



# HANDBOOK ON VALUATION FOR PURPOSES OF RESOLUTION

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**EBA**

EUROPEAN  
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# Abbreviations

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AMV	asset management vehicle
AVA	additional value adjustment
BRRD	Directive 2014/59/EU on bank recovery and resolution
CAPM	capital asset pricing model
COE	cost of equity
CRD	Directive 2013/36/EU on capital requirements
CRE	commercial real estate
CRR	Regulation (EU) No 575/2013 on capital requirements
DCF	discounted cash flow
DTA	deferred tax asset
DTC	deferred tax credit
EBA	European Banking Authority
FOLTF	failing or likely to fail
GAAP	generally accepted accounting principle
IFRS	International Financial Reporting Standards
MIS	management information system
NAV	net asset value
NCWO	no creditor worse off
NPL	non-performing loan
P&L	profit and loss
PCEV	post-conversion equity value
PD	probability of default
RA	resolution authority
Regulation on valuation before resolution	European Commission Delegated Regulation No 2018/345
Regulation on valuation after resolution	European Commission Delegated Regulation No 2018/344
RTS	Regulatory technical standards
RWA	risk-weighted assets
SOTP	sum of the parts
WDCCI	write-down or conversion of capital instruments

# Executive summary

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## Introduction

Directive 2014/59/EU of the European Parliament and of the Council establishing a framework for recovery and resolution of credit institutions and investment firms (BRRD)<sup>1</sup> provides a comprehensive framework of powers for resolution authorities (RAs) to intervene in failing banks to protect the public interest and financial stability. To ensure that authorities exercise these powers in ways that reduce the risk of costs falling on the taxpayer, preserve value where possible and respect the property rights of affected shareholders and creditors, the BRRD requires independent valuations to be carried out to inform RAs' decisions.

The BRRD relies on valuations conducted by a person meeting conditions of independence for a number of purposes.

The BRRD lays down the general criteria and requirements that such valuations should comply with, and delegates to the European Banking Authority (EBA) responsibility to supplement and specify them in regulatory technical standards (RTS) enacted by the European Commission in the form of delegated regulations. This body of law represents the harmonised European Union (EU) legal and regulatory framework on valuation in resolution matters, is directly applicable in all Member States and has to be observed by valuers and RAs when conducting the valuation.

To support the RAs in the context of valuation, the EBA has developed this Handbook on valuation for purposes of resolution ('Handbook') with a view to operationalising the valuation process in order to facilitate its implementation by RAs in times of crisis. The Handbook is therefore subordinate to the abovementioned Level 1 and Level 2 texts (the BRRD, and RTS developed by the EBA and endorsed by the European Commission in the form of delegated regulations; see summary table in Section 1.1) and has been developed bearing in mind the need to be consistent with that body of law.

## Legal basis and overview

The Handbook is developed on the basis of Article 29(2) of Regulation (EU) No 1093/2010 establishing the EBA, to promote common approaches and practices. While it is not binding and not subject to 'comply or explain', it is aimed at fostering the convergence of practices in the implementation of the valuation process, including in the interaction with valuers.

The Handbook is addressed to the **RAs** and aims to be a useful non-exhaustive support document in the context of the valuations requested under Articles 36 and 74 of the BRRD. It does not purport to be a comprehensive and prescriptive valuation manual but aims to provide a non-exhaustive **overview of selected aspects of valuation methodologies** that could be used when conducting the valuation in accordance with the EU legal and regulatory framework, and of the related **implementing process**.

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<sup>1</sup> The same provisions are set out in Regulation (EU) No 806/2014 establishing the Single Resolution Mechanism (SRMR). To avoid duplication, references in this Handbook are to the BRRD provisions only rather than also to the corresponding provisions set out in the SRMR.

The Handbook has been developed having regard to acknowledged **international valuation standards and practices**, such as the current edition of the International Valuation Standards (IVS) produced by the International Valuation Standards Council (IVSC), a non-binding although authoritative source of reference on best market practices, and relevant internationally acknowledged literature (see Annex). Furthermore, RAs' valuation experience with actual or near-miss resolution events has provided useful background information.

The Handbook respects the **valuer's independence and freedom to choose** the appropriate valuation approaches or methodologies. In the light of this, the Handbook does not purport to prescribe a specific level of granularity, whether the use of a top-down or bottom-up approach is appropriate, when to use samples and of what size, or any other similar detail. In addition, it acknowledges that the quality and the granularity of the valuation are constrained by the circumstances, including the **available timeframe, data and information**.

With the above caveats in mind, the Handbook aims to outline the main steps in which valuations may be articulated, having regard to the dynamics of the resolution strategies and of the execution of the resolution tools, and illustrates the potential application of the most common valuation approaches in accordance with the criteria set out in Commission Delegated Regulation 2018/345 on valuation before resolution (Regulation on valuation before resolution). Specific attention has been paid to the development of examples of application of the autonomous notions of 'hold value' and 'disposal value' that are set out in the Regulation on valuation before resolution, including in the context of each resolution tool.

While the Handbook covers all types of valuations to be performed for purposes of resolution, it mainly focuses on the valuation informing the RA's decision on the adoption of the resolution tool(s) (commonly referred to as Valuation 2). This is the most technically complex valuation and has the greatest impact on the resolution decision affecting shareholders, creditors and potentially public finances; for these reasons, the largest part of the Handbook is devoted to this type of valuation. Less space is devoted to the valuation to be performed to assess if the conditions for resolution or for write-down and conversion are met (commonly referred to as Valuation 1), since it can be broadly considered an accounting valuation. The description of the valuation to be performed after the execution of the resolution action in order to assess any difference in treatment of shareholders and creditors had the entity been subject to normal insolvency proceeding instead of resolution (commonly referred to as Valuation 3) is also dealt with in less detail, since, broadly speaking, it is a gone concern valuation to a large extent influenced by national insolvency law and practice.

The Handbook also deals with the valuation process, including the appointment and interaction with the valuer, the conditions for its independence and suggestions about potential contents of the valuation report. In doing so, the Handbook intends to support the RAs in setting the expectations of the valuation results to effectively inform the resolution decision.

One Chapter of the Handbook (Chapter 10) deals with the assessment by the RAs, in business as usual, of institutions' valuation preparedness, and focuses on the capabilities to develop and/or adjust management information systems (MISs) to meet expectations about data and information to be swiftly provided to the RA/valuer to support a robust valuation. Work on this Chapter is still in progress; for this reason, only a textbox is included in the current version of the Handbook.



After an introductory Chapter providing an overview of the EU legal and regulatory framework and a summary of the main features of the valuations to be performed for purposes of resolution, Chapter 2 outlines horizontal issues common to the valuations before resolution, including questions related to the valuation date, definitive and provisional valuation, best point estimates and value ranges. Chapter 3 is devoted to a high-level illustration of Valuation 1. Chapter 4 provides an outline of the purposes and conceptual remarks of Valuation 2, and gives attention to considerations of operational costs and the determination of the buffer for additional losses in cases of provisional valuation. Chapter 5 deals with asset valuation under **hold** and **disposal value** assumptions, and outlines, among other things, considerations related to the application of cash flows and discount rates in Valuation 2. It also covers the assessment of the value of **liabilities** and of **contingent assets and contingent liabilities** in the context of Valuation 2. Chapter 6 deals with the **equity valuation of the institution** itself, notably aspects of the dividend discount model and market value methodology. Chapter 7 considers aspects of the implementation of the **resolution tools** under Valuation 2. Chapter 8 closes the section of the Handbook on valuation before resolution and deals with the process, including the appointment of the independent valuer, and the potential content of the valuation report to be submitted by the valuer to the RA. Chapter 9 deals with aspects of **Valuation 3**, the valuation to be carried out after the execution of the resolution action to assess differences in treatment of shareholders and creditors in resolution and in hypothetical insolvency proceedings. Finally, Chapter 10, which relates to the enhancement of institutions' valuation preparedness, is in progress and is currently represented by a textbox.

# 1. Introduction: overview of the EU valuation framework

## 1.1 Outline of EU legislative and regulatory sources on valuation for purposes of resolution

Valuation is critical to resolution execution: its role of informing the resolution decision, purposes and general requirements are outlined in the BRRD and further specified in a body of EU regulation laying down an EU harmonised approach that is mindful of ensuring consistency with the resolution objectives and principles.

Against this background, the BRRD provides that independent valuations be performed before resolution, under Article 36(4) of the BRRD, and after resolution, under Article 74 of the BRRD. Pursuant to Article 36(4) of the BRRD, the valuation before resolution has to:

- (i) inform the determination of whether the conditions for resolution or the write-down or conversion of capital instruments ('WDCCI') are met (**Valuation 1**);
- (ii) where the RA determines that an entity meets those conditions, inform the resolution action to be adopted, the extent of any eventual write-down or conversion of capital instruments, and other decisions on the implementation of resolution tools (**Valuation 2**);
- (iii) where liabilities arising from derivatives are subject to write-down or conversion, meet special valuation requirements set out in Article 49 of the BRRD.

Under Article 74 of the BRRD, an independent valuation is needed to:

- (iv) determine whether an entity's shareholders and/or creditors would have received better treatment if the entity had entered into normal insolvency proceedings rather than into resolution (principle of no creditor worse off (NCWO)) (**Valuation 3**).

To ensure harmonised approaches to the conduct of these valuations, the BRRD delegates to the Level 2 regulation the tasks of setting out the criteria on which valuations for the purposes of points (i) and (ii) have to be based, and defining the methodology for the valuation under points (iii) and (iv). The European Commission has enacted four Delegated Regulations in matters related to valuation in the context of resolution, based on EBA RTS. This body of law is the harmonised EU legal and regulatory framework on valuation in resolution matters and aims to promote consistent application of valuation throughout the European Union.

Legal source	Matter
BRRD Article 36	Valuation before resolution (Valuation 1 and Valuation 2)
Commission Delegated Regulation 2018/345	Valuation before resolution
Commission Delegated Regulation 2016/1401	Valuation of liabilities arising from derivatives

Commission Regulation 2016/1075 (Articles 37-41)	Requirements for independent valuers
BRRD Article 74	Valuation after resolution
Commission Delegated Regulation 2018/344	Valuation after resolution

## 1.2 Valuation before resolution

Valuation is a specialised technical task to be performed by professional experts. In the context of resolution, valuation has to be conducted in accordance with valuation best practices and in order to fulfil the purposes set out by the resolution framework in accordance with the resolution scenarios provided by the RA to the valuer. This requires the valuer to be cognisant of the resolution principles, objectives and dynamics in the application of the valuation methodology. When performing the valuation before resolution, for example, attention should be paid to appropriately **balance ‘fair, prudent and realistic assumptions’** to ensure the **full recognition of losses**, and their **internalisation** through write down and conversion, in order to **protect public finances** and the **business viability** as the case may be, and **at the same time to respect the right of property of shareholders and creditors, having regard to the principle of NCWO**. The expression ‘fair, prudent and realistic assumptions’, which is laid down in recital (52) of the BRRD, should be interpreted in the light of the resolution context rather than with regard to accounting notions.

Valuation before resolution may be subject to time and data availability constraints which may affect the valuation exercise. As a general remark, a longer timeframe allows the application of a methodology on a more granular level and possibly also **the use of a second methodology, as a consistency check; however, this may not be the case when the available timeframe is very short or information is limited**. In the light of the above, it is acknowledged that the specific circumstances of the case at hand may greatly influence specific decisions on valuation matters.

It is also worth noting the interaction between the valuation before resolution in accordance with the BRRD and the State aid framework. While the BRRD requires that the **valuation must not assume the provision of State aid** (Article 36(5)), the interaction of the two regimes may nonetheless result in the need for State aid or financial support from the resolution fund. In that case, resolution action is conditional on prior and final approval under the Union State aid framework. Thus, if such situations arise, it is suggested that resolution authorities engage the European Commission as early as possible for pre-notification contacts.

### 1.2.1 Horizontal issues

Although valuation before resolution is a single process, it requires the fulfilment of different steps and the performance of various types of valuation exercises to meet the purposes set out in the BRRD.

As a default solution, the BRRD requires a **definitive valuation** to be conducted before resolution, which is a valuation fulfilling the general requirements set out in Article 36 and conducted by an independent valuer.

Where such definitive valuation cannot be performed or in cases of urgency, resolution action can be supported by a **provisional valuation**, which may be performed by the valuer or by the RA. As part of the valuation before resolution, an **ex ante estimate of the treatment that shareholders and creditors** would receive had the institution been subject to normal insolvency proceedings should be made (Article 36(8) of the BRRD). In cases of provisional valuation, such assessment may be made to the extent practicable. In cases of both definitive and provisional valuation, the valuation date has to be as close as possible before the date on which the resolution decision is adopted.

An **ex post definitive valuation** is envisaged when resolution action has been taken on the basis of a provisional valuation (Article 36(10) of the BRRD)<sup>2</sup>. In such a case, the valuation date has to be the resolution date.

The valuation before resolution has to determine **best point estimates** and, where appropriate, may include a discussion of **value ranges** and sources of valuation uncertainty and be supported by an outline of the key methodologies and assumptions used with appropriate justification.

As regards macroeconomic assumptions, they may be based on forecasts produced by the official sector (e.g. the European Commission, central banks etc. ...) and should be the same across all types of valuations, including Valuation 3.

### 1.2.2 Valuation 1

Valuation 1 is the valuation required under Article 36(4)(a) to assess whether the conditions for resolution or for write-down or conversion are met.

As described in recital (51) of the BRRD, informing the determination of whether the conditions for resolution or for write-down or conversion of the entity's capital instruments are met requires a fair and realistic valuation of the entity's assets and liabilities that recognises losses in accordance with letter (g) of Article 36(4). Such a valuation is principally aimed at determining whether or not the aggregate value of the entity's assets exceeds that of its liabilities (in other words, whether or not the entity is balance-sheet solvent) and whether or not the conditions for authorisation are fulfilled, including whether or not the applicable regulatory capital requirements are met. It should be noted, however, that the assessment of this latter aspect might go beyond the valuer's remit. To assist with this determination, Valuation 1 must be closely linked to the accounting principles relevant to the preparation of the entity's financial statements and the prudential regulations relevant to the calculation of the entity's capital requirements. This should not prevent the valuer from deviating from assumptions made by the entity's existing management, if this is warranted, based on the valuer's independent expert judgement.

### 1.2.3 Valuation 2

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<sup>2</sup> It is acknowledged that the interpretation of Article 20(11) of Regulation 806/2014 establishing the Single Resolution Mechanism (which corresponds to Article 36(10) of the BRRD) has been submitted to the Court of Justice of the European Union. This Handbook intends to be neutral regarding the disputed issue and does not purport to suggest any interpretation of the legal text.

Pursuant to letters (b) to (g) of Article 36(4) of the BRRD, Valuation 2 informs the decision on the appropriate resolution action to be taken and, depending on such action, the decisions on the extent of the cancellation or dilution of shares, the extent of the write-down or conversion of eligible liabilities, the assets, rights, liabilities or shares to be transferred, and the value of any consideration to be paid. Being conducted before resolution actions are implemented, it has to consider the impact (as yet hypothetical) of actions that may be taken by the RA to implement its resolution strategy. For this purpose, **under the Regulation on valuation before resolution the RA “may consult with the valuer in order to identify the range of resolution actions being considered by that authority”** (Article 10(1) of the Regulation on valuation before resolution) setting the dynamic frame for the valuation. Pursuant to Article 36 of the BRRD, the valuation before resolution is aimed at assessing the value of assets and liabilities and “informs” the resolution decision, which is adopted by the RA, taking into account and balancing the existing circumstances.

Valuation 2 has to be fair, prudent and realistic; it is directed at determining the **economic value** of assets and liabilities, having regard to the applicable resolution scenario, in order to represent fairly the entity’s financial position in the context of the opportunities and risks that it confronts. To that end, the valuer may use any relevant information pertinent to the valuation date.

The determination of the economic value of assets and liabilities aims at the full recognition of losses, consistent with the resolution objective of internalising the costs of resolution and of protecting public funds. Where valuation 2 is provisional, the BRRD requires the inclusion and justification of a **buffer for additional losses**. The buffer is aimed at approximating losses that the valuer expects to occur or that have occurred but that the valuer has not yet been able to precisely estimate as part of the provisional valuation.

In terms of valuation approaches, the Regulation on valuation before resolution gives precedence to the discounted cash flow (DCF) methodology, this notwithstanding references to other valuation approaches in that Regulation make the application of the DCF not exclusive, leaving room for other valuation approaches — for instance the market methodology or the adjusted book value methodology — in accordance with valuation best practices, the valuer’s judgement and the EU legal and regulatory framework.

The Regulation on valuation before resolution sets out valuation criteria reflecting the rationale of the resolution actions. In particular, it provides two measurement bases: the hold value and the disposal value. For resolution strategies envisaging the entity under resolution to continue holding some or all of the entity’s assets as a going concern, the hold value as defined in the Regulation on valuation before resolution has to be applied (Article 11(4)). For resolution strategies entailing the **transfer** of assets, rights, liabilities or shares — notably the sale of business, the bridge institution and the asset separation tools — the **disposal value** has to be applied. The Regulation before resolution also lays down autonomous definitions of ‘**franchise value**’ and ‘**equity value**’.

Where resolution envisages conversion of capital instruments or other liabilities, Valuation 2 shall also provide an **estimate of the post-conversion equity value** of new shares transferred or issued as consideration. This is necessary to enable the resolution authority to determine a rate of conversion into equity that ensures either that the institution after resolution is adequately capitalised from a regulatory perspective or that holders of converted instruments receive equity of sufficient value to be consistent with their fundamental property rights and with the NCWO safeguard under Article 73 of the BRRD.

## 1.3 Valuation 3

The BRRD provides explicit safeguards to protect the fundamental property rights of shareholders and creditors. Article 73 of the BRRD requires that Member States ensure that shareholders and creditors affected by resolution tools receive at least as much in resolution as they would have received had the entity been wound-up under normal insolvency proceedings, regardless of whether their claims are written down or modified as a result of resolution actions. The existence of any difference in treatment is determined by Valuation 3, to be performed in accordance with the methodology laid down in the European Commission Delegated Regulation No 2018/344 ('Regulation on valuation after resolution'). This valuation takes place after the execution of resolution and informs the application of the BRRD legal safeguards to protect the rights of shareholders and creditors against decisions adopted on the basis of Valuation 2. As opposed to Valuation 1 and 2, it is conducted on a gone concern basis.

To make those safeguards effective, the methodology described by the Regulation on valuation after resolution seeks to determine:

- (a) the treatment that shareholders and creditors would have received had the entity under resolution entered insolvency proceedings at the time when the authority decided to apply the resolution strategy;
- (b) the actual treatment that shareholders and creditors have received in resolution;
- (c) the difference between actual treatment and counterfactual treatment.

In other words, the exercise attempts to determine the treatment actually received by shareholders and creditors existing as of the date of resolution, but immediately preceding any resolution action, and to compare this with an estimate of the outcome resulting from a hypothetical insolvency of the entity under normal insolvency proceedings. For this reason it has to be based on insolvency scenarios reflecting the applicable insolvency law and practice. As is the case with Valuations 1 and 2, Valuation 3 shall be supported by key assumptions and sensitivity analysis, and reflect uncertainties and any lack of relevant information or other issues encountered.

## 2. Valuation before resolution: horizontal issues

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### 2.1 Valuation date, definitive and provisional valuations

Although Valuation 1 and Valuation 2 fulfil different purposes and have to be performed in accordance with different criteria, certain requirements apply to both of them and are therefore dealt with together in this Chapter.

#### 2.1.1 Valuation date

According to the Regulation on valuation before resolution, the valuation date is defined as follows:

- (a) “the reference date as determined by the valuer on the basis of the date as close as possible before the expected date of a decision by the resolution authority to put the entity in resolution or to exercise the power to write-down or to convert capital instruments”;
- (b) where an *ex-post* definitive valuation by Article 16(10) of Directive 2014/59/EU is conducted, the resolution date;
- (c) in relation to liabilities arising from derivatives, the point in time determined pursuant to Article 8 of Commission Delegated Regulation (EU) 2016/1401.”

#### 2.1.2 Definitive and provisional valuations: general considerations

The BRRD provides, as a default solution, that resolution decisions should be informed by a valuation performed by an independent valuer and fulfilling the requirements laid down in Article 36, i.e. a ‘**definitive**’ valuation informing the resolution decision. To enable the RA to take action also in circumstances of **urgency** or because an **independent valuation is not possible**, the BRRD envisages the possibility of adopting resolution action also on the basis of a **provisional valuation** (Article 36(2) and (9)). Such provisional valuation should comply with the requirements set out in paragraphs (1), (6) and (8) of Article 36 of the BRRD to the extent practicable. Paragraph (8) of Article 36 of the BRRD relates to the estimated hypothetical recovery rate by creditor classes, basically an *ex ante* estimate of the NCWO, that may be performed consistently with the principles of the Regulation on valuation after resolution insofar as they can be applied prior to resolution (Article 2(5)(b) of the Regulation on valuation before resolution). Such valuation consists of two steps: first, the subdivision of creditors into classes; second, establishing an estimate of the treatment that such classes would receive should the institution be put into insolvency.

The provisional valuation may be performed by the independent valuer or by the RA itself, and it is envisaged to be followed by an ex-post definitive valuation after the execution of the resolution scheme (Article 36(10) of the BRRD).

### 2.1.3 Ex-post definitive valuation

An **ex-post definitive valuation** is envisaged when the resolution decision has been informed on the basis of a provisional valuation (Article 36(10) of the BRRD)<sup>3</sup>. The provisional and the ex-post definitive valuation, “fully compliant with all the requirements” of Article 36 of the BRRD and carried out “as soon as practicable” after the execution of the resolution scheme, may yield different results owing to the higher granularity of the available information, the valuation approach adopted and the time available.

This is consistent with the BRRD, which expressly acknowledges that the purpose of the ex-post definitive valuation is “to ensure that any losses on the assets of the institution or entity ... are fully recognised in the books of accounts of the institution or entity”, to write back creditors’ claims or to increase the value of the consideration paid (see Article 36(11) of the BRRD).

The ex-post definitive valuation may rely on **data and information not available to the valuer or the RA when performing the provisional valuation, provided they refer to facts occurred before the resolution date**. In accordance with Article 3(b) of the Regulation on valuation before resolution, the valuation date in such cases is the resolution date. In accordance with Article 6(e) of that Regulation, the valuation report should explain the differences between the methodologies and assumptions used in the provisional and in the ex-post definitive valuation.

## 2.2 Best point estimates and value ranges

According to the Regulation on valuation before resolution, the valuer has to provide a “**best point estimate** of the values” of the assets, liabilities and combinations thereof; **value ranges** should also be determined “where appropriate” (Article 2(3) of the Regulation on valuation before resolution). The determination of best point estimate should be supported by the clear indication and explanation in the valuation report of any relevant assumptions, reservation and qualifications (if any) or similar considerations. Similarly, where, in addition to the best point estimate, value ranges are determined, the valuation report should indicate how the value range has been derived, for instance the parameters and assumptions that are the basis for the sensitivity and/or scenario analysis, as well as the parameters and assumptions to which the valuation is most sensitive.

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<sup>3</sup> It is acknowledged that the interpretation of Article 20(11) of Regulation 806/2014 establishing the Single Resolution Mechanism (which corresponds to Article 36(10) of the BRRD) has been submitted to the Court of Justice of the European Union. This Handbook intends to be neutral regarding the disputed issue and does not purport to suggest any interpretation of the legal text.



## 3. Valuation 1

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Under Article 36(4)(a) of the BRRD, the valuation has to “inform the determination of whether the conditions for resolution or the conditions for the write down or conversion of capital instruments are met”. This valuation is commonly referred to as ‘Valuation 1’.

Valuation 1 should rely on “fair and realistic assumptions”, consistent with recital (51) of the BRRD, and is principally aimed at determining whether the aggregate value of the entity’s assets exceeds that of its liabilities (in other words whether the entity is balance-sheet solvent) and whether the conditions for authorisation are fulfilled, including the applicable requirements. It should be noted, however, that the assessment of this latter aspect might go beyond the valuer’s tasks.

The Regulation on valuation before resolution also clarifies that, when the results of Valuation 1 are available, they shall inform the competent authority’s or the RA’s determination that the institution is failing or likely to fail (‘FOLTF’) (Article 7(1) and recital (4) of the Regulation on valuation before resolution). The unavailability of the results of such valuation is therefore not an obstacle to the FOLTF assessment. The latter is governed by Article 32(2) and (4) of the BRRD and by the EBA Guidelines on the different circumstances when an institution shall be considered as failing or likely to fail<sup>4</sup>.

The general BRRD requirement of close cooperation between the competent authorities and the resolution authorities, including providing each other upon request with all the information necessary for the performance of their tasks, applies also for the purposes of Valuation 1<sup>5</sup>. Such cooperation should ensure that overlapping data requests and any resulting additional reporting burden for institutions in times of crisis are avoided as far as possible.

In accordance with the general criteria set out in Articles 2(3) and 8 of the Regulation on valuation before resolution, valuation results should be provided in the form of best point estimates and, where appropriate, also in value ranges.

According to Article 7(2) and (3) of the same Regulation, Valuation 1 shall be consistent with the applicable accounting and regulatory framework. Furthermore, the valuation methodologies may rely on an institution’s internal models, if considered appropriate for the valuation, “taking into account the nature of the entity’s risk management framework and the quality of data and information available”. Consistent with the above, it is also possible to “challenge the assumptions,

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<sup>4</sup> EBA Guidelines on the interpretation of the different circumstances when an institution shall be considered as failing or likely to fail under Article 32(6) of Directive 2014/59/EU (EBA/GL/2015/07) of 6 August 2015, available at [https://www.eba.europa.eu/documents/10180/1156219/EBA-GL-2015-07\\_EN\\_GL+on+failing+or+likely+to+fail.pdf/9c8ac238-4882-4a08-a940-7bc6d76397b6](https://www.eba.europa.eu/documents/10180/1156219/EBA-GL-2015-07_EN_GL+on+failing+or+likely+to+fail.pdf/9c8ac238-4882-4a08-a940-7bc6d76397b6).

<sup>5</sup> See in particular recital (17) and Article 11(2) relating to information on both resolution planning and resolution implementation. For the Banking Union, Article 34(1) of Regulation (EU) No 806/2014 establishing the Single Resolution Mechanism also provides that the SRB should make “full use of all information available to the ECB”.

data methodologies and judgements on which the entity based its valuations for financial reporting obligations or for the calculation of the regulatory capital or capital requirement and disregard them for the purposes of the valuation”.

Accounting values would be the valuation bases, and institutions are assumed to provide in a timely manner updated financial statements and related information in order to conduct the valuation when the valuation exercise is triggered<sup>6</sup>. Such related information may include (but is not restricted to) information about applied valuation approaches<sup>7</sup>, information about applied data sources and explanations about the provision of consolidated data or individual, unconsolidated accounts.

In accordance with letter (a) of Article 4 of the Regulation on valuation before resolution, updated information may be provided, for instance, via supervisory reporting templates (e.g. so-called CoRep (common reporting framework) or FinRep (financial reporting framework) templates). These templates, however, might not cover all data needed to perform Valuation 1. Careful consideration might also be given to the fact that they commonly cover consolidated information (regulatory view of consolidation, which might differ from the accounting view of consolidation) rather than information on the solo basis.

A request for the provision of updated information by an institution – potentially in a situation of stress and as of an uncommon day (e.g. middle of the month, i.e. not end of the quarter or end of a month) – could be a problematic request to meet by the institution in a relatively short period of time. Such inability to provide updated information in a short term might arise, for instance, when, due to technical reasons, accrual accounts cannot be closed during the month. However, depending on the composition of the assets and liabilities (and including off-balance sheet positions), sudden changes in the values of these positions on the days prior to resolution might have a material impact on an institution’s financial position.

In such cases, careful consideration might be given to the fact that the financial institution should be able to provide updated information on the more volatile positions (volatile in the meaning of valuation or pricing, e.g. bonds, equity and derivative positions in times of elevated volatility). For less volatile positions (e.g. loans and deposits, as long as there are no significant withdrawals of the latter), recently available financial accounting information might be considered sufficiently reliable by those performing the valuation. Very recently updated information might also be deemed necessary for FX positions. In any case, the trade-off between data quality and timely provision of updated data should be carefully considered when performing the valuation.

Article 8 of the Regulation on valuation before resolution points to several areas of particular concern for Valuation 1. These include loans and loan portfolios, repossessed assets, fair valued

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<sup>6</sup> Article 4 of the Regulation on valuation before resolution provides “[...] in addition to the financial statements, related audit reports and regulatory reporting as of a period as close as possible to the valuation date, the relevant information may include [...] (a) the updated financial statements and regulatory reporting prepared by the entity as close as possible to the valuation date”.

<sup>7</sup> According to letter (b) of Article 4 of the Regulation on valuation before resolution, “relevant information may include”: “an explanation of the key methodologies, assumptions and judgements used by the entity in order to prepare the financial statements and regulatory reporting”.

assets (here: fair value according to the applicable accounting standard) for which the valuations are no longer applicable or valid, goodwill and intangibles, legal disputes and regulatory actions, pension assets and liabilities as well as deferred tax items.

## 4. Valuation 2: general considerations

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### 4.1 Valuation 2: purposes and general considerations

According to Article 36 of the BRRD, the taking of a resolution decision or the exercise of the WDCI are subject to a **fair, prudent and realistic valuation** of the assets and liabilities of the institution. Unlike Valuation 1, an accounting valuation aimed at establishing whether the conditions for WDCI or resolution are met (see Chapter 3), Valuation 2 is aimed at informing the RA's decision on the execution of WDCI or the resolution action and has to be conducted having regard to the following purposes laid down in Article 36(4) letters (b) to (g) of the BRRD<sup>8</sup>:

- (b) [...] to inform the decision on the appropriate resolution action [...];
- (c) when the WDCI is applied, to inform the decision on the extent of the cancellation or dilution of shares or other instruments of ownership, and the extent of the write down or conversion of relevant capital instruments;
- (d) when the bail-in tool is applied, to inform the decision on the extent of the write down or conversion of eligible liabilities;
- (e) when the bridge institution or asset separation tool are applied, to inform the decision on the assets, rights, liabilities or shares or other instruments of ownership to be transferred and decision on the value of any consideration to be paid [...];
- (f) when the sale of business tool is applied, to inform the decision on the assets, rights, liabilities or shares or other instruments of ownership to be transferred and to inform the resolution authority's understanding of what constitutes commercial terms [...];
- (g) in all cases, ensuring that any losses on the assets of the institution are fully recognised at the moment the resolution tools are applied or the .

To attain these purposes, Valuation 2 has to have regard to the **resolution scenario provided by the RA to the valuer**, and to comply with the valuation criteria laid down in the BRRD and specified in the Regulation on valuation before resolution. In accordance with Article 36 of the BRRD, the valuation before resolution is meant to “inform” the resolution decision, which is adopted by the RA taking into account and balancing the existing circumstances.

Valuation is dependent on various constraints such as time, quantity and quality of available data, market conditions and resolution scenarios. In accordance with the Regulation on valuation before resolution, Valuation 2 aims to establish the **economic value** – and not the accounting value – of assets and liabilities or of the entire entity or selected businesses, as appropriate. The valuation

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<sup>8</sup> Article 36(4)(a) refers to valuation 1: ‘to inform the determination of whether the conditions for resolution or the conditions for the write down or conversion of capital instruments are met’.

approaches and methodologies described in this Handbook should therefore be applied with a view to determining such economic value in accordance with the measurement bases of the hold value or on the disposal value as defined in that Regulation. For that purpose, and to make sure that losses are fully recognised, the valuation has to be based on “fair, prudent and realistic assumptions”. At the same time, however, the valuation should be mindful to indicate any potential violation of the principle that shareholders and creditors do not incur greater losses in resolution than in normal insolvency proceeding (see also Chapter 9).

It is worth noting that the Regulation on valuation before resolution sets out in general terms certain criteria or principles as well as some key variables to be used in the valuation. Although some of these criteria and key variables reflect in particular the **discounted cash flows ('DCF') methodology**, which is given prevalence throughout the Regulation on valuation before resolution, the terms of that Regulation are not conclusive as to the application of a single commonly accepted valuation methodology. Rather, the Regulation lays down specific resolution-oriented criteria for valuation allowing for the application of various methodologies, subject to and to the extent that they can deliver the economic value as required by the Regulation. Within the limits set forth by and consistent with the Regulation on valuation before resolution, the **valuer remains free to choose the most suitable methodology for each specific case**. A **summary of commonly applied valuation approaches and methodologies** is provided in the Annex.

Valuation 2 may be a single asset and liability valuation (Chapter 5) or an equity valuation (Chapter 6) of the whole institution. The latter may be required either when the sale of business tool is applied in the form of share deals or, consistent with the Regulation on valuation before resolution, for purposes of determining the conversion rate or rates when WDCCI or bail-in are applied in accordance with Article 50 of the BRRD.

As a general rule, Valuation 2 has to include the conduct of an **ex-ante estimate of the treatment of shareholders and creditors classes in a hypothetical normal insolvency proceeding**, indicating to the RA whether creditors do not bear greater losses in resolution than they would bear had the financial institution been subject to normal insolvency proceedings. In the case of provisional valuation, this requirement may be fulfilled to the extent practicable (see also Section 2.1.2).

## 4.2 Measurement bases: hold value and disposal value

### 4.2.1 Hold value

To achieve the economic value, the Regulation on valuation before resolution sets out two general criteria reflecting resolution specific situations: the **hold value** and the **disposal value**. Examples of potential articulations of the hold value and of the disposal value and related discount rates are illustrated in Sections 5.2 and 5.3. More generally, for purposes of the valuation, consideration can be given to the following.

The **hold value** applies where the entity is envisaged to retain the assets as a going concern after the application of the resolution tool, i.e. the bail-in tool. The continuation of the entity as a going

concern requires some forward-looking considerations and the support of business forecasts and, where available, restructuring plans. The Regulation on valuation before resolution does not contemplate the application of franchise value (as defined in Article 1(g)) where the hold value is applied. In accordance with that Regulation, “reasonable expectations for franchise value” could be considered when determining equity value for purposes of the determination of the post-conversion equity value in the case of application of the bail-in tool.

Under Article 1(e) of the Regulation on valuation before resolution, **hold value** is defined as “the present value, discounted at an appropriate rate, of cash flows that the entity can reasonably expect under fair, prudent and realistic assumptions from retaining particular assets and liabilities, considering factors affecting customer or counterparty behaviour or other valuation parameters in the context of resolution”. The last sentence of Article 11(4) of the same Regulation provides that “The hold value may, if considered fair, prudent and realistic, anticipate a normalisation of market conditions”.

#### Textbox – Hold value

As hold value is intended to be based on “cash flows that the entity can reasonably expect under fair, prudent and realistic assumptions from retaining particular assets and liabilities”, the valuer may consider the use of inputs and assumptions regarding the cash flows that are particular to the entity that is retaining the assets or liabilities being valued. Given that the hold value assumes that the subject entity retains the asset or liability, no presumed exchange (either real or hypothetical) is assumed<sup>9</sup>. The value-driving inputs and assumptions made by the valuer under the scenario that the entity retains the asset or liability differ from those that would be assumed under a hypothetical exchange between a willing buyer and willing seller. Therefore, the valuer may wish to consider and explain the reasons for such differences in the valuation report, for example why the entity may warrant different performance assumptions than an alternative market participant might consider. Any such explanation should be for validation purposes only, and not yield to the determining the hold value as being the same as the value assumed under a hypothetical exchange between a willing buyer and a willing seller, or as the disposal value.

#### 4.2.2 Disposal value

The definition of disposal value is set out in Article 12(5) of the Regulation on valuation before resolution, providing that it “shall be determined by the valuer on the basis of the cash flows, net of disposal costs and net of the expected value of any guarantees given, that the entity can reasonably expect in the currently prevailing market conditions through an orderly sale or transfer of assets or liabilities. Where appropriate, having regard to the actions to be taken under the

<sup>9</sup> Where assets are being retained by the institution under resolution in order to be disposed of, in accordance with, for instance, the balance sheet destination of specific assets or with the business plan and forecasts, reference should be made to the disposal value having regard to the disposal horizon (see Chapter 7.2.2).

resolution scheme, the valuer may determine the disposal value by applying a reduction for a potential accelerated sale discount to the observable market price of that sale or transfer. To determine the disposal value of assets which do not have a liquid market, the valuer shall consider observable prices on markets where similar assets are traded or model calculations using observable market parameters, with discounts for illiquidity reflected as appropriate”.

Unlike the hold value, when determining the disposal value for the purpose of **transfer of business** under the sale of business or of the bridge institution tool, “the valuer may take into account reasonable expectations for **franchise value**”<sup>10</sup>. Franchise value is defined in Article 1(g) of the Regulation on valuation before resolution as “net present value of cash flows that can reasonably be expected to result from the maintenance and renewal of assets and liabilities or businesses and includes the impact of any business opportunities, as relevant, including those stemming from the different resolution actions that are assessed by the valuer. Franchise value may be higher or lower than the value arising from the contractual terms and conditions of assets and liabilities existing at the valuation date. Reasonable expectations of franchise value can also be considered when determining the equity value.

#### **Textbox – Disposal value**

The **disposal value** applies where assets, rights and liabilities are transferred from the entity under resolution to a third party purchaser, the bridge institution or the asset management vehicle when the sale of business, the bridge institution or the asset separation tool are respectively applied.

With respect to the disposal value, the valuer may need to consider the appropriateness of the disposal costs<sup>11</sup> that it may be necessary to incur to get the assets or liabilities being valued into a saleable condition (being careful that any potential change in value that may result from such expenditure is also considered). The valuation may also wish to consider the effect that a piecemeal sale may have (as opposed to a combined sale) with respect to factors such as (i) differences in the observable market prices or (ii) timelines of potential sales. Similarly, the valuer may wish to consider difference between (i) an orderly transaction with a typical marketing period and (ii) a forced transaction with a shortened marketing period with limited (or no) buyer interest.

### 4.3 Further considerations on Valuation 2: best point estimate and value ranges

As illustrated in the Chapter on the Horizontal issues of valuation before resolution (see Section 2.2), the Regulation on valuation before resolution requires the valuation to determine the

<sup>10</sup> For further considerations on the franchise value in the context of the determination of the disposal value, see Section 7.3.2.

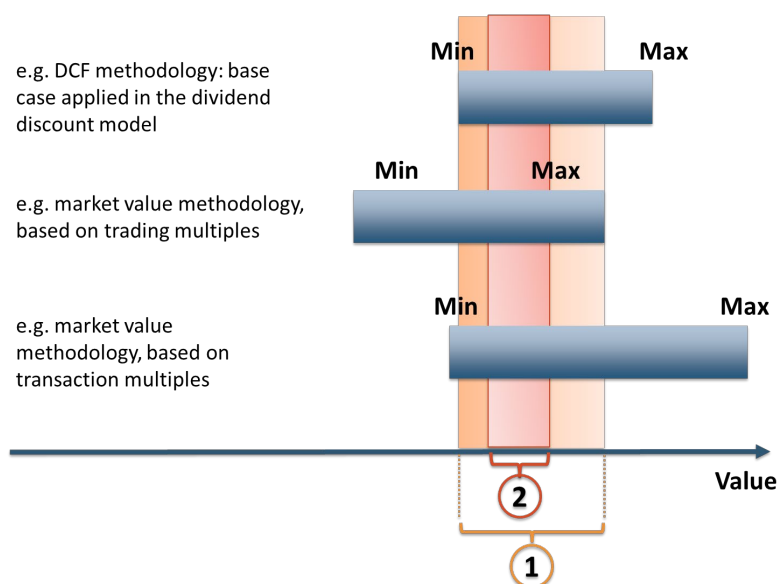
<sup>11</sup> See Article 12(5) of the Regulation on valuation before resolution. Besides direct cost of the disposal, e.g. legal or other consultancy costs, costs might also include expenses that may be needed to get an asset or liability into a saleable form, as opposed to operational management costs. This may be, for example, costs to complete work in progress, construction costs related to a commercial real estate (CRE) asset, repairs to assets (e.g. repossessed property) or breakage fees on loans, contracts or assets etc.

“**best point estimate** of the values” of the assets, liabilities and combinations thereof. It also provides that **value ranges** should also be determined “where appropriate” (Article 2(3) of the Regulation on valuation before resolution). Without prejudice to the requirement that best point estimates have to be indicated in the valuation, as a general consideration, value ranges seem appropriate where the application of **different valuation methodologies or assumptions** influences the valuation result.

In the case of indication of the best point estimate or of a value range, such results should be supported with information and adequate explanation in the Valuation Report (see Section 9.5). In particular, the parameters (e.g. valuation methodologies or assumptions) to which the valuation is most sensitive should be clearly identified. **Sensitivity and/or scenario analyses**, for instance, may be performed to address identified uncertainties regarding the result of the valuation.

Such analyses examine the impact of the applied methodologies and/or assumption(s) and parameters on the value. In the case of, for example, equity valuation, this may be observed by applying different methodologies (e.g. market methodology based on trading multiples and DCF methodology, applying for instance a dividend discount model) and/or assumptions and parameters within these methodologies (e.g. calculating the sensitivity in case the assumed interest rates face a certain upward and downward shift)<sup>12</sup>. A scenario analysis might also consider different markets at which an asset might be sold, or the assumed speed of a portfolio sale, for instance.

Figure 1. : Example of value range (illustrative example, for further explanations see the text below)<sup>13</sup>



<sup>12</sup> However, there is no necessity for different valuation methodologies to be applied for the valuation of, for example, an asset or an institution’s equity.



**Figure 1** shows an illustrative example in which **three different valuation methodologies are applied** for the valuation of, for example, an institution's equity, i.e. the valuation of the institution as a whole (see Chapter 6)<sup>14</sup>. Within the application of these three methodologies, different value ranges are derived, which are represented by the blue bars in the chart. With regard to the **DCF methodology**, the value range might for instance result from different assumptions in respect of the institution's forecasted value and cost drivers - including interest margins (e.g. resulting from the abovementioned upward and downward shifts of interest rates), its forecasted cost base, non-performing loan ('NPL') trends and cost of risk — or discount rates. With regard to the market value methodology, based on **trading and transaction multiples**, the value ranges might result from the use of different peer groups (e.g. groups of institutions that are considered to be similar to the valued one) or of different assumptions for the calculation of adjustments to the peer group's multiple(s).

**Value range 1** in Figure 1 represents a range resulting from the application of the three different methodologies<sup>15</sup>. Within this broad range, a smaller range (**value range 2**) might finally be considered reasonable by the valuer. However, value range 2 is not necessarily within value range 1, as some methodologies might be considered to be more appropriate than others, depending on the circumstances of the valuation.

The value range should be within a **reasonable range**, i.e. not too widely dispersed. For the valuation result in the form of the value range to be useful to the RA to inform its decision, the RA and the valuer could consult each other, where necessary, paying careful attention to the circumstances of the case at hand. To derive a reasonable range, the assumptions applied in the sensitivity and/or scenario analyses should for instance be fair, prudent and realistic (in the above example of calculating a sensitivity for up- and downward shifts of the assumed interest rates these shifts should for instance be in a realistic range). From the RA perspective, it is also important that a valuer does not just simply choose any value that is within each methodology's range but appropriately details why a methodology was chosen, how the range(s) come(s) into existence and why the best estimate is at that particular point within the range.

## 4.4 Operational costs

For the purpose of Valuation 2, **operational costs** should be considered. Such operational costs might for instance result from liquidation costs and/or costs related to the implementation of the resolution tool(s). They might for instance include costs for closing legal entities, running down of business lines or similar, set-up costs (e.g. for setting up an asset management vehicle or a bridge institution), as well as other resolution and "running business" related legal and administrative costs. By contrast, any capital injections required would not be part of the operational costs but constitute a separate position within the valuation.

<sup>14</sup> Depending on the concrete valuation, not all valuation methodologies might be applicable, and a value range through, for example, the application of different methodologies might not be derived in all cases.

<sup>15</sup> The number of methodologies applicable might depend for instance on the valued assets, the circumstances of the valuation, available data etc. In certain cases, only one methodology might be applicable; in other circumstances, two, three or more methodologies might be applicable.

Dis-synergies might also be considered in this valuation, for instance when a bridge institution and a completely separated asset management vehicle are set up, resulting in dis-synergies from certain overhead costs that for instance remain in place despite a run-down of certain portfolios or businesses (see Section 5.1 and Chapter 7 on the different resolution tools). To determine such costs, communication and exchange of information between the RA and the valuer would be important.

Whereas these operational costs have a presumably negative value, there might be other aspects which might result in a positive effect, e.g. **assumed cost reductions or income increases** (through, for example, synergy effects). Assumed cost reductions might result from the fact that, for instance, an asset management vehicle (AMV) would not incur any costs related to the generation of new business (e.g. attracting new clients or extending business with existing clients). To the extent that the relevant information on potential synergy effects can reliably be estimated by the valuer and to the extent that their inclusion helps to better approximate the expected result of a disposal, such synergies might also be considered in the case of an expected sale of the institution or parts of it to a competitor (see Section 5.1 and Chapter 7 on the different resolution tools). For estimating synergies, it might be necessary to create a set of assumptions, including for instance about the size of the recipient (e.g. large vs. small institution) and whether the recipient is an institution or another kind of entity. In any case, **estimating any potential synergy effects might be a very challenging part in the valuation exercise** and should therefore be used cautiously. It might well also be the case that valuers are not able to properly estimate them.

In the case of an asset and liability valuation (valuation of assets and liabilities as well as of contingent assets and liabilities or of groups of such positions), such operational costs or assumed cost reductions or other synergy effects might be disclosed **separately within the valuation** (i.e. not as part of any of the valued assets and/or liabilities but as a separate position)<sup>16</sup>. Any double counting of such effects (operational costs, cost reductions, etc.) in the valuation of such a separate position and, for example, the asset and liability valuation (e.g. reflected in the assumed administrative costs in the loan valuation; see Section 5.2) should be eliminated<sup>17</sup>.

In the case of an equity valuation (i.e. valuation of the institution as a whole), such effects (e.g. from operational costs and/or synergies) would presumably be considered as **part of the cash flow calculation**.

Furthermore, if parts of the institution are assumed to go into insolvency (with other parts for instance being assumed to be sold), the valuer might provide an estimation of the operational costs for such a “legacy entity”. This could inform the resolution decision for the amount of necessary cash to be left in this legacy entity, to meet at least the running costs of the legacy entity at the beginning.

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<sup>16</sup> Unsettled commitments (e.g. from rental contracts, but not in case of prepayments) with long duration might be reduced during resolution due to the BRRD option of regulation of contracts (in the example, the liability resulting from potentially long-dated real estate contracts may thus be reduced). In such cases, the valuation of these contingent liabilities would be based on the adjusted contractual terms.

<sup>17</sup> As a potential example, if in the asset valuation marginal costs are considered, the operational costs would include costs not yet considered in the asset valuation.

## 4.5 Provisional valuation: buffer for additional losses

When resolution action is taken on the basis of a provisional valuation, Valuation 2 has to include a **buffer for additional losses** as a remedy to dealing with the **uncertainty** of a fast and less granular valuation. This buffer shall “reflect the facts and circumstances supporting the existence of additional losses of uncertain amount or timing” (Article 13(1) of the Regulation on valuation before resolution) that could not be taken into account due to the provisional nature of the valuation. It should be based on a fair, prudent and realistic assessment of those additional losses, accompanied with appropriate justifications. Along these lines, it should cover, for instance, for the lack of accuracy of estimates and the areas of valuation which were not estimated prudently. When determining “the size of the buffer [...] factors that may affect expected cash flows as a result of the resolution actions likely to be adopted” should be considered (Article 13(2) of the Regulation on valuation before resolution). Article 13(3) of the Regulation on valuation before resolution also provides two suggestions on how this buffer might be calculated:

- An estimation of the buffer based on the **extrapolation of losses** considered for a **part of the institution’s assets to the balance sheet**: in such case, for instance, the losses estimated for certain loan portfolios might be extrapolated to other similar loan portfolios, i.e. the buffer would be calculated as a percentage of these assets. Alternatively, the losses calculated for certain asset classes (e.g. loan and bond portfolios etc.) might be extrapolated to, for instance, other similar types of assets of the institution. The buffer would as such be estimated as a certain percentage of the total assets when there is a need to value some portfolios on a collective basis, due to lack of time and data during the provisional valuation.
- An estimation of the **average losses for a peer competitor’s assets** (e.g. NPL or non-performing exposure (‘NPEs’) ratios of solvent peers or, to the extent available, definitive losses incurred in similar resolution or similar market transactions) may be extrapolated to the institution. Such an approach might result in buffers estimated as a certain percentage of certain portfolios (if buffers are estimated for example at portfolio level) or of the institution’s total assets (if the buffer is estimated for example for the institution as a whole). The Regulation on valuation before resolution stresses that “necessary adjustments for differences in the business model and financial structure” should be considered in such calculation.

In the calculation of the buffer, “**double counting** of uncertainty” should be avoided (Article 13(1) of the Regulation on valuation before resolution). This might for instance mean that if buffers, which are assumed to include for example credit risk considerations, are applied on portfolio levels, they should not be applied in addition on the level of total assets.

The buffer may be calculated on an aggregate basis for the total assets or on an asset per asset class basis. In the latter case, the valuer should indicate them in the valuation report to allow the RA to assess their combined effect.



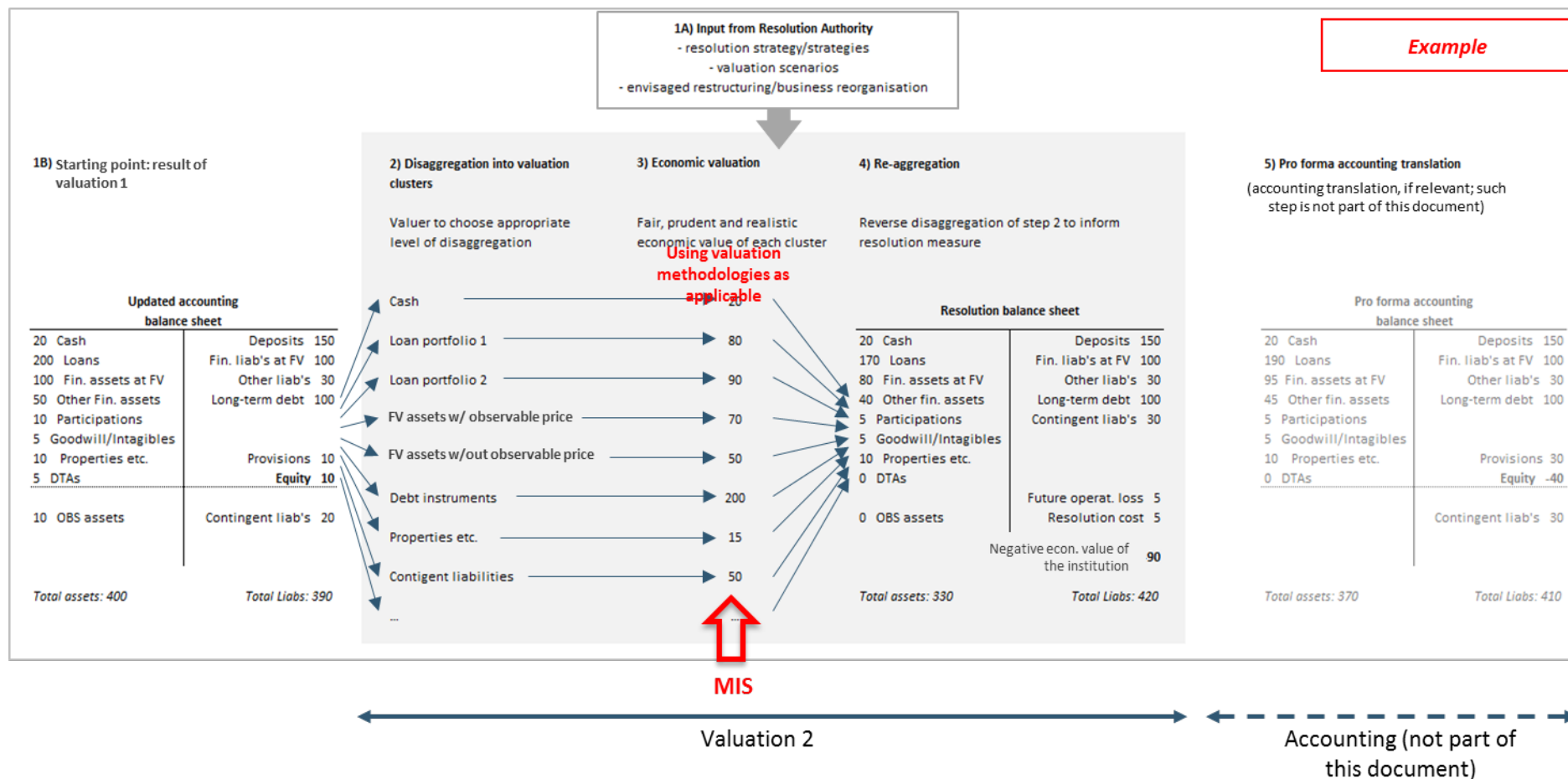
## 5. Valuation 2: single asset/liability (granular) valuation

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### 5.1 Overview of the valuation process

One of the approaches that might be used to perform a Valuation 2 is the single asset and liability (also “granular”) valuation (Figure 2). According to this methodology, assets or liabilities are valued at single asset/liability or group of assets/liabilities level. In this approach, besides assets and liabilities, items that are not recognised on an institution’s balance sheet also need to be considered in respect of their relevance for valuation (e.g. uncertain liabilities and franchise value; see Sections 5.9.2 and 7.3.2) as they contribute to the overall value of the institution. The assets/liabilities (or groups of assets/liabilities) are valued at their economic value, reflecting their envisaged treatment under the resolution strategy.

Figure 2. Outline of the conceptual steps that a single asset and liability valuation might follow<sup>18</sup>



<sup>18</sup> The assumed flow of information and process strongly depends on the applied valuation methodology/ies. The flow of information and the process might be completely different, depending on the individual valuation and applied approach, methodology/ies, etc.

In **Step 1**, all inputs are gathered. This includes in particular the updated balance sheet following Valuation 1, which provides the valuer with an overview of the current perimeter of the institution's on- and off-balance sheet assets and liabilities. This information is supplemented by additional information needed by the valuer to determine the economic value of the assets and liabilities (see Chapter 10 on the MIS), but also any information that the valuer might need to gather on its own, for example market data. Further inputs are those provided by the RA, which encompass the potential resolution strategies, any potentially applicable restructuring plans, scenarios and assumptions to be applied and any further information pertinent to the valuation that the RA might have.

In **Step 2**, the assets and liabilities of the institution might be disaggregated into clusters that are considered to be homogeneous enough to lend themselves to the application of a common valuation methodology and model. Given that the valuation factors in the effects of the resolution strategy, such clusters should be organised to reflect the fact that all their components are subject to the same resolution tool and power. For example, where the use of an AMV for a group of assets is envisaged, only assets that are subject to the transfer to the AMV would be assumed to be within the same cluster(s); the cluster(s) would presumably not include any assets that are not transferred to the AMV. Yet not all the assets to be transferred need to be within a single cluster. For example, where the assets consist of loans and their respective hedging instruments, two clusters might be needed, because loans and derivatives do not lend themselves to a common valuation methodology. The disaggregation is entirely within the valuer's scope of judgement in order to achieve the best possible quality in the valuation.

In **Step 3**, the economic value is derived. The disaggregation and clustering would be instrumental to facilitate the determination of the **economic value** of the institution's assets and liabilities as well as of contingent assets and contingent liabilities. In this step, and depending on the valuation approach applied, the starting data points would be integrated with the relevant data and information stored in the **valuation MIS** to calculate the economic value. This step includes the application of the relevant measurement basis, i.e. of the hold or of the disposal value on the basis of the relevant resolution strategy and valuation methodologies.

In **Step 4**, after having derived economic values, the clusters are reintegrated into a (resolution) balance sheet. This approach allows to compare total economic values of the institution's assets and its liabilities. The difference informs the determination of the amount of losses to be offset by WDCCI/bail-in. Also, operational costs or similar elements (see Section 4.4) would need to be considered in this step.

**Step 5** follows completion of Valuation 2 and contemplates a pro forma translation of the resolution balance sheet into a pro forma (opening) balance sheet. Such a pro forma opening balance sheet might not be applicable in all cases and is not part of Valuation 2; therefore, it is not dealt with in this Handbook.

The valuation of single assets/liabilities or groups of assets/liabilities depends on the measurement basis (hold vs. disposal value, see Article 1(e) and (f) of the Regulation on valuation before

resolution), with the measurement basis for a given item depending on the applied resolution tool, or combination of different tools, or WDCCI power. The valuation should accordingly reflect the resolution scenarios provided by the RA.

Where a valuation is performed on a portfolio level or for a group of assets and/or liabilities, these portfolios or groups should be constructed in such a way that the methodology used for the same resolution tool and powers apply to each of portfolio or group, and that the measurement basis would be the same for the respective assets and liabilities.

The valuation approaches and methodologies described throughout this Handbook aim to establish an **economic value** of assets and liabilities or of the entire entity or selected businesses, as appropriate, as required by the Regulation on valuation before resolution. The following Chapters build on the summary of valuation approaches and methodologies provided in the Annex.



## 5.2 DCF methodology: cash flows according to hold/disposal value calculation

	Potential considerations in Valuation 2 in general	Potential further considerations related to the hold value calculation	Potential further considerations related to the disposal value calculation
<b>Type of cash flows</b>	<p>In a <b>loan valuation</b>, for instance, all cash flows related to the respective exposure might be considered in full, pre tax and in the currency of the loan <sup>19</sup>. However, exceptions might include <b>syndicated loans</b>; in that case, if the exposure to be valued represents only a share of the total loan, the partial cash flows related to the respective institution's exposure are considered.</p> <p>In the valuation of an institution's <b>equity investment</b> (e.g. FinTech or insurance companies or re-possessed shares in other kinds of companies, but also in other institutions), the cash flows depend for instance on the applied method (e.g. free cash flow to firm or free cash flow to equity, dividend discount model, etc.)<sup>20</sup>. It might for instance also be the case that the restructuring plan or the resolution action envisages the divestment of any particular</p>	<p>Cash flows might differentiate between holding assets for extracting contractual flows (with necessary adjustments; see below on such adjustments in the description of prospective financial information (PFI)) or subsequent sale.</p> <p>For example, the valuation of a loan portfolio in the core business line of the institution that the institution intends to keep on its books, might rather</p>	<p>Cash flows are assumed to reflect all considerations that the market would apply.</p> <p>For example, the valuation of a loan portfolio might take into account all costs that a potential buyer would incur for holding that portfolio and that the potential buyer would therefore include in its determination of the purchase price. Also the</p>

<sup>19</sup> Consideration needs to be given to the exchange rate that, in a separate step, is applied to the conversion of the valued loans, as in some jurisdictions a rate defined by law have to be applied.

<sup>20</sup> The equity valuation of the institution itself (i.e. the valuation of the institution as a whole, applying for instance the dividend discount model) is covered in Chapter 6.

investment (or other assets); in that case, the disposal value has to be used for the specific assets.

use adjusted contractual cash flows of respective loans.

If there are specific attributes attaching to the asset or liability (e.g. for a loan portfolio, in-house servicing costs may be favourable compared with external third parties) then these would be factored into the hold valuation.

In contrast, the valuation of a securities portfolio that the institution holds for, for example, market-making purposes might rather use the sales proceeds at the foreseen time of a sale. Similarly, if an NPL portfolio is considered as held for sale (e.g. it is considered as non-current asset held for sale by an International Financial Reporting Standards (IFRS)

“strength” of (a) potential / assumed purchaser(s) in the acquisition process of an assets/group of assets/an institution/etc. might be considered, for instance if the potential/assumed purchaser(s) is/are in a strong position in the negotiation to request price reductions <sup>21</sup>. This might depend on the depth/liquidity of the market, at which for instance a portfolio is assumed to be sold.

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<sup>21</sup> The potential strength of a buyer’s position might for instance depend on the portfolio and/or entity that is assumed to be sold as well as on the applied tool. For instance, if “attractive” portfolios are sold, applying the sale of business tool, the buyers’ positions might be weaker, as many of them are attracted. This might be in contrast to a case, in which a bridge institution in a highly competitive market with an unclear strategy is sold.

applier, i.e. for which IFRS 5 is applied), the cash flows considered in the valuation might rather be those from the assumed sale of the NPL portfolio.

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**Length of the forecasted period (detailed planning period)**

When valuing a **loan or loan portfolio**, for instance, the valuer may consider **cash flow forecasts** for the whole (remaining) lifetime of the loan (i.e. lifetime of the valued asset). The length of the forecasted period may take into account the **clients' behaviour** in respect for instance of the early redemption / prepayments or prolongations of loans, including changed terms and conditions (see on clients' behaviour also the following paragraph).

Such analysis of clients' behaviour might be analysed on portfolio level, for instance of very similar assets (e.g. mortgage loans in a specific region).

A borrower's financial situation and/or behaviour might be influenced by the fact that the institution is subject to bail-in (e.g. if a client is simultaneously a debtor and creditor of the same institutions and if, for some reason, the client is subject to the write-down or conversion of its investment). The institution's statistical data on borrowers'/clients' behaviour might accordingly no longer be fully valid/applicable for the valuation.

In the case of a non-performing exposure, which is for instance assumed to be transferred to a private equity investor (assumed sale of business), the time for the recovery of for example the collateral might be shorter than formerly assumed.

The length of the forecasted period might also depend on the applied resolution tool and for instance on the depth/liquidity of markets (see also Section 6.2).

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**Prospective financial**

PFI-related considerations include for instance reflections whether contractual or adjusted cash flows are applied. With

The institution's refinancing and cost situation after bail-in

The financing and cost situation of the recipient

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**information  
(PFI)**

regard to a loan, **contractual cash** flows are the repayments and the interest payments agreed upon in the contract. However, in most cases further consideration needs to be given to derive **adjusted cash flows**, in order to include for instance **assumed cost of risk** of the respective exposure, administration and funding costs and similar parameters.

Furthermore, the expected cash flows might reflect the **financial guarantees received** for the related respective exposure.

All the aspects that are not considered in the cash flows, but that are relevant for the valuation, are **alternatively reflected in the discount rate**.

Where a transfer is assumed, the expected cash flows might for instance also depend on the **transfer of the valued asset** to another entity, as the recipient's financing position and cost structure might be different from those of the current owner of the asset.

and reorganisation to the extent known would be applicable.

(bridge institution, AMV or potential/assumed third party purchaser in case of sale of business) would be applicable.

If for instance a group of assets is transferred to another institution (e.g. through a sale of business), that institution might realise **synergies** related to respective exposures (as it might for example be specialised in the respective asset class). However, the identification and estimation of such synergies might be extremely challenging, e.g. as it might not be known who the purchaser will be, nor the likelihood and feasibility of synergies implementation.

As in most cases the concrete recipient — and



therefore applicable financing and cost structures or potential synergies — might not be known (as in most cases), a peer group representing an assumed/potential recipient (e.g. a group of institutions that might bid for a portfolio or an institution) might be used for this purpose.

In the case of an assumed sale of the exposure, financial guarantees received might not be applicable any more, i.e. also the consideration of financial guarantees received needs careful examination.

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<b>Terminal value</b>	Depending on the expected cash flows and the remaining lifetime of the valued asset following the forecasted (detailed planning) period, a terminal value which reflects the asset’s remaining lifetime. Such remaining lifetime might be indefinite or it might be restricted to a certain period.	No specific hold value considerations.	No specific disposal value considerations.
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An **indefinite lifetime** might for instance be applicable when valuing equity investments of the institution (e.g. when valuing the institution’s investment in a FinTech or insurance company or similar) or when deriving a franchise value.

A **finite lifetime** (e.g. when a loan has an expected maturity of nine years) might for instance be applicable when the detailed forecasted period in the valuation of this loan is five years, but its maturity is nine years. In such case, four years would be considered in the terminal value calculation.

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**Assumed exit from the investment in future**

An example of an assumed exit could be the forecast of cash flows of a **commercial real estate (CRE) project financing** of a newly built hotel and which is assumed to be sold after its completion. Such a case might be relevant if the CRE object was for instance foreclosed by an institution. In this example, the project’s expected cash flows are negative in the beginning. When the completed hotel is assumed to be sold in the end, the respective proceeds from the sale — i.e. the assumed “exit” — might be forecasted using a **market value methodology** (see Section 5.4), considering “**market conditions**” at the time of sale.

Also, if for instance the **foreclosed stake in a small or medium-sized enterprise** (SME) is valued, the assumption might be that the institution will “exit” this investment after a certain period of time, e.g. after its restructuring.

When an exit is assumed from for example a CRE financing (as described in the left column) but is not certain, different options might be considered in the valuation. These exit options might be specific to the case of the bailed-in institution.

The assumed exit options might depend on the entity to which for example a loan is transferred. A private equity investor might for instance be faster in the restructuring of an SME than an institution, which might in its respective actions consider a future client relationship with exactly this client.

The nature of the disposal may drive a different set of cash flows, e.g. an accelerated exit may reflect



Exit values **might also be negative**, for instance if the institution foreclosed a share in a company that will need to cover the costs for its closure.

different costs or cash flow assumptions versus an orderly sale process.

Figure 3. Simplified scheme for loan valuation and deriving expected cash flows (source: Schwamborn et al., 2011, translated and slightly amended to reflect requirements of valuation 2)

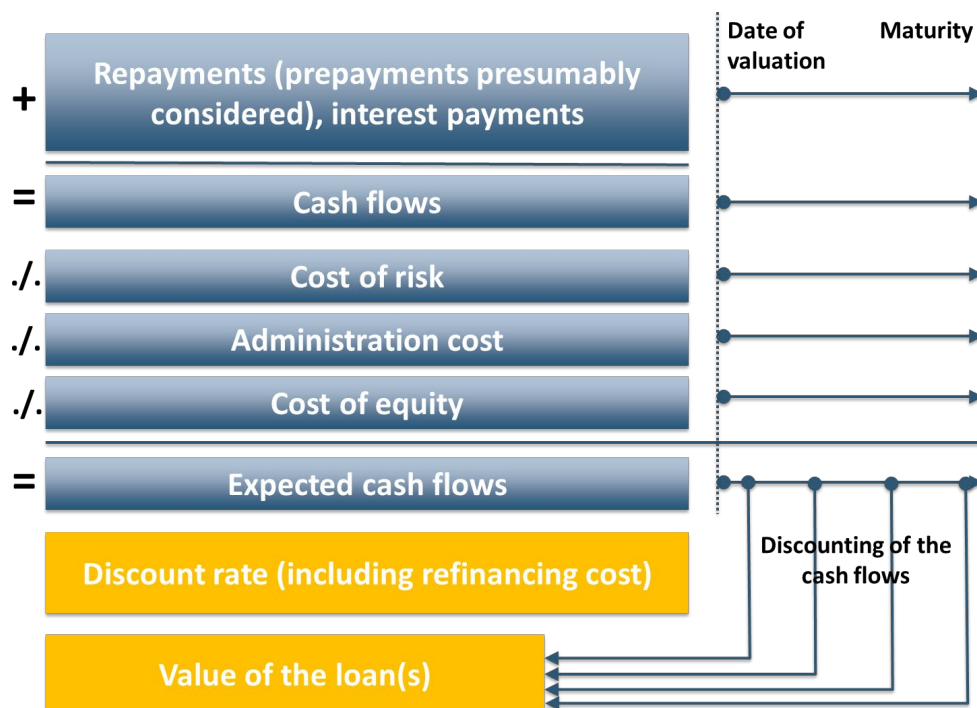


Figure 3 outlines the main high-level components for valuing loans. There are various approaches for the cash-flow-based valuation of loans; the textbox in Section 5.3 (Loan valuation: two potential cash flow-based approaches) provides two examples, namely (i) a top-down (high-level) approach and (ii) a bottom-up (granular) approach. Figure 3 shows one example of how loans might be valued where most of the components are considered in the cash flows. They might alternatively be considered in the discount rate, for instance when current interest rates for a loan of similar risk are identified and then transferred into a discount rate. Figure 3 is also rather focused on performing loans, since in the case of non-performing loans the focus might rather be for instance on the realisation of collateral and the time to recovery.



### 5.3 DCF methodology: discount rate according to hold/disposal value calculation

Article 11(6) of the Regulation on valuation before resolution provides a list of parameters for the determination of the appropriate discount rate. The following table is based on that list. To the extent that any of these parameters are already considered in the forecasted cash flows, they should not be reflected in the discount rate and the valuer should report in which parameters they were considered.

	<b>Potential considerations in Valuation 2 in general</b>	<b>Potential further considerations related to the hold value calculation</b>	<b>Potential further considerations related to the disposal value calculation</b>
<b>Timing of related cash flows</b>	The discount rate has to be time specific, i.e. the time over which the forecasted cash flows are discounted — as of the valuation date — should be correctly reflected in the discount rate. Such consideration might include the question at which point in time the forecasted cash flows are assumed in the planning horizon, e.g. per year-end or in the middle of the year.	Discount rates might for instance differentiate between holding assets for extracting contractual flows (with necessary adjustments) or subsequent sale.	Discount rates are assumed to reflect market expectations.
<b>Risk profile</b>	The discount rate has to reflect the risks inherent in for instance a valued loan or foreclosed real estate asset (e.g. a warehouse),	Under the hold value assumption, normalised market conditions might be	The disposal value might be short-term oriented, i.e. rather depending on e.g. the

assuming that this has not yet already been included in the cash flows.

The level of risk of a newly built shopping centre in a competitive environment might for instance be significantly higher than the risk from retail mortgages in a city that forms the economic centre of a country.

considered, i.e. the assumed risk inherent to e.g. the valued loan or foreclosed real estate property might be lower, when compared to the risk assumed in the disposal value assumption<sup>22</sup>. Normalised market conditions, and therefore a normalised risk profile of a valued asset, might be derived from the long-term average risk profile of respective asset (i.e. considering periods of elevated risks and for example increased price volatility related to the valued asset, and periods of lower risks and for example subdued volatility).

current market situation of a valued real estate property. This might for instance be reflected by currently low returns (low rates of return) for this property (when compared to its long-term average profitability) and elevated price volatility, which would accordingly be reflected in the discount rate calculation.

Disposal values are also assumed to generally reflect prices investors would be willing to pay at the disposal date. Therefore, the considerations of potential investors, for instance regarding the future risk-return-expectations might accordingly be reflected. The uncertainty surrounding such expectations, including the potential purchaser(s) strength in the purchase or

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<sup>22</sup> On assuming the normalisation of market conditions if the hold value is applied, see Article 11(4) of the Regulation on valuation before resolution.



the depth/liquidity of the market at which an asset is assumed to be sold, might accordingly be reflected in discount rates, which might reduce current valuations.

Also the “strength” of the potential/assumed purchaser(s) in the acquisition process of an assets/group of assets/an institution / etc. might be considered, for instance if the potential / assumed purchaser(s) is / are in a strong position in the negotiation to request price reductions.

Also the homogeneity and transparency of the portfolio might affect the risk profile considerations.

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<b>Financing costs</b>	Financing costs might depend, for instance, on the question on who is the assumed ‘owner’ of the valued asset in future. When the potential buyer is subject to the State aid framework, the valuation	The institution’s refinancing position after bail-in would be applicable, which may	If for instance another institution is assumed to become the owner of an
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should ensure not to assume financing costs lower than market level, which would provide a more favourable treatment because of the State connection or support.

also depend on many issues related for instance to possible restructuring of an existing portfolio of senior loans, of which some may be converted into equity, and similar cases.

asset or portfolio (e.g. assumed sale of business), this institution’s financing costs might be considered. Although very challenging owing to the uncertainty regarding the potential acquirer during the valuation exercise, the latter might be reflected through the consideration of the financing costs of one particular institution that is assumed to “most probably” purchase the portfolio, or the average financing costs of a group of institutions that might bid for the portfolio.

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<b>Market conditions</b>	<p>Market conditions as appropriate to the asset being measured: this might include macroeconomic conditions or consideration of the marketability of an asset.</p> <p>In the event of an economic crisis, it might be difficult to dispose of financial instruments, even those for which under common economic conditions a liquid market exists. It might be even more challenging for, for example, non-performing loans of non-performing commercial real estate (CRE) assets, as the</p>	<p>If the hold assumption persists, i.e. no disposal of the valued asset is assumed, consideration of the marketability of respective asset might be irrelevant given that the hold value may</p>	<p>Where the transfer of a non-performing exposure, e.g. a CRE exposure, is assumed under any resolution tool, respective marketability should be considered. The potential impact on the discount rate depends on for instance the size of the</p>
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marketability of such assets might be extremely low. This might for instance be considered through a marketability discount (i.e. reducing the value of the portfolio).

anticipate normalisation of the market conditions.

market, its liquidity, as well as the current level of potential distress and similar considerations.

**Disposal strategy**

If a fast disposal of certain assets is assumed, the discount rate might be short-term oriented and might even assume a discount for an accelerated sale.

If a specific (group of) potential recipient(s) is targeted for the disposal, discount rates should adequately reflect the considerations on which such (a) recipient(s) would base its/their purchase price.

Similar to the above: if the hold assumption persists, i.e. no disposal of the valued asset is assumed, consideration of the marketability of respective asset might be not relevant given that the “holder” of the asset may anticipate normalisation of the market conditions.

If for instance the resolution scheme envisages a sale of a non-performing CRE exposure is to be immediately implemented, which might imply potentially distressed circumstances, such ‘disposal pressure’ (accelerated sale) should be considered and would be likely to have a significant impact on the discount rate (depending also on the size of the market, its liquidity, the current level of potential distress and similar factors; see Article 12(5) of the Regulation on valuation before resolution regarding for example the discount in



the event of an accelerated sale.

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**Entity’s post-resolution financial position**

This aspect includes consideration of for example the funding composition of the entity. This might for instance include the assumption that an asset shall be held on the institution’s balance sheet, in which case the institution’s financial position (e.g. including implied rating) after resolution might be considered when deriving the discount rate.

The institution’s financial position after bail-in should be considered.

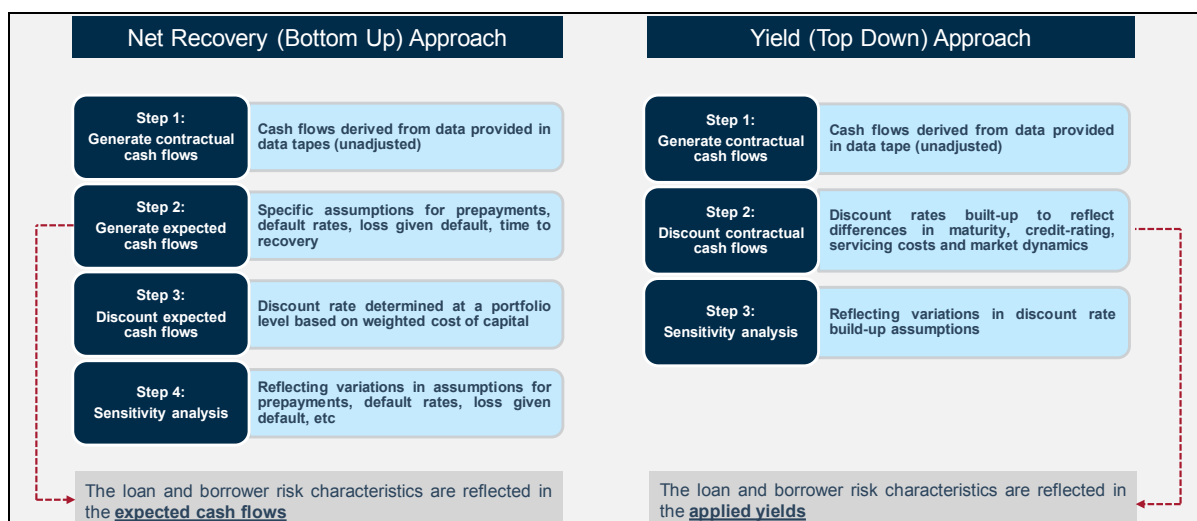
The entity’s post-resolution financial position might for instance be reflected through the average financing costs of a group of institutions that might for example be considered as potential bidders for a portfolio in the case of a sale of business.

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### Textbox — Loan valuation: two potential cash flow-based approaches

Cash flow-based loan valuations might be performed in many different ways, two of which would include (i) top-down approach: by applying broader portfolio level assumptions, and/or (ii) bottom-up approach: analysing individual positions, depending on the specific situation, availability of information and required timelines (Figure 4). A valuer might work on bottom-up and top-down approaches in parallel: they are rather not a substitute for each other but might for instance complement each other. This would be the case when for instance a quick top-down valuation exercise might in a first step give some broad value range but also shows key drivers/sensitivities. In a second step, when for instance more time for the valuation exercise is available, the bottom-up approach might be applied to derive a narrower and more reliable value range.

Figure 4. Simplified description of Bottom Up and Top Down approaches



(i) The Top Down approach may help to get a quick preliminary view and may also help to understand the key value drivers as well as support with a validation of a bottom up approach based valuation. However, using this top-down approach, the range of the valuations could be broad, potentially even too broad for valuation in resolution purposes. Still, the top-down approach might be used in conjunction with the bottom-up approach in considering the overall valuation ranges. It can be divided into three steps: generation of contractual cash flows, discount contractual cash flows and sensitivity analysis.

Figure 5. Simplified description of Top Down discount rate consideration<sup>23</sup>

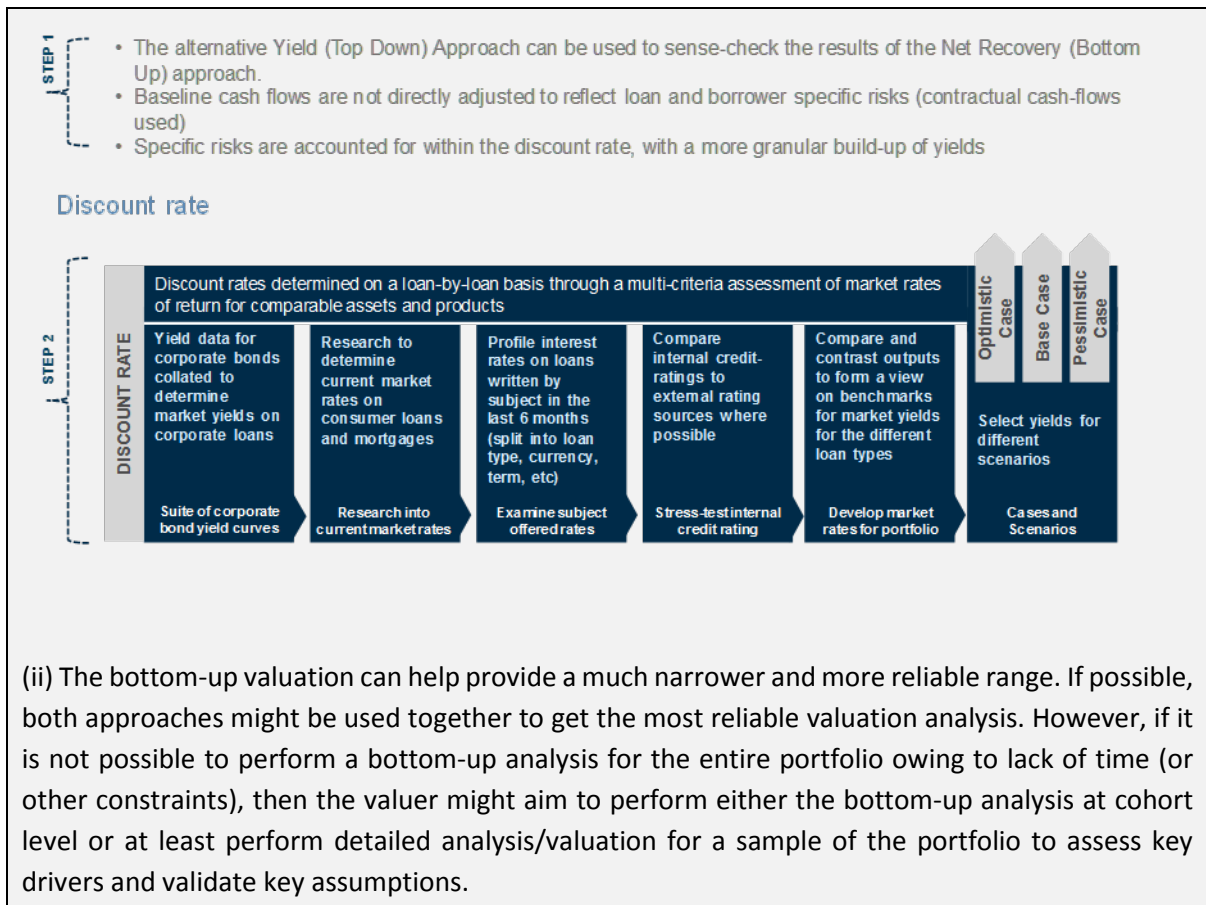
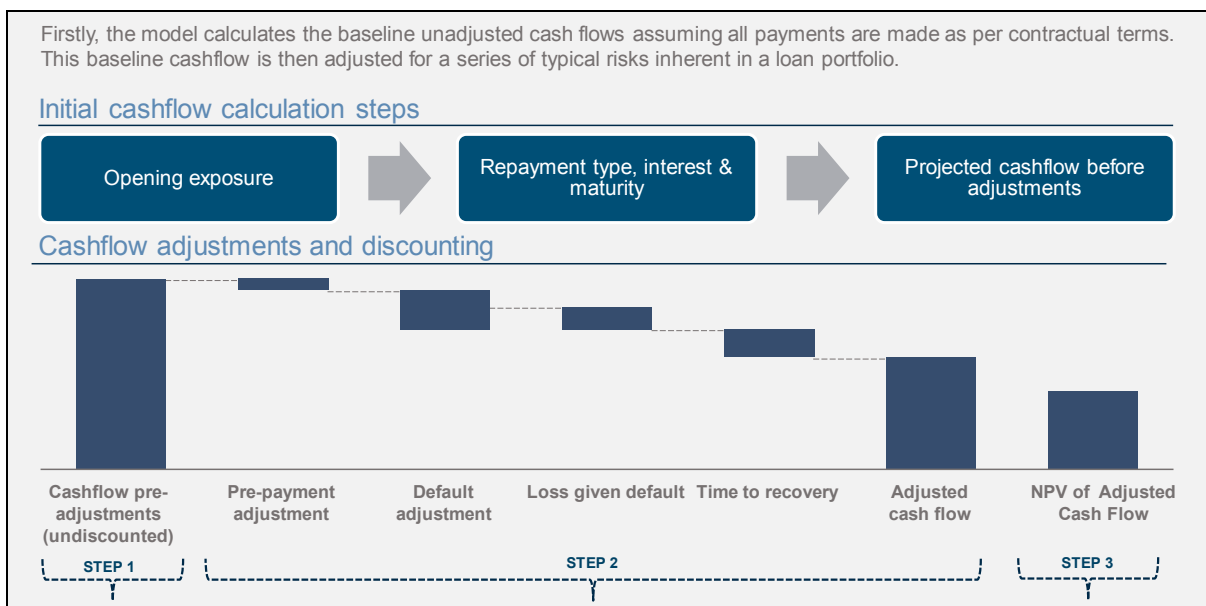


Figure 6. Sample Bottom-Up cash flow adjustments



<sup>23</sup> Portfolio servicing/recovery costs could potentially be included in the discount rate estimations.



Again, servicing/recovery costs could be either considered in the adjusted cash flow or factored in to the discount rate.

Size (both in volume and value), granularity and availability of comparables/benchmarks also play an important role in selecting the right approach; for example, a homogeneous mortgage portfolio may need only a cohort-level bottom-up analysis whereas a diverse and chunky corporate book might need individual assessment of a bigger portion of the portfolio. The latter could be resource intensive and put even higher pressure on timelines. Cohorts could be created by any combination of portfolio characteristics such as product (e.g. mortgage, personal loan), sub-product (e.g. primary home, BTL), vintage (e.g. originated in 2008 or earlier, originated after 2008), industry, location of borrower or collateral. Ultimately, the determination of the approach(es) will be determined by the valuer's independent and expert judgement based on the resolution case specifics.

## 5.4 Market value methodology

In the context of **valuation 2**, market values may be used to value for instance debt or equity securities that are traded on liquid markets (trading multiples). Where quoted prices of the same asset are available (for instance for debt security with the same International Securities Identification Number ('ISIN')), the assumed multiple would be 1<sup>24</sup>. However, the valuer might still consider, for instance, whether to apply an adjustment for the size of the investment held by the institution (including effects from for example large-scale 'dumping' of assets on the market) or a discount for an accelerated sale<sup>25</sup>.

Market value methodologies might also be considered for the **valuation of an institution's equity investments or business lines**. In such cases, **trading and transaction multiples** might be applied<sup>26</sup>. This approach might require the identification of a **peer group** for the valued entity to identify applicable multiples (e.g. comparable entities whose shares are quoted on a liquid market). When applying trading or transactions multiples, adjustments might for instance also be made for differences in the financial position of the valued equity investment or business line, compared to the market average (e.g. the applied peer group). Furthermore, the market value methodology might form the basis for the cash flow calculation from the sale of for example a real estate asset (e.g. a CRE asset) or non-performing loan portfolios, based on comparable transactions.

The application of the market value methodology might be focused on — but would not necessarily be restricted to — cases in which assets or groups of assets or the entity are assumed to be sold. The application of this methodology should be consistent with the Regulation on valuation before

<sup>24</sup> This might be comparable to a so-called level 1 input as described in IFRS 13.

<sup>25</sup> This might be comparable to a so-called level 1 input as described in IFRS 13.

<sup>26</sup> Equity value is applied in this document in the meaning of Article 1 of the Regulation on valuation before resolution.

resolution, which requires the valuation to deliver an **economic value** and confers prevalence to the DCF methodology. Furthermore, the determination of the economic value in accordance with the Regulation should reflect the choice of the resolution tool to be used and rely on the application of **hold and disposal value considerations**, e.g. when considering the level of distress in a particular market. The latter might for instance include the marketability of a valued asset or an assumed accelerated sale of an asset (see Sections 5.2 and 5.3).

Apart from being used in a stand-alone manner, market value methodologies might be applied for the estimation of cash flows to be used in DCF models, in particular given a disposal strategy.

## 5.5 Adjusted book value based methodology

### 5.5.1 (Amortised) cost as basis for the book value

The application of this approach to Valuation 2 may be suitable for certain assets only. By way of example, it could be applied for the valuation of a **unique machine that is not income generating**, which had been **provided as collateral and/or was foreclosed by an institution**. Potential adjustments to the book value should be considered, for instance in the form of **discounts**. In the example of the very unique, non-income-generating, machine, the haircut might even amount to 100 %, where the machine cannot be used by the institution and there is no potential buyer interested in such a machine. The haircut might also take into account differences in **economic vs. accounting depreciation**.

#### Textbox — Lifetime expected losses

Depending on the applied accounting standards, **lifetime expected losses** can form the basis for the impairment measurement of assets measured at (amortised) cost. For IFRS appliers, this is the case for so-called stage 2 and stage 3 assets (i.e. those that have an increased credit risk and/or are considered credit impaired)<sup>27</sup>. Depending on the applied valuation approach and model, a valuer might consider the information applied for the calculation of the lifetime expected loss as an input parameter to their valuation.

In this case, the idea would be that the basis for the estimation of a loan's lifetime expected loss is similar to the approach of calculating economic values, as in both cases cash flow estimates are required. This might mean that, if an institution has developed **capabilities to estimate reliably lifetime expected losses**, these capabilities might be used as input to the calculation of economic values. This might include, for instance, one or several parameters that form part of the cash flow estimation or certain models applied. One such parameter might for instance be the probability of default (PD).

When considering the **PD** in the calculation of economic values, it is important that several **concepts** for its derivation exist. These concepts include conditional PD (annual probability of default),

<sup>27</sup> For financial assets measured for accounting purposes at fair value, the expected loss is only one component in the valuation. National generally accepted accounting principles (GAAPs) might have similar requirements.

unconditional PD (the probability of a future default from today’s perspective, which can most easily be derived indirectly from the accumulated PD) and the accumulated PD (the probability of default from today until a certain future time, which can be calculated with so-called migration matrices).

### 5.5.2 Fair value as basis for the book value

In the case of assets and equity values recognised at **fair value** (here, fair value according to the applicable accounting standard), the remarks on the **market- and DCF value-based methods apply accordingly** (see Sections 5.2, 5.3 and 5.4). If the book value is derived using such methods, consideration might be given to its use in Valuation 2, if this is consistent with the economic value and strategy for that asset. However, careful consideration needs to be given to the valuation **assumptions** applied for deriving the book value (e.g. applied for cash flow forecasts and discount rate calculations).

The question would be whether these values can be used as such under Valuation 2 or need amendments. Similarly, the applied **valuation model** needs to be carefully examined too. One way to accommodate the need for adjustments of book values for their use under Valuation 2 might be the application of **haircuts**. However, deriving such haircuts might be as challenging as performing a separate valuation. A valuer might also consider potential links to the prudent valuation, for instance additional value adjustments (AVAs) or parameters applied in the calculation of such AVAs (see Commission Delegated Regulation 2016/101 on prudent valuation under Article 105(14) of Regulation (EU) No 575/2013).

#### Textbox — Valuation hierarchies applied for accounting purposes<sup>28</sup>

Accounting standards might refer to so-called valuation hierarchies, applicable for deriving fair values of assets and/or liabilities. As an example, the IFRS apply such a valuation hierarchy. According to IFRS 13.76, **level 1 inputs** are “quoted prices (unadjusted) in active markets<sup>29</sup> for identical assets or liabilities that the entity can access at the measurement date”. **Level 2 inputs** are “inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly” and **level 3 inputs** are described as “unobservable inputs”.

Similarly to the DCF and market value methodology, also when the adjusted book value based methodology is applied, the determination of an **economic value** (rather than accounting value) has to be ensured, in accordance with the Regulation on valuation before resolution. Consistency with that Regulation has also to be ensured regarding the prevalence conferred to the DCF methodology. Along the same lines, **hold and disposal value considerations** apply accordingly, e.g.

<sup>28</sup> The textbox covers respective requirements under IFRS. National GAAPs might be similar or comparable or differ from these.

<sup>29</sup> For the definition of “active markets” one might refer to IFRS 13, as endorsed by the EU, according to which an active market is “a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis”.

through the consideration of a discount in an assumed accelerated sale of the valued asset (see Sections 5.2 and 5.3).

## 5.6 Further valuation methodologies

Besides the valuation methods described above, **further valuation methodologies** exist, for instance the **option price method**. The application of such alternative valuation methods needs to be considered carefully. They might for example be applicable when valuing — plain vanilla or complex — **derivatives or structured finance products** (including synthetic securitisations and the like) and complex loan structures (which might also involve structured products or derivative components, in particular as part of valuation of the collateral) but also as part of the calculation of the franchise value, for instance. Independent from the applied valuation methodology, consistency with the **economic value** concept set out in the Regulation on valuation before resolution and the prevalence conferred to the DCF methodology need to be ensured; **hold and disposal value considerations** apply accordingly.

## 5.7 Valuation of derivatives

With regard to derivatives with negative value, if they have to be closed-out by the RA for purposes of bail-in, the valuation of the related liabilities has to be conducted in accordance with the relevant Regulation on the valuation of liabilities arising from derivatives, Commission Delegated Regulation (EU) No 2016/1401. In case derivatives are not assumed to be closed-out, they continue. In such cases they are valued at either hold value or disposal value, depending on the resolution tool envisaged.

For the valuation of derivatives more generally, careful consideration needs to be given to whether **fair values**, as calculated for instance for risk management or accounting purposes, might form the basis for economic values. Depending on the kind of derivative, the applied valuation methodology, valuation model, hold and disposal values under the resolution strategy for derivatives might not differ significantly from their fair values. However, the differences might be more significant in cases of more complex, illiquid derivatives. All such considerations need to be assessed by the valuer during the course of the valuation, as well as the fact that derivatives might regularly form part of a portfolio, together with other financial assets and liabilities. Further consideration on valuation of derivatives will be contained in Chapter 10 on MIS.

## 5.8 Valuation of funding liabilities

The Regulation on valuation before resolution **does not in general distinguish between measurement bases for assets and liabilities**. This implies that also for liabilities, including funding-related liabilities (e.g. issued bonds, interbank financing, term deposits), an economic value would need to be calculated. However, to avoid double counting or neglect of certain facts, the approach taken to the valuation of liabilities might also need to reflect the way in which respective assets are valued.

A key consideration in the valuation of funding liabilities would be their costs, i.e. the pricing of the existing funding instruments as described above (bonds, interbank financing, deposits, etc.) and referred to in the following as **'legacy' funding costs**. In carrying out Valuation 2, a valuer may reasonably choose to account for the interest rates or coupon rates of the institution's existing liabilities where they are meaningfully different from the institution's expected funding cost for newly issued liabilities. This may result from **changes in risk-free rates** (in particular for instance in the case of fixed-rate issuances, of less relevance in the case of variable interest rates) **or the institution's individual credit spreads** since the interest or coupon rate was set. Such 'legacy' funding costs would in such approach be reflected in the expected cash flows. Two potential alternative approaches may be put forward. Should the valuer apply one of the following approaches, they might need to consider carefully to what degree the valuation results will reflect hold/disposal values on the level of single assets and/or liabilities or on the level of groups of assets and/or liabilities. The two approaches can be applied independently of each other, i.e. a valuer might apply one or the other. It might also be possible to apply both of them and compare the outcome of their application against each other.

1. **Legacy funding costs (i.e. funding costs according to the existing contractual conditions) considered on the asset side of the balance sheet:** in this case, the liabilities would be valued at their outstanding amount. Assets would be valued using a discount rate that reflects the institution's (in the case of a hold value) or a hypothetical/potential acquirer's forward-looking funding cost (in the case of a disposal value)<sup>30</sup>, incorporating the legacy funding costs (e.g. by taking a weighted average across of interest/coupon rates of existing and new liabilities over time)<sup>31</sup>.
2. **Legacy funding costs considered on the liability side of the balance sheet:** in this case, the economic value of liabilities would be assessed using the **DCF methodology**. Both assets and liabilities would be valued using a discount rate that reflects the institution's (in the case of a hold value) or a hypothetical/potential acquirer's forward-looking funding cost (in the case of a disposal value). In contrast to the first approach, legacy funding costs would not be considered in any of the discount rates, i.e. in neither the asset side nor the liability side. For deriving the forward-looking funding cost a valuer might for instance apply benchmarking data of comparable institutions.

An **alternative method** would be to use the **principle of substitution**. This method would require a market sounding among potential debt investors — other institutions, asset managers, insurance companies, other private investors, etc. — to receive indications and offers for respective funding costs. Such an exercise — i.e. contacting a broad investor base — might be extremely challenging to perform, taking into account the strict confidentiality requirements and time constraints of valuation for purposes of resolution.

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<sup>30</sup> When evaluating hold value, this would reflect the institution's funding cost after bail-in execution. When evaluating disposal value, this would reflect the funding cost that a hypothetical/potential acquirer would be assumed to apply.

<sup>31</sup> Where this approach is applied, the valuer might add comparability by disclosing in the valuation report the relevant asset values both pre and post adjustment for the legacy funding costs.

To avoid double counting, legacy funding costs would only be incorporated on one side of the balance sheet when one of the above approaches is applied (i.e. using one, but not both of the options above).

As the impact of legacy funding costs would also be valued based on a **fair, prudent and realistic basis**, particular caution might be exercised about incorporating any benefits arising from legacy funding costs (i.e. where these are lower than the expected funding cost for new funding). This might be particularly relevant when evaluating hold value, where it may be less clear that this benefit could be realised. The approach taken to the valuation of liabilities would **not impact the assessment of liability value for determining any write-down or conversion**.

#### **Example — Comparison of the two approaches for the valuation of funding liabilities**

The following example provides an illustration of how the two approaches described above for consideration of legacy funding costs might apply in practice. The example is based around the estimation of hold value to inform the extent of a potential bail-in.

In this example, the institution being considered has a number of debt instruments outstanding with high coupon rates relative to the cost of recent issuances by similar institutions. This may be, for instance, because market rates have decreased since the instruments were issued, or because the institution issued the instruments during a period of stress, reflecting a higher risk premium attached to the institution.

The institution is expected to be able to refinance this high-coupon funding more cheaply once recapitalised following the bail-in. The difference between the institution's funding costs on existing liabilities and its expected funding costs following bail-in is assumed to be large enough that it could materially impact the amount of bail-in required.

#### **Approach 1: legacy funding costs considered on the asset side of the balance sheet**

Under this approach, the discount rate applied to the institution's assets would reflect its weighted average funding cost, incorporating the funding cost of the institution's outstanding instruments for the remainder of their maturity (or until they are expected to be called, if possible) ('legacy funding costs') as well as the prospective cheaper funding cost after resolution. This would result in a higher discount rate than if legacy funding costs had not been considered. In turn, this would lead to a lower valuation of the institution's assets on a DCF basis.

The institution's liabilities would be valued at their outstanding amount. As such their valuation would not be impacted by the institution's legacy funding costs.

Overall, the consideration of legacy funding cost would have a negative impact on estimated net asset value.

#### **Approach 2: legacy funding costs considered on the liability side of the balance sheet**

Under this approach, the discount rate applied in the valuation would reflect the expected funding costs of the institution on a forward-looking basis. The funding costs on existing high-coupon instruments would not be incorporated into the discount rate. In this example, the discount rate would therefore be lower than under Approach 1, resulting in a higher valuation of the institution's assets on a DCF basis.

To account for legacy funding costs, the institution's liabilities would also be valued on a DCF basis. In this example, the existing debt instruments would have a coupon rate higher than the discount rate applied, meaning that their valuation would be higher than their outstanding amount.

Again, considering legacy funding costs would therefore have a negative impact on estimated net asset value, as was the case under Approach 1. However, it is important to note that the total amount of a liability available to bail-in, and the rate at which a bailed-in liability would be converted into equity, would presumably be based on the outstanding amount of that liability.

In theory, the institution's net asset value under each approach should be the same. However, in practice, the two outcomes could differ. The valuer may wish to compare outcomes under both approaches. For instance, Approach 2 could be used to assess how the valuation of assets may change if high-coupon instruments were bailed-in as part of the resolution. In any case, it would be important to ensure that the impact of legacy funding costs is not double counted.

While this example focuses on the application of hold value, similar considerations might apply to disposal value. For instance, if the resolution authority is considering a sale of business, the valuer might want to account for the legacy funding costs of the institution being valued, which may be materially different to the expected funding cost of a potential acquirer.

## 5.9 Contingent assets and liabilities

### 5.9.1 Contingent assets

The valuation of **contingent assets** or contingent liabilities needs to be carefully examined. Potentially relevant contingent assets include financial guarantees received. In case such **financial guarantees received** are not yet considered for instance as part of the valuation of the loans to which they are linked to (e.g. a guarantee for a certain exposure), a separate valuation might be considered appropriate. Also, for such financial guarantees received and not already considered as part of the asset valuation, a cash flow-based approach might be considered appropriate (on asset valuation see, for example, Section 5.2, which also covers the consideration of different measurement bases). The consideration of financial guarantees received in the valuation might for instance require **expert judgement** and careful examination if the received financial guarantee is for instance, **realistically recoverable**.

### 5.9.2 Contingent liabilities

Contingent liabilities in the meaning of this Handbook might include those that are recognised in the institution's financial statement (e.g. **provisions**) and those that are not recognised and therefore off balance sheet. The former include for instance **pension-related provisions** or restructuring-related provisions already recognised by the institution at an earlier point in time. The latter include **contingent liabilities**, i.e. liabilities whose occurrence is possible but less probable<sup>32</sup>.

As a first step for their valuation, all potentially relevant contingent liabilities have to be identified. Accounting-related information might form the basis for this mapping process, but further analysis might be needed to ensure **completeness**. Contingent liabilities might for instance include pension-related provisions, litigation- or tax-related contingent liabilities as well as **loan commitments and financial guarantees provided**. Also, **restructuring-related liabilities** that are a result of the resolution actions would need to be considered.

Following their identification, the valuation of contingent liabilities depends on their purpose, as for instance different kinds of information and expert knowledge are needed for the valuation of pension-, restructuring- or litigation-related provisions. The valuation of contingent liabilities might for instance build up on **probability-weighted cash flows**, i.e. consider different scenarios for assumed cash outflows, weighted with their probability.

Certain contingent liabilities, for instance financial guarantees or loan commitments, might also result in a positive value if the client is performing and paying a fee for respective instruments. Here also there is a need to consider reducing that positive value to reflect the reward a potential acquirer would demand for assuming the risk.

The estimation of the cash flows as well as their probability might for instance need **input from various experts (expert judgement)**, including for instance input from actuaries as well as knowledge of the national legislative framework. Also, historical information might form the basis for respective valuations, for instance in cases of litigation-related provisions (using for example best practice/experience from similar court cases or similar). Where for instance loan commitments or financial guarantees provided are assumed to be cancelled by the institution, for example in case a loan commitment includes a break-up clause and the client's credit quality has decreased, their assumed value might be considered zero (i.e. the loan commitment is assumed to be cancelled, and cash inflow or outflow is no longer assumed).

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<sup>32</sup> See footnote 16 on the RA's ancillary power to cancel or amend the terms of a contract to which the institution is a party or to substitute a recipient as a party in resolution (Article 64(1)(f) of the BRRD). In the valuation of respective liabilities, the restructured terms might need to be considered as potentially converting a contingent liability into an actual, i.e. current, liability. Also, in case future payments from such liabilities are included within the operational costs, these should not be considered contingent liabilities, i.e. any potential double counting of such future liabilities would need to be avoided.



## 6. Valuation 2: equity valuation of the institution

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### 6.1 Overview and valuation process

According to the Regulation on valuation before resolution, an **institution's equity value** is “the estimated market price, for transferred or issued shares, that results from the application of **generally accepted valuation methodologies**” That Regulation also clarifies that, “depending on the nature of the assets or business, the equity value may comprise franchise value” (Article 1(h))<sup>33</sup>.

For the purposes of resolution valuations, equity valuations may be performed in two cases: first, for the calculation of the post-conversion equity value (PCEV), which forms the basis for the conversion amount when the WDCCI power or the bail-in tool are used; second, for determining the disposal value of the equity in the event of a share deal, where the whole equity of the institution is transferred by application of the sale of business tool or of the bridge institution.

The valuation of the institution as a whole can be conducted using a variety of valuation methodologies, each of which is based on the cash generative capability of the entire entity, seeking to incorporate all assets and liabilities collectively within a single valuation. Contingent assets and liabilities and other non-balance-sheet assets (such as not recognised intangible assets) should be implicitly captured within such valuation. In the light of this, **DCF and market methodologies** (Brunner, 2009, p. 475) may be applicable: DCF, for instance, in the form of a dividend discount or free cash flow to equity model; market methodology in the form of trading or transactions multiples.

In terms of the process, the equity valuation may be schematically summarised in the following five Steps, which are represented in Figure 7. These Steps refer to the valuation of one “entity”, which might for instance be the institution on a consolidated basis. Alternatively, one might also split the institution into different parts for valuation purposes. In such case, the institution might for instance be split into its head office — operating in its home market — and its different subsidiaries, which might reflect the business in different countries. If the institution is split into parts for valuation purposes, these parts would in the end, after having performed the valuations of these parts, again be combined (sum of the parts (SOTP)).

**Step 1** is an information-gathering phase, involving provision of information through the MIS. The RA would provide the valuer with the resolution scenario(s), which presumably drives certain methodologies or assumptions for the valuation. In addition, to the extent possible the valuer will seek information to support the valuation from the relevant institution. This might include for example the institution's financial forecasts for the business or aspects of the business, portfolio values for investments, run-off profiles for loan portfolios, dividend or free cash flow projections and restructuring plan(s) if available etc. Typically, if the equity valuation method is selected, the

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<sup>33</sup> See Chapter 7.3.2 for further explanations related to the franchise value.

financial information will be ‘consolidated’ on the level of the entity subject to valuation. In addition, the valuer may use external information to support the valuation, including macroeconomic information/forecasts or market-based data sources from reliable and independent providers. These may be used directly in the valuation or to support assumptions contained within the bank’s financial models and information. Whereas the former applies primarily where the income approach is applied, the market approach might also be considered. In such cases, information relevant to this approach would also need to be gathered, which includes for instance comparable company multiples (trading and/or transaction multiples).

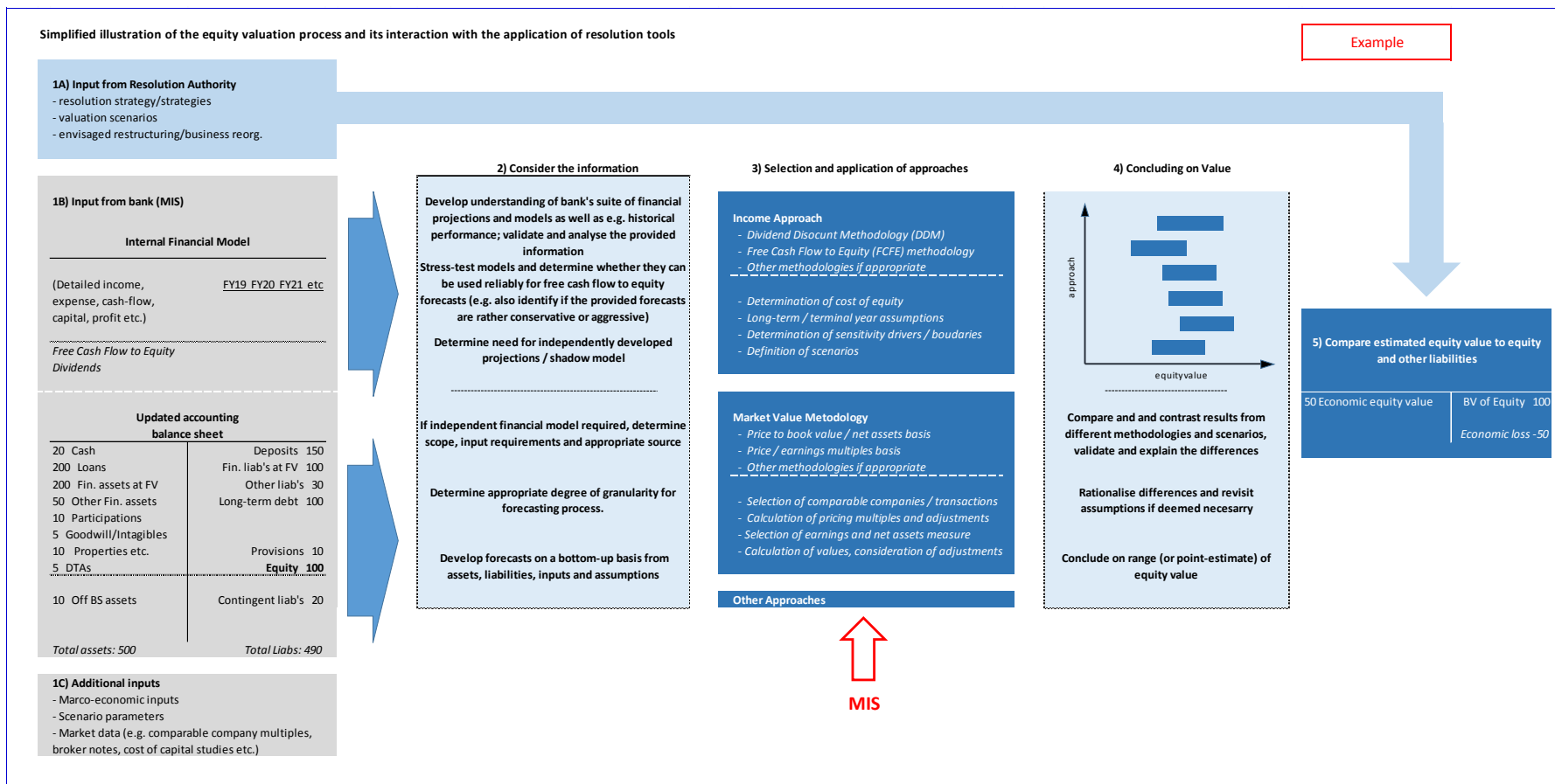
**Step 2** relates to the information collected in Step 1, validates and assesses the reasonableness of the data, and ensures its completeness and the appropriateness for the valuation that may be undertaken. Sources for the data should be checked and assumptions challenged where reasonable and possible. Alternative information sources or assumptions can be considered if appropriate.

**Step 3** involves the selection of valuation approach, which would presumably be either the income or market approach. It might also be considered sensible to use different approaches where feasible to corroborate (or otherwise) the selected approaches. Sensitivities or scenarios might additionally be selected “within” the different approaches to highlight the volatility of the valuation to changes in certain parameters.

The resulting outputs from the application of the methodologies in Step 3 are then considered in **Step 4** to assess the best point estimate and, where appropriate, also value ranges. Consideration can be given at this stage to the overall process and resolution strategy to ensure consistency between valuation method and overall proposed outcome. This step also includes the comparison of the results from different methodologies/approaches and potential sensitivity and scenario analyses, including the explanation of any differences between these.

**Step 5** compares the economic value of the equity with the liabilities. In an SOTP valuation, the valuer would need to determine the outcome of the sum of the parts. Particular care would need to be given to intragroup exposures and liabilities if the SOTP approach were applied.

Figure 7. Simplified illustration of the equity valuation process and its interaction with the application of resolution tools



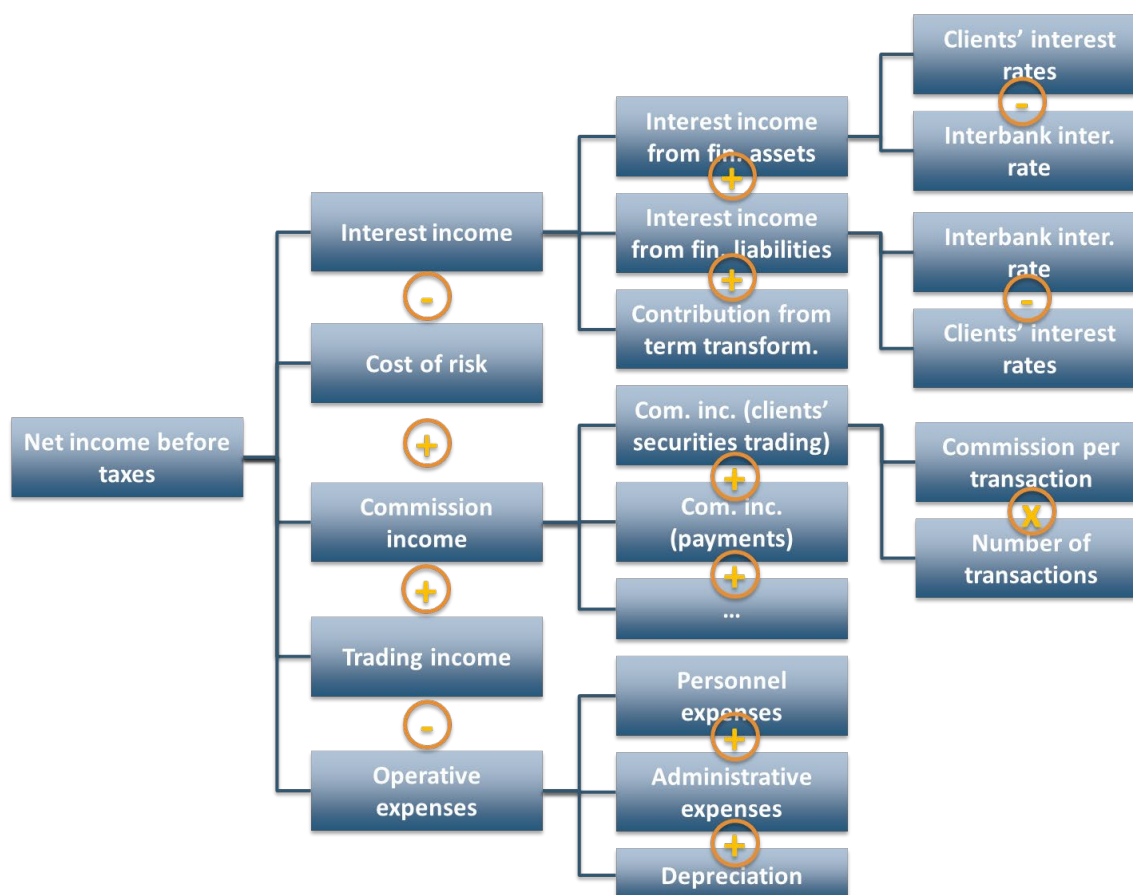
## 6.2 DCF methodology

In case of a valuation applying the **dividend discount model**, an institution is valued by discounting the institution's expected dividends. These **dividends (i.e. cash flows)** are assumed to be derived on the basis of detailed forecasts of the institution's expected profits and losses (P&Ls), which can for instance be based on an institution's value driver analysis. Besides respective forecasted P&L positions, further PFI might be considered as value drivers in a dividend discount model:

- Forecasted **volumes** (loans, bond books, deposits, etc.);
- **the treasury function**, for instance reflected in a fund transfer pricing (FTP) model, which might accordingly reflect the assumed funding conditions (for instance in a model in which interest income is decomposed into the client margin, income from term transformation/ from maturity mismatches and income from capital benefit);
- forecasted **risk-weighted assets** (RWA), not least depending on the forecasted asset composition;
- **capital plans**, etc. (see for example Damodaran, 2009, p. 5; Brunner, 2009, p. 472).

Given the effects of the envisaged resolution measure, an institution's former going-concern forecasts and business plans might no longer be valid and might need to be amended to reflect the applied resolution measures.

Figure 8. Possible input parameters for a P&L-focused value driver analysis of institutions (source: Adamus/Koch, 2007, translated)



During the valuation, particular consideration might for instance be given to **litigation and conduct risks** (e.g. ongoing or potentially upcoming lawsuits), the institution's non-performing exposures as well as its derivative book (e.g. reflecting assumed close-outs). Similar to the valuation of assets (see detailed descriptions in Section 5.2), in case of valuation of the institution as a whole, careful consideration might for instance also be given to the **terminal/residual value**, which might constitute the major part of the institution's value. The assumed growth rate in the terminal value — which can be positive, zero or negative — is potentially another value driver.

In an **ordinary going concern** situation, assumed cash flows might be forecasted for a period of for example three to five years, followed by a terminal value (forecasted period/detailed planning period; see Section 5.2 and Brunner, 2009, p. 474). However, considering the requirements of the BRRD, the presumably assumed planning years related to a bridge institution are two years, including a positive terminal value. In the case of an open bank bail-in, Article 52 of the BRRD requires the business reorganisation plan to set out measures to restore long term viability in a reasonable timescale.

Finally, the **discount rate** might be derived applying the CAPM or alternative approaches. Section 5.3 provides examples of parameters that might be considered for deriving the discount rate.

It should be noted that in some cases an SOTP might be appropriate or needed, as described above in the valuation process chart (Section 6.1), i.e. an **individual valuation of subsidiaries**. The reason might for instance be that some subsidiaries are located in different geographies and/or have specificities (e.g. risk structure or business model), which requires an individual analysis and valuation. This might imply the application of different methodologies and/or assumptions, such as discount rates exchange rates etc.

As an alternative to the dividend discount model, the **free cash flow to equity (FCFE) model** might for instance be applied. In general, the free cash flow to equity model commonly builds up on the net income, minus the difference of capital expenditures and depreciation and minus the change in non-cash working capital, plus the difference of new debt issued and debt repayments (see Damodaran, 2002, p. 352). Given that such calculation might not be considered practical and/or adequate in case of valuation of institutions, one might derive the free cash flow to equity as net income minus reinvestment in capital, i.e. what part of net income is assumed to be retained in capital (see Damodaran, 2009, p. 22). In that case, however, the FCFE model becomes comparable to the dividend discount model ('DDM').

### 6.3 Market value methodology

**Market value methodologies** might also be applied derive an institution's value. This methodology includes trading- and transaction based multiples methods. Where the whole institution is valued, commonly applied multiples are for instance price to earnings and price to book (see Damodaran, 2009, p. 27; see Annex on the market value based method more generally).

Market value methodologies might need careful consideration with regard to the extent of their applicability to institutions in resolution. In case of valuation of an **institution in distress** — including an institution in resolution — the market value methodology might not be appropriate, as trading or transaction multiples might rather stem from the valuation of fully performing institutions, and adjustments to these multiples might be extremely difficult to determine. However, in specific — and probably rather rare — circumstances, transaction multiples might for instance be available from a similar and comparable institution that had been in distress and sold to or merged with e.g. a competitor. The availability of comparable transactions also depends on the kind of institution (e.g. broad universal bank vs. specialised lender) as well as the jurisdiction (in some jurisdictions transactions might be less frequent or not common, whereas in others they might be more common).

When applying the trading or transactions multiples methods, adjustments might for instance be made for differences in the institution's financial position from the market average. For instance, the funding costs of the institution after bail-in or of a bridge institution might differ significantly from the market average. In the DCF methodology, this would be reflected in the discount rate (see

Section 5.3). As this option does not exist for pure market value methodologies, such considerations might be reflected through adjustments to multiples.

## 7. Valuation 2: tool specific considerations

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### 7.1 Write Down and Conversion of Capital Instruments ('WDCCI')

In addition to the resolution tools, the RA is entrusted by the BRRD with the WDCCI power. This power is set out in Article 59 of the BRRD, providing that it can be exercised either “independently of a resolution action”, or “in combination with a resolution action, where the conditions for resolution specified in Article 32 and 33 are met”. Broadly speaking, the purpose of the WDCCI is to absorb losses and/or recapitalise the institution.

Article 59(3) of the BRRD spells out the conditions under which the WDCCI power has to be used, namely when:

- (i) the conditions for resolution have been met (letter (a) of Article 59(3) of the BRRD);
- (ii) the institution or group would no longer be viable without the application of WDCCI (letters (b) to (d) of Article 59(3) of the BRRD); or
- (iii) extraordinary public financial support is required, except for the cases falling under Article 32(4) point (d)(iii) of the BRRD (letter (e) of Article 59(3) BRRD).

In accordance with Article 36(4)(c), the exercise of the WDCCI has to be informed by a valuation aimed at determining the “extent of the cancellation or dilution of shares or other instrument of ownership, and the extent of the write down or conversion of relevant capital instruments”. The sequence and the modalities of the WDCCI are governed by Article 60 of the BRRD.

The aggregate amount of the WDCCI should be determined in accordance with the applicable measurement basis, i.e. the hold value or the disposal value depending on the resolution scenario and the destination of each specific asset.

### 7.2 Bail-in tool

#### 7.2.1 Execution of the bail-in tool: steps related to the valuation

Bail-in is one of the resolution tools provided for by Articles 43 and 44 of the BRRD to achieve the resolution objectives consistently with the resolution principles. It may be used either to absorb losses or to recapitalise the institution under resolution “to the extent sufficient to restore its ability to comply with the conditions for authorisation [...] and to carry out the activities for which it is authorised under Directive 2013/36/EU or Directive 2014/65/EU [...] and to sustain sufficient market confidence”.



Broadly speaking, the implementation of the bail-in tool involves first the loss absorption and then the recapitalisation of the institution under resolution.

The execution of bail-in requires the completion of several steps, some of which specifically relate to the valuation. The **list below** enumerates in a **non-exhaustive** manner some of the steps necessary for the **implementation of the tool and does not purport to allocate tasks/competences/responsibility to the valuer, the RA, the supervisor or other parties**:

- (i) economic valuation in accordance with the **hold value** as described below (see also Chapter 5) for those assets that are going to be retained by the institution under resolution. Assets that are being retained in order to be disposed, as indicated for instance in business forecasts or plan or in the balance sheet, should be assessed under the **disposal value** taking into account the expected disposal horizon (Article 11(5) and (6) or Article 12(4) of the Regulation on valuation before resolution). To the extent that the bail-in tool is applied in combination with other tools, the **hold value** or the **disposal value** should be applied, having regard to the assumed strategy per each type of asset
- (ii) determination of the institution's net asset value ('NAV') on the basis of the economic valuation;
- (iii) determination of the aggregate amount of write down required to absorb losses and restore NAV to zero (Article 46(1)(a) of the BRRD);
- (iv) determination of the amount by which eligible liabilities must be converted into shares or other types of capital instruments in order to restore the Common Equity Tier 1 (CET1) capital ratio of the institution under resolution or of the bridge institution (Article 46(1)(b) of the BRRD), taking into account any contribution of capital by the resolution financing arrangement pursuant to point (d) of Article 101(1) of the BRRD;
- (v) The amounts determined in accordance with Article 46(1)(a) and (b) shall enable to sustain sufficient market confidence and enable the institution to continue to meet the conditions for authorisation and to continue to carry out the activities for which it is authorised under Directive 2013/36/EU (Capital Requirements Directive (CRD)) or Directive 2014/65/EU (Markets in Financial Instruments Directive II (MiFID II)) (Articles 43 and 46 of the BRRD) (recapitalisation amount);
  - for the purposes above, the institution's risk weighted assets ('RWA') post-resolution should be estimated;
- (vi) where the resolution scheme envisages to use the asset separation tool, the bail-in amount has to take into account the prudent estimate of the capital needs of that vehicle (Article 46(2) of the BRRD);
- (vii) where it is envisaged to access the resolution fund, the amount of the 8% of total liabilities, including own funds, should be calculated (Article 44(5) of the BRRD);

- (viii) identification of eligible liabilities and their insolvency ranking, as well as statutory and discretionary exclusions (Article 44(2) and (3) of the BRRD);
- (ix) on the basis of the above identification, determination of the sequence of write down and conversion (Article 48(1) of the BRRD) and allocation of losses in compliance with the *pari passu* principle (Article 48(2) of the BRRD)<sup>34</sup>;
- (x) determination of treatment of shareholders and of holders of instruments of ownership (Article 47 of the BRRD and EBA Guidelines on the treatment of shareholders in bail-in or the write-down and conversion of capital instruments)<sup>35</sup>;
- (xi) determination of “an estimate of the post-conversion equity value of new shares transferred or issued as consideration to holders of converted capital instruments or other creditors” (for equity valuation see Chapter 5), in accordance with Article 10(5) of the Regulation on valuation before resolution;
- (xii) determination of the conversion rates of debt to equity (Article 50 of the BRRD and EBA Guidelines on the rate of conversion of debt to equity in bail-in)<sup>36</sup> by application of the equity value as defined in the Regulation on valuation before resolution.

### 7.2.2 Specific consideration during the valuation

When deriving **hold values**, expected cash flows should be the assumed payments that the owner of respective asset recovers — “cash flows that the entity can reasonably expect under fair, prudent and realistic assumptions” (Article 1(e) of the Regulation on valuation before resolution; see Chapter 5). These expected cash flows should in general be derived having regard to the circumstance that the asset can be held in order to **recover its expected cash flows over its (remaining) lifetime**.

It may be the case that **assets are being retained by the institution under resolution in order to be disposed of**, in accordance with, for instance, the balance sheet destination of specific assets or with business plans and forecasts. It is understood that the valuation should accommodate such strategies, given the forward-looking nature of bail-in and the continuation of the institution under resolution as a going concern. The valuation of such assets that are ‘held to exit’ may therefore have regard to their expected treatment following entry into resolution. This would entail the

<sup>34</sup> EBA Guidelines on the interrelationship between the BRRD sequence of write-down and conversion and CRR/CRD (EBA/GL/2017/02), [https://www.eba.europa.eu/documents/10180/1807502/Guidelines+on+the+interrelationship+BRRD\\_CRR+%28EBA-GL-2017-02%29.pdf](https://www.eba.europa.eu/documents/10180/1807502/Guidelines+on+the+interrelationship+BRRD_CRR+%28EBA-GL-2017-02%29.pdf).

<sup>35</sup> EBA Guidelines on the treatment of shareholders in bail-in or the write-down and conversion of capital instruments (EBA/GL/2017/04), <https://www.eba.europa.eu/documents/10180/1807527/Guidelines+on+the+treatment+of+shareholders+in+bail-in+%28EBA-GL-2017-04%29.pdf>.

<sup>36</sup> EBA Guidelines on the rate of conversion of debt to equity in bail-in (EBA/GL/2017/03), <https://www.eba.europa.eu/documents/10180/1807514/Guidelines+on+the+rate+of+conversion+of+debt+to+equity+in+bail-in+%28EBA-GL-2017-03%29.pdf>.

application of the disposal value having regard to ‘the expected disposal horizon’ (Article 11(5) and (6) or Article 12(4) of the Regulation on valuation before resolution).

Where the bail-in tool is applied in combination with other tools, in particular the asset separation tool, the assets to be transferred should be valued in accordance with the **disposal value** as specified in Sections 7.3 and 7.5).

Even though for both measurement bases (hold and disposal) the valuation is **cash flow oriented** (see Sections 5.2 and 5.3 on the DCF based methodologies), they might imply the use of different valuation methodologies, as well as the application of different parameters. For instance, the expected cash flows and the applied **discount rates** might depend on the assumption as to whether an asset is assumed to be disposed of or to be held to recover its expected cash flows.

### 7.2.3 Estimate PCEV

The execution of the bail-in tool also requires the performance of an equity valuation to determine **post-conversion equity value**. This should be an estimate of the market price for those shares that would result from generally accepted valuation methodologies, and should inform the determination of the conversion rate or rates pursuant to Article 50 of the BRRD (see Article 10(5) of the Regulation on valuation before resolution).

Once the equity value is determined, it has to be allocated to the new shareholders in accordance with valuation criteria that respect the requirements set out in the BRRD, in the Regulation on valuation before resolution, and in the EBA Guidelines on the rate of conversion of debt to equity in bail-in.

From a valuation perspective, **without purporting to allocate tasks/competences/responsibility to the valuer, the RA, the supervisor or other parties**, a simplified process could be articulated in the following steps:

- Use economic values derived for the identification of the loss absorption amount as input parameters to prepare an updated pro forma balance sheet (see Step 5 of the process described in Figure 2).
- Determination of estimate RWA.
- Determination of capital requirements.
- Performance of equity valuation in accordance with the income approach (DDM, FCFE) or the market approach (multiples, assuming the viability of the institution under resolution):
  - “equity value may comprise franchise value” (Article 1(h)) (see Section 7.3.2 on the calculation of the franchise value);

- factors potentially affecting the future cash flows may be taken into account in the valuation, including “additional or alternative valuation bases or methodologies that are considered appropriate by the valuer [...], including in the context of assessing the post-conversion equity value of shares” (Article 12(2)(b)).
- Attention would be paid, for instance, where the DDM shows that during the planning horizon further capital injections might be needed (“negative dividend”). In that case, the calculation to derive the PCEV should be re-run to fully take into account such additional capital need. Also, in case P/B multiples derived in the market approach are below 1, the valuer might need to consider its appropriateness. This would be driven by the idea/assumption that the bailed-in institution would for instance not bear any “hidden losses”, which might be in contrast to its peers that were used for deriving the market multiple.
- The expected result of the PCEV should be an estimate of the market price for those shares that would result from generally accepted valuation methodologies, and the estimate shall inform the determination of the conversion rate or rates.

## 7.3 Sale of business tool

### 7.3.1 Implementation of the sale of business tool: valuation considerations

The sale of business tool is the transfer to a third party purchaser of (i) shares or other instruments of ownership issued by the institution under resolution (‘share deal’) or (ii) all or any assets, rights or liabilities of an institution under resolution (‘asset deal’) (Article 38 of the BRRD). Consistent with the resolution principles and relevant BRRD provisions, the implementation of the sale of business tool has to be accompanied by measures ensuring that shareholders and creditors bear losses first via burden-sharing, which can be direct — application of the WDCCI and bail-in power (if required) — or indirect — achieved by leaving shareholders and creditors behind in the ailing institution (in the case of a partial asset transfer). For that purpose, the amount of the write-down to absorb the losses should be determined in accordance with the **disposal value** (for the bail-in process see Section 7.2.1).

Under Article 36(4)(f) of the BRRD, the valuation relating to the sale of business tool aims to inform (i) the decision on the assets, right, liabilities or shares or other ownership instruments to be transferred and (ii) the RA’s understanding of what constitutes commercial terms for the purposes of Article 38 of the BRRD, i.e. “having regard to the circumstances and in accordance with the **State aid framework**” (emphasis added).

In accordance with Article 11(4) of the Regulation on valuation before resolution, the hold value cannot be applied to assets, rights or liabilities subject to the sale of business tool. Along the same lines, the application of the criterion set out in Article 12(8) is also prohibited. The applicable measurement basis to the sale of business tool is therefore the **disposal value**.

When the sale regards the transfer of businesses, i.e. not simply assets and liabilities, reasonable expectations for franchise value may be taken into account in the valuation (Article 12(7) of the Regulation on valuation before resolution).

The valuation of business, assets and liabilities left behind in the institution under resolution that is not going to remain a going concern should be conducted in accordance with Article 12(9) of the Regulation on valuation before resolution.

### 7.3.2 Specific considerations on the derivation of the franchise value

When the sale regards the transfer of businesses, i.e. not simply assets and liabilities, reasonable expectations for franchise value may be taken into account in the valuation (Article 12(7) of the Regulation on valuation before resolution). Furthermore, where the equity value is used, the Regulation on valuation before resolution provides that, “depending on the nature of the assets or business, equity value may comprise franchise value”<sup>37</sup>.

The **franchise value** — as defined in Article 1(g) of the Regulation on valuation before resolution — includes effects from the maintenance and renewal of assets and liabilities (including a refinancing of an open portfolio) or from a continuation or resumption of business in the context of the resolution actions. The impact of any business opportunities might be included in the franchise value, too. Consideration might also be given to the fact that the institution or the business that is transferred would likely be different in condition and scope. Furthermore, the consideration of potential second-round effects (“boomerang effects”) from the resolution might be needed when deriving franchise values. This idea is based on the principle that imposing losses on a large number of creditors could compromise the institution’s originally positive franchise value with core clients and may compromise its overall viability.

The franchise value should be derived applying for instance the DCF methodology, including cash flows that can “reasonably be expected”. Also, option pricing methods might be considered when deriving the franchise value, as well as other methodologies.

## 7.4 Bridge institution tool

The bridge institution tool entails the establishment of a **temporary institution** aimed at maintaining access to critical functions. It may be implemented by transfer of (a) shares or other instruments of ownership issued by one or more institutions under resolution or (b) all or any assets, rights or liabilities of one or more institution under resolution.

In accordance with Article 36(4)(e) of the BRRD, the valuation has to inform the decision on (a) the assets, rights, liabilities or shares or other instruments of ownership to be transferred, to make sure that assets exceed liabilities, and (b) the “decision on the value of any consideration to be paid to the institution under resolution or, as the case may be, to the owners of the shares or other instruments of ownership”.

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<sup>37</sup> As illustrated in Chapter 6, the equity valuation is presumably suitable to the assessment of the value of the whole institution in the case of a ‘share deal’, since it is commonly used for purposes of a transaction.

To cater for the bridge institution's solvency requirements, the RA has to make sure that "the total value of liabilities transferred to the bridge institution does not exceed the total value of the rights and assets transferred from the institution under resolution or provided by other sources".

Under the Regulation on valuation before resolution, the hold value cannot be applied when the bridge institution tool is applied (second sub-paragraph of Article 11(4)).

The **disposal value**, as defined in Article 12(5) of the Regulation on valuation before resolution, should therefore apply (for disposal value, see Chapter 5). The criteria set out therein require the disposal value to be determined having regard to actual market conditions. The provision envisages that the disposal value is determined "on the basis of cash flows net of disposal costs and net of the expected guarantees given, that the entity can reasonably expect in the **currently prevailing market conditions through an orderly sale or transfer of assets and liabilities**" (emphasis added).

A discount for **accelerated sale** to the observable market price of that sale or transfer may be applied "where appropriate". Furthermore, the determination of the "disposal value of assets which do not have a liquid market" has to reflect discounts for illiquidity as appropriate, consistently with the requirements set out in that provision. When business is transferred, reasonable expectations for franchise value (see later in this Section) may be taken into account for purposes of the valuation.

As an alternative to the determination of the disposal value as illustrated above, the disposal value could also be determined having regard to the criteria laid down in paragraph (5) in combination with paragraph (4) of Article 12.

The latter provides that, "where an entity's situation prevents it from holding an asset or continuing a business or where the sale is otherwise considered necessary by the resolution authority to achieve the resolution objectives, the expected cash flows shall be referenced to **disposal values expected within a disposal period**' (emphasis added)". The disposal periods and the discount rates would be linked to the expected time of the sale of the bridge institution and at any rate not exceed two years, which is the default lifetime of the bridge institution. Along these lines, the disposal value would result in the present value of the cash flows that are expected to be realised within (up to) two years (including from the sale of the bridge institution), net of disposal costs and net of the expected guarantees given. From this perspective, for the purposes of determining the disposal value, reference should be made to the market conditions expected at the end of the disposal period when the actual sale of the bridge institution or parts of it would take place (i.e. up to two years) and to the present value of the expected sale at that point in time. Having regard to expected future cash flows, discount rates reflecting risk premium should be applied. Discounts for illiquidity would be applied, in accordance with Article 12(5) of the Regulation, to those illiquid assets transferred to the bridge institution. With regard to the discount for **accelerated sale** envisaged by Article 12(5), which is applicable "where appropriate", the valuation might consider whether the extended disposal period would make an accelerated sale unlikely<sup>38</sup>.

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<sup>38</sup> From a State aid perspective, the transfer of assets, rights, liabilities or shares at a value above current market value may be subject to scrutiny. In principle, the entity in resolution that transfers such assets, rights, liabilities or shares to the bridge institution should not be considered to receive an advantage under the State aid framework if it is going to be wound down. In such circumstances the transfer at a value above current market value would give rise to a selective advantage to the shareholders and creditors of the entity in

In projecting the cash flows, the valuation would also take into account restructuring and operational costs and the marketability of the institution at the time of the sale, having regard to market and macroeconomic assumptions. In addition, the valuation would also embed the uncertainty related to the unsettled issues concerning ownership at its termination and make sure that the bridge institution is endowed with an adequate level of capital correlated to its lifetime expectancy.

Reasonable expectations for **franchise value** may be taken into account in relation to the valuation of businesses to be transferred to the bridge institution or at the moment of the sale of that temporary vehicle (Article 12(7) of the Regulation on valuation before resolution; on franchise value, see also Section 7.3.2). When determining any reasonable expectations for franchise value, careful consideration should be given to the circumstance that the bridge institution will be a different/new entity in respect of the institution under resolution and that an expected lifetime of up to two years may curtail expectations of franchise value. The assumptions supporting the expectation of franchise value should therefore be explained in the valuation report.

Operationally, when the bridge institution tool is applied, at least a pro-forma opening balance sheet would be needed when the new entity is being set-up. With regard to the value of assets and liabilities that are left behind in the institution under resolution and are destined to liquidation, the value should be determined in accordance with Article 12(9) of the Regulation on valuation before resolution relating to gone concern situations<sup>39</sup>.

## 7.5 Asset separation tool: asset management vehicle (AMV)

The asset separation tool may be applied by the RA only together with another resolution tool (Article 37(5) of the BRRD) for the purpose of managing “the assets transferred to it with a view to maximising their value through eventual sale or orderly wind down” (Article 42(3)). For that purpose, assets, rights or liabilities may be transferred from the institution under resolution or a bridge institution to **one or more asset management vehicles**.

In accordance with Article 36(4)(e) of the BRRD, the valuation has to inform the decision on (a) the assets, liabilities or shares or other instruments of ownership to be transferred and (b) the “value of the consideration to be paid to the institution under resolution or, as the case may be, to the owners of the shares or other instruments of ownership”.

The BRRD expressly envisages that the **consideration of the transfer can have nominal or negative value**. When the AMV tool is applied, a pro-forma opening balance sheet would be needed, when the new entity is being set-up.

In the implementation of the AMV, the regime set out in the BRRD and in the Regulation on valuation before resolution has to be coordinated with the **State aid framework**, in particular the

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resolution. To the extent that they are undertakings, it cannot be excluded that State aid scrutiny could be performed.

<sup>39</sup> “For parts of a group of assets or of a business that are likely to be liquidated under ordinary insolvency procedures, the valuer may consider the disposal values and disposal periods observed in auctions involving assets of a similar nature and condition. The determination of expected cash flows shall take into account illiquidity, the absence of reliable inputs for the determination of disposal values, and the resulting need to rely on valuation methodologies based on unobservable inputs”.

Communication from the Commission on the treatment of impaired assets in the Community banking sector<sup>40</sup>, the Communication from the Commission on the application of State aid rules to support measures in favour of banks in the context of the financial crisis<sup>41</sup> and the relevant case law of the Court of Justice.

Under the second sub-paragraph of Article 11(4) of the Regulation on valuation before resolution, the hold value cannot be applied when the asset separation tool is used. The application of the criterion laid down in Article 12(8) is also excluded. The valuation of the assets, rights and liabilities that are transferred to the AMV has to be conducted in accordance with the **disposal value** as defined in Article 12(5) of the Regulation on valuation before resolution.

In accordance with the State aid framework, the transfer at a value that is higher than the 'market price' can only occur in accordance with the guidance laid down by the European Commission and the relevant applicable procedure as interpreted by the Court of Justice<sup>42</sup>. In terms of process, this entails that the RAs should be aware that a parallel discussion with the Directorate-General for Competition should be initiated.

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<sup>40</sup> [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0326\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XC0326(01)&from=EN).

<sup>41</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013XC0730\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013XC0730(01)&from=EN).

<sup>42</sup> From a process perspective, the RA could also mandate the independent valuer appointed for purposes of the valuation under Article 36 to estimate both the 'market price' and the 'real economic value' in accordance with the State aid framework, for the purpose of submitting the State aid notification to the European Commission. This would be without prejudice to the European Commission's own assessment of the existence and, if applicable, of the compatibility of the requested aid.



## 8. Valuation 2: process and report

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### 8.1 Process

#### 8.1.1 Appointment of the independent valuer and performance of the valuation

The appointment of the independent valuer is the indispensable premise to ensure that a definitive or provisional — save for when the RA performs it — valuation before resolution may be performed.

To be appointed as independent valuer, a legal or natural person has to meet the conditions of independence set out in Articles 38 to 41 of Commission Delegated Regulation (EU) No 2016/1075. As a **precondition of the independence**, the person concerned has to:

- (a) have the qualifications, experience, ability, knowledge and resources to ensure that they can perform a valuation without depending on the support of parties, in particular public authorities — including the RA — and the relevant institution;
- (b) be legally separated from public authorities — including the RA — and from the relevant institution;
- (c) not have **material** common or conflicting interest (within the meaning of Article 41 of that Regulation).

As underscored by Article 38 of Regulation 2016/1075, not all conflict or common interest should be considered as a ground for excluding the valuer's independence. The Regulation sets a threshold so that only those actual or potential **material** common or conflicting interests should be considered by the RA as a ground for the non-appointment of the valuer.

The assessment of **materiality** of the potential or actual interest is left to the RA and revolves around the influence or the perceived influence of the independent valuer's judgement in carrying out the valuation (Article 41(2) of Regulation 2016/1075). In particular, this assessment should weigh the extent of the common or conflicting interests against the potential valuer's competence and proficiency.

The Regulation mentions only one circumstance that constitutes per se an **actual material common or conflicting interest**, notably having performed the statutory audit in the year preceding the appointment (Article 41(5)). In general, for purposes of establishing whether a potential or actual common or conflicting interest should be considered **material** by the RA, the Regulation lays down a minimum, non-exhaustive list of parties/relations and matters that are relevant to such assessment (Article 41(3) and (4)).

To facilitate the independence assessment, any person considered for the position of independent valuer is required to:

- (a) maintain policies and procedures to identify any actual or potential interest which may be considered to constitute a material interest;
- (b) notify without delay the appointing authority of any actual or potential interest which the independent valuer considers may, in the assessment of the authority, be considered to amount to a material interest;
- (c) take appropriate steps to ensure that none of the staff or other persons involved in carrying out the valuation have any material interest of a kind.

To preserve its independence, the valuer should not seek or receive instructions or guidance from public/resolution authorities, or accept financial or other advantages save for the payment of the remuneration and expenses. This notwithstanding, the valuer may receive instructions and guidance where necessary for achieving the goals of the valuation (Article 39).

**From a practical perspective**, without being exhaustive, recent practice suggests that an initial 'questionnaire' revolving around at least the parties/relations and the matters envisaged in Article 41(3)(4) of Commission Regulation 2016/1075 could be submitted to the person concerned to facilitate **the identification of potential or actual common or conflicting interests**. The assessment of the genuine character of the responses is left to the RA, as well as the **assessment of the materiality of any common or conflicting interest**. Furthermore, at the moment of the appointment, further to the RA assessment, the independent valuer could also be requested to sign a statement of absence of further reasons of common or conflicting interest. In assessing the materiality of a potential or actual conflict of interest, the RA could also consider whether or not, in its own judgement, the adoption of certain measures by the person concerned would ensure that a potential or actual interest would not amount to a material interest.

The EU framework does not specify whether the independent valuer for the valuation before resolution has to be or may be the same as the independent valuer of the valuation after resolution. In the absence of any specific requirement under EU law, it is for the appointing authority to decide what path to follow.

The **fast appointment** of the independent valuer is crucial to ensure the timely start and performance of the valuation, in particular having regard to the resolution time constraints<sup>43</sup>. It is suggested, in the light of recent practice, that RAs adopt procedures for the pre-selection of a shortlist of potential valuers, from which a valuer that meets the conditions of independence in the specific case could be selected without delay. The shortlist would also be useful to identify ex-ante valuers with experience, ability, knowledge and resources; furthermore, in accordance with and subject to each authority's legal system, such shortlisted valuers could agree in advance on a

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<sup>43</sup> Non-disclosure agreements might need to be considered already ahead of the appointment, depending also on national law and similar considerations.

framework agreement to be specified at the time of the appointment with an ad hoc mandate. It is suggested that RAs prepare a legally revised draft mandate template prior to crisis events.

As a general consideration, the mandate or any related document/exchange at the time of the appointment should **specify at least the following**: (i) the type of valuation requested, i.e. provisional or definitive; (ii) in cases of provisional valuation, it is suggested that the valuation includes — to the extent practicable — the ex-ante estimate of the NCWO valuation in accordance with Article 36(8) of the BRRD; (iii) the range of resolution actions that the RA requires the valuation to consider; (iv) the timeframe of the valuation and the intermediate milestones (for instance request of data and information to the institution, i.e. set-up of the virtual data room; performance of the due diligence; performance of valuation of each resolution action as requested by the RA, starting from the preferred resolution strategy or the strategy indicated by the RA as a priority); (v) performance of sensitivity and/or scenario analysis in respect of specific parameters having regard to the circumstances, to the range of resolution actions or to specificities of the institution; (vi) areas where the valuer is assisted by specific experts, for example legal or accounting experts; and (vii) non-disclosure and confidentiality obligations.

### 8.1.2 General considerations on the performance of the valuation

As a general consideration, **interactions between the RA and the valuer** in the context of the valuation are not prohibited by the Regulation. In particular before the start of the valuation, interaction can be helpful to set the stage and to reach a better understanding of the resolution actions to be considered (see Section 1.2.3), the expected results of the valuation, of the data and information needs and availability, the phases of the valuation, etc ...

**After the valuation** has been performed, interaction with the valuer may be helpful to reach a better understanding of the Valuation Report. **In the course of the valuation**, the interaction with the valuer may be envisaged as regards day-to-day issues, updates on the progress and state of the valuation, on the determination of resolution actions, etc. In particular, in this latter phase, the nature, content and frequency of such interaction should ensure that the valuer's independence is not undermined, save where the provision of instructions and guidance by the RA is considered 'necessary' for achieving the goals of the valuation (see Article 39(4)(a) of the Commission Regulation 2016/1075). This is a case-by-case analysis.

The Regulation does not provide any guidance about the **place where the valuer should perform the valuation**, whether at the institution's, RA's or valuer's premises. In assessing the best solution, also for single aspects of the valuation, regard should be given to practical considerations such as access to data and information, exchange of views with the institution's management and personnel and/or with the RA, confidentiality requirements in particular with regard to potential information leaks to the public.

### 8.1.3 General considerations on the timeframe

There is **no pre-determined timeframe** for the performance of a valuation under Article 36 of the BRRD; in principle it can be carried out in a few weeks or in several months, depending on the level

of granularity, on the institution's size and complexity, on the quality, quantity and timeliness of the data and information made available by the institution, and on the type of the crisis: slow or fast burn. For a provisional valuation, requirements for sufficient quality are much less prevalent; rather, a provisional valuation shall seek to deliver the best possible quality in whatever time is available.

The BRRD does not set out an express 'start time' for the valuation; however, it contains useful references for a reasonable approach. The **discipline on early intervention measures** (Article 27 of the BRRD) provides some guidance on this aspect; in particular, it refers to the exchange of information between the competent authority and the RA for the update of the resolution plan and the performance of valuation for purposes of resolution in accordance with Article 36 of the BRRD<sup>44</sup>. The BRRD also requires Member States to ensure that the competent authorities notify the RAs without any delay upon determining that the conditions laid down in Article 27(1) of the BRRD are met<sup>45</sup>.

RAs should assess the overall situation and consider whether to take arrangements to prepare the valuation. In such phase, and depending on the circumstances, confidentiality issues and adverse market impacts should particularly be taken into account when defining the practical arrangements for the data and information collection.

The notification about the fulfilment of early intervention conditions, however, is not a precondition for the collection of information and the start of a valuation by the RA. Article 63(1)(a) of the BRRD gives more leeway to the RA as to the collection of information and the start of the valuation, in a way which is disentangled from the early intervention phase. This article confers upon the RA a general power to require any person (therefore, including the institution) to **provide any information required** by the RA to decide upon and prepare a resolution action, including updates and supplements to information provided in the resolution plans and including requiring information to be provided through on-site inspections. This provision could therefore support a broader approach — and anticipated in time — to the determination of the start time of the valuation (including data collection), which does not rely on an early intervention notification but on the RA's discretionary assessment of the level of risk and progress in the development of contingency planning.

The first steps to be conducted to start a valuation are the appointment of the independent valuer, save where the provisional valuation is performed by the RA (see Section 8.1.1), and the collection

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<sup>44</sup> Article 27(1)(h) provides that the competent authority shall "acquire, including through on-site inspections and provide to the RAs, all the information necessary in order to update the resolution plan and prepare for the possible resolution of the institution and for valuation of the assets and liabilities of the institution in accordance with Article 36".

<sup>45</sup> The EBA Guidelines on triggers for the use of early intervention measures (EBA/GL/2015/03) of 8 May 2015 (<https://eba.europa.eu/documents/10180/1067473/EBA-GL-2015-03+Guidelines+on+Early+Intervention+Triggers.pdf>) provide that the breach of a trigger entails, as a first step, the competent authority's investigation of the matter, which may or may not lead to the adoption of an early intervention measure. The EBA GL envisage that the competent authority should consider collecting information to perform the valuation pursuant to Article 27(1)(h) of the BRRD when it assigns an Overall SREP score of '4' to the institution. As stated above, if the competent authority determines that the conditions for early intervention have been met, it has to notify the resolution authority.

and request of data and information to the institution, including the set-up of the virtual data room (see Chapter 10).

#### 8.1.4 Specifics in the valuation of asset and liability valuations

The process for Valuation 2 will build upon **input from the RA** (step 1A), the **institution** and **its supervisory authority** (see Figure 2). On the one hand, the RA has the task of indicating to the valuer the resolution strategies and scenarios and the envisaged restructuring plan when possible and feasible; on the other hand, the institution should cooperate and provide the valuer or the RA with (updated) information about the entity's activities (including accounting data — balance sheet and off-balance sheet positions, etc. — see step 1B in Figure 2 and Chapter 10 on the MIS). The valuer should ensure **completeness** in their valuation, i.e. make sure that all assets and liabilities, all off-balance sheet positions (contingent assets and contingent liabilities), operational costs and the impact of measures resulting from the application of resolution tools are included. Other factors affecting future income and cash flows should also be covered by the valuation.

#### 8.1.5 Potential content of the Valuation 2 report

The Valuation report would presumably be written in a way that would allow an experienced reader with access to the information provided by the institution to replicate the results of the valuation. Having regard to transparency requirements that have been recently established by European jurisdictional bodies in the context of disputes originating from resolution proceedings<sup>46</sup>, RAs should aim to ensure effective jurisdictional protection to affected shareholders and creditors by the publication of a non-confidential version of the valuation report, without undermining financial stability and legitimate business secrecy concerns.

In addition to the minimum elements set out in the Regulation on valuation before resolution (Article 6 in particular), the following information relating to specific aspects of the performed valuation(s) might be included in the Valuation report, with a view to helping the RA to inform its decision on the appropriate resolution action (non-exhaustive list):

- **Introduction:** purpose of the valuation, identification of the entity, valuation date.
- **Buffer for additional losses** (provisional Valuation 2; see Section 4.5): how it was calculated, assumptions and reasoning, justification, elaboration if calculated on single asset level or on aggregate level.
- Difference between **provisional and definitive Valuation 2** (Section 2.1.2): reasons, justifications, explanation.
- Clear indication of the assets, rights and liabilities that have been included in the valuation, and, where the application of a combination of tools has been envisaged, clear indication

<sup>46</sup> SRB Appeal Panel no. 41/17; SRB Appeal Panel case no. 44/2017 and 7/2018 (<https://srb.europa.eu/en/content/cases>).

of the assets, rights and liabilities that have been included in the valuation of each **resolution tool**.

- Clear indication of the positions valued in accordance with either the hold or the disposal value (Chapter 5).
- **Valuation methodology** (information might be provided for instance on portfolio level; see Chapter 5): indication of the valuation methodology/methodologies that has/have been applied, reasoning/justification, and explanation if there was one leading valuation methodology applied and another one/others has/have been applied for specific aspects and/or for consistency checks of the valuation results. Any potentially applied methodologies shall be clearly documented in the valuation report, e.g.:
  - **DCF methodology** (information might be provided for instance on portfolio level; see Sections 5.2 and 5.3): reasoning, data basis/data sources, specifics of the applied valuation model (e.g. length of the forecasting period, terminal value calculation, growth rate assumptions), assumptions for cash flows (e.g. contractual or adjusted cash flows) and discount rates (e.g. considered risk profile, disposal strategy considered), – if applicable, etc.);
  - **market value methodology** (information might be provided e.g. on portfolio level): reasoning, data basis/data sources, general assumptions (e.g. for the assumed peer group) and for example for adjustments and/or haircuts, justification, etc.;
  - **adjusted book value methodology** (information might be provided for instance on portfolio level; see Chapter 5.5): reasoning, data basis/data sources, general assumptions (e.g. if book values have been updated for valuation purposes) and for example for adjustments and/or haircuts, justification, etc.;
  - **other valuation methodologies** (information might be provided for instance on portfolio level; see Section 5.6): reasoning, data basis/data sources, assumptions, specifics of the applied valuation model, justification, etc.
- **Underlying assumption** of the valuation(s) performed, clearly supporting the assumptions being used such as credit spreads, cost of equity, etc., and the data and comparables that are being used to develop such assumptions.
- Where the **bail-in tool** is applied (Section 7.1): explanation of aggregate amount of write-down required to absorb losses and restore NAV to zero; NAV in accordance with the economic valuation; initial assessment of liabilities to be written down in accordance with insolvency hierarchy; post-conversion equity value; and treatment of shareholders and creditors.
- Where the **sale of business tool** is applied (Section 7.3): commercial terms of the transfer; equity value in the event of a ‘share deal’ or value of specific assets and liabilities in the

event of an asset deal; a disposal value concept; assumptions and explanation supporting the inclusion and the quantification of franchise value when considered in the valuation, valuation of the different categories of assets and liabilities/or equity to be transferred and, in the case of an asset deal, valuation of the legacy entity; estimation of the necessary amount of bail-in to recapitalise the perimeter/equity transferred (if appropriate).

- Where the **bridge institution tool** is applied (Section 7.4): valuation of the different categories of assets and liabilities/or equity to be transferred in the case of a share deal and of an asset deal; valuation of the legacy entity; estimation of the necessary amount of bail-in to recapitalise the perimeter/equity transferred; estimation of the necessary amount of bail-in/conversion to capitalise the new institution transferred (if appropriate).
- Where the **AMV tool** is applied (Section 7.5): explanation of the underlying assumptions for the transfer of the assets, rights and liabilities.
- Where the **franchise value** is applicable and has been applied: assumptions, including for example expectations contained in the business, and approach to its calculation, and information/data sources.
- Valuation of **operational costs, cost reductions, synergies** (to the extent already known) and similar (Sections 4.3 and 4.4): how it was calculated, assumptions and reasoning, justification.
- Specific consideration given for the valuation of **funding liabilities** (Section 5.8): explanation, reasoning, justification.
- Specific consideration given for the valuation of **contingent assets and contingent liabilities** (Section 5.9): identification approach/process, explanation of respective valuation, reasoning, justification.
- **Equity valuation of the institution** as a whole (Chapter 6): valuation methodology applied, reasoning, data basis/data sources, specifics of the valuation model applied, assumptions for cash flows and discount rates and/or for the market value methodology.
- **Best point estimates** (Section 4.3: clear indication and explanation of the assumptions, reservations and qualifications (if any), and similar considerations, that have been used and that support the determination of the best point estimate. Where, in addition to the best point estimate, a **value range** has been calculated (Section 4.3: indication of how the value range has been derived, i.e. whether the range is the result of different approaches or scenarios having been applied (leading to different point-estimate results) or due to the use of ranges (as opposed to single-point estimates) in respect of value-impacting inputs or assumptions.
  - If different approaches or scenarios have driven the value-range, the report should explain the valuer's choice of approaches/scenarios and comment on whether or

not they are considered to be equally appropriate (in respect of approaches) or equally likely (in respect of scenarios).

- In the case of ranges of a particular input or assumption leading to ranges of value within one approach and scenario, the report should explain the valuer's choice of the upper and lower boundaries of the input/assumption range and comment on whether or not any particular point within the range is deemed most appropriate or likely. Where possible, the boundaries of the range should be justified with supporting data and such data should be sourced - sources may include the subject bank's MIS, market data from publicly available data sources or macroeconomic data sources such as central banks and global financial bodies.
- Significant differences between assumptions used in the valuation and those **underlying accounting or regulatory information**, where known to the valuer (recital 13 of the Regulation on valuation before resolution), detailing the methodologies used by the institution where they were relied upon.
- In the case of **identified losses that cannot be recognised in the updated balance sheet** owing to national specificities: a specification of the amount of and reasons for the losses and the likelihood and time horizon of their occurrence (Article 10(4) of the Regulation on valuation before resolution).
- Information about **valuations of subsidiaries** that are within the scope of internal minimum requirements for own funds and eligible liabilities (MREL and about subsidiaries or separate business lines that might be divested as part of the resolution-driven restructuring of the institution.
- Subdivision of the **creditors in accordance with their priority levels** under applicable insolvency law, and an estimation of their treatment, including a hypothetical insolvency scenario and explanations about the assumptions made.
- Information about **new data and information based on new, post-resolution events**.

Related to **organisational and other aspects** applicable in the valuation, the report might include (non-exhaustive list):

- where specific **valuation standards** legally in force in the jurisdiction of reference have been applied, express indication of these standards together with the **legal basis** for their application to the valuation;
- key sources of information and data:
  - information/data provided by the institution and the supervisor; information as to whether data / which data was provided by outsourced data providers; details of data used and why changes were made;



- other data considered, e.g. market data;
  - explanation if information/data needed for performing a proper valuation is/was missing.
- where other valuers or advisors or similar were involved in the valuation, indication of their respective contributions;
- statement of compliance of the valuation with the applicable law;
- statement of independence of the valuer.

## 9. Specific aspects of Valuation 3

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### 9.1 Conceptual and procedural aspects

Under Article 74 of the BRRD, a valuation has to be carried out after the execution of the resolution in order to establish the difference in treatment of shareholders and creditors in resolution and in normal insolvency procedure ('Valuation 3'). To put it in other terms, Valuation 3 is instrumental to assess whether the **NCWO** principle has been breached.

Such valuation differs from the valuation under Article 36(8) of the BRRD, i.e. the estimate of the treatment of shareholders and creditors had the institution been subject to normal insolvency proceedings (ex-ante NCWO valuation). Unlike the latter, Valuation 3 is **performed after the execution of the resolution action** and is based on a claim (rather than a creditor class) basis. For this purpose, Valuation 3 requires the availability of particularly granular data.

It is worth noting that, pursuant to Article 2(1) of the Regulation on valuation after resolution, valuation 3 requires the establishment of an **"inventory of all identifiable and contingent assets owned by the entity"** (emphasis added). Along the same lines **"a list of all claims and contingent claims against the entity shall be made available to the valuer"** (Article 2(2)). In addition, **"encumbered assets and claims secured by those assets shall be identified separately by the valuer"**.

The Regulation on valuation after resolution sets out an important limitation on the facts and related data and information, which can be used to carry out Valuation 3. By restricting hindsight, it provides that **"the valuation shall only be based on information about facts and circumstances which existed and could reasonably have been known at the resolution decision date** which, had they been **known by the valuer, would have affected** the measurement of the assets and liabilities of the entity at that date" (emphasis added)" (Article 1(1)).

The **reference date** for Valuation 3 is the actual resolution decision date (Article 1(3) of the Regulation on valuation after resolution; for Valuations 1 and 2, see Article 3 of the Regulation on valuation before resolution). This date might differ from the actual treatment date or dates, i.e. the date when shareholders and creditors receive the treatment arising from the implementation of the resolution tools (Article 1(2) of the Regulation on valuation after resolution). When necessary to allow the comparison with the treatment in (a hypothetical) normal insolvency proceedings at the resolution decision date, the Regulation provides for discounting the treatment in resolution back at the resolution decision date.

In accordance with Article 3 of the Regulation on valuation after resolution, valuation 3 is assumed to determine:

- (a) The **treatment** that shareholders and creditors, or the relevant deposit guarantee scheme, **would have received had the entity entered into a normal insolvency proceeding**

at the resolution decision was taken. For consistency with Valuation 2 and to ensure the comparability of the outcomes of the treatment in resolution and in a hypothetical normal insolvency proceedings, the Regulation clarifies that such valuation should disregard “any provision of extraordinary public financial support”.

(b) The **actual treatment that shareholders and creditors have received** in the context of the application of the resolution action. In accordance with the Regulation, such treatment corresponds to “the value of the restructured claims following the application of the bail-in tool or other resolution powers and tools, or of other proceeds received by shareholders and creditors as at the actual treatment date or dates”. And

(c) “whether the outcome of the treatment in point (a) exceeds the outcome of the value referred to in point (b) for **each creditor** in accordance with the priority levels in normal insolvency proceedings”.

Valuation 3 is a liquidation type of valuation and for this reason it is significantly dependent on the applicable **national insolvency law and practice**, in particular to determine the priority ranking of creditors’ claims, or the expected disposal period or recovery rates or the relevant costs. Depending on further national specificities, corporate law and other domains may require specific consideration.

The BRRD does not specify whether the independent valuer performing valuation 3 could be the same as or should be different from the valuer who has carried out Valuation 2. It is therefore up to the authority appointing the independent valuer to decide.

## 9.2 Methodologies for assessing realisation from assets

### 9.2.1 General considerations

Similarly to the Regulation on valuation before resolution, the Regulation on valuation after resolution lays down criteria consistent with various methodologies, even though significant relevance is assigned to the DCF methodology. Valuation 3 (which is a liquidation valuation) is assumed to be a valuation of single assets/liabilities (granular valuation) (see Chapter 5 on granular Valuation 2).

Valuation methodologies, however, have to adjust to the liquidation scenario of Valuation 3. This entails for instance the **absence of future business prospects**, also having regard to the withdrawal of the authorisation, and the articulation of assumptions about **administrative costs** relating to the entity in liquidation which differ/are not present in a going concern institution. Administrative costs include for instance:

- **costs for running down the business itself**, e.g. for closing down branches;

- **costs related to the insolvency proceedings**, e.g. reasonably foreseeable administration, transaction, maintenance, disposal and other costs, as described in Article 4(3)(b) of the Regulation on valuation after resolution;
- a **generally different cost base of the entity** that is wound- up, compared to the costs base of an institution that is conducting business in a going concern scenario (for the latter incl. recurring business, and as such including for example marketing and sales expenses for a fully operative institution); for instance, in case of a gone-concern entity, variable personnel expenditures might decrease over time, whereas other parts of personnel costs might rather be sticky (overhead costs).

### 9.2.2 DCF methodology

Factors that are commonly considered risks — either in the expected cash flows or in the discount rate — may require special attention when conducting valuation<sup>3</sup>. Such risks include for instance credit or liquidity risk (see in the text covering Valuation 2 in Sections 5.2 and 5.3 as well as the Annex) and the **risk of realising the asset value during insolvency proceedings**. The latter considers that an insolvency procedure is likely to impair the position of the seller of the assets, given that buyers are presumably aware of the fact that the seller is under sale pressure.

Similarly to other kinds of risks, this factor may be reflected either in the expected cash flows (for instance by applying adjustments to the forecasted disposal prices of assets) or in an adjustment to the discount rate (for instance by applying an add-on to the discount rate, which reflects the weaker position of the seller). The risk, however, also depends on the asset itself, as for instance highly attractive repossessed CRE assets may be easily sellable, whereas other kinds of assets (e.g. repossessed cars of an unattractive brand) may be difficult to dispose.

**Applicable insolvency law and practice** would need to be reflected when deriving expected cash flows and/or discount rates (Article 4(3(a)) of the Regulation on Valuation after resolution). Article 4(2) of the Regulation on valuation after resolution also stresses that, where applicable insolvency law or practice requires the application of “particular rates”, this has to be considered accordingly in Valuation 3.

### 9.2.3 Market value methodology

Articles 4(4) and 4(5)(a) to (c) of the Regulation on valuation after resolution point to the market value methodology for assets, or similar assets, traded on **active markets**<sup>47</sup>. Article 4(4) of that Regulation also stresses, for instance, that the **marketability** of the entity’s asset(s) needs to be considered when applying observed prices (further considerations applicable to the market value methodology are covered in the Annex).

<sup>47</sup> The Regulation does not provide any further explanation or reference to “active markets”, but one might for example refer to IFRS 13, as endorsed by the EU, according to which an active market is defined as “a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis”.

### 9.2.4 Other valuation methodologies

Depending on the circumstances, the adjusted book-value based methodology as well as other valuation methodologies (e.g. option pricing model) might also be considered appropriate for Valuation 3 purposes. Valuation methodologies are described in more detail in Sections 5.5 and 5.6 (under Valuation 2) as well as in the Annex. Specific considerations in the application of these methodologies in Valuation 3 might be needed, for instance for the derivation of adjustments when applying the book value based methodology.

## 9.3 Specific considerations for certain assets/liabilities

Certain types of assets/liabilities might require significantly different – also when compared to Valuation 2 – valuation approaches under insolvency proceedings, which might for instance go beyond an adjustment to parameters. Some examples of such asset/liability types include the following (non-exhaustive list):

- **Goodwill:** as goodwill relates to the entity's ability to generate future returns, it might be generally assumed to have no value in Valuation 3 due to the withdrawal of the banking licence. However, if for instance goodwill is related to the holding in a subsidiary, which might be considered to be for sale as part of the insolvency procedure, such goodwill might still be of value.
- **Deferred Tax Assets (DTAs)/Deferred Tax Credits (DTCs):** not least depending on the national legal and tax frameworks, valuation 3 might require adjustments related to DTAs/DTCs. For instance, an entity in resolution may have accumulated DTAs as a result of past losses, which may have a significant value to potential buyers in a going concern scenario (e.g. following the application of a resolution tool). However, they might have zero value under a gone-concern scenario, as the entity is assumed to fail the profitability test owing to its insolvency. In some jurisdictions, some qualified DTAs might keep their value also in insolvency; these are sometimes referred to as DTCs.
- **Franchise value:** whereas franchise value might be applicable on a going concern basis, it could rather be assumed to be zero on gone-concern basis.

## 9.4 Determination of recoveries to creditors

Insolvency applies on an entity-by-entity basis. When the resolution entity of a resolution group is put in resolution, the issue is whether Valuation 3 should be conducted only for the entity that has been put into resolution or also for the subsidiaries belonging to the resolution group of the resolution entity that would have been expected to be placed into insolvency had the resolution entity been subject to normal insolvency procedure. Where a subsidiary has external creditors or shareholders, it is possible that these claimants would bear some of the insolvency losses that may otherwise be borne by resolution entity creditors if the subsidiary is recapitalised in resolution. This

in turn could affect the net recoveries to those with claims of the entity in resolution, and could be relevant to a NCWO assessment.

The assessment of outcomes under an insolvency counterfactual may also need to take into account the following:

- **Intragroup claims:** in insolvency, intra-group liabilities and equity holdings as well as intragroup guarantees would affect the flow of net recoveries throughout the group and, ultimately, to the entity subject to resolution. They may therefore be relevant to an NCWO assessment. In practice, an iterative approach may need to be applied to assess how recoveries on intra-group claims would in turn affect the recoveries on other claims throughout the group.
- **Netting, set-off and collateral arrangements:** these could include contractual arrangements as well as any statutory arrangements that may exist in certain jurisdictions. They could also include other cases where assets are encumbered in respect of an institution's secured liabilities. These arrangements may need to be accounted for before any net realisations could be distributed to unsecured creditors. In accounting for these arrangements, assumptions may need to be made about the expected behaviour of counterparties in insolvency, such as in relation to early termination rights.

## 9.5 Potential content of the valuation report

The Valuation report would presumably be written in such a way that an experienced reader with access to the information provided by the institution would be able to understand how the valuation was carried out. In addition to the minimum elements set out in the Regulation on valuation after resolution (in particular in Article 6), the following information relating to specific aspects of that valuation might be included in the report (non-exhaustive list):

- indication of the difference in treatment (if any) of shareholders and creditors in resolution and in the hypothetical normal insolvency proceeding;
- the ideas presented in Section 9.5 on topics/issues that might be covered by the report on Valuation 2 and might apply accordingly for Valuation 3, depending on their relevance in Valuation 3 (this might for instance include information about the valuation methodology and key assumptions applied, etc., as well as organisational and other aspects of the valuation carried out);
- description of the assumed insolvency strategy or strategies and how this was arrived at (for instance through discussions with an insolvency practitioner);
- description of how the specificities of national insolvency law and other legal requirements have been considered, and justification of any discretion applied, including estimation of the time needed to conclude the insolvency process, calculation(s) of any recovery costs

under the insolvency scenario, illiquidity adjustment, costs from the insolvency process, treatment of set-off, netting, claw-back actions, etc.;

- description of the (key) differences in methodologies, assumptions, etc., between Valuation 2 and Valuation 3; in particular, assumptions and methodological choices taken that apply to all or some assets and liabilities and are specific to the insolvency scenario and are not considered to be applicable on a going concern basis, including for Valuation 2;
- in particular when the DCF methodology is applied: explanation of potential adjustments to the expected cash flows under a going concern scenario (or, if applicable, any deviation from such scenario);
- in case the adjusted book value based methodology is used: explanation of the basis and assumptions regarding the estimation of adjustment to the accounting value of assets and liabilities under the insolvency scenario, including adjustments for illiquid markets and/or assets;
- description and explanation of the basis and assumptions applied for the estimation of costs associated to the insolvency proceeding(s);
- additional information on the hypothetical contribution of the national deposit guarantee scheme (DGS) in a liquidation scenario.

## 10. Management Information Systems (MIS)<sup>48</sup>

### Textbox: Management Information System ('MIS')

A robust valuation contributes to the effectiveness of resolution actions, including the legitimacy and soundness of the decision, and the achievement of the resolution objectives. To be robust, a valuation must rely on the **timely provision of high quality data and information to the valuer**. To ensure this, there is the need to enhance institutions' preparedness in the course of the resolution planning phase. As part of the resolvability assessment, the BRRD requires RAs to assess the institution's MIS. Relevant legal bases are points (9) and (10) of Section C of the Annex to the BRRD<sup>49</sup>. The section on resolvability assessment of the Commission Delegated Regulation 2016/1075 further develops such requirements<sup>50</sup>. With specific regard to valuation for purposes of resolution, the MIS is expected to provide high quality data and information that are necessary to conduct the valuations before resolution or to implement insolvency decisions ('valuation MIS').

Article 4 of the Regulation on valuation before resolution sets out a **non-exhaustive list** of sources of information to perform the valuation in addition to the entity's financial statements, related audit reports and regulatory reporting as of a period ending as close as possible to the valuation date<sup>51</sup>. It is worth underlining that in any case the valuation will be based on "any information pertinent to the valuation date which is deemed relevant by the valuer". This entails that the **valuer remains free to assess what information is relevant and what may be disregarded, whether it is complete or it needs to be integrated**.

The Regulation on valuation before resolution expressly envisages the possibility for the valuation to rely on the data and information provided by the institution's internal valuation models, by providing for the possibility for the valuer "to determine the most appropriate valuation methodologies that may rely on internal valuation capabilities" where they are deemed appropriate (Article 7(2)). Overall, the Regulation indicates that the "internal capabilities and

<sup>48</sup> This MIS Chapter is still under development and will be completed at a later stage.

<sup>49</sup> "When assessing the resolvability of an institution or group, the RA shall consider the following [...]: (9) the "capacity of the management information systems to provide the information essential for the effective resolution of the institution at all times even under rapidly changing conditions" and (10) "the extent to which the institution has tested its management information systems under stress scenarios as defined by the resolution authority".

<sup>50</sup> Article 22(3)(a) requires that a resolution plan contain at least "a description of the information, and processes for ensuring availability in an appropriate timescale of that information required for the purposes of valuation, in particular pursuant to Articles 36 and 49 of Directive 2014/59/EU [...]". Article 29(3) of the same Regulation provides that in assessing the existence of potential impediments to resolution the RA shall consider "the capability of the institution or group to provide information to carry out a valuation to determine the amount of write-down or recapitalisation required".

<sup>51</sup> Article 4 of the Regulation on valuation before resolution clarifies that, in addition to the entity's financial statements, related audit reports and regulatory reporting as of a period ending as close as possible to the valuation date, relevant information may include those listed in that provision.



systems to support resolution valuations should be assessed by the resolution authority as part of the resolvability assessment<sup>52</sup>, hence the need to enhance the preparedness of the institution in good time.

Given the high positive correlation between an accurate valuation and the effectiveness of the resolution action(s), including safeguarding of public money, the valuation MIS should identify the **data and information needs** that in principle ensure the performance of a definitive Valuation 1 and 2 (including the ex-ante estimate of NCWO valuation for purposes of Valuation 2). Although the valuation MIS should primarily focus on the data and information needs to support the valuation implementing the preferred **resolution strategy**, it should consider the full range of possible resolution actions, given that the RA should be ready to apply all resolutions tools and to deviate from the resolution plan if circumstances so require. This entails that institutions will have to develop capabilities to provide to the RA/valuer accurate granular data for the relevant asset classes.

The RAs' approach towards institutions' resolution valuation MIS should be in line with the legal framework outlined above, uniform across the EU and proportionate to the goal pursued. Along these lines, elements for consideration are the use of data produced by internal capabilities, so that the **imposition of additional/specific data or information requirements should only be envisaged to the extent necessary to perform a robust valuation**<sup>53</sup>. To ensure a harmonised and proportionate approach throughout the EU, a common data dictionary for benchmarking purposes could be developed, without introducing regular reporting requirements.

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<sup>52</sup> Recital (3) of the Regulation on valuation before resolution.

<sup>53</sup> Recital (3) of the Regulation on valuation before resolution indicates that "the valuer should have access to any sources of relevant information and expertise, such as the internal records, systems, and models of the institution. The ability of internal capabilities and systems to support resolution valuations should be assessed by the resolution authority as part of the resolvability assessment pursuant to Article 15 of Directive 2014/59/EU". See also Article 7(2), which reads "The valuer shall determine the most appropriate valuation methodologies which may rely on the entity's internal models where the valuer deems it appropriate taking into account the nature of the entity's risk management framework and the quality of data and information available".

# Annex

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## Overview of valuation approaches

### General considerations

The valuation approaches and methodologies described in this Handbook aim to establish an economic value of assets and liabilities or of the entire entity or selected businesses, as appropriate, as required by the Regulation on valuation before resolution. The following overview draws on the **International Valuation Standards 2017**, as published by the International Valuation Standard Council in 2017. Despite not being focused on bank valuation, the IVS represent an authoritative source for valuation methodologies in accordance with general practice. The IVS are a non-binding although authoritative source of best market practices. Where country-specific valuation requirements legally in force in certain Member States are applicable to the valuation performed for purposes of resolution, the valuation should ensure that prevalence is given to the EU resolution valuation framework, and that such national valuation requirements are applied to the extent consistent with such framework.

This brief account does not purport to provide a comprehensive explanation of the methodologies referred to. It is only a general synopsis for information. Furthermore, it is without prejudice to other methodologies that may be deemed appropriate by the valuer and that are consistent with the EU framework.

The International Valuation Standards Council (IVSC) differentiates between the **market, income and cost approaches** as the key valuation approaches (IVS 105.10)<sup>54</sup>. These approaches can then be further differentiated into different **methods**, which are commonly applied by valuers in their valuation<sup>55</sup>. The IVSC clarifies that it is part of a valuer's tasks in a valuation to choose the appropriate approach(es) and method(s) when performing a valuation. Examples of methods the IVSC refers to are the following:

- Income approach, including for example the **discounted cash flow (DCF) methodology** (IVS 105.50).
- Market approach, including for example the **comparable transactions methodology** (using transactions of the same or similar assets or entities (IVS 105.30).
- Cost approach, including for example the **replacement and reproduction methodology** (IVS 105.70).

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<sup>54</sup> The IVS references are those to the 2017 edition of the IVS.

<sup>55</sup> Whereas the IVS refer to valuation approaches and methods, the Regulation on valuation before resolution normally makes reference to valuation methodologies. For purposes of this Handbook, it is assumed that methods and methodologies can be considered similar.

Chapter 4 further elaborates on these methods as they are commonly applied by valuers. As a general remark, it should be noted that the valuation and thus the methods can be applied on the level of **single assets or liabilities, or on portfolio or groups of assets or combined assets and liabilities, or businesses, or the entity considered as a whole**, depending on the circumstances (Article 2(4) of the Regulation on valuation before resolution).

The **DCF methodology** aims to provide the ‘intrinsic’ present value of the valued asset, or group of assets, or combined assets and liabilities, or businesses or the entity considered as a whole, and in optimal scenarios — notably completeness of information, correctness of assumptions and availability of the required time to develop the analysis — might generally be considered to yield the most accurate results.

The **market approach** aims to determine a relative value, derived from the comparison of the same or of similar transactions in assets/entities or trades of (similar) assets/entities, rather than the intrinsic value that can be derived from the cash flow approach.

Similarly to the market approach, the **adjusted book value methodology** aims to deliver a relative value, but based on accounting values, adjusted with the inclusion or exclusion of haircuts or other adjustments.

In addition to these approaches and methods, the IVS also cover the liquidation value, which is defined as the “amount that would be realised when an asset or group of assets are sold on a piecemeal basis” (IVS 104.80).

## DCF methodology

### a. General considerations

Under the DCF methodology, expected cash flows are discounted as of the valuation date; in other words, this requires that the key parameters for the methodology are the expected cash flows and the discount factor(s). The expected **cash flows and the applied discount rate should be consistent** to avoid double counting (for example, if funding costs are computed in the cash flows they should not be included in the discount rate). Depending on the lifetime of the asset or the entity and the time horizon for which cash flows are forecasted, the DCF method could include a **terminal value** (IVS 105.50). Broadly speaking, the terminal value reflects the value of the asset/entity at the end of the period for which expected cash flows are forecasted for instance in a detailed valuation model, i.e. a terminal value is only applicable in case the valued object has a lifetime which goes beyond the period for which detailed expected cash flows are forecasted.

### b. Cash flows

IVS 105.50 describes the key steps to be taken when forecasting cash flows. Without being exhaustive, these include:

- The choice of the “most appropriate **type of cash flow**”: it is for the valuer to decide whether to consider the whole (which is usual) or the partial cash flows to an asset/entity, as well as other factors such as the currency of the cash flows and if they are estimated pre or post tax.
- The definition of the period over which the cash flows are forecasted: the **forecasting period** depends for instance on the life (e.g. remaining lifetime) of the asset or entity, reasonability considerations (the period for which cash flows can reasonably be forecasted) and cyclical aspects (the entire cycle should be included in the expected cash flows).
- The preparation of the expected cash flows: in this respect, consideration should be given to the “**prospective financial information (PFI)**”, which should reflect the reason for the valuation (for instance a valuation related to a particular measurement basis/resolution tool), the amount and timing of the cash flows, the business forecasts on for example a weekly, monthly or annual basis, etc.
- A **terminal value** should be determined where an asset’s / entity’s lifetime ends “beyond the explicit forecast period”: such terminal value should reflect if the asset/entity has a **finite or infinite life** and at what rate the cash flows are assumed to grow in the terminal value (so-called Gordon growth model).
- Where the **exit from the valued asset or entity** is assumed, the “exit value” may be determined by the application of the market value methodology<sup>56</sup>. In such cases, the “market conditions” at the time of exit (e.g. the sale of a foreclosed share in a company) should be taken into account. Whereas the “exit value” might be positive in many cases, it might also appear to be negative in rather particular cases (e.g. for closing down a business that is not viable and that was repossessed during foreclosure measures, or repossessed land with possible pollution in the ground).

### c. Discount rate

The discount rate should take into account several factors, including **asset/entity specifics**, **geographical location** of an asset/entity, an asset’s /entity’s **lifetime** and similar aspects (IVS 105.50). **Factors** that are already **reflected in the cash flow forecasts** should **not** be incorporated in **discount rates** to avoid double counting. The discount rate should also be **consistent with the forecasted cash flows**, e.g. in respect of the currency in which the cash flows are applied (IVS 105.50). In a dividend discount model, for instance, the **cost of equity** might be the basis for the discount rate (e.g. applying the capital asset pricing model, CAPM).

## Market value methodology

<sup>56</sup> The “exit value” is a valuation concept and not the same as disposal value in the meaning of the Regulation on valuation for resolution.

The market value method is commonly based on the comparison of the asset/entity to be valued with **comparable transactions of the same or similar assets/entities** for which price information is available (IVS 105.30). Following a “comparative analysis of **qualitative and quantitative similarities** and differences between the comparable assets and the [...] asset [to be valued]’ (emphasis added)”, adjustments to the identified price information might be applied (IVS 105.20). **Adjustments** might depend on parameters including the following (IVS 105.30):

- The asset/entity itself: for instance, a so-called trading or transaction **multiple**<sup>57</sup> might be applied depending on whether the asset/entity to be valued using the comparable price information is the same asset/entity or a similar one. Comparable price information is for instance that observed on a liquid market for the same asset/entity or in a transaction (for instance mergers and acquisitions, transactions in similar loan portfolios or transactions in similar real estate assets). As a general remark, **trading multiples** are commonly based on market prices, and as such reflect prices on liquid markets, whereas **transaction multiples** are commonly based on acquisition prices applied in transactions. In business valuations, for instance, such multiples can be calculated on the basis of an entity’s observed market or transaction price as the multiple of its earnings before interest, tax, depreciation and amortisation (EBITDA), earnings, revenues or book value<sup>58</sup>. IVS 105.30 further elaborates on considerations to be given to the application of the two different kinds of multiples.
- The size of the investment: this parameter includes “control characteristics” such as, when the investment in a significant share in a company is valued, a **discount or a premium to the assumed share price**, depending on the circumstances;
- The terms of the valuation: this parameter may include the application of “Discounts for Lack of Marketability (DLOM)” or of discounts to the observed price for a sale under distressed conditions (including accelerated sales).

#### Textbox — market value in the CRR

Regulation (EU) No 575/2013 on Capital requirements (CRR) includes a definition of market value for immovable property (Article 4(76)) according to which it is “the estimated amount for which the property should exchange on the date of valuation between a willing buyer and a willing seller in an arm’s-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without being under compulsion”.

<sup>57</sup> A multiple could for instance reflect an entity’s value as a multiple of its revenue or the equity value — as observed as for example share price on a liquid market — as a multiple of the entity’s net book value (i.e. based on accounting data).

<sup>58</sup> An EBITDA-based multiple might not be applicable for the valuation of institutions. However, as this Handbook also covers for instance the valuation of an institution’s (equity) investment, which might include a wide range of different industries, it is neutral in respect of the industry of the valued asset/entity.

## Adjusted book value based methodology

### (Amortised) cost as basis for the book value

When considering the book value method — i.e. using an accounting book value as basis for the valuation — one has first to assess if the respective asset is recognised and measured at (amortised) cost or at fair value<sup>59</sup>. In the case of a **recognition and measurement at (amortised) costs**, the method might be considered as a method under **the cost approach** as described by the IVS and might be applied for instance if an **asset is not income generating** and owing to the **unique nature** of the asset the income or market approaches are not feasible<sup>60</sup>.

Two key methods under the cost approach are based either on the **replacement costs** (i.e. the costs for a similar asset) or the **reproduction costs** (i.e. the costs to create a replica of an asset). Depreciation is commonly considered in the form of **physical, functional and economic obsolescence** (IVS 105.60).

### Fair value as basis for the book value

In cases of a **recognition and measurement at fair value** (here, fair value according to the applicable accounting standard), the way the fair value is derived comes further into focus. The fair value might be derived for example based on **prices quoted on liquid markets**, or applying a **valuation model** etc. In such cases, the valuation approach might be the **market approach** or the **income approach** (in case for example a DCF model is applied for the valuation), and considerations on the methods under these two approaches might apply accordingly. The fair value might also be based on **other valuation methods, e.g. option pricing methods**.

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<sup>59</sup> The two methods of recognition and measurement described are the most important ones. However, there might be further ways, e.g. the equity method.

<sup>60</sup> From an institution's point of view, this might for instance be a foreclosed, unique machine that had been used as collateral in the financing of a small or medium-sized entity ('SME').



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