

# FRAMEWORK FOR VALUATION

## FEBRUARY 2019



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FEBRUARY 2019**

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# ABBREVIATIONS

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<b>BRRD</b>	Bank Recovery and Resolution Directive
<b>CAPM</b>	Capital asset pricing model
<b>CDR</b>	Commission Delegated Regulation
<b>CRR</b>	Capital Requirements Regulation
<b>DCF</b>	Discounted cash flow
<b>DGS</b>	Deposit guarantee scheme
<b>DTA</b>	Deferred tax asset
<b>DTC</b>	Deferred tax credit
<b>EBA</b>	European Banking Authority
<b>EU</b>	European Union
<b>FINREP</b>	Financial reporting framework
<b>IFRS</b>	International Financial Reporting Standards
<b>ITS</b>	Implementing Technical Standards
<b>LGD</b>	Loss given default
<b>NCWO</b>	No creditor worse off
<b>NPE</b>	Non-performing exposure
<b>NPL</b>	Non-performing loan
<b>SRMR</b>	Single Resolution Mechanism Regulation
<b>SRB</b>	Single Resolution Board
<b>WDCC</b>	Write-down and conversion of relevant capital instruments

# 1. GOAL, SCOPE AND STRUCTURE OF THIS FRAMEWORK

## 1.1. GOAL AND SCOPE OF THE DOCUMENT

Directive 2014/59/EU (the Bank Recovery and Resolution Directive (BRRD)) <sup>(1)</sup> and Regulation (EU) No 806/2014 (the Single Resolution Mechanism Regulation (SRMR)) <sup>(2)</sup> provide the framework governing the powers of resolution authorities to intervene and resolve failing or likely to fail banks. To support and inform the decisions of the resolution authorities regarding resolution actions, the framework relies on valuations for a number of purposes, inter alia: (i) informing the determination of whether or not the conditions for resolution or the write-down or conversion of capital instruments are met (Valuation 1); (ii) where the resolution authorities determine that an entity meets the conditions for resolution, informing the decision about the implementation of resolution tools (Valuation 2); and (iii) determining if shareholders and creditors of an institution would have received better treatment if the entity under resolution had entered into normal insolvency proceedings (Valuation 3).

The objective of this framework for valuation is to provide the general public and future potential valuers with an indication of the expectations of the SRB (Single Resolution Board) regarding the principles and methodologies for Valuation 2 — either provisional or definitive, as the case may require — and Valuation 3, as well as the main elements of such valuation reports, thus reducing the level of uncertainty for both the independent valuer and the SRB and increasing the comparability of valuations across future resolution cases. This framework, based on Level 1 and Level 2 legal texts, has been drafted taking into account the main valuation methodologies generally applied by independent valuers that are considered best practices. It considers the methodological options in relation to the use of a specific resolution tool, always taking as a starting point the definitions of ‘hold value’ and ‘disposal value’ and the methodological approaches set out in CDR 2018/345 <sup>(3)</sup>. It also takes into account the principles established in CDR 2018/344 <sup>(4)</sup>.

<sup>(1)</sup> Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012, of the European Parliament and of the Council, OJ L 173, 12.6.2014, p. 190.

<sup>(2)</sup> Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund and amending Regulation (EU) No 1093/2010, OJ L 225, 30.7.2014, p. 1.

<sup>(3)</sup> Commission Delegated Regulation (EU) 2018/345 of 14 November 2017 supplementing Directive 2014/59/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying the criteria relating to the methodology for assessing the value of assets and liabilities of institutions or entities, OJ L 67, 9.3.2018, p. 8.

<sup>(4)</sup> Commission Delegated Regulation (EU) 2018/344 of 14 November 2017 supplementing Directive 2014/59/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying the criteria relating to the methodologies for valuation of difference in treatment in resolution, OJ L 67, 9.3.2018, p. 3.

The SRB does not intend this guidance to replace or supersede any applicable regulatory or accounting requirement or guidance from existing European Union (EU) regulations or directives and their national transpositions or equivalent. The information included herein can under no circumstances be regarded as professional or legal advice.

When providing its expert advice, and especially when the abovementioned expectations as set out in this framework are not met, the independent valuer will be expected to clearly explain and justify the assumptions and the methodologies adopted in the valuation report, as also required by the Commission Delegated Regulations (CDRs) (hereafter 'CDR 2018/344' or 'CDR 2018/345'). **In this respect, the framework does not restrict the independence of the valuer and the exercise of professional judgement in the course of the valuation performed in a specific resolution case.** The information included in this document is of a general nature only and is not intended to address the specific circumstances of any particular institution or resolution case. In drafting this document, the SRB has sought the right balance in illustrating a set of principles and methodologies while acknowledging the flexibility required to address complex situations, such as when valuers have to work under time pressure or under constraints related to the quality of available information, to the size of the institution or to the complexity of the business model.

Finally, the SRB considers this document useful for the banks under its remit. The ability of banks' management information systems to provide accurate and timely information in the context of resolution preparedness is crucial for the reliability and robustness of valuations. The availability of data in an accessible format and the reliability of the data are fundamental prerequisites for the performance of valuation work. Even though the SRB does not intend this document to develop or define a framework for information requirements, it does expect it to provide an indication of the information that the valuer may need to conduct valuations.

## 1.2. STRUCTURE OF THE DOCUMENT

This document contains a general overview of common valuation methodologies as well as specific issues for an independent valuer to take into consideration.

Chapter 2 introduces the main types of valuation methodologies. The most commonly used valuation methodologies are described in some detail in Section 2.4: the discounted cash flow (DCF) method (Section 2.4.1), the market multiples method (Section 2.4.2) and the adjusted book value method (Section 2.4.3). The discounted cash flow method is described in most detail, as it is generally accepted as the method of economic valuation that incorporates most of the parameters that affect the expected cash flows and discount rates applicable to an entity's assets and liabilities.

Chapter 3 presents specific considerations regarding individual resolution tools and how the valuation approach needs to be adapted. One section is dedicated to each resolution tool, namely bail-in (Section 3.3), bridge institution (Section 3.4), asset separation (Section 3.5) and sale of business (Section 3.6).

In certain circumstances, it may not be possible to perform a definitive valuation before the resolution action is taken, in which case the valuer or the SRB will conduct a provisional valuation instead. Chapter 4 of this framework addresses the specific considerations to be taken into account in this scenario.

Following the implementation of the resolution action, the independent valuer must perform a counterfactual valuation assuming that the institution is wound up under normal insolvency proceedings. This is done to ensure that the 'no creditor worse off' principle is adhered to in any resolution scenario. Methodological considerations relating to this valuation exercise are set out in Chapter 5.

Chapter 6 comprises two annexes. Annex I presents explanatory tables relating to Chapter 2 (valuation methodology). These tables show potential options often observed in different valuations, common observations for projection of cash flows and terminal value, potential options for discount rate setting under the DCF method, sources of multiple options for the market multiples method and alternative approaches to the adjusted book value method. Annex II sets out other general considerations regarding the treatment of specific assets and liabilities.



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## 2. VALUATION METHODOLOGIES

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### 2.1. INTRODUCTION

This chapter puts forward considerations relating to the most commonly observed valuation methodologies and illustrates some of the choices that the valuer has to make.

Selecting a valuation approach involves inherent trade-offs that the independent valuer must evaluate given the circumstances. Depending on the time and data available, the valuer may choose to perform a bottom-up valuation exercise to maximise accuracy or a less granular valuation using conservative assumptions based on professional judgement. In addition, the valuer may find it necessary to examine some assets or liabilities in more detail than others. This may be the case, for example, when the level of uncertainty around the assets' or liabilities' value is higher or because their impact on the resolution decision is considered critical. The decisions taken regarding these trade-offs must be explained and justified in the valuation report.

Furthermore, the assumptions underlying a valuation must reflect the resolution strategy and resolution tool or combination thereof in the given circumstances. A key underlying assumption is the achievement of the resolution objectives, including, *inter alia*, the maintenance of all critical economic functions and financial stability throughout the resolution process in every scenario. Current market circumstances should be taken into account when they influence the value of the item being valued, for example if the resolution scenario involves a sale of business or assets in the near future. For a longer holding period, developments in the business environment including, *inter alia*, liquidity, credit conditions and macroeconomic factors should be taken into account. The assumptions made must be consistent with the resolution strategy and resolution tools; for example, a valuation of a bridge institution should assume that critical functions continue to be maintained, as this is one of the primary objectives of the resolution action.

### 2.2. KEY CHARACTERISTICS OF VALUATIONS 2 AND 3

Valuation 2 informs the decision <sup>(f)</sup> on the appropriate resolution action to be taken and, depending on that action, the decisions on the extent of the cancellation, transfer or dilution of shares, the extent of the write-down or conversion of relevant capital instruments and eligible liabilities, the assets, rights, liabilities or shares to be transferred, and the value of any consideration to be paid. Valuation 2 should include an estimate of the treatment that each class of shareholders and creditors would have been expected to receive if an entity were wound up under normal insolvency proceedings <sup>(g)</sup>.

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<sup>(f)</sup> Article 20(5)(g) of the SRMR.

<sup>(g)</sup> Article 20(9) of the SRMR.

Valuation 2 involves an assessment of the value of the assets and liabilities of the institution in resolution under the criteria set out in CDR 2018/345.

Valuation 3 is carried out to determine whether or not shareholders and creditors are worse off under resolution than they would have been under normal insolvency proceedings, in accordance with Article 20(16) to (18) of the SRMR and CDR 2018/344. It is based on the assumption of counterfactual normal insolvency proceedings in the relevant jurisdiction(s) and is an ex post valuation, that is, conducted after the resolution actions have been effected. It will be performed on a 'gone-concern' basis. These normal insolvency proceedings will probably involve significant costs, including discounts on asset values and legal and administrative costs, that need to be covered by the insolvency proceeds. The costs of and time frame for normal insolvency proceedings may vary materially depending on the applicable insolvency regulation.

**Table 1 summarises the key characteristics of Valuation 2 and Valuation 3, based on information from <sup>7</sup>CDR 2018/344 and CDR 2018/345.**

	Valuation 2: resolution valuation	Valuation 3: insolvency valuation
<b>Purpose</b>	'Inform the choice [of] 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' <sup>(7)</sup>	'Determine whether an entity's shareholders and/or creditors would have received better treatment if the entity had entered into normal insolvency proceedings' <sup>(8)</sup>
<b>Timing</b>	<i>Ex ante</i> <sup>(9)</sup>	<i>Ex post</i>
<b>Basis</b>	<ul style="list-style-type: none"> <li>▶ Economic value that fully recognises all losses and is fair, prudent and realistic</li> <li>▶ The measurement basis (the hold or disposal value) is made as appropriate for the resolution tools considered</li> <li>▶ Based on expected bank structure after the resolution, reflecting impact of chosen resolution tools</li> </ul>	<ul style="list-style-type: none"> <li>▶ Gone-concern basis</li> <li>▶ Based on counterfactual normal insolvency proceedings</li> </ul>
<b>Valuation date</b>	▶ As close as possible before the expected date of the decision by the resolution authority <sup>(10)</sup>	▶ Resolution decision date
<b>Approach</b>	<ul style="list-style-type: none"> <li>▶ Valuation should leverage assumptions around future business projections that are in line with the resolution tool employed and the entity's post-resolution business/restructuring plan</li> <li>▶ DCF, market prices for same or similar assets, information from comparable transactions and expert judgement can be used in the valuation exercise</li> <li>▶ Valuation should reflect the effects of the resolution tool or powers employed: <ul style="list-style-type: none"> <li>▶ sale of business tool</li> <li>▶ bridge institution tool</li> <li>▶ asset separation tool</li> <li>▶ bail-in tool</li> <li>▶ WDCCI <sup>(11)</sup> power</li> </ul> </li> </ul>	<p>Two separate calculations are performed to compare the treatment of creditors and shareholders under the actual resolution scenario versus under the counterfactual scenario of normal insolvency proceedings:</p> <p>(1) normal insolvency proceedings</p> <ul style="list-style-type: none"> <li>- discounted expected cash flows reflecting: <ul style="list-style-type: none"> <li>◦ insolvency law/practice in the jurisdiction</li> <li>◦ costs associated with the insolvency process</li> <li>◦ similar cases from recent past</li> </ul> </li> </ul> <p>(2) actual treatment of creditors and shareholders in resolution:</p> <ul style="list-style-type: none"> <li>- if equity compensation is provided, overall value of equity transferred or issued should be estimated</li> <li>- if debt compensation is provided, change in contractual cash flows of the debt security should, inter alia, be considered</li> <li>- for both types of compensation, observed market prices for the same or highly similar instruments may be taken into account in addition to the factors described above</li> </ul>

<sup>(7)</sup> Final draft EBA RTS 2017/05 and RTS 2017/06 on valuation before and after resolution, page 3.

<sup>(8)</sup> Ibid.

<sup>(9)</sup> Although such a valuation may in certain cases be followed by an ex post valuation. See Article 20(11) of the SRMR.

<sup>(10)</sup> For more information on the relevant date for the performance of the valuation, see Article 3 of CDR 2018/345.

<sup>(11)</sup> Write-down and conversion of relevant capital instruments.

## 2.3. DETERMINING THE VALUATION OBJECTIVE

Valuation 2 is performed by the independent valuer to support the choice of resolution action. Broadly put, the valuation objective associated with the respective resolution tool is as follows:

- ▶ Bail-in <sup>(12)</sup>: valuation of assets and liabilities to determine the amount of eligible liabilities to be written down and converted and, in the case of conversion of eligible liabilities to equity, calculation of post-conversion equity value of new shares to inform the determination of conversion ratios (for each class of equity and liability) by the resolution authority.
- ▶ Sale of business, depending on perimeter to be sold:
  - sale of entire business/institution — value of equity;
  - sale of a portfolio of assets — value of assets/liabilities (net income of sale);
  - to inform the decision on the perimeter to be transferred and the SRB's understanding of what constitutes commercial terms.
- ▶ Bridge institution: where applicable, the value of assets and liabilities or equity to be transferred to the bridge institution, to inform the decision on the perimeter to be transferred and the decision on the value of any consideration to be paid.
- ▶ Asset separation: value of assets/liabilities to be transferred to the asset management company, to inform the decision on the perimeter to be transferred and the decision on the value of any consideration to be paid.

In addition to the above, the valuation also aims to ensure that any losses on the assets of the institution are fully recognised at the moment that the resolution tools are applied or the power to write down or convert relevant capital instruments is exercised.

It may not be clear which resolution tool(s) will be applied ex ante. In many cases, two or more resolution tools may be applied simultaneously or sequentially. In the case of the asset separation tool, it must always be applied in combination with another resolution tool. This means that the independent valuer should undertake a range of valuations under various resolution scenarios defined by resolution authorities. The resolution authority may identify some options as not being relevant for the specific case for technical or operational reasons. In these circumstances, it is not deemed necessary to conduct a valuation of irrelevant options. For relevant options, however, the choice of valuation method(s) and measurement basis must have a clear incentive and be carefully explained. With regard to the relevant resolution options, the outcome for different classes of shareholders and creditors should be compared with the estimated treatment that each class of shareholders and creditors would have been expected to receive under normal insolvency proceedings, to support the application of the no creditor worse off principle (NCWO) (see Section 5.1).

## 2.4. MAIN VALUATION METHODOLOGIES

When performing an economic valuation, the valuation methodologies most commonly used by independent valuers are:

<sup>(12)</sup> For the purposes of this framework and unless stated otherwise, 'bail-in' should be read as encompassing both the exercise of the WDCCI power and the bail-in tool. Accordingly, when the framework refers to 'resolution tools', this includes the WDCCI power, although it is not a resolution tool in the legal sense.

- ▶ cash flow valuation:
  - DCF methods (such as a traditional dividend discount model, a cash flow to equity discount model or an excess return model, as well as methods assessing the value of specific assets by discounting the expected cash flows from the asset).
- ▶ relative valuation:
  - multiples method;
  - adjusted book value method.

Depending on the methodology, the right segmentation of the balance sheet as a starting point for the valuation is crucial. Assets may be grouped into relatively homogeneous portfolios in terms of risk profile, business lines or other similar characteristics. Different asset classes will often have different characteristics, determining the risk profile. Furthermore, different items may be subject to different treatments under each resolution strategy. The choice of the appropriate valuation methodology must reflect these considerations.

Time constraints at the point of valuation may require a pragmatic approach using a relative valuation methodology that requires a limited set of data readily available from annual accounts or supervisory reporting. This process would involve a high-level segmentation of the balance sheet and the application of adjustments to the book values of the segmented assets. In determining the adjustments, reference should be made to market benchmarks, relevant experiences from other valuations/resolutions and information provided by the prudential supervisor of the institution.

In line with best practice, the results from the main valuation methodology could be compared with results from a second valuation approach to provide a sanity check. The latter would contribute to ensuring that both sets of results are conceptually comparable; for example, a 'going-concern' value should not be compared with a liquidation value. If this is not possible owing to a lack of time or data, the valuer needs to explain the reasons preventing a comparative approach.

### 2.4.1. DCF methods

The DCF method requires the determination of the following three parameters:

1. projection period;
2. cash flows over the projection period plus any terminal value;
3. the discount rate(s).

As both the cash flows and the discount rate will be heavily influenced by the economic and financial scenario under which the valuation is performed, options for defining said economic and financial scenarios have also been provided (see Section 3.3.4.1).

The DCF approach is, from both a theoretical perspective and a practical standpoint, the method that best incorporates all factors affecting the value of an institution. It is based on the following assumptions:

- ▶ It is a cash flow-based approach that does not rely on accounting magnitudes and takes into account the time value of money.

- ▶ In equity valuations, it takes into consideration the bank's capacity to create value for its shareholders on a going-concern basis.
- ▶ In equity valuations, it takes into account the effects deriving from the bank's business strategy.

It explicitly incorporates risk factors revolving around future cash flows (e.g. expected losses for loan portfolio and, for equity valuations, capital requirements limiting distributions to shareholders), either in the cash flow forecast or in the discount rate. The DCF method involves a number of steps that usually take time and require substantial amounts of data. Therefore, this approach is the most appropriate to perform the exercise of definitive valuations.

## PROJECTION PERIOD

There are various factors to consider when selecting the explicit forecast period for the DCF method, which include, among others:

- ▶ contractual or behavioural lifetime of the asset being valued;
- ▶ maximum length of the period for which reliable projections can be made based on the available data;
- ▶ minimum length of the period required for an asset or asset class to return to a stable level of growth, which can be assumed to remain constant thereafter and to be used in the calculation of terminal value;
- ▶ for cyclical assets, such as loan portfolios, minimum length of the period required to cover a full economic cycle.

A careful balance needs to be struck between the length of the projection period and the terminal value. A longer projection results in the valuation being less sensitive to the terminal value, which is desirable as said value is a significant driver of uncertainty in any DCF valuation. However, longer projection periods require more information and resources.

Three potential options often observed in different valuations are presented for the selection of an explicit projection period and can be seen in Table 3, included in Annex I.

## CASH FLOW PROJECTIONS

Projecting future cash flows is one of the most challenging and impactful aspects of valuation. The starting point for the projections is often the restructuring or business reorganisation plan prepared by the bank, which may be subject to a positive bias with respect to key drivers such as net interest margins, fee income, non-performing loan (NPL) cure rates and restructuring costs.

Cash flow projections need to be made over the holding period and for the terminal value at the end of the projection period. Relative importance of the terminal value changes depending on the length of the explicit projection period.

It should be noted that cash flow projections need to be consistent with:

- ▶ the discount rate used — for example, if the expected cash flows are measured net of credit losses, the discount rate must then be reduced by the credit risk component to eliminate

double counting<sup>(13)</sup>. As a rule, risk factors should be considered either in the cash flow projections or in the discount rates.

- ▶ macroeconomic and financial scenarios — for example, the impact of market conditions on items such as interest expense, interest income and fee income should be considered. Stress scenarios may be considered and should be calibrated appropriately against stress scenarios used as a basis for Valuation 3. For institutions that are heavily dependent on wholesale financing markets, market-wide liquidity stress scenarios may also be considered where appropriate.

Depending on the valuation perimeter and granularity, cash flows may be determined at entity, portfolio or asset level.

### CASH FLOWS AT ENTITY LEVEL

For the purpose of this methodology framework, cash flows are defined as the amount of cash flow that could be distributed to the shareholder without compromising the future of the business. The cash flow should be calculated as the operating income derived from the assets less the amount of costs (e.g. expected losses, interest expenses, restructuring costs) and other operational requirements (e.g. capital requirements applicable to the institution or to the portfolio of assets) that are deemed necessary to continue operating.

This approach is suitable for situations in which all or the majority of the assets are transferred to a new buyer. Such a valuation requires forecasting the future, post-resolution income statement of the business that is being sold. The valuer should challenge the business plan provided by the entity to ensure that the effects of the resolution measure and developments such as a repricing on the asset or liability side, increased provisioning requirements and any restructuring costs stemming from the resolution action are captured in the business plan. In addition, the assumptions regarding the development of the balance sheet underlying the income statement forecasts should be reviewed by the independent valuer.

### CASH FLOWS AT PORTFOLIO OR ASSET LEVEL

A forecast of the future income statement of the entity is possible but not strictly necessary for the discounted cash flow valuation in this case as funding costs are not generally included in cash flows projections at asset or portfolio level (because the cash flows from an asset are independent of how it is funded). This has the benefit that different funding costs — which may vary between resolution scenarios and for different types of buyers (e.g. banks vs. non-banks) — can be used to discount the same cash flows.

Table 3 and Table 4, included in Annex I, provide common observations for projection of cash flows and terminal value. The terminal value is a major source of uncertainty in most DCF exercises, especially if the projection period is relatively short. As such, any source of uncertainty regarding the terminal value should be addressed and quantified in a sensitivity analysis.

<sup>(13)</sup> International Valuation Standards (IVS) 2017.

## DISCOUNT RATE

The appropriate discount rate can reflect the following factors (see IVS 2017 <sup>(14)</sup>), as appropriate for the type of the valuation performed:

- ▶ timing of cash flows;
- ▶ risk profile of the entity or asset type;
- ▶ financing costs;
- ▶ market conditions as appropriate to the asset or liability being measured;
- ▶ disposal strategy considered and characteristics of potential buyers;
- ▶ rates implied by market transactions;
- ▶ entity's post-resolution financial position;
- ▶ location of the asset and/or the markets in which it would be sold or is traded.

Table 5, included in Annex I, provides four potential options for discount rate setting for the DCF method.

### 2.4.2. Market multiples method

The market multiples or comparable method relies on the observed relationship between market values of comparable assets or entities and fundamental business indicators such as equity or earnings. This relationship is summarised in a multiple, which can then be applied to the sustainable level of future earnings determined for the entity to arrive at a valuation.

The most fundamental choice when applying the market multiples method is the source of information from which multiples are derived: multiples derived from comparable transactions can be used alongside those derived from the market capitalisation of similar entities. A comparison of these alternatives is provided in Table 6, included in Annex I below.

In addition, the business indicator (or the common unit of comparison) in which multiples are expressed must be chosen: earnings or net worth multiples are typically used for financial institutions. Multiples of net worth and net income are particularly applicable to banks. Multiples based on earnings before interest, taxes, depreciation and amortisation (EBITDA) and earnings before interest and taxes (EBIT) are used less frequently since interest income and expense are fundamental for financial institutions. The business indicator can also be differentiated by asset type.

Finally, the sustainable level of the selected business indicator to which multiples are applied needs to be calibrated: once a multiple has been determined, it needs to be applied to a long-term maintainable value of the selected business indicator. Factors to be taken into account while determining this sustainable value include:

- ▶ the entity's historical performance prior to resolution;

<sup>(14)</sup> International Valuation Standards (IVS) 2017, page 27.

- ▶ expected level of future operating performance, taking into account the time it is expected to take to return to normal levels;
- ▶ expected changes in the entity's operating environment due to resolution actions.

The application of trading or transaction multiples by the valuer should be based on best practice and be on a comparable basis, taking into account factors such as market liquidity, control characteristics of the comparable and marketability.

### **2.4.3. Adjusted book value method**

In the face of significant time pressure and lack of data, the adjusted book value method provides a pragmatic alternative to the DCF method. In the context of provisional valuation, and having regard to time constraints, resolution authorities or independent valuers may even need to rely solely on this methodology.

The adjusted book value method relies on adjustments applied to the book value of the entity's balance sheet, which are intended to account for the effects of resolution tools such as an accelerated sale of assets in a potentially illiquid market. Two main parameters that need to be considered when applying the adjusted book value method are:

1. the magnitude of adjustments applied, which often depends on the asset type and
2. the types of information that are used to justify the adjustments.

Table 7, included in Annex I, outlines alternative approaches to the adjusted book value method, considering both the extent of and justification behind adjustments.



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## 3. RESOLUTION TOOLS

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### 3.1. INTRODUCTION

Notwithstanding the wide range of existing methodologies, regulations CDR 2018/344 and CDR 2018/345 express preference for DCF-based methods. However, as mentioned in Chapter 2, some resolution tools tend to be associated with shorter time horizons that may make the use of other methodologies more suitable than DCF. It is important to recognise the interdependence between time horizon, choice of resolution tool and valuation method.

Without prejudice to the specific circumstances of each case, some resolution tools are more likely to be used for certain asset classes that can indirectly affect the choice of methodology:

- ▶ Business sales tend to happen first and, as such, recent market multiples may be most reliable. On the other hand, business sales and bridge institutions are typically used for higher-quality assets that have steady cash flows, which is an argument in favour of the DCF methodology. In addition, in a wider financial crisis the prices of financial assets in general may have become depressed, which means that recent market benchmarks may not be relevant for subsequent business sales.
- ▶ The bridge institution tool is a temporary solution until the institution is either sold to market participants or wound up. Therefore, at the end of the process there also is a market transaction even though the status quo is probably quite different by then. Because of this time lag and because the buyer will use DCF, it seems reasonable to employ a DCF model.
- ▶ Non-performing assets that generate no or irregular cash flows will typically be separated or sold. DCF for such assets is challenging and one may need to use comparable or historic transactions or indices when markets for these assets are liquid. For illiquid assets, the valuer should consider observable market prices in markets where similar assets are traded or model calculations using observable markets parameters, with discounts for illiquidity reflected as appropriate.

Table 2 below provides a comparison of the resolution tools.

**Table 2:** Comparison of resolution tools<sup>(15)</sup>

Resolution tool	Type of assets	Counterparty	Timeframe	Time pressure
<b>WDCCI/bail-in</b>	All assets	Former shareholders/creditors	Viability in next $\approx$ 3-5 years	High
<b>Sale of business</b>	For sale of a portfolio of assets and liabilities (asset deal): all assets or better quality assets and those whose transfer is considered necessary to achieve the resolution objectives (e.g. linked to the provision of critical functions). For sale of the business (share deal): shares/instruments of ownership	Market party	Until acquiring party is found by the resolution authority (if a buyer is not found, another resolution decision has to be taken)	High
<b>Bridge institution</b>	For bridge institution in the form of transfer of assets and liabilities: assets suitable to the creation of a clean bank, e.g. performing loans and those whose transfer is considered necessary to achieve the resolution objectives (e.g. linked to the provision of critical functions). For bridge institution in the form of transfer of shares: shares/instruments of ownership	Public authority control or the former creditors first, then market party or winding up	Sale of bridge institution ( $\approx$ 2 years with the option of extension for one or more additional 1-year periods)	Normal
<b>Asset separation</b>	Always in combination with other tool, assets unsuitable to the creation of the clean bank (see also Article 42(5) of the BRRD) and, consequently, that need to be transferred to one or more asset management vehicle	Public authority control, then either winding up or market party; hence, market prices should be used in the transfer to the public authority	Wind-down of assets ( $\approx$ 10 years or more depending on remaining maturity of assets)	Normal

<sup>(15)</sup> This table is provided for illustrative purposes only, it is not exhaustive and in no way should be interpreted as the only options available to the Resolution Authority when designing resolution strategies or its implementation.

Resolution tool	Valuation objective	Reference to CDR 2018/345
<b>Bail-in</b>	<ul style="list-style-type: none"> <li>Calculate the loss absorption and recapitalisation amounts and subsequently the conversion rates (via the equity value)</li> </ul>	<ul style="list-style-type: none"> <li>A post-conversion value for the equity must be given (CDR 2018/345 Chapter III Article 10(5))</li> <li>Hold value shall be used as the measurement basis (CDR 2018/345 Chapter III Article 11(4))</li> </ul>
<b>Sale of business</b>	<ul style="list-style-type: none"> <li>For sale of the business (share deal): value of equity</li> <li>For sale of a portfolio of assets and liabilities (asset deal): net present value of assets minus net present value of liabilities</li> </ul>	<ul style="list-style-type: none"> <li>Hold value shall not be used as the measurement basis (CDR 2018/345 Chapter III Article 11(4))</li> <li>Expected cash flows shall correspond to foreseen disposal values if the sale of assets is envisaged (CDR 2018/345 Chapter III Article 11(5) and Article 12(4))</li> <li>Disposal value should be determined based on cash flows and any discount from an accelerated sale as appropriately (CDR 2018/345 Chapter III Article 12(5))</li> <li>Specific factors affecting disposal value should be taken into account (CDR 2018/345 Chapter III Article 12(6))</li> <li>Reasonable expectations for franchise value may be taken into account (CDR 2018/345 Chapter III Article 12(7))</li> </ul>
<b>Bridge institution</b>	<ul style="list-style-type: none"> <li>For bridge institution in the form of transfer of shares: value of equity</li> <li>For bridge institution in the form of transfer of assets and liabilities: the value of assets and liabilities to be transferred</li> </ul>	<ul style="list-style-type: none"> <li>Hold value shall not be used as the measurement basis (CDR 2018/345 Chapter III Article 11(4))</li> <li>Expected cash flows shall correspond to foreseen disposal values if the sale of assets is envisaged (CDR 2018/345 Chapter III Article 11(5) and Article 12(4))</li> <li>Disposal value should be determined based on cash flows and any discount from an accelerated sale as appropriately (CDR 2018/345 Chapter III Article 12(5))</li> <li>Specific factors affecting disposal value should be taken into account (CDR 2018/345 Chapter III Article 12(6))</li> <li>Reasonable expectations for franchise value may be taken into account (CDR 2018/345 Chapter III Article 12(7))</li> <li>Should consider set up and running costs</li> </ul>
<b>Asset separation</b>	<ul style="list-style-type: none"> <li>Disposal value minus of liabilities</li> </ul>	<ul style="list-style-type: none"> <li>CDR 2018/345 Chapter III Article 11(3) and 12(5) and (6)</li> <li>Hold value shall not be used as the measurement basis (CDR 2018/345 Chapter III Article 11(4))</li> <li>Workout costs and benefits should be taken into account (CDR 2018/345 Chapter III Article 12(3))</li> </ul>

The valuer should also take into consideration the second-round effects on the asset side derived from the extension of the burden sharing intended to be imposed on creditors that are, at the same time, debtors of the institution.

The following sections describe the valuation principles and methodologies considered most relevant for different resolution tools without prejudice to the use of the expert judgement by the valuer and to its independence. In many cases two or more resolution tools may be applied simultaneously or sequentially. In each case, the choice of valuation method(s) considered must be carefully justified and explained.

## 3.2. PROVISION OF A BEST ESTIMATE AND A VALUATION RANGE

The independent valuer must provide a best estimate of the valuation result under each of the resolution scenarios considered.

As valuation estimates are subject to significant uncertainty, the valuer may choose to provide a valuation range around the best estimate. The size of this range reflects the extent of uncertainty based on, inter alia, the valuer's understanding of the institution's current and expected future circumstances and the resolution outcome, and must be supported by arguments justifying the range. The expected valuation range, in particular after taking into consideration areas subject to significant valuation uncertainty that have a significant impact on the overall valuation as specified in Article 8 of CDR 2018/345, would be within a band of  $\pm 5-10\%$  around the best estimate, in order for the valuation to be sufficiently informative to support the decision-making process of the resolution authority.

In circumstances where such a range cannot be adhered to, the valuer must explain in detail the drivers of the augmented uncertainty. Sources of high valuation uncertainty may include high proportions of non-performing or illiquid assets, asset portfolios with highly correlated cash flows or assets without any contractual cash flows, contingent liabilities and off-balance sheet exposures. The need to rely on models or expert judgement for calibrating key parameters can also be a source of uncertainty.

To determine key parameters and assumptions to which the final valuation is most sensitive, independent valuers should perform extensive sensitivity analyses and triage the balance sheet. The triaging should categorise the balance sheet according to the plausible variability of valuation to identify asset types whose valuation requires particular attention.

## 3.3. WDCCI AND BAIL-IN

### 3.3.1. Introduction

This section describes the characteristics of the methodologies used for Valuation 2 when the bail-in tool has been selected as the preferred resolution tool.

According to the SRMR, the bail-in tool may be applied for the purpose of recapitalising an entity 'that meets the conditions for resolution to the extent sufficient to restore its ability to comply with the conditions for authorisation [...] and to continue to carry out the activities for which it is authorised [...], and to sustain sufficient market confidence in the institution or entity' <sup>(16)</sup>. The bail-in tool may also result in conversion to equity or a reduction in the principal amount of claims or debt instruments that are transferred to a bridge institution or under the sale of business or asset separation tool <sup>(17)</sup>.

<sup>(16)</sup> Article 27(1)(a) of the SRMR. The bail-in tool may be applied for the purpose provided in Article 27(1)(a) of the SRMR only if there is a reasonable prospect that the application of that tool together with other relevant measures, including measures implemented in accordance with the business reorganisation plan required by Article 27(16) of the SRMR, will, in addition to achieving relevant resolution objectives, restore the entity in question to financial soundness and long-term viability (Article 27(2)).

<sup>(17)</sup> Article 27(1)(b) of the SRMR.

In the event of bail-in, WDCCI under Article 21 of the SRMR are first applied and then the bail-in tool will be applied to write down and/or convert eligible liabilities into equity. In a first phase, the holders of Common Equity Tier 1 (CET1) and relevant capital instruments and eligible liabilities will absorb losses through the write-down of the principal or outstanding amount ('loss absorption phase'). Thereafter, the institution in resolution will subsequently be recapitalised through the conversion of any remaining capital instruments and eligible liabilities ('recapitalisation phase').

Before using WDCCI powers and bail-in powers, a valuation of the assets and liabilities — that is, a valuation of the net assets — must be made in accordance with Article 36(4)(b) to (g) of the BRRD. Net asset value should reflect the difference between the economic value of the current assets and liabilities of the institution. In this sense, it is an equity value, as equity reflects the residual claims on the cash flows from assets after debt payments. The outcome of this valuation may inform the extent of write-down or dilution of shares or other instruments of ownership and the amount of debt subject to conversion. CDR 2018/345 gives prevalence to the DCF methodology. However, this may not be possible in all specific circumstances and valuers may triangulate different valuation methodologies, including the adjusted book value approach.

This latter valuation is more focused on individual assets or portfolios of assets. This exercise will result in the size of valuation adjustments to be applied to the book value of the different items of the balance sheet of the institution, which will be the basis for determining the risk-weighted assets of the institution post resolution and the capital needs to be covered through the conversion of capital and debt instruments.

Additionally, where capital instruments or other liabilities are converted into equity in the recapitalisation phase, the valuer must provide an estimate of post-conversion equity value of the new shares transferred or issued to stockholders of converted capital instruments or to other creditors, which will be the basis for the calculation of conversion rates. In this case, the key point of the valuation is the determination of the value of the whole bank, that is, the net value of the equity of the institution post resolution.

The outcome of these valuations will inform the resolution actions to be taken by resolution authorities, and it will be taken into account when the resolution authority takes any decisions related to the execution of restructuring measures or other actions aimed at streamlining the capacity of the entity in resolution and restoring its viability. The underlying assumptions used in this valuation should be consistent with those envisaged in the business reorganisation plan.

### 3.3.2. Valuation criteria

The bail-in mechanism may involve a sequence of actions to restore the viability of the institution and allow it to continue as a going-concern institution. In this case, the valuer will take the hold value as the appropriate measurement basis, pursuant to Article 11(4) of CDR 2018/345 <sup>(18)</sup>.

Article 1(e) of CDR 2018/345 defines the hold value 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'. Therefore, on the basis of this definition, the valuer has to provide a going-concern valuation under the assumption that the entity is expected to continue operating under normalised conditions. The going-concern valuation basis applies irrespective of the valuation methodology

<sup>(18)</sup> This will be the case for the institutions as a whole, although a different measurement basis could apply to specific portfolios.

chosen. As defined in CDR 2018/345, the value should be fair and realistic and, additionally, a certain degree of conservatism should be taken into consideration to obtain prudent valuation.

Moreover, cash flows may include estimates of any disposal of assets that is considered necessary to meet the resolution objectives (e.g. the sale of NPLs or the discontinuation of a business line in the restructuring phase). In such a case, the expected cash flows must be related to disposal values expected within a given disposal period.

Likewise, the valuer must take into consideration any necessary adjustments to obtain prudent valuations (e.g. contingent liabilities related to litigations, restructuring costs (see Section 6.3) or second-round effects derived from the execution of bail-in to the liabilities' holders being simultaneously a debtor and creditor of the same institution).

Irrespective of the selected valuation methodology, the valuer should compare the valuation results with projected ratios of comparable entities or prices paid for transactions involving entities with similar business models or operating in the same market, and justify any significant deviation.

### 3.3.3. Adjusted book value methodology

Valuation is a complex task requiring a large amount of information and resources. Frequently, the valuer faces difficulties due to time pressure, the size or the complexity of the institution, lack of information or difficulties with the information technology (IT) systems to provide granular data. Accordingly, the selection of the valuation methodology will be partly determined by the specific circumstances of the situation at a given time.

The adjusted book value method involves the adjustment of the book value of assets and liabilities to their fair value, determined in accordance with CDR 2018/345. The adjustment could be made by applying adjustments to the different items of the asset side of the balance sheet. The valuer could also consider additional adjustments on the liability side to cover the risks stemming from contingent liabilities, such as litigation costs. To calculate the value for single assets or for portfolios of assets, the valuer could leverage on the methodologies described in Chapter 6.

The valuer should clearly explain the basis and assumptions that support the selection of the applied valuation methodology.

When applying the adjusted book value approach, the valuer should clearly explain and justify the calculation basis for the application of adjustments to the assets and liabilities.

When applying the adjusted book value approach under the assumption that a bail-in will be effected, the valuer should take a 'going-concern' perspective.

### 3.3.4. Discounted cash flow methodology

#### DEFINITION OF CASH FLOW

For the valuation of assets and liabilities through an asset/portfolio-oriented approach, cash flows should be estimated on the basis of expected cash flows. Then they should be adjusted for expected losses and other operational requirements related to the features of a realistic standard buyer (e.g. capital requirements if the potential purchaser is a credit institution). For asset-specific cash flows, assets with no or irregular cash flows, the valuer can use the methodologies described in Chapter 6.

When using a DCF methodology based on the determination of the value of the whole bank, the net asset value of the institution can be determined by discounting to the valuation date the sum of future expected cash flows. It involves estimating cash flows over the projection period and the terminal value at the end of such period.

A proper valuation based on DCF demands the forecast of the bank's financial statements and risk parameters modelling, assuming a normalisation over the projection period of both the market and the bank's financial situation. Cash flows may be estimated by mapping projected macro scenarios to the forecasted financial statements (e.g. profit and loss (P&L) and balance sheet statements) and risk factors<sup>(19)</sup> (e.g. credit risk parameters). They should be consistent with the bank's business plan, adjusted for the effects of the resolution measure, and ideally also with the projections and figures of the business reorganisation and restructuring plans where the state aid framework applies, where such plans are available. The impacts associated with the normalisation over time of market conditions on all accounting items and with the direct effect of the resolution actions should be considered in the estimation of cash flows.

The valuer should justify the feasibility and the credibility of the projections and of the underlying assumptions. Particular emphasis will be placed on items with a high level of uncertainty such as balance sheet growth, treatment of maturing exposures, repricing of assets and liabilities, margins, divestments and contingent liabilities.

For the valuation of the institution as a whole, the cash flow is defined as the dividend flow that could be distributed to the shareholders without jeopardising the long-term viability of the institution, meaning that in the first years after resolution, the losses have been allocated and the recapitalisation has taken place. As a result, the dividend flow in the first years could be negative, meaning no 'effective' dividend distribution to the shareholders. It should be calculated as the operating income (e.g. interest income, commissions) derived from assets less the amount of costs (e.g. interest expenses, administrative and restructuring costs) and other operational costs imposed by legislation and that are deemed necessary to continue operating, such as provisions for performing and NPLs and applicable capital requirements. Therefore, the net cash flow for each period should be the excess of capital that is not required to preserve or restore the institution's 'ability to comply with the conditions for authorisation [. . .] and to continue to carry out the activities for which it is authorised [. . .], and to sustain sufficient market confidence in the institution'<sup>(20)</sup>.

The discount rate applied should be consistent with the cash flows to be discounted, meaning that risk factors not covered by future cash flows or the uncertainty related to them have to be

<sup>(19)</sup> As regards macro-economic assumptions, they may be based on forecasts produced by the official sector (e.g. the European Commission, central banks etc.) and should be consistent across all types of valuations, including Valuation 3.

<sup>(20)</sup> See Article 27(1)(a) of Regulation (EU) No 806/2014.

When applying the DCF methodology, the valuer should discount the future expected cash flows as of the date of the resolution.

The valuer should justify the feasibility and credibility of the projections and clearly explain the underlying assumptions when estimating future cash flows and the terminal value. Particular attention should be paid to components of the valuation with a high level of uncertainty.

The valuer can make use of asset-specific methodologies as described in Chapter 6 when estimating cash flows derived from those assets.

The valuer should apply a macroeconomic scenario provided by the resolution authority at the request of the resolution authority or propose the application of a specific macroeconomic scenario to the resolution authority, after explaining the assumptions and basis of said scenario. The final selection of the macroeconomic scenario, the main characteristics and elements and the underlying assumptions taken into consideration for the projections of cash flows will be clearly explained and justified in the final valuation report.

When considering risk factors and uncertainty the valuer should modify accordingly either the cash flows or the discount rates, not both, and clearly explain and justify choices made in the valuation report.

considered in the calculation of the discount rates (i.e. if the cash flows are measures net of liquidity risks, the discount rates must be reduced by the liquidity risk component).

## PROJECTION PERIOD

The valuer should choose the time horizon of the financial projections taking into consideration the decreasing reliability of projections over time. Projections for periods longer than 5 years increase the margin of error.

When using a single asset/portfolio-oriented approach, the cash flows of assets will be projected in accordance with the asset's contractual terms.

On the other hand, when applying the DCF methodology for the valuation of the entity as a whole, cash flows should be projected over a maximum of a 5-year time horizon. This projection period is aligned with current practices and is considered to be, in principle, an appropriate time horizon to achieve a normalised level of returns as well as stability for the business model.

When applying the DCF methodology to value the entity as a whole, the valuer should consider a 5-year time horizon for the valuation exercise.

If the valuer considers a different time frame to be more appropriate for the valuation exercise, this should be communicated to the resolution authority as soon as possible during the early stages of the valuation exercise, clearly explaining the underlying reasons and assumptions behind the proposal. The underlying reasons and assumptions should be included in the final valuation report.



## ESTIMATE OF DISCOUNT RATE

The calculation of the discount rate is critical for the valuation exercise. Pursuant to CDR 2018/345 on valuation, the discount rates must be determined having regard to the (i) timing of the cash flows, (ii) risk profile, (iii) financing costs and market conditions as appropriate for the asset or liability being valued, (iv) disposal strategy and (v) entity's post-resolution financial position. The discount rate would also depend on the parameters considered when estimating cash flows. Moreover, discount rates should take into account the inherent risk within the cash flows and the risk premium required by investors on investments with equivalent risk.

Discount rates can be derived from capital asset pricing models (CAPMs) multifactorial models or from discount rates implied by real market transactions. This choice would depend on the availability of recent market data and benchmarks. If CAPMs are used, the valuer should compare the resulting discount rate with market-based metrics, for example:

- ▶ internal rate of return (on equity) required by potential buyers such as specialised investors in the sector;

When applying the DCF methodology, the valuer should clearly explain, in the valuation report, the underlying assumptions and the choices made when calculating the discount rates used in the valuation exercise.

When considering risk factors and uncertainty the valuer should modify accordingly either the cash flows or the discount rates, not both, and clearly explain and justify choices made in the valuation report.

- ▶ discount rates or yields implied by comparable recent transactions or the market capitalisation/yields implied by trading prices of similar entities/assets;
- ▶ discount rates that reflect the cost of financing the asset or entity that is being valued.

## TERMINAL VALUE PROJECTION OPTIONS FOR THE DCF METHOD

When performing a valuation of the whole bank (i.e. equity valuation), the calculation of the terminal value is extremely important, as this component could represent a significant share of the final value of the whole entity. The terminal value can be estimated through a wide range of methodologies, which can be grouped into two categories: formula-based approaches and market-based references.

A perpetuity formula for cash flows could be considered to determine the income into perpetuity growing at a constant rate. The three relevant parameters of this formula are as follows:

- ▶ the growth of the business into perpetuity;
- ▶ capital requirements into perpetuity;
- ▶ the long-term sustainable discount rate.

The growth rate of the business into perpetuity should be estimated in accordance with the long-term estimates of the main macroeconomic indicators and the key variables of the business. In practice, the growth rate may be assumed equal to long-term nominal economic growth rate.

Alternatively, the valuer could estimate terminal value by assuming that the entity as a whole would be sold after a certain holding period. Thus, the terminal value may be calculated as the expected sale price of the whole entity at the end of the projection period, on the basis of information on recent comparable transactions or historical data.

When applying the DCF methodology, the valuer should clearly explain, in the valuation report, the underlying assumptions and the choices made when calculating the terminal value. Particular attention should be paid to explaining the main components and methodological aspects of the choices made and how they deviate from the standard practice.

When estimating the nominal economic growth rate for the terminal value, the valuer should relate the choices made to the long-term economic growth rate and provide an assessment of its credibility and reliability

## 3.4. BRIDGE INSTITUTION

### 3.4.1. Introduction

This section describes the characteristics of the methodologies used for Valuation 2 when the bridge institution tool has been selected as the preferred resolution tool.

As per Article 40(2) of the BRRD, a bridge institution is a legal entity that is (i) is wholly or partially owned by one or more public authorities, which may include the SRB, and is controlled by the resolution authority and (ii) created for the purpose of receiving and holding shares or other instruments of ownership or assets, rights and liabilities of one or more institutions under resolution with a view to maintaining access to critical functions and selling the institution.

As per Article 36(4)(e) of the BRRD and Article 20(5)(e) of the SRMR, the purpose of the valuation when using the bridge institution tool is twofold:

- ▶ To inform the decision on the assets, rights, liabilities, shares or other instruments to be transferred to the bridge institution.
- ▶ To inform 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 instruments of ownership transferred. In this respect, the outcome resulting from this valuation is crucial to ensure that, as per Article 40(3) of the BRRD, 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.

Having said that, the valuation may follow a single asset/portfolio-oriented approach if the valuer focuses more on assets or groups of assets. Otherwise, should the valuer conduct the valuation of a portfolio of assets together with some liabilities or through the valuation of business units, it could be a net equity value-based valuation.

### 3.4.2. Valuation criteria

According to Article 11(4)(second subparagraph) of CDR 2018/345, the hold value shall not be used as the measurement basis where assets are transferred to a bridge institution pursuant to Article 40 of the BRRD. As a result, the valuation criterion to be used when applying the bridge institution tool is the estimation of the disposal value of assets and liabilities that are to be transferred to the bridge institution when a realistic prospect for the disposal of the entity or of the assets can be reasonably expected.

When assessing the value of businesses for purposes of the bridge institution tool — Article 12(7) of CDR 2018/345 — the valuer may take into account reasonable expectations for franchise value. Such expectation for franchise value shall include the franchise value resulting from a renewal of assets, a refinancing of an open portfolio or a continuation or resumption of business in the context of the resolution actions.

The same methodological considerations that apply to the DCF and the adjusted book value methods for the bail-in tool are valid when implementing the bridge institution. The specificities of the implementation of the DCF model to the bridge institution tool are related to the estimation of the franchise value and the time horizon of the valuation exercise. The valuer may also consider accounting for costs incurred by the authorities when running the bridge institution, such as set-up, organisation and possibly restructuring costs, especially when these costs are deemed to be material.

### 3.4.3. Discounted cash flow methodology

#### FRANCHISE VALUE VALUATION

The valuer may consider a reasonable expectation for a franchise value when performing the valuation exercise for the implementation of the bridge institution tool. The franchise value, based on a 'going-concern' approach, should take into consideration the renewal of assets stemming from a refinancing of an open portfolio, a continuation or resumption of business within the context of the resolution actions or from the cleaning-up of the bank after problem assets are carved out and left in the legacy entity. In addition, the valuer could consider the potential impact or second-round effects of the implementation of the preferred resolution strategy on the institution's franchise value.

The valuation exercise taking into consideration the implementation of the bridge institution tool should be based on the assumptions and expectations contained in the business plan. Those expectations should account for the uncertainty related to the future value of the bridge institution, which could eventually be sold in a share deal, maintaining some franchise value, in one or several asset deals or even be wound down. Restructuring and resolution costs in these scenarios may differ and should be taken into account.

An appropriate valuation methodology for the aggregated franchise value should not assume a divestment of single assets but a divestment of groups of assets and liabilities or the sale of the entire bank <sup>(21)</sup>. When the resolution strategy foresees a sale of the shares (and thereby of the entire bank), which implies that assets and liabilities remain in the balance sheet of the entity post resolution, a 'going-concern' approach would be used.

<sup>(21)</sup> Article 38(1) of the BRRD (Sale of business tool) distinguishes between a sale of assets/liabilities and a share deal.

If taken into consideration, the valuer should explain clearly the basis and assumptions that support the estimation of a franchise value when estimating the value of a bridge institution.

## PROJECTION PERIOD

The bridge institution tool is a temporary solution. According to Article 41(5) of the BRRD, the resolution authority shall terminate the operation of a bridge institution as soon as possible and in any event 2 years after the date on which the last transfer from an institution under resolution pursuant to the bridge institution tool was made. The resolution authority may extend the 2-year period for one or more additional 1-year periods when certain circumstances apply (Article 41(6) of the BRRD).

The valuer should consider a 2-year time horizon for the valuation exercise when considering the implementation of the bridge institution tool, meaning that the valuer should estimate, in addition to the estimated cash flows within a 2-year time horizon, the expected value to be obtained from the sale or the winding up of the institution at the end of the 2-year projection period. In addition, this expected value to be obtained at the end of the 2-year period would need to be discounted as of the valuation date.

The same methodological considerations that apply to the terminal value projection for the bail-in tool are valid when calculating the expected value at the end of the projection period of 2 years. The valuer should clearly explain the underlying assumptions and justifications and clearly state, in their expert opinion, which is the most probable scenario and the best estimate for the final valuation result. The valuer will only be able to take into consideration one of the scenarios mentioned above when performing the valuation exercise if, after consulting the resolution authority and clearly stating the justifications and underlying assumptions of the proposal, the resolution authority agrees to said proposal.

## 3.5. ASSET SEPARATION

### 3.5.1. Introduction

This section describes the characteristics of the methodologies used for Valuation 2 when the asset separation tool has been selected as resolution tool.

The asset separation tool is the mechanism for effecting a transfer by a resolution authority of assets, rights or liabilities of an institution under resolution to an asset management vehicle (in accordance with Article 42 of the BRRD). The asset separation tool must always be applied together with another resolution tool (i.e. sale of business, the bridge institution and/or bail-in) <sup>(22)</sup>.

<sup>(22)</sup> Article 22(4)(second sentence) of the SRMR.

### 3.5.2. Valuation criteria

According to Article 11(4)(second paragraph) of CDR 2018/345, the hold value shall not be used as the measurement basis where assets are transferred to an asset management vehicle pursuant to Article 42 of the BRRD. Therefore, the valuation criterion to be used when applying the asset separation tool is the estimation of the disposal value of assets transferred to the asset management vehicle.

As regards the asset separation tool, the legal framework does not allow for specific exceptions to the application of the disposal value approach owing to the fact that no realistic prospect for the disposal of an asset or business can reasonably be expected <sup>(23)</sup>.

The disposal value shall be determined by the valuer on the basis of the cash flows for the expected disposal horizon, 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 (in accordance with Articles 11(5) and 12(5) of CDR 2018/345).

The valuer will proceed with the valuation of assets and liabilities to be transferred to an asset management vehicle by conducting a valuation of individual assets or portfolios of assets or, on the contrary, the valuer can set-up portfolios of assets funded with a group of liabilities.

Where appropriate, having regard to the actions to be taken under the resolution scheme, the valuer may determine the disposal value by applying an adjustment that reflects a potential accelerated sale discount to the observable market price of that sale or transfer.

To determine the disposal value of assets that do not have a liquid market, the valuer must consider observable prices on markets where similar assets are traded or model calculations using observable market parameters with discounts for illiquidity, and may also consider sale costs and other sources of uncertainty related to the disposal of assets, reflected as appropriate.

According to Article 12(6) of CDR 2018/345, 'the valuer shall have regard to factors that might affect disposal values and disposal periods, including the following:

- ▶ the disposal values and disposal periods observed in similar transactions, adjusted appropriately to take into account differences in the business model and in the financial structure of the parties to those transactions;
- ▶ advantages or disadvantages of a particular transaction that are specific to the parties involved or to a subset of market participants;
- ▶ particular attributes of an asset or business that may only be relevant to a potential purchaser, or to a subset of market participants;
- ▶ the likely impact of expected sales on the entity's franchise value'.

The same methodological considerations that apply to the adjusted book value and the DCF method for the bail-in tool are valid when implementing the asset separation tool. As with a bridge institution, the valuer may also factor in costs incurred by the authorities for the set-up and operation of the asset management vehicle, especially when these costs are deemed to be material.

<sup>(23)</sup> Article 12(8) of CDR 2018/345: when a valuer considers that no realistic prospect for the disposal of an asset or business can reasonably be expected, the valuer shall not be required to determine the disposal value, but shall estimate the related cash flows on the basis of the relevant prospects for continuation or winding up. This provision shall not apply to the asset separation tool or to the sale of business tool.

The valuer should clearly state, justify and explain in the valuation report the underlying assumptions that justify the consideration of a potential accelerated sale of assets when comparing with observable market prices and in relation to actions taken under the resolution scheme.

The valuer should disclose and clearly explain in the valuation report the main factors taken into consideration when estimating disposal values and disposal periods.

The valuer should clearly disclose considerations of illiquid markets and justify and explain how some observable market prices of similar assets or other model calculations based on observable market parameters have been used when estimating discounts for illiquidity for determining the disposal value of assets.

The valuer should explain and include in the valuation report the main factors taken into consideration when estimating disposal values and disposal periods.

## 3.6. SALE OF BUSINESS

### 3.6.1. Introduction

This section describes the characteristics of the methodologies used for Valuation 2 when the sale of business tool has been selected as the preferred resolution tool.

The sale of business tool should enable authorities to conduct a sale of the shares of the institution or parts of its business, assets or liabilities to one or more purchasers without the consent of shareholders.

### 3.6.2. Valuation criteria

According to Article 11(4)(2) of CDR 2018/345, the hold value shall not be used as the measurement basis where a sale of business tool pursuant to Article 38 of the BRRD is used. Therefore, the valuation criterion to be used when applying the sale of business tool is the disposal value.

As regards the sale of business tool, the legal framework does not allow for specific exceptions to the application of the disposal value approach owing to the fact that no realistic prospect for the disposal of an asset or business can reasonably be expected<sup>(24)</sup>.

When assessing the value of businesses for purposes of the use of the sale of business tool — Article 12(7) of CDR 2018/345 — the valuer may take into account reasonable expectations for franchise value. Such an expectation for franchise value shall include franchise value resulting from a renewal of assets, a refinancing of an open portfolio or a continuation or resumption of business in the context of the resolution actions.

<sup>(24)</sup> Article 12(8) of the CDR 2018/345: when a valuer considers that no realistic prospect for the disposal of an asset or business can reasonably be expected, the valuer shall not be required to determine the disposal value, but shall estimate the related cash flows on the basis of the relevant prospects for continuation or winding up. This provision shall not apply to the asset separation tool or to the sale of business tool.

It is important to note that the purpose of the valuation when the sale of business tool is applied is 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 when applying the sale of business tool (Article 36(4)(f)).

The same methodological considerations that apply to the adjusted book value and the DCF methods for the bail-in tool are valid when implementing a sale of business as well as the requirements regarding the estimation of a franchise value established in the section on the bridge institution tool and, finally, the references regarding disposal values contained in the section concerning the asset separation tool. In this respect, the valuation should be conducted by determining the value of the whole institution or part of the institution being sold, either through a DCF approach or an adjusted book value method.

The valuer should clearly disclose in the valuation report, taking into consideration the scope of the valuation (sale of the shares or other instruments of ownership or sale of all or any assets, rights or liabilities), the result of the valuation that will inform the resolution authority's understanding of what constitutes commercial terms when applying the sale of business tool.

The result of the valuation report should take into consideration, and clearly disclose and explain, all those elements, circumstances and uncertainties that a potential 'standard' buyer would take into consideration when acquiring the business or part of the assets or liabilities of the institution in resolution.

The valuer should explain clearly the basis and assumptions that support the estimate of a franchise value when estimating the value of the shares of the institution in the event of a share transfer.

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## 4. PROVISIONAL VALUATION

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### 4.1. INTRODUCTION

Where, owing to urgency in the circumstances of the case, either it is not possible to comply with the requirements laid down in Articles 20(7) and (9) of the SRMR or an independent valuation is not possible (Article 20(3) of the SRMR), a provisional valuation will be carried out.

This section refers to the specificities of the provisional valuation.

### 4.2. VALUATION CRITERIA

The provisional valuation should be based on the assumption that the general principles and methodologies for such a valuation are the same as for the definitive valuation. The considerations that apply to the adjusted book value and the DCF methods when a provisional valuation is carried out are described in Chapter 3 (resolution tools).

As in the definitive valuation, the independent valuer must provide a best estimate of the institution's value under each of the resolution scenarios considered.

As provisional valuation estimates are subject to significant uncertainty, the valuer may choose to provide a valuation range around the best estimate. In principle, an appropriate valuation range is considered to be a band of  $\pm 5-10\%$  around the best estimate also for provisional valuations.

If the circumstances of the provisional valuation mean that the valuer cannot adhere to such a range, the drivers of the increased uncertainty must be explained.

### 4.3. SPECIFIC CHARACTERISTICS OF THE PROVISIONAL VALUATION

#### **CONTENT OF THE PROVISIONAL VALUATION REPORT**

The objective of the provisional valuation should be to assess the value of the assets and liabilities of the institution or entity (Article 36(3) of the BRRD/Article 20(4) of the SRMR) and, as far as reasonably possible, the valuation report should be supplemented by the following information as appearing in the accounting books and records of the institution:



- ▶ an updated balance sheet and a report on the financial position of the institution or entity;
- ▶ an analysis and an estimate of the accounting value of the assets;
- ▶ the list of outstanding on- and off-balance sheet liabilities shown in the books and records of the institution with an indication of the respective credits and priority levels under the applicable insolvency law.

Finally, as far as reasonably practicable, the valuation report should also indicate the subdivision of the creditors in classes in accordance with their priority levels under the applicable insolvency law and an estimate of the treatment that each class of shareholders and creditors would have been expected to receive if the institution or entity were wound up under normal insolvency proceedings <sup>(25)</sup>.

When conducting a provisional Valuation 2, the valuer should explain the reasons why the following items could or could not be included in the valuation report: an updated balance sheet and a report on the financial position of the institution, an analysis and estimate of the accounting value of the assets and a list of the outstanding balance sheet and off-balance sheet liabilities with an indication of the respective credits and priorities under the applicable insolvency law.

## **CALCULATION OF A BUFFER AIMED AT APPROXIMATING THE AMOUNT OF ADDITIONAL LOSSES**

A provisional valuation pursuant to Article 36(9) of the BRRD/Article 20(10) of the SRMR, forming the basis of the decision on the taking of the appropriate resolution action, should include a buffer aimed at approximating the amount of additional losses. That buffer should be based on a fair, prudent and realistic assessment of those additional losses. The decisions and assumptions supporting the calculation of the buffer should be adequately explained and justified in the valuation report. The valuer will need to exercise professional judgement to identify assets with the highest valuation uncertainty and determine a provisional valuation approach to inform the provisional valuation buffer.

When calculating the buffer in the context of a provisional valuation, the valuer should state the valuation methodology used and the underlying assumptions taken that result in a fair, prudent and realistic assessment of additional losses. All decisions should be adequately explained and justified.

## **METHODOLOGY FOR THE CALCULATION OF THE BUFFER FOR ADDITIONAL LOSSES**

According to Article 13 of CDR 2018/345, the valuer shall include a buffer and explain the facts and circumstances that support the existence of additional losses of uncertain amount or timing. To avoid double counting of uncertainty, the assumptions supporting the calculation of the buffer shall be adequately explained and justified by the valuer.

To determine the size of the buffer, the valuer shall identify factors that may affect expected cash flows as a result of resolution actions likely to be adopted. To estimate the value of the buffer

<sup>(25)</sup> Article 36(8) of the BRRD/Article 20(9) of the SRMR.

for additional losses, the valuer should deploy the methodologies envisaged in Article 13(3) of CDR 2018/345; namely:

- ▶ Extrapolate losses estimated for a part of the entity's assets or portfolios to the remainder of the entity's balance sheet. These losses may be estimated on the basis of findings from on-site inspections, specific reviews or stress tests already available.
- ▶ Extrapolate average losses estimated for assets of peer competitors, subject to the necessary adjustments for differences in the business model and financial structure. As an example, average losses may be estimated on the basis of non-performing exposures ratios or coverage rates of peers or on the basis of findings from system-wide stress tests or asset quality reviews.

Additionally, to estimate the buffer, the valuer could leverage historical data on losses recorded in other resolution or crisis cases or base the buffer on an analysis of historical losses for selected entities with a similar business model and risk profile.

The valuer shall explain in the valuation report the facts and circumstances that support the existence of additional losses of uncertain amount or timing. In addition, the assumptions supporting the calculation of the buffer shall also be adequately explained and justified by the valuer.

Regarding the size of the buffer, the valuer shall identify the factors that affect the expected cash flows as a result of resolution actions likely to be adopted and should explain, in the valuation report, how losses estimated for a part of the entity's assets have been extrapolated to the remainder of the entity's balance sheet.

If average losses estimated for assets of competitors have also been extrapolated for the calculation of the buffer for additional losses, the valuer should explain in the valuation report the justification and reason of the application of this approach and how the extrapolation has been done as well as how necessary adjustments for differences in the business model and financial structure have been taken into account.

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## 5. VALUATION 3

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### 5.1. INTRODUCTION

Valuation 3 under Article 20(16-18) of the SRMR aims at determining whether or not shareholders and creditors would have received better treatment if the institution under resolution had entered into normal insolvency proceedings. In other terms, Valuation 3 aims at assessing any possible breach of the NCWO principle.

When performing Valuation 2 and, as far as reasonably practicable, when performing the provisional Valuation 2, the valuation report should indicate the subdivision of the creditors in classes in accordance with their priority levels under the applicable insolvency law and an estimate of the treatment that each class of shareholders and creditors would have been expected to receive if the institution or entity were wound up under normal insolvency proceedings. This part of Valuation 2 focuses on an NCWO analysis to support the drafting of the resolution scheme and the decision-making process to, insofar as possible, avoid any breach of the NCWO principle. One of the main differences between Valuation 2 and Valuation 3 is their respective timing. While the valuation for the NCWO analysis supporting the resolution scheme is prepared as of the date as close as possible before the expected date of a decision by the resolution authority, the valuation date of Valuation 3 will be the resolution date<sup>(26)</sup>.

Valuation 3 must determine:

- ▶ the treatment that shareholders and creditors in respect of which resolution actions have been effected, or the relevant deposit guarantee schemes (DGS), would have received if the institution under resolution had entered normal insolvency proceedings at the time when the resolution decision was taken;
- ▶ the actual treatment that shareholders and creditors have received in the resolution of the institution at stake;
- ▶ whether or not there is any difference between the treatment referred to in (a) and the treatment referred to in (b).

Against this background, the valuer must get a clear view on both the Level 1 and the Level 2 legislation as well as the national insolvency framework. The latter is important to define the waterfall of liabilities eligible for the required loss absorption. Owing to the lack of an EU harmonised insolvency framework, a strong understanding of the national framework, specificities and powers granted to the liquidators is critical. In general, the valuer should take into account, for example, the national insolvency law, corporate law, any legal specificities of the national banking sector, and typical costs from normal insolvency proceedings. Finally, it is worth mentioning that each valuation should be carried out necessarily as a stand-alone

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<sup>(26)</sup> Please refer to page 7, table 1, relevant date for the performance of the valuation, see [Article 3 of CDR 2018/345](#)

valuation exercise (although the same independent valuer could carry out both Valuations 2 and 3, as mentioned above).

## 5.2. REFERENCE TIME

Valuation 3 must be based only on information concerning facts and circumstances that existed and could reasonably have been known as of the resolution date, which, had they been known, would have affected the measurement of the entity's assets and liabilities at that date.

To this end, the valuer should:

- ▶ assume that the institution has been subject to a normal insolvency proceeding at the date of the resolution decision and that the resolution action had not been effected;
- ▶ disregard any provision of extraordinary public financial support to the institution <sup>(27)</sup>.

## 5.3. MODIFICATIONS TO VALUATION METHODOLOGIES

The valuation methodologies adopted under Valuation 3 are expected to be similar to the ones that apply to Valuation 2. Nevertheless, they must be adapted to the different (insolvency) context. This chapter will highlight the main differences in valuing the assets and liabilities compared with the methodologies used when performing Valuation 2.

Under normal insolvency proceedings, the valuation of assets is informed by the absence of future business prospects. This may have a significant negative effect on the net value of the assets, which the valuer needs to take into account. The entity should be assumed not to generate any future returns other than the ones from the insolvency.

The normal insolvency procedure is often a judicial or administrative process aiming at recovering the highest possible value of assets over time. Furthermore, some national jurisdictions require several formal steps to implement transparent and competitive sales of assets. Against this background, the sale of assets is still possible under insolvency, even if the most usual approach consists of a slow recovery of all the significant cash flows. The valuer should take into account this aspect in describing the gone-concern strategy and rationalise any deviation from it. Considering all the above, the valuer cannot exclude that a fire sale under insolvency is provided for by certain jurisdictions. In this case, this fire sale could result in higher adjustments that need to be estimated considering the local context.

As the normal insolvency proceedings may take a prolonged period of time to be carried out, the time frame may have a significant impact on the final outcome of the assets' recovery. For this reason, the valuer should estimate such a timeline at least per asset category by taking into consideration national insolvency law and practice. Information on recent insolvency cases — if available and relevant — could provide a useful benchmark.

<sup>(27)</sup> The definition of 'extraordinary public financial support' is equivalent to the definition established in [Article 3\(1\)\(29\) of the SRMR](#): 'Extraordinary public financial support' means State aid within the meaning of Article 107(1) TFEU or any other public financial support at supra-national level, which, if provided at national level, would constitute State aid, that is provided in order to preserve or restore the viability, liquidity or solvency of an entity referred to in Article 2 of this regulation or of a group of which such an entity forms part.'

The valuer should also consider the potential macroeconomic and feedback effects stemming from the failing of the institution at stake. These effects — which are likely to be more relevant for global systemically important banks (G-SIBs) and other systemically important banks (O-SIBs) — could trigger a reduction of the market prices and result in further adjustments. Therefore, the assumed macroeconomic and financial scenarios could be revised accordingly, by taking into consideration any time limits for performing the valuation.

Finally, it is essential that the valuer provide adequate justification on the assumptions underlying the calculation of any valuation losses. These assumptions can impact valuation significantly and must, therefore, be explained and justified.

The valuer should disclose and explain clearly in the valuation report how the specificities of the national insolvency regime and national context have been considered and justify any deviation from it, including, inter alia, estimation of the time needed to conclude the insolvency process, the adjustments made to the value of assets and liabilities in past cases, illiquidity adjustment and costs from the insolvency process.

### 5.3.1. Valuation criteria

The same methodological considerations that apply to the adjusted book value and the DCF methods as described in Chapter 3 (resolution tools) apply when performing Valuation 3. However, CDR 2018/344 gives prevalence to the DCF.

### 5.3.2. DCF method

In an insolvency scenario, future cash flows are still subject to residual risks of realising the asset values during insolvency proceedings. This risk should be reflected in the future cash flow forecasts by applying the appropriate adjustments to the forecasted disposal prices of assets. These adjustments should reflect the collateral value and should include the costs incurred during the insolvency proceedings. The magnitude of such adjustments depends on the asset type (i.e. secured vs. unsecured loans, special loans, shipping loans, project financing) and it must be disclosed and adequately justified by the valuer.

As the risk surrounding future cash flow realisation has been accounted for in the cash flow forecast already, it should not also be reflected in the discount rate used to calculate net present value of cash flows.

The valuer should clearly explain the basis and assumptions regarding the discount rate use and the adjustment to the estimated expected cash flows under a 'gone-concern' scenario or any deviation from it.

The valuer should take into consideration and disclose the calculation of any recovery costs under the insolvency scenario.

### 5.3.3. Relative valuation methods

Valuation methodologies involving market multiples and comparable transactions should be considered as residual in a 'gone-concern' scenario, usually owing to the lack of relevant comparables in terms of dimension and characteristics for the institution as a whole. Nevertheless, the adoption of these techniques cannot be excluded, even if strong assumptions should be disclosed by the valuer. For specific assets, it may be the case that a liquid market might exist in which the assets could be sold during insolvency proceedings.

### 5.3.4. Adjusted book value method

Owing to the above lack of comparables, a valid alternative to the DCF method could be represented by the adjusted book value method, in particular for loss-making or illiquid assets and off-balance sheet exposures.

In this case, the adjustments to be applied to the accounting values of the different items should be, in general, more conservative than the ones adopted in Valuation 2. Moreover, the adjustments for the illiquid assets (i.e. fair value Level 3 assets or highly customised products) are likely to be higher than the ones used if a resolution tool with a longer term prospect was employed. However, the most liquid assets (i.e. cash) would not be affected by the insolvency.

The valuer should clearly explain the basis and assumptions regarding the estimation of adjustment to the accounting value of assets and liabilities under the insolvency scenario and should include and explain the adjustment made to account for illiquid assets or markets.

## 5.4. TREATMENT OF LIABILITIES IN VALUATION 3

As a general rule, the liabilities (both on- and off-balance sheet) under a 'gone-concern' scenario could be measured at their nominal value.

Having said that, the valuer should clearly disclose the ranking of claims under Article 2(2) of CDR 2018/344 in accordance with national law as well as the estimated distribution amounts based on the estimated value derived from normal insolvency proceedings. In addition, the valuer should provide the resolution authority with charts or tables that allow comparison with the distribution of the recoverable amount both under resolution and under insolvency scenarios to allow the resolution authority to identify immediately any breach of the NCWO principle. The comparison should also show the potential DGS's contributions in both scenarios since, according to Article 109 of the BRRD, the DGS is entitled to be (partially) refunded if the DGS's contribution to resolution was greater than the net loss that the institution would have incurred if the bank had been wound up under normal insolvency proceedings.

Finally, the valuer should also take into account those liabilities that are highly protected under other regulatory frameworks (i.e. covered bonds, derivatives with collateral). The valuation of derivatives under the assumption of normal insolvency proceedings may depart from their nominal value owing to close-out costs and capital value adjustments of any potential purchaser (see Section 6.2.4.2).

The valuer should include in the valuation report a clear comparison of the recoverable amount for both the resolution and insolvency scenarios as a basis for the assessment of any breach of the NCWO principle and include an estimation, if needed, of the contribution of the DGS in both resolution and insolvency.

## 5.5. DIFFERENCE IN THE TREATMENT OF CERTAIN ASSETS AND LIABILITIES

Certain asset types require a fundamentally different valuation approach under insolvency proceedings that goes beyond an adjustment to parameters. While accounting for a significant portion of the entity's valuation on a going-concern basis, these assets may have little or no value, depending on the specific insolvency scenario (e.g. the goodwill in wind-down). The valuer should take note of the specificities of the insolvency framework when estimating the value of these assets, among which could be the following:

- ▶ some assets may be excluded from normal insolvency proceedings as they have separation rights (assets under custody) and some transactions have specific settlements under a gone-concern scenario, such as netting agreements or set-off rights;
- ▶ the impact of the withdrawal of the banking licence on the unlikely to pay (UtP) portfolio due to the impossibility to provide further funding to the clients in difficulty. In particular, the valuer should detail the extent of any credit portfolio deterioration and, more specifically, both the cure rate and decay rate.

Some examples of asset types whose values differ significantly under normal insolvency proceedings are discussed below.

### 5.5.1. Goodwill

As goodwill relates to the entity's ability to generate future returns, it is generally assumed to have no value in Valuation 3 because the bank will no longer undertake any new business.

### 5.5.2. Deferred tax assets

An entity in resolution may have accumulated deferred tax assets (DTAs) as a result of past losses, which may have value in a going-concern scenario depending on the entity's business plan and under the assumption that the entity returns to profitability in the future. However, unprotected DTAs (i.e. DTAs stemming from temporary differences and tax losses) will probably have zero value under a gone-concern scenario as the bank is assumed to fail the profitability test owing to its insolvency. The stock of these unprotected DTAs to be wiped out could be material. On the other hand, in some jurisdictions, some qualified deferred tax assets would also keep their value in insolvency: these are referred to as deferred tax credits (DTCs). In particular, the DTAs stemming from credit provisioning (or from goodwill and intangibles' mark-down under some specific jurisdictions) could be converted into a credit against the national tax authority. Therefore, DTCs would be almost equivalent to a sovereign bond and their value can be approximated to their nominal value.

The different treatment of the DTCs could give rise to a breach of the NCWO principle. As a result, the valuer should focus on this topic with great attention.

Having said that, the valuer should also consider that the DTA legal framework varies between Member States. Before carrying out any valuation, a deep dive on the current national rules for DTAs/DTCs must be made to get consistent results.

### 5.5.3. Franchise value

On a 'going-concern' basis, the branch network, operating platform, customer base and brand of an entity can be valuable, especially to a strategic buyer. However, franchise value can be assumed to be zero on a gone-concern basis. In general, the same assumption can also be made with regard to intangible assets. Having said that, an exception to this assumption is the possibility that parts of the entity are significant enough to warrant franchise valuation depending on the insolvency proceeding legislation of the respective jurisdiction.

The valuer should disclose and clearly explain in the valuation report the assumptions and methodological choices taken that apply to all or some assets and liabilities, are specific to the insolvency scenario and would not apply on a going concern basis or Valuation 2.

As a minimum, the valuer should explain the assumptions taken when performing the valuation of any goodwill, intangible assets, deferred tax assets and any franchise value in its valuation report. The valuer shall explain any deviation with respect of the descriptions specified in this framework when considering these types of assets.

### 5.5.4. Costs under insolvency proceedings

Costs associated with normal insolvency proceedings must also be taken into account in Valuation 3. These costs include legal and professional fees paid to the liquidator or administrator, accountants, auditors, independent valuers, operational expenses of the normal insolvency process and costs related to disposal activities such as rendering assets saleable and wind-down costs incurred for portfolios that are going to be wound up. Specific estimations should be provided for the Member States where the concerned bank is located by taking into consideration recent past insolvency cases, if available. An interaction with the liquidator could provide useful inputs for such estimation, at least for ex post Valuation 3.

The valuer should take into consideration and explain clearly the basis and assumptions regarding the estimation of costs associated with the insolvency proceeding in accordance with national insolvency regimens and context.



# 6. ANNEXES

## 6.1. ANNEX I: CHAPTER 2 EXPLANATORY TABLES

**Table 3: Projection period options for the DCF method**

	Option 1	Option 2	Option 3
<b>Description</b>	<ul style="list-style-type: none"> <li>▶ Projection for the full lifetime of the asset</li> </ul>	<ul style="list-style-type: none"> <li>▶ Projection for 5-10 years, given decreasing reliability of projections over time</li> </ul>	<ul style="list-style-type: none"> <li>▶ Projection until the end of the disposal period</li> </ul>
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>▶ For assets with finite lifetimes, cash flows will typically be forecasted over the full life of the asset</li> <li>▶ For assets with no contractual lifetime, behavioural lifetimes may be used as the projection period</li> <li>▶ If the entity in question has developed International Financial Reporting Standards (IFRS) 9 capabilities or other capabilities in accordance with local accounting or supervisory standards, these could be leveraged for projection over the full lifetime</li> <li>▶ As macroeconomic forecasts are generally considered to be reliable for up to a 3- to 4-year horizon, return to long-run historical trends may be assumed after this point</li> </ul>	<ul style="list-style-type: none"> <li>▶ As a minimum, cash flows should be projected up to the point when normalised levels of return can be achieved by the entity according to its business plan</li> <li>▶ The time horizon for achieving normalised levels of return will be affected by:                             <ul style="list-style-type: none"> <li>- specific characteristics and current situation of the entity, e.g. volatility of operations</li> <li>- maturity of the market</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶ If it is expected that the entity as a whole or its assets are going to be sold within a disposal period of e.g. 2-3 years, explicit projection is needed only until the end of this disposal period</li> <li>▶ At the end of this period, the terminal value would be measured as the expected sale price</li> </ul>
<b>Complexity/ granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>▶ High complexity as it requires projections over the full lifetime, which can be quite long for certain asset classes</li> <li>▶ Greater accuracy as there is no reliance on terminal value assumptions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Lower complexity and greater accuracy as projections are limited to a 5- to 10-year horizon</li> <li>▶ Lower accuracy as there is greater reliance on terminal value and the assumptions contained therein</li> </ul>	<ul style="list-style-type: none"> <li>▶ Lower complexity and greater accuracy as projections are limited to a 2- to 3-year horizon</li> <li>▶ Greater accuracy as projections are required for a short period of time</li> <li>▶ Accuracy may be lower due to use of the sale price as terminal value and the uncertainties around the sale price estimate</li> </ul>
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>▶ Information on assets' contractual or behavioural lifetime required</li> </ul>	<ul style="list-style-type: none"> <li>▶ No extra data requirements</li> </ul>	<ul style="list-style-type: none"> <li>▶ No extra data requirements</li> </ul>
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>▶ Margin of error on projections will increase as they go further into the future</li> <li>▶ This is offset by the reduced reliance on terminal value assumptions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Terminal value is defined by various assumptions and thus carries a greater margin of error</li> </ul>	<ul style="list-style-type: none"> <li>▶ Margin of error mainly caused by determination of the expected sale price</li> </ul>

Table 4: Cash flow projection options (except terminal value) for the DCF method

	Option 1	Option 2	Option 3	Option 4	Option 5
<b>Description</b>	▶ Contractual cash flows	▶ Contractual cash flows adjusted for expected losses of the assets	▶ Behavioural cash flows adjusted for expected losses of the assets	▶ Asset-specific cash flow forecasts	▶ Contractual and behavioural cash flows adjusted for expected losses, capital and other operational requirements
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>▶ The discount rate should reflect the risk-adjusted return for prospective buyers, such as:               <ul style="list-style-type: none"> <li>- cost of risk</li> <li>- capital or solvency requirements</li> <li>- cost of capital</li> </ul> </li> <li>▶ For higher-risk assets it may be challenging to include all risk components into the discount rate; therefore, adjusted cash flows may be preferred</li> </ul>	<ul style="list-style-type: none"> <li>▶ Impact of normalisation over time of market conditions on items such as interest expense, interest income and fee income should be reflected</li> </ul>	<ul style="list-style-type: none"> <li>▶ Impact of resolution actions on customer behaviour should be considered, such as:               <ul style="list-style-type: none"> <li>- potential increase in prepayments of loans as customers refinance loans elsewhere</li> <li>- potential increase in strategic defaults</li> <li>- overall decrease in customer loyalty</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶ It is common for entities to have specific cash flow forecasts for individual significant exposures and/or clients, which can be used directly or with adjustments for valuation purposes</li> </ul>	<ul style="list-style-type: none"> <li>▶ It is the common method for the valuation of the equity of banks</li> <li>▶ It implies the estimation of cash flows of assets and liabilities and determines the surplus of capital requirements to be distributed to the shareholders</li> <li>▶ It does not imply the valuation of assets and liabilities individually</li> <li>▶ Restructuring and resolution costs must be considered</li> </ul>
<b>Complexity/granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>▶ Low complexity in cash flow projections; however, discount rate setting may be complex instead</li> <li>▶ Level of granularity should be determined by the valuer and can range from loan level to less granular with segmentation</li> <li>▶ Distinction between core and non-core business should be first layer of segmentation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Greater complexity as it requires estimation of expected losses</li> <li>▶ Level of granularity should be determined by the valuer and can range from loan level to less granular with segmentation</li> <li>▶ Distinction between core and non-core business should be first layer of segmentation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Greater complexity as it requires estimation of expected losses and the entity's internal models may need to be used to project behavioural cash flows</li> <li>▶ Level of granularity should be determined by the valuer and can range from loan level to less granular with segmentation</li> <li>▶ Distinction between core and non-core business should be first layer of segmentation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Greater complexity</li> </ul>	<ul style="list-style-type: none"> <li>▶ Greater complexity as it requires estimation of cash flows, expected losses and capital requirements</li> </ul>

	Option 1	Option 2	Option 3	Option 4	Option 5
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>▶ Less intensive data requirements such as contractual cash flows are expected to be available or easily calculable</li> </ul>	<ul style="list-style-type: none"> <li>▶ Intensity of data requirements depends on granularity of the analysis</li> <li>▶ Regardless of granularity, additional data are needed for expected loss estimation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Intensive data requirements due to need for behavioural cash flow projections</li> <li>▶ Intensity of data requirements depends on granularity of the analysis</li> <li>▶ Regardless of granularity, however, additional data are needed for expected loss estimation and to justify behavioural assumptions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Business and repayment plan for individual assets</li> </ul>	<ul style="list-style-type: none"> <li>▶ Business/restructuring plan, cash flows projections and capital requirement</li> </ul>
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>▶ Uncertainty is low, especially for assets with low risk and clearly defined contractual terms</li> </ul>	<ul style="list-style-type: none"> <li>▶ Uncertainty around expected losses</li> <li>▶ If the entity's internal models are used to estimate expected losses, uncertainty inherent to these models should be considered</li> </ul>	<ul style="list-style-type: none"> <li>▶ Uncertainty around behavioural assumptions, which can be key drivers of results and should be explained in the valuation report</li> <li>▶ If the entity's internal models are used to estimate expected losses, uncertainty inherent to these models should be considered</li> </ul>	<ul style="list-style-type: none"> <li>▶ Significant uncertainty around whether or not cash flows will realise in line with the business plan</li> <li>▶ Depends on how reliable the business plan is considered to be</li> </ul>	<ul style="list-style-type: none"> <li>▶ All uncertainties pointed out in the other options</li> </ul>

Table 5: Terminal value projection options for the DCF method

	Option 1	Option 2	Option 3	Option 4
<b>Description</b>	<ul style="list-style-type: none"> <li>Value of unamortised principal and interest</li> </ul>	<ul style="list-style-type: none"> <li>Disposal value of collateral</li> </ul>	<ul style="list-style-type: none"> <li>Disposal value of asset based on comparable transactions</li> </ul>	<ul style="list-style-type: none"> <li>Perpetuity formula for cash flows</li> </ul>
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>The principal amount for a bond or loan that follows the bullet repayment schedule is the final payment</li> <li>For some amortising loans and bonds the terminal value will be close to zero; however, there are loans that follow arbitrary amortisation where the terminal value is not zero</li> <li>There may be cases of bonds (e.g. equity linked or inflation linked) or loans (e.g. some restructured loans) where the principal amount at maturity may vary depending on the underlying index, on the capitalisation of interest or on the restructuring features of the contracts</li> <li>In both cases, the terminal value is exactly in line with contractual cash flows</li> <li>Certain assets with depreciation schedules may have zero accounting value at the end of their useful life</li> </ul>	<ul style="list-style-type: none"> <li>If the resolution scenario requires that collateral be liquidated within certain timelines, terminal value should be calculated as the disposal value</li> <li>Depending on the maximum holding period, distressed sale discounts should be adjusted</li> <li>A view on the liquidity of the market at the end of the maximum holding period is needed</li> <li>Collaterals may or may not produce cash flows in addition to terminal value</li> </ul>	<ul style="list-style-type: none"> <li>If the resolution scenario requires that the entity as a whole or parts of its assets are sold after a certain holding period, the terminal value should be calculated as disposal value at the end of the holding period</li> </ul>	<ul style="list-style-type: none"> <li>Calculation uses formulas that determine the income into perpetuity growing at a constant rate</li> <li>To estimate the normalised sustainable income, the following should be considered: <ul style="list-style-type: none"> <li>the growth of the business into perpetuity</li> <li>capital requirements into perpetuity</li> <li>the long-term sustainable return on equity (RoE)</li> </ul> </li> <li>The growth rate into perpetuity should be estimated in accordance with the long-term estimates of the principal macroeconomic indicators and the key variables of the business</li> <li>There should be adjustments to the growth assumptions based on extraordinary and one-off effects</li> </ul>
<b>Complexity/granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>Low complexity as information about principal amounts of exposures is generally available</li> </ul>	<ul style="list-style-type: none"> <li>Potentially lower accuracy if it is difficult to project market conditions and thus disposal value at the end of the holding period</li> </ul>	<ul style="list-style-type: none"> <li>Potentially lower accuracy if it is difficult to project market conditions and thus disposal value at the end of the holding period</li> </ul>	<ul style="list-style-type: none"> <li>High complexity as a normalised, sustainable, long-term income must be estimated for the entity or asset</li> </ul>
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>Data on principal amounts and on various transactional characteristics</li> </ul>	<ul style="list-style-type: none"> <li>Data on collateral characteristics required</li> <li>Assumptions about changes in collateral prices required</li> </ul>	<ul style="list-style-type: none"> <li>Data on comparable transactions required</li> </ul>	<ul style="list-style-type: none"> <li>Entity's business plan is required, with potential adjustments to the assumptions by valuers</li> </ul>
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>Limited uncertainty driven by features with embedded optionality</li> </ul>	<ul style="list-style-type: none"> <li>Some uncertainty as estimate of collateral prices for the terminal value calculation are needed</li> </ul>	<ul style="list-style-type: none"> <li>Level of uncertainty depends on the availability of comparable transactions and the degree of comparability of assets</li> </ul>	<ul style="list-style-type: none"> <li>Level of uncertainty depends on the length of the explicit projection period and the data available to justify growth assumptions</li> <li>Given the overall reliance on assumptions, there is high uncertainty</li> </ul>

**Table 6: Discount rate options for the DCF method Annex 2: 2019 Key performances indicators**

	Option 1	Option 2	Option 3	Option 4
<b>Description</b>	<ul style="list-style-type: none"> <li>▶ CAPM</li> <li>▶ Discount rate is equal to a risk-free rate plus a risk premium calculated as the product of market risk premium and the beta coefficient, which measures the entity's correlation with the market</li> </ul>	<ul style="list-style-type: none"> <li>▶ Internal rates of return (on equity) required by potential buyers such as specialised investors in the sector</li> </ul>	<ul style="list-style-type: none"> <li>▶ Discount rates implied by transactions or market capitalisation of comparable assets/entities</li> </ul>	<ul style="list-style-type: none"> <li>▶ Discount rates that reflect the cost of financing the asset or entity that is being valued</li> </ul>
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>▶ For the risk-free rate, literature prescribes using the longest possible maturity, e.g. the 10-year government bond return</li> <li>▶ Where the entity is not listed, the beta coefficient can be taken as that of similar listed entities. To do this, a group of comparable entities needs to be selected</li> <li>▶ Market risk premium should be based on long-run historical data on the delta between the average return on a diversified equity portfolio and the risk-free rate</li> <li>▶ An alpha coefficient can be added to the CAPM formula to capture the specific risk premium for the entity not recognised in the beta. When determining the alpha, the following factors should be considered:                             <ul style="list-style-type: none"> <li>- size of the entity compared with comparable entities</li> <li>- uncertainties inherent in the entity's financial projections</li> <li>- difficulties the entity may face in obtaining funding</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶ The internal rate of return (IRR) required depends on the type of buyer and their cost of capital</li> <li>▶ Returns expected by private equity funds reflect the long-term and illiquid nature of their investments</li> <li>▶ Mid-tier, challenger banks have a higher risk profile and funding costs than Tier 1 banks and therefore require an above-market return on investment</li> <li>▶ Strategic buyers and top-tier banks will use the average cost of equity in the market</li> <li>▶ If the time frame for sale allows potential buyers to conduct a proper due diligence, a smaller uncertainty premium should be considered</li> </ul>	<ul style="list-style-type: none"> <li>▶ A triangulation with as many reference points as possible is required for this approach, e.g.:                             <ul style="list-style-type: none"> <li>- yields implied by comparable transactions</li> <li>- yields implied by trading prices of similar assets</li> <li>- scientific benchmarks coming out of securitisation structures</li> </ul> </li> <li>▶ Discount rate can also be tailored to specific asset types or assets segmented by riskiness</li> </ul>	<ul style="list-style-type: none"> <li>▶ If a dividend cash flow is used to value the equity, the discount rate for discounting dividends should reflect the cost of equity</li> <li>▶ If an asset portfolio is valued, the cost of funding the asset portfolio (accounting for a mix between debt and equity) might be considered</li> <li>▶ The cost of liabilities that are linked to and will be transferred with the assets might be considered</li> </ul>
<b>Complexity/ granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>▶ Estimation is straightforward</li> <li>▶ Parameters operationalised using historical data may not reflect the resolution setting</li> </ul>	<ul style="list-style-type: none"> <li>▶ As this option requires significant expert judgement, accuracy is lower</li> <li>▶ Returns required by potential buyers can rise to unreasonable levels in a resolution setting with limited number of buyers and shortened timelines</li> </ul>	<ul style="list-style-type: none"> <li>▶ As transactions or peers considered cannot be 100% comparable, accuracy is lower</li> </ul>	<ul style="list-style-type: none"> <li>▶ Can be calculated at the desired level of granularity and with high accuracy</li> <li>▶ May not adequately reflect the resolution setting</li> </ul>

	Option 1	Option 2	Option 3	Option 4
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>▶ No data availability issues expected as historical market data are the main requirement</li> </ul>	<ul style="list-style-type: none"> <li>▶ Dependent on availability of benchmarks</li> </ul>	<ul style="list-style-type: none"> <li>▶ Dependent on availability of comparable transactions, assets and peers</li> <li>▶ Details of transactions may not be publicly available</li> </ul>	<ul style="list-style-type: none"> <li>▶ Less intensive data requirements</li> <li>▶ Required data are expected to be available on a continuous basis as part of business as usual (BAU)</li> </ul>
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>▶ No inherent uncertainty as it is a closed-form calculation</li> <li>▶ Uncertainty can stem from selection of peers for the calculation of the beta coefficient and setting of the alpha coefficient</li> </ul>	<ul style="list-style-type: none"> <li>▶ Some uncertainty as required rates of return are based on benchmarks and may change depending on the specific resolution's setting and market environment</li> </ul>	<ul style="list-style-type: none"> <li>▶ Some uncertainty as transactions or peers considered cannot be 100 % comparable</li> </ul>	<ul style="list-style-type: none"> <li>▶ Very limited uncertainty</li> </ul>

**Table 7: Sources of multiple options for the market multiples method**

	Option 1	Option 2
<b>Description</b>	<ul style="list-style-type: none"> <li>▶ Multiples of earnings, revenue or net worth derived from comparable transactions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Multiples of earnings, revenue or net worth derived from market capitalisation of peer entities</li> </ul>
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>▶ Similarity of transactions considered should be assessed and the weight given to the derived multiples adjusted accordingly</li> <li>▶ There are various factors to consider when selecting comparable transactions: <ul style="list-style-type: none"> <li>- degree of similarity between the assets</li> <li>- timing of the transaction</li> <li>- whether or not it is an arm's-length transaction</li> <li>- reliability of information concerning the transaction</li> </ul> </li> <li>▶ Actual transactions should be given more weight than intended transactions or unrealised bids</li> <li>▶ Similarly, previous offers for the whole or parts of the entity can be considered, but with less weight</li> <li>▶ Adjustments such as an illiquidity discount may need to be made for the setting in which transactions take place as different multiples can be expected for an orderly market transaction vs. sale of business in a resolution setting</li> </ul>	<ul style="list-style-type: none"> <li>▶ The multiples applied in an earnings-based valuation are generally derived from data relating to companies listed on a recognised stock exchange</li> <li>▶ Adjustments should be made for business-specific characteristics based on an assessment of the comparability of the peer entities</li> <li>▶ Assessment of comparability should take into account factors such as each peer entity's: <ul style="list-style-type: none"> <li>- risk profile</li> <li>- return performance</li> <li>- size and complexity</li> <li>- geography and geographical diversification</li> <li>- market depth</li> </ul> </li> <li>▶ The peer group used for the determination of the beta factor for the CAPM discount rate calculation may also be used to derive suitable multiples</li> <li>▶ Generally, the mean or median of the peer group multiple is taken to calculate the entity's value</li> </ul>
<b>Complexity/granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>▶ Straightforward, top-down approach</li> <li>▶ Adjustments to net income or net worth may be necessary</li> <li>▶ Limited accuracy, typically used as a cross-check</li> </ul>	<ul style="list-style-type: none"> <li>▶ Straightforward, top-down approach</li> <li>▶ Adjustments to net income or net worth may be necessary</li> <li>▶ Limited accuracy, typically used as a cross-check</li> </ul>
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>▶ Information on comparable transactions with details required to perform an assessment of their comparability</li> </ul>	<ul style="list-style-type: none"> <li>▶ Capital market data for peer entities</li> <li>▶ Historical and projected business indicators for the entity</li> </ul>
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>▶ Method is highly sensitive to choice of only two parameters and therefore ranges can be large (e.g. if two comparable transactions suggest widely different multiples)</li> <li>▶ A large number of multiples results in a more robust average</li> </ul>	<ul style="list-style-type: none"> <li>▶ Method is highly sensitive to choice of only two parameters and therefore ranges can be large (e.g. if two comparable transactions suggest widely different multiples)</li> <li>▶ A large number of multiples results in a more robust average</li> </ul>

**Table 8: Alternative approaches to the adjusted book value method**

	Option 1	Option 2	Option 3	Option 4
<b>Description</b>	<ul style="list-style-type: none"> <li>▶ Use book value, i.e. no adjustment</li> </ul>	<ul style="list-style-type: none"> <li>▶ Book value adjustments based on expert judgement of resolution authority</li> </ul>	<ul style="list-style-type: none"> <li>▶ Book value adjustments based on previous resolutions and comparable transactions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Adjustments from central bank lending of last resort facilities</li> </ul>
<b>Practical considerations</b>	<ul style="list-style-type: none"> <li>▶ For certain asset types, book value can be used directly without any adjustments</li> <li>▶ These are very low-risk, highly liquid assets that can be readily sold without any loss on their book value</li> <li>▶ However, depending on the size of such assets on the entity's balance sheet, a small adjustment may need to be considered owing to potential price drops from the accelerated disposal of large volumes</li> </ul>	<ul style="list-style-type: none"> <li>▶ Book value adjustments can be determined by resolution authorities leveraging results and findings of previous exercises such as:                             <ul style="list-style-type: none"> <li>- stress tests</li> <li>- on-site inspections</li> <li>- other asset quality review exercises</li> <li>- portfolio reviews (e.g. auditors, SRB specialists)</li> </ul> </li> <li>▶ If necessary, resolution teams could approach joint supervisory teams (JSTs) for feedback from a supervisory perspective</li> <li>▶ Adjustments should reflect:                             <ul style="list-style-type: none"> <li>- effects of the resolution setting, such as higher illiquidity and accelerated sale discounts</li> <li>- complexity and fundamental characteristics of asset types in addition to their quality</li> <li>- expected losses or incurred losses not recognised in the financial statements</li> <li>- other adjustments (e.g. estimated restructuring or litigation costs)</li> </ul> </li> <li>▶ As such, while useful in provisional valuation contexts, this method can also help to narrow the typical range around valuation outcomes</li> </ul>	<ul style="list-style-type: none"> <li>▶ Book value adjustments can be estimated with model-based approaches that leverage data from historical bank failures — for example, academic research based on US banks indicates that total costs from insolvency proceedings average ≈ 12 % <sup>(25)</sup></li> <li>▶ Such models can provide an unbiased estimate of the ultimate value of different asset types on the entity's balance sheet</li> <li>▶ Price to book value adjustments can also be based on comparable transactions</li> <li>▶ Takes into account restructuring and resolution costs</li> </ul>	<ul style="list-style-type: none"> <li>▶ Where available, discount rates applied by central bank lending of last resort facilities can be used as a benchmark</li> <li>▶ Examples of such facilities include the Federal Reserve System's discount window and the European Central Bank (ECB)'s marginal lending facility</li> <li>▶ Often, further discounts will be needed to reflect higher illiquidity and accelerated sale discounts appropriate for a resolution setting</li> </ul>
<b>Complexity/ granularity vs. accuracy</b>	<ul style="list-style-type: none"> <li>▶ N/A<sup>(26)</sup></li> </ul>	<ul style="list-style-type: none"> <li>▶ Granularity of valuation is up to the independent valuer but generally at asset type level with some further segmentation</li> </ul>	<ul style="list-style-type: none"> <li>▶ To ensure comparability of book value adjustments to previous cases and comparable transactions, an asset type segmentation is most reasonable</li> </ul>	<ul style="list-style-type: none"> <li>▶ Depends on the granularity of available discounts</li> </ul>
<b>Data requirements</b>	<ul style="list-style-type: none"> <li>▶ No data requirements</li> </ul>	<ul style="list-style-type: none"> <li>▶ Stress test results, on-site inspection findings and asset quality assessments performed by supervisory teams</li> </ul>	<ul style="list-style-type: none"> <li>▶ Requires large number of historical bank failure or resolution cases and granular balance sheet as well as outcome information for each case</li> </ul>	<ul style="list-style-type: none"> <li>▶ Updated discounts for liquid instruments are readily available</li> </ul>

<sup>(25)</sup> BENNET and UNAL, Understanding the Components of Bank Failure Resolution Costs, FDIC-CFR, 2015.

<sup>(26)</sup> N/A: Not applicable

	Option 1	Option 2	Option 3	Option 4
<b>Confidence-level target</b>	<ul style="list-style-type: none"> <li>▶ N/A</li> </ul>	<ul style="list-style-type: none"> <li>▶ Some uncertainty as method primarily relies on expert judgement; however, use of supervisory exercise results should reduce uncertainty</li> <li>▶ Ideally used as one reference point in a triangulation exercise</li> </ul>	<ul style="list-style-type: none"> <li>▶ Some uncertainty as each entity and resolution setting are unique and extrapolations from previous resolutions may not capture these specificities</li> <li>▶ Given the uniqueness of each entity as well as the vulnerabilities that have led it into resolution, any model outputs should be treated as indicative ranges rather than definitive valuations</li> <li>▶ Ideally used as one reference point in a triangulation exercise</li> </ul>	<ul style="list-style-type: none"> <li>▶ High uncertainty as discounts may not be available for sufficiently comparable assets</li> <li>▶ Ideally used as one reference point in a triangulation exercise</li> </ul>



## 6.2. ANNEX II: OTHER CONSIDERATIONS REGARDING THE TREATMENT OF SPECIFIC ASSETS AND LIABILITIES

### 6.2.1. Non-performing exposures and foreclosed assets

#### DEFINITION

Regulation (EU) No 680/2014 <sup>(30)</sup> refers to non-performing exposures (NPEs) as exposures that satisfy either or both of the following criteria:

- ▶ exposures becoming 90 days overdue;
- ▶ exposures in which debtors are assessed as unlikely to pay without the enforcement of the collateral, regardless of the existence of any past due amount.

This categorisation applies notwithstanding the classification of an exposure as defaulted for regulatory purposes in accordance with Article 178 of Regulation (EU) No 575/2013 (the Capital Requirements Regulation (CRR)) or as impaired for accounting purposes.

The valuation of NPEs might very well involve a degree of uncertainty higher than when valuing performing loans as they are usually loss-making, that is, they usually generate no or irregular cash flows. Likewise, some categories of these assets cannot be easily sold without a substantive loss of value, particularly in times of crisis. Therefore, the valuation of NPEs can be more challenging than the valuation of performing loans. In addition, the level of prudence in the selection of parameters for the valuation may need to be higher.

Foreclosed or repossessed assets are those assets (e.g. real estate, participations) owned by the institution that have been received in payment of debt, regardless of the legal form used (e.g. judicial or extra-judicial proceedings, purchase of assets for the cancelation of debts).

#### METHODOLOGIES

Irrespective of the chosen valuation methodology, an intermediate objective for the valuer is to determine the value of NPEs on the basis of the present value of the cash flows expected to be recovered for each exposure ('recoverable amount'). Cash flows of NPEs can derive either from payments made by the borrowers (going-concern approach) or from the disposal or the realisation of the collateral (gone-concern approach). Under the going-concern approach, it can be assumed that the debtor continues making positive cash flows that can be used to repay debt. A gone-concern approach is typically applied to NPEs becoming past due as well as other cases where it is not possible to obtain recent financial information from debtors. This approach is very similar to that defined by an accounting framework for the calculation of impairments.

The going-concern approach is only recommended where the estimation of cash flows of the borrower will probably not involve a high degree of uncertainty, for example in the case of project finance. Nevertheless, this approach demands a more granular analysis.

<sup>(30)</sup> Commission Implementing Regulation (EU) No 680/2014 of 16 April 2014 laying down implementing technical standards with regard to supervisory reporting of institutions according to Regulation (EU) No 575/2013 of the European Parliament and of the Council, OJ L 191, 28.6.2014, p. 1.

The outcome of valuations of NPEs should be consistent with the definitions envisaged in CDR 2018/344 and CDR 2018/345. It would imply that when using the hold value as the measurement basis, cash flows derived from the realisation of the collateral should be those that the entity can reasonably expect under fair, prudent and realistic assumptions. If the valuer performs a valuation on the basis of disposal value, it should take into consideration the prevailing market conditions through an orderly sale or a transfer of the collaterals and, where appropriate, should apply additional adjustments to reflect disorderly or fire sales conditions.

Regardless of the methodology selected (DCF or adjusted book value <sup>(21)</sup>), the valuer should estimate the recoverable amount of the loan. When the recoverable amount is calculated on the basis of the realisation value of the collateral, this value must be calculated taking into account the necessary adjustments to adequately reflect the potential drop in the collateral's value up to the time of disposal. These adjustments will take into account market liquidity and the collateral's characteristics. Additionally, an adjustment should be made to cover the cost of sale, maintenance expenses and judicial costs, which are especially relevant if the collateral serves as security for several loans or has a lien granted over it. These costs could be estimated on the basis of the institution's experience with sales.

Additionally, the value of NPLs should reflect, among others, the following aspects:

- ▶ effects of the application of the resolution tool(s), such as the sale of assets during the restructuring phase or the transfer to an asset management vehicle;
- ▶ complexity and fundamental characteristics of asset types and their markets;
- ▶ time of disposal of assets, which would depend on the expected time for the enforcement of collaterals in accordance with national legislation and taking into account the liquidity of the market.

## LEVEL OF GRANULARITY AND SEGMENTATION

The valuation of NPEs could be made with different levels of granularity, ranging from loan level to less granular portfolios. The specific segmentation applied will be constrained by the available data and time as higher levels of granularity have higher data requirements.

The choice of a collective analysis or an individual analysis will determine the level of granularity of the information provided by the institution. Whatever the approach is, a minimum level of segmentation is always required to treat non-homogeneous exposures differently.

The individual analysis requires a debtor or exposure level assessment and very granular and accurate information extracted from loan tapes. To achieve this, it must be ensured that the data that the institution provides for valuation are of sufficient quality around key issues such as exposure segmentation and debtors' attributes. This approach could be valid for the valuation of large exposures (e.g. those designated under the prudential framework) or for exposures with specific characteristics.

Under a collective analysis approach the valuer can calculate the recoverable amounts or adjustments at an aggregated level by segmenting the loan portfolio by exposure type (e.g.

<sup>(21)</sup> When using the adjusted accounting value method, the valuer shall estimate the magnitude of the adjustments applied to the book value of the entity's exposures. To achieve this, the difference between the net carrying amount of the exposure, as of the date of valuation, and the present value of expected cash flows to be collected when realising the collateral will be calculated using an appropriate discount rate. When a DCF method is used the valuer has to determine the present value of cash flows derived from the borrower or from the enforcement and disposal of collateral.

retail mortgages, real estate developers, small and medium-sized enterprises (SMEs), large corporations, public sector loans) or by collateral class (e.g. securities, first residence, land, guarantees) or by geographical location of the collateral. To achieve this, the valuer could adopt the segmentation defined for prudential reporting (financial reporting framework (FINREP), common reporting framework (COREP) and generally accepted accounting principles (GAAP)) or that used by the institution for internal reporting. Banks with advanced models for the calculation of capital requirements should be able to segment portfolios by risk level (e.g. by rating/scoring). To the extent possible, the valuer should ensure that assets are correctly segmented according to their characteristics, for example through the use of sample testing.

### **CALCULATION OF ADJUSTMENTS (ADJUSTED BOOK VALUE)/PRESENT VALUE OF CASH FLOWS (DCF METHOD)**

In principle, the valuer should estimate the recoverable amount of collaterals or the adjustments on the basis of forward-looking projections (top-down approach) provided by macroeconomic scenarios by mapping scenario assumptions to risk parameters expressed in terms of recoverable amounts (e.g. value of collaterals) or adjustments.

However, where valuers face significant time pressure, uncertainty regarding scenario assumptions or a lack of necessary information, alternative approaches could be taken based on credit risk parameters of the institution or on expert judgement (bottom-up approaches), namely:

- ▶ Credit risk parameters of the institution (e.g. loss given defaults (LGDs)) or the average level of provisions: these could be adjusted for supervisory findings of on-site inspections, supervisory exercises (e.g. asset quality reviews and stress test) or specific reviews.
- ▶ Reappraisal of collaterals by independent experts: where resources or time are limited, valuers can prepare a sample of collaterals subject to reappraisal and extrapolate conclusions to other exposures of the same segment or to exposures from other segments. Alternatively, the valuer could make use of representative indexes such as real estate indexes.
- ▶ Credit risk parameters of peers with similar business model or operating in the same markets.
- ▶ Market multiples and comparable transactions: such as data on transactions of NPEs with similar characteristics or data on sales of foreclosed assets.
- ▶ Expert judgement based on recent resolution cases or data from historical bank failures.

### **FORECLOSED ASSETS**

Irrespective of the valuation methodology used, the valuer will have to determine the recoverable amount of assets at the expected time of sale. The outcome of the valuation should be consistent with the valuation criteria foreseen in CDR 2018/344 and CDR 2018/345.

The approach proposed for the valuation of NPLs can be applied equally to the valuation of foreclosed assets. The three most relevant parameters for the valuation of these assets are as follows:

1. Asset value: the valuer can choose a different level of granularity depending on the information available. In a granular approach, the valuer should segment the portfolio by

asset class. In principle, recoverable amounts or adjustments should be modelled on the basis of macro scenarios described in Section 3.3.4. Alternatively, the valuer can use prices inferred from comparable transactions in the relevant markets, price indexes or prices provided by automated valuation methods. Additional adjustments could be applied to take into consideration market circumstances (e.g. liquidity conditions) as well as the volume of assets in the institution's balance sheet and possible fire sales.

2. Additional adjustments: the adjustments to the recoverable amount should include an estimation of costs to be incurred up to the sale of assets, such as maintenance and marketing costs and taxes. The estimation of these costs could be drawn on the institution's experience on sales.
3. Expected time of sale: to estimate this parameter the valuer could leverage on historical information relating to recent transactions and liquidity of the assets.

The valuer should clearly disclose and explain in the valuation report the underlying assumptions for the estimation of the value of NPEs and foreclosed assets.

The valuer should disclose and explain the methodological approaches and main parameters of the valuation of these portfolios, or any other portfolio of assets (even performing portfolios) when a specific approach has been used. The valuer should explain all the main underlying assumptions of the valuation performed, including but not limited to the disclosure of the use of hold or disposal value approaches.

## 6.2.2. Performing exposures

### DEFINITION

The portfolio of performing exposures accounts for a large part of the asset side of many banks, even during times of distress. The following sections comment on several aspects regarding the valuation of performing loans.

Performing loans can be defined as those loans that do not fall within the scope of NPEs of the EBA's Implementing Technical Standards (ITS) on forbearance and non-performing exposures. However, the level of risk of the different segments of performing loan portfolios may vary significantly and, as a consequence, the valuer should devote particular attention to high-risk segments — that is, exposures whose credit risk has increased significantly since the initial recognition — in the sense of IFRS 9, or restructured/forborne exposures classified as performing in the institution's accounting books.

As mentioned in the previous section, the valuation of performing loans may involve a lesser degree of uncertainty compared with the valuation of NPEs. However, there are some elements of the valuation process (e.g. interest rate curves, calculation of expected losses) that merit the attention of the valuer, as they could add uncertainty to the outcome of the valuation.

### METHODOLOGIES

As for the valuation of NPEs, an intermediate objective for the valuer is to determine the value of performing exposures on the basis of the present value of the cash flows that are expected

to be recovered for each exposure, considering that a share of performing loans is expected to become impaired during the valuation horizon. Therefore, the valuer should also consider the expected losses related to expected new defaulted loans. Cash flows are normally derived from payments made by the borrowers and it is assumed that debtors will continue repaying the debt. Therefore, the estimation of cash flows of performing loans often does not involve a high degree of uncertainty, with the exception of high-risk exposures or forbore exposures, which should be carefully tackled by the valuer.

In light of the reasons mentioned above, the valuation of performing loans can be referred to as a going-concern approach such that the DCF method should be generally applied for the valuation of performing loans, unless a provisional valuation is available.

The outcome of the valuation of performing loans should be consistent with the definitions of CDR 2018/344 and CDR 2018/345. When using the hold value as the measurement basis, cash flows should be estimated under fair, prudent and realistic assumptions. The valuer can estimate the hold value by taking into consideration, among other factors, the contractual cash flows of the existing portfolio, the behavioural cash flows related to new production/business (e.g. when the valuer has to estimate the value of the whole bank) and valuation losses. If the measurement basis is the disposal value, the valuer should apply an adjustment to the valuation's outcome or higher discount rates when using the DCF method to take into consideration the market conditions through an orderly sale. Where appropriate, the adjustments or discount rates should reflect a potential disorderly or fire sale conditions.

## **METHODOLOGICAL ASPECTS OF THE VALUATION OF PERFORMING LOANS**

### ***Determination of cash flows***

The key aspect for the valuation of performing loans is the estimation of cash flows, which has two main components: the expected repayments and expected losses.

With regard to the expected income from loans, as a starting point, the valuer should make a distinction between (i) the existing portfolio of loans and (ii) the roll-over/new business that the entity plans to disburse in the future.

Regarding the existing portfolio, a number of aspects should be duly considered. Preferably, the valuer should seek access to granular data to determine the amount and the timing of future cash flows. A starting point for the analysis may be the calculation of contractual cash flows, which may be a complex process, depending on a number of parameters that interplay as well as on the level of granularity of the input data. Normally, institutions have application lifecycle management (ALM) applications providing estimates of cash flows based on projections of interest rates curves, spreads and forecasts of the new business.

More specifically, a key attention point revolves around the interest rates, spreads of new business and repricing characteristics of the loans, which are relevant for the calculation of the cash flows, that is, not relevant for discounting.

To project interest rates, the valuer will be required to map macroeconomic scenarios with the corresponding contractual cash flows. The behavioural cash flows related to the new production and to loan advances/commitments should follow a forward-looking view and must be estimated taking into consideration the institution's business model, the prevailing market conditions (volumes, interest rates and products) and the expectations on markets' credit

demand where the entity is present. The valuer must duly consider the liquidity and capital constraints that the bank may face post resolution as well as the measures to restrict business imposed by the authorities to limit distortion of competition when state aid is applicable.

The estimates used by the valuer should be prudent and realistic as well as consistent with the projections of the business reorganisation plan and restructuring plan. Particular attention will be paid when a reorientation or a change of strategy is envisaged in such plans.

### ***Computation of estimated losses as a result of valuation***

The second driver for the determination of cash flows is the estimation of economic losses. The valuer must translate the macroeconomic scenarios into corresponding credit risk impacts (top-down approach) by computing the expected loss in the valuation horizon. In supervisory exercises, credit risk impacts are usually estimated with statistical models based on credit risk parameters, including the probability of default, the losses incurred given the default (i.e. LGD parameters), the expected cure rates. Moreover, calculations of provisioning levels are made on an aggregated level by using the so-called collective provision approach, such that provisioning needs are calculated per segment/portfolio.

However, where scenarios are not available or where the valuer faces time pressure or uncertainty on scenario assumptions, the valuer can take different approaches for the computation of valuation losses, namely:

- ▶ credit risk parameters of the institution extracted from the models they use to produce impairment provisions, capital requirements under the internal ratings-based (IRB) approach or for risk management;
- ▶ take the latest available information concerning own institution risk parameters (e.g. default rates, provisioning levels and coverage rates) and stress them to reflect the underlying characteristics of macro scenarios or resolution scenarios;
- ▶ use of credit risk parameters of peers with similar a business model or operating in the same markets;
- ▶ extrapolate the conclusions of the valuation of NPEs;
- ▶ use of implicit parameters in comparable transactions (e.g. the sale prices in recent transactions with foreclosed assets could be used as a reference for determining valuation losses);
- ▶ expert judgement based on recent resolution cases or data from historical bank failures.

### ***Discount rates***

The application of resolution tools may imply the transfer of a portfolio of performing loans to a new owner. In these cases, there is a need to estimate a specific discount rate. When the measurement basis for the valuation is the hold value the valuer has to produce fair, prudent and realistic valuations. The discount rates should reflect the current risk profile and term structure of the cash flows. For this purpose, the valuer may use the effective interest rate of newly issued loans with comparable risk profile and maturity. This interest rate should be adjusted for expected credit losses, funding costs or other operational requirements applicable to the purchaser (e.g. capital requirements should the portfolio be bought by a credit institution), as

defined in Section 3.2.4.3. Risk factors already considered in the estimation of cash flows must not be included as factors in the estimation of discount rates.

When the disposal value is the basis for the valuation, the valuer should take into account additional risk factors related to the potential sale of the portfolio under distress-marked conditions, where applicable.

## LEVEL OF GRANULARITY AND SEGMENTATION

A high level of granularity of information on the loan portfolio provides the valuer with insights into the loan portfolio, the potential to make adjustments to erroneous data or data missing from the dataset and the flexibility to aggregate data to a more generic level.

Potentially, the submission of data at such a high level of granularity may not be feasible, for instance if the valuer faces time constraints or if the bank cannot report at such a level of granularity.

As in other supervisory exercises, the valuer may consider to perform the valuation at a more aggregated level of data (sub-portfolio level following CRR/FINREP <sup>(32)</sup> segmentation for reporting) and to compute the valuation losses through a collective analysis. Whatever type of segmentation is taken, the resulting sub-portfolios should be sufficiently homogenous in terms of product characteristics and risk. Additionally and to the extent possible, the sub-portfolios should reflect (i) the existing main business lines of the (pre-resolution) bank, since specific business lines may be sold to different market participants (for instance, secured vs. unsecured loans) and (ii) the geographical specificities of the loans (segmentation by country/region).

Conversely, for the high-risk segments mentioned above, for large exposures or for segments with less granularity in the level of risk, a more granular or individualised analysis (at debtor or exposure level) should be conducted.

### 6.2.3. Treatment of specific liabilities and contingent liabilities

Certain contingent liabilities may arise in resolution that could also be considered in the valuation process. These liabilities and their possibility of an outflow may have a value that is inherently uncertain and/or may depend on the effects of the resolution action itself. Typical examples of resolution-related costs are litigation costs, external services, restructuring costs, early termination costs and running costs of the residual organisational structure.

These contingent liabilities should be taken into account as part of the valuation exercise. The criteria and methodology used should be well founded and could be based on:

- ▶ historical information from comparable cases;
- ▶ information provided directly by the credit entity (i.e. business and restructuring plans or any other strategic plan/information);
- ▶ expert judgement, if necessary.

<sup>(32)</sup> Regulation 680/2014 laying down implementing technical standards with regard to supervisory reporting of institutions according to Regulation (EU) No 575/2013 of the European Parliament and of the Council

Numerous challenges affecting the valuation exercise may arise, particularly due to time limitations or due to the fact that there may be a need for local legal expertise with regard to a specific jurisdiction. In certain cases, an entity's asset portfolio spread across different jurisdictions, each with its own distinct legal regime, may bring about additional challenges.

Examples of possible contingent liabilities and their respective treatment in valuation, inter alia, are as follows.

Litigation costs and legal risks. These may be triggered by resolution activities, such as lawsuits on behalf of bailed-in creditors and/or shareholders, or due to ongoing litigations reported by the entity's management.

The valuer could take into consideration litigation costs and/or legal risks deemed to be material for the valuation exercise. Thereafter, the valuer should identify the types of legal risks and determine their corresponding quantifiable amount. On the basis of the aforementioned amount, the valuer could justify coverage percentages (i.e. reliable estimates of obligations that may arise). As mentioned above, the valuer may consider historical information from comparable cases.

To determine an appropriate valuation, the valuer could consider the following:

- ▶ A list of open lawsuits including the expected outflows and current provisioning.
- ▶ Contingent liabilities that are likely to materialise after resolution. For instance, if the bank issued shares or bonds in the previous months to the resolution action, the valuer should take into account the likelihood of receiving claims after resolution based on the insufficient information published at the moment of issuance.

Restructuring costs. These arise as a result of the restructuring process and are not associated with the entity's ongoing activities. The latter include, but are not limited to, all commitments to employees (which comprise pension plans, retirement bonuses and termination of workforce contracts), advisory costs that may be incurred under an insolvency procedure and any other administrative costs, including closure of branches, singular buildings and layoffs.

If the valuer considers the aforementioned costs to be material during the valuation exercise, it could specify the corresponding types of costs and respective quantifiable amounts defined in the restructuring plan. As these costs are based on the entity's own estimates, should the latter be deemed to be too low or too high in the valuer's opinion, additional expenses or deductions used to adjust them must be explained by the valuer. In this situation, the valuer could explain the methodology employed, such as historical information from comparable cases, or any expert judgement considered.

Early termination costs. These include costs stemming from early termination of contracts with third party service providers and suppliers. Transfer of staff, equipment, licences or other assets to new parts of the organisation also form part of these types of liabilities.

Other examples that should be covered in the valuation exercise include the impact of ending joint ventures or exclusivity agreements, such as joint ventures with insurance companies. In this regard, the valuer should determine said impact in an individualised manner to allow the resolution authority to consider whether or not there is a need for modifying the contract in the resolution scheme.



Should the valuer consider the aforementioned costs to be material in the valuation exercise, it could specify the corresponding types of costs and their respective quantifiable amounts. The valuer could explain the methodology employed, such as historical information from comparable cases, or any expert judgement considered.

The valuer should value these contingent liabilities within the context of the resolution strategy that the resolution authority intends to apply. The use of the bail-in, sale of business, bridge institution and asset management company tools may have different consequences, which the valuer should assess.

The valuer should take into consideration the potential impact of contingent liabilities when performing the valuation exercise.

The valuer should individually disclose the amount and the underlying assumptions made when performing valuation of contingent liabilities.

The valuer should explain how it has approximated a best estimate for the valuation of contingent liabilities and the sources of information considered for the analysis, including but not limited to management information and comparable cases.

## 6.2.4. Securities, derivatives and other tradable assets

### INTRODUCTION

For some banks, securities, derivatives and other similar assets represent a significant part of the balance sheet. The valuation of these assets may sometimes be challenging for the valuers, in particular if a significant part of said assets are not market quoted.

This section is a non-exhaustive list of issues that the valuer may have to deal with in the valuation of securities, derivatives and other tradable assets.

For the valuation of liabilities arising from derivatives (i.e. netting sets with negative value), if they are subject to bail-in powers and therefore have to be closed out, the valuation should be conducted in accordance with CDR 2016/1401. Liabilities arising from derivatives not affected by bail-in should be valued at either hold or disposal value, depending on the resolution tool envisaged.

### VALUATION CRITERIA

In accordance with the accounting framework, securities are accounted at fair value at the initial recognition and, subsequently, assets are measured on the basis of different criteria: fair value and amortised cost. Therefore, the book value of assets in the balance sheet of institutions is calculated on the basis of accounting definitions, thus differing from the definitions of 'hold value' and 'disposal value' included in CDR 2018/344 and CDR 2018/345.

In accordance with the CDR on valuation the hold value or the disposal value are the two measurement bases utilised for valuation in resolution. The hold value criterion 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 disposal value on the other hand is defined as the cash flows that the entity can reasonably expect in the current market conditions through an orderly sale or transfer of assets and liabilities. At the same time, the valuer may determine the disposal value by applying a discount to the value initially obtained to take into account a potential accelerated sale discount.

Both definitions differ from the definition of 'fair value', envisaged in the IFRS 13, which defines said value as 'the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date'.

The hold value and the disposal value definitions are also based on the principle of prudence, which is not embedded in the definition of fair value.

When using the hold value or the disposal value as the measurement basis the valuer should consider factors affecting counterparty behaviour in the context of resolution. For example, if the resolution scheme envisages the divestment of a portfolio of assets, the disposal value should reflect the potential price to be received at the expected time of disposal, which will probably be lower than the expected fair value or market price in an orderly transaction. The disposal value is also a value net of disposal expenses.

Therefore, the fair value may only be a starting point for determining the value of assets on the basis of hold value and disposal value criteria. If the fair value is used as an initial reference, the necessary adjustments to arrive at the hold and disposal values must be made.

For derivatives portfolios, the fair value calculated by the bank's own internal models can serve as a starting point. To arrive at the hold value for a portfolio of derivatives, the independent valuer may make use of banks' own adjustments to fair values made for regulatory capital calculation purposes to capture elements that are more difficult to price such as correlation and volatility. When determining disposal values, two additional considerations should be taken into account: the costs incurred when closing out the derivatives book and the cost of capital adjustments probably required by the buyer of the derivatives portfolio.

For portfolios of complex or bespoke derivatives with a limited set of potential buyers, the independent valuer may perform scenario analysis to gauge the level of uncertainty of its value.

For banks that are subject to capital requirements for positions in the trading book, the valuer can use the latest available daily price as a valid initial reference <sup>(23)</sup>. As values of trading book assets can be quickly affected by market movements, a time series of price observations can be considered over the valuation period.

### **6.2.5. Challenges in the valuation of securities and derivatives.**

IFRS 13 classifies assets in three categories:

1. Level 1: assets with a quoted price in an active or deep market. In this case, the valuation is not particularly difficult because this price provides reliable evidence of the fair value.

<sup>(23)</sup> Article 105(3) of the CRR establishes that institutions shall revalue trading book positions at least daily.

2. Level 2: assets without a price in an active market but that can be valued through valuation techniques, with inputs that are observable for the asset, either directly or indirectly. For example, the price of some assets can be determined on the basis of prices for similar assets that are quoted in active markets.
3. Level 3: assets without a price in an active market but that can be valued through valuation techniques with inputs that are unobservable for the asset. For example, specific categories of asset-backed securities can be classified in the Level 3 category as parameters for the estimation of the value are unobservable (e.g. the correlation between the assets forming part of the pool of assets).

The larger the share of Level 3 assets in a securities portfolio, the greater the expected complexity of the valuation, which results in a greater amount of resources needed to perform valuations.

For the valuation of Level 2 or Level 3 assets, the valuer should use valuation methods that are appropriate given the circumstances and the available data. The valuer should maximise the use of observable input. In case of time pressure or limited resources, the valuer may leverage the methodologies used by the bank to determine fair value. In such cases, the valuer must check the reliability, accuracy and the underlying hypotheses.

A non-exhaustive list of valuation techniques follows. Whatever methodology is chosen, the valuer must duly explain and account for underlying assumptions and inputs.

- ▶ Market multiples methods: this approach uses prices and other relevant information generated by market transactions involving comparable or similar assets, as explained in Chapter 2.
- ▶ DCF: based on the computation of the present value of estimated future cash flows, discounted at a rate that adequately measures the uncertainty inherent in the cash flows of an asset, as described in Chapter 2.
- ▶ Pricing models based on formulas/simulation: this group of methodologies incorporates the present value of cash flows and reflects both the time value and the expectations on the expected cash flows. For example, option pricing models based on the Black-Scholes approach or advanced techniques based on Monte Carlo simulation are widely used by the banking industry in the valuation of derivatives, in particular for Level 2 and Level 3 assets/derivatives.

For large, complex or bespoke derivatives portfolios, second- or third-order risks caused by imperfect hedges for illiquid positions can impact valuations and should be considered by the valuer if they are of significant value. The value adjustments indicated by any stress tests for the purposes of the bank's internal models may be used by the valuer as a reference point.

An additional consideration for derivatives portfolios is the offsetting or netting of contracts, especially if the resolution scenario involves asset separation or sale of part of the derivatives portfolio. In such a scenario, the independent valuer may find that a set of contracts covered under set-off or netting arrangements should be protected from disruption.



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