EBA/CP/2021/36

2 December 2021

Consultation Paper

Draft Regulatory Technical Standards specifying

supervisory shock scenarios, common modelling and parametric assumptions and what constitutes a large decline for the calculation of the economic value of equity and of the net interest income in accordance with Article 98(5a) of Directive 2013/36/EU.

Contents

1. Responding to this consultation

The EBA invites comments on all proposals put forward in this paper and in particular on the specific questions summarised in 5.2.

Comments are most helpful if they:

- respond to the question stated;
- indicate the specific point to which a comment relates;
- contain a clear rationale;
- provide evidence to support the views expressed/ rationale proposed; and
- describe any alternative regulatory choices the EBA should consider.

Submission of responses

To submit your comments, click on the 'send your comments' button on the consultation page by 4 April 2022. A public consultation period of four months is proposed on an exceptional basis, considering the concomitant publication of 3 different regulatory products on the same topic. Please note that comments submitted after this deadline, or submitted via other means may not be processed.

Publication of responses

Please clearly indicate in the consultation form if you wish your comments to be disclosed or to be treated as confidential. A confidential response may be requested from us in accordance with the EBA's rules on public access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by the EBA's Board of Appeal and the European Ombudsman.

Data protection

The protection of individuals with regard to the processing of personal data by the EBA is based on Regulation (EU) 1725/2018 of the European Parliament and of the Council of 23 October 2018. Further information on data protection can be found under the Legal notice section of the EBA website.

2. Executive Summary

In the context of the Supervisory Review and Evaluation Process (SREP), Article 98 of the Directive 2013/36/EU[1] (CRD) envisages a review and evaluation to be performed by competent authorities on the exposure of institutions to the interest rate risk arising from non-trading book activities (IRRBB). Here a supervisory outlier test (SOT) is envisaged to identify institutions of which, in the context of a shock scenario, their economic value of equity (EVE) declines by more than 15% of their Tier 1 capital or their net interest income (NII) experiences a large decline. If any of those limits are breached, competent authorities, unless they consider notwithstanding the breach that the institution's IRRBB management is adequate and that it is not excessively exposed to IRRBB, shall exercise their supervisory powers like setting additional own funds requirements, limitations of activities with excessive risks, specifying modelling and parametric assumptions, among others established in the CRD.

With these draft Regulatory Technical Standards (RTS) the EBA is complying with its mandate in Article 98(5a) of the CRD to specify the supervisory shock scenarios and modelling and parametric assumptions for the SOT on EVE and the SOT on NII as well as to provide a definition and calibration of the large decline for the SOT on NII.

As per its mandate the draft RTS are inspired on internationally agreed prudential standards, i.e. the Basel standards. The EBA published in July 2018 Guidelines "on the management of interest rate risk arising from non-trading book activities" that apply from June 2019 which have dedicated provisions on the SOT on EVE. The draft RTS generally give continuation to these Guidelines with some additional specifications and introduce the specificities for the SOT on NII. The draft RTS take into account the current low interest rate environment, for example in the determination of a post-shock interest rate floor.

Next steps

The draft regulatory technical standards will be submitted to the Commission for endorsement following which they will be subject to scrutiny by the European Parliament and the Council before being published in the Official Journal of the European Union.

---

[1] Directive 2013/36/EU (link) amended by Directive (EU) 2019/878 (link).

3. Background and rationale

1. In June 2019 the Directive (EU) 2019/878 amended the Directive 2013/36/EU and updated, under a new paragraph 5 of its Article 98, and in the context of the supervisory review and evaluation process (SREP)[2], the so called 'supervisory outlier tests (SOTs)', "i*n order to improve competent authorities' identification of those institutions which might be subject to excessive losses in their non-trading book activities as a result of potential changes in interest rates[3]*".

2. The SOTs, as part of the evaluation of the exposures of an institution to the interest rate risk arising from non-trading book activities (IRRBB) in the SREP, aim at assessing whether those exposures have an impact on its economic value of equity ('SOT on EVE') or on its net interest income ('SOT on NII') beyond specific thresholds.

3. In particular, points (a) and (b) of Article 98(5) refer to such thresholds as:

   (a) 15% of its Tier 1 capital, in the case of the SOT on EVE; and

   (b) a 'large decline' of the net interest income, in the case of the SOT on NII.

4. In case an institution reaches any of these thresholds, the relevant competent authority shall exercise its supervisory powers[4] unless it considers, in the context of the SREP, that the institution's management of IRRBB is adequate and that the institution is not excessively exposed to IRRBB[5]. In June 2021, the EBA launched a public consultation on its revised Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP) and supervisory stress testing. Title 6 of these draft updated SREP Guidelines refers explicitly to the SOTs as a minimum information that competent authorities should consider in their assessment of institutions' exposure to IRRBB, as stipulated in Article 98(5) of Directive 2013/36/EU and further specified by the delegated regulation to be adopted in accordance with Article 98(5a) of that Directive.

5. The SOTs are supervisory tools which objective is to inform supervisors about the exposure of institutions to IRRBB by obtaining comparable information for all institutions. The SOTs are important tools for competent authorities to monitor this risk and perform reviews.

6. The EBA is also consulting in parallel on a reviewed version of the Guidelines for IRRBB and CSRBB. There, the SOTs are also foreseen as fully integrated into the internal framework for the management of IRRBB by institutions and should be used as complementary tools for measuring

---

[2] Section III (on 'Supervisory review and evaluation process') of Chapter 2 (on 'Review Processes') in Title VII (on 'Prudential Supervision') of the Directive 2013/36/EU.

[3] Recital 19 of the Directive (EU) 2019/878.

[4] Supervisory powers that may include the requirements envisaged in Article 104(1) of the Directive 2013/36/EU (e.g. capital requirements, restrictions of some business activities with excessive risks to the soundness of the institution) or the need to specify other modelling and parametric assumptions for its IRRBB management.

[5] Article 98(5) of the Directive 2013/36/EU.

exposure to IRRBB and capital allocation. To be noted that the current Guidelines for IRRBB will be repealed with the upcoming reviewed Guidelines and RTS. The SOT on EVE envisaged in the current Guidelines will be stipulated in the upcoming RTS on SOTs. The new Guidelines will include and complement the part related to IRRBB management in the current Guidelines and will add CSRBB assessment and monitoring rules.

7. The Directive (EU) 2019/878 reformulates the SOT on EVE, stipulated in the Directive 2013/36/EU[6], and introduces the SOT on NII.

3.1 Basel standards and EU rules

8. The implementation into EU rules of the Basel standards on interest rate risk in the banking book published by the Basel Committee on Banking Supervision in April 2016[7] started with the EBA Guidelines "*on the management of interest rate risk arising from non-trading book activities*" published on 18 July 2018. The 2018 EBA Guidelines introduced supervisory expectations regarding the management of IRRBB, encompassing the identification, measurement, monitoring and control of IRRBB. The Guidelines also included the revised SOT on EVE as an early warning signal and credit spread risk in the banking book (CSRBB).

9. The Directive (EU) 2019/878 introduced the remaining elements of the Basel standards and added some new ones (SOT on NII, with a mandate to develop the relevant supervisory shock scenarios, modelling criteria and the definition of a large decline of the net interest income). The Directive mandates the EBA to draft Guidelines and draft regulatory technical standards to elaborate those items. Specifically:

   (a) Draft regulatory technical standards on SOTs (Article 98(5a) of the Directive 2013/36/EU)

   (b) Draft regulatory technical standards on standardised and simplified standardised approaches (Article 84(5) of the Directive 2013/36/EU)

   (c) Guidelines on IRRBB and CSRBB (Article 84(6) of the Directive 2013/36/EU)

10. These draft regulatory technical standards and Guidelines are currently under public consultation in parallel.

3.2 Draft regulatory technical standards on the SOTs

11. Article 98(5a) of the Directive 2013/36/EU specifies the items that the regulatory technical standards will develop for the purposes of the SOT EVE and SOT NII.

---

[6] Its Article 98(5) established the threshold for outliers as a decline of an institution's economic value by more than "*20 % of their own funds as a result of a sudden and unexpected change in interest rates of 200 basis points or such change as defined in the EBA guidelines.*"

[7] Available online: http://www.bis.org/bcbs/publ/d368.htm.

12. The regulatory technical standards may not specify any behavioural assumptions to be considered in the SOTs. This is explicitly excluded by Article 98(5a) of the Directive 2013/36/EU.

13. Institutions will conduct the SOTs applying the specific provisions in the regulatory technical standards. With regard to the modelling and parametric assumptions that are not specified therein, institutions shall use those that they employ in their IRRBB measurement and management, i.e. their internal measurement methodologies, the standardised approach or the simplified standardised approach.

3.2.1   SOT on EVE

14. The regulatory technical standards will specify:

(a) The six supervisory shock scenarios that set out the change in interest rates under which the impact on the economic value of equity shall be assessed.

(b) the treatment of the institution's own equity, in the calculation of the economic value of equity

(c) the inclusion, composition and discounting of cash flows sensitive to interest rates arising from the institution's assets, liabilities and off-balance-sheet items, including the treatment of commercial margins and other spread components, in the calculation of the economic value of equity

(d) the use of dynamic or static balance sheet models and the resulting treatment of amortised and maturing positions, new business assumptions, in the calculation of the economic value of equity

15. These draft RTS are very much inspired by the Basel standards on SOT EVE. Particularly the draft RTS envisage the six prescribed interest rate shock scenarios in the Basel rules. The draft RTS generally follow the modelling assumptions in the Basel standards, e.g. discretion to include or not commercial margins and subsequent employment of relevant risk free rates, the use of a run-off balance sheet assumption and consideration of a post-shock interest rate floor. However, the draft RTS foresee an aggregation approach of EVE sensitivities across currencies where, by contrast to Basel, gains are not fully disregarded for proportionality reasons.

3.2.2   SOT on NII

16. The regulatory technical standards will specify:

(a) The two supervisory shock scenarios that set out the change in interest rates under which the impact on the net interest income shall be assessed.

(b) the inclusion and composition of cash flows sensitive to interest rates arising from the institution's assets, liabilities and off-balance-sheet items, including the treatment of commercial margins and other spread components, in the calculation of the net interest income;

(c) the use of dynamic or static balance sheet models and the resulting treatment of amortised and maturing positions, new business assumptions, in the calculation of the net interest income

(d) the period over which future net interest income shall be measured

(e) The definition of 'large decline' for the purposes of identifying outlier institutions under SOT NII.

17. The draft RTS builds on the jurisdictional discretion foreseen in the Basel rules by which additional outlier tests might be envisaged to capture IRRBB from a perspective including interest income, expenses and even market value changes. The two supervisory shock scenarios and modelling assumptions follow as much as possible those established in the Basel rules for the SOT EVE as well as those established in the context of disclosure, e.g. constant balance sheet and 12 months horizon and inclusion of commercial margins. The same currency aggregation approach of sensitivities as for the SOT EVE is envisaged.

3.2.3 The supervisory shock scenarios

18. The specification of the supervisory shock scenarios builds on those established in the EBA/GL/2018/02 on the management of interest rate risk arising from non-trading book activities from 18 July 2018.

19. These regulatory technical standards establish the interest rate shocks for specific currencies. The shock size for the six interest rate shock scenarios is based on historical interest rates. More precisely, for capturing the local interest rate environment and cycle, a historical time series ranging from 2000 to 2015 for various maturities was used to calculate the parallel, short-end ('short') and long-end ('long') shocks for a given currency. The shocks capture the heterogeneous economic environments across the jurisdictions.

20. For the purposes of the calibration of other currencies, the proposed interest rate shock calibration can lead to unrealistically low interest rate shocks for some currencies and to unrealistically high interest rate shocks for others. In order to ensure a minimum level of prudence and a level playing field, floor and caps are set out. A generic 16-year time series, rather than the specific one between 2000 and 2015, is required to be considered now to collect daily interest rates for the calculation of the overall average interest rate that serves as a basis for calculating the interest rate shock sizes. This should avoid lack of available data.

4. Draft regulatory technical standards

COMMISSION DELEGATED REGULATION (EU) No …/..

of XXX

[…]

Supplementing Directive 2013/36/EU, amended by Directive (EU) 2019/878, of the European Parliament and of the Council with regard to regulatory technical standards to specify the supervisory shock scenarios, the common modelling and parametric assumptions and the definition of a large decline, for the purposes of the supervisory outlier tests of the exposures of institutions to the interest rate risk arising from non-trading book activities and their impact on net interest income and economic value of equity

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, as amended by Directive (EU) 2019/878 of the European Parliament and of the Council of 20 May 2019[8], and in particular Article 98(5a) thereof,

Whereas:

(1)   The specification of the supervisory shock scenarios set out in this Regulation builds on the relevant specification established by the Basel Committee on Banking Supervision (BCBS) [9] and already reflected in the EBA Guidelines on the management of interest rate risk arising from non-trading book activities[10] that apply from 30 June 2019 and will be repealed following the adoption of this Regulation.

(2)   For the purposes of the calculations of the cited economic value of equity and net interest income, this Regulation seeks to specify common modelling and parametric assumptions that institutions should use. To that end, it is appropriate to set out in this Regulation that for the calculation of the net interest income, a constant balance sheet assumption over a one-year time horizon should be used while, for the calculation of the economic value of equity, a run-off balance sheet assumption

---

[8] OJ L 150, 7.06.2019, p. 253

[9] SRP – Supervisory review process – SRP31 – Interest rate risk in the banking book (link)

[10] EBA/GL/2018/02 of 18 July 2018 (link)

should be used where maturing positions are not replaced. These assumptions aim to provide a good balance in terms of calculation accuracy, reliability of estimates and operational complexity.

(3) To strike the right balance between ensuring comparability of the results and providing the flexibility necessary due to the long term horizon and the inherent operational complexity, this Regulation should set out that commercial margins and spread components should be included in the calculation of the net interest income, but for the calculation of the economic value of equity, institutions should proceed in accordance with their internal management and measurement approach for interest rate risk in the non-trading book.

(4) This Regulation is based on the draft regulatory technical standards submitted to the Commission by the European Banking Authority.

(5) EBA has conducted an open public consultation on the draft regulatory technical standards on which this Regulation is based, analysed the potential related costs and benefits and requested the opinion of the Banking Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1093/2010.

HAS ADOPTED THIS REGULATION:

Article 1

Supervisory shock scenarios

1. The six supervisory shock scenarios referred to in Article 98(5), point (a) of Directive 2013/36/EU shall be the following:

   (a) parallel shock up, where there is a parallel upward shift of the yield curve with the same positive interest rate shock for all maturities;

   (b) parallel shock down, where there is a parallel downward shift of the yield curve with the same negative interest rate shock for all maturities;

   (c) steepener shock, where there is a steepening shift of the yield curve, with negative interest rate shocks for shorter maturities and positive interest rate shocks for longer maturities;

   (d) flattener shock, where there is a flattening shift of the yield curve, with positive interest rate shocks for shorter maturities and negative interest rate shocks for longer maturities;

   (e) short rates shock up, with larger positive interest rate shocks for shorter maturities to converge with the baseline for longer maturities; and

(f) short rates shock down, with larger negative interest rate shocks for shorter maturities to converge with the baseline for longer maturities.

2. The two supervisory shock scenarios referred to in Article 98 (5), point (b) of Directive 2013/36/EU shall be the following:

   (a) parallel shock up, where there is a parallel upwards shift of the yield curve with the same positive interest rate shocks for all maturities; and

   (b) parallel shock down, where there is a parallel downwards shift of the yield curve with the same negative interest rate shocks for all maturities.

3. The supervisory shock scenarios referred to in paragraphs 1 and 2 shall be calculated on the basis of the currency-specific specified sizes of interest rate shocks set out in ANNEX 1 and Article 2 and shall apply at least to the exposure of institutions to the interest rate risk arising from non-trading book activities denominated in each currency separately for which the institution has positions where the accounting value of financial assets or liabilities denominated in a currency amounts to 5% or more of the total non-trading book financial assets (excluding tangible assets as defined under Article 4(10) of Directive 86/635/EEC) or liabilities, or less than 5% if the sum of financial assets or liabilities included in the calculation is lower than 90% of total non-trading book financial assets (excluding tangible assets) or liabilities.

Article 2

Currencies not referred to in ANNEX I

To calibrate specified sizes for interest rate shocks for currencies not referred to in ANNEX I, the following shall apply:

 (a) Institutions shall first calculate the daily average interest rate by collecting a 16-year time series of daily 'risk-free' interest rates, without instrument-specific or entity-specific credit spreads or liquidity spreads, for each currency for the maturities 3M, 6M, 1Y, 2Y, 5Y, 7Y, 10Y, 15Y and 20Y and then calculate the arithmetic average interest rate for each currency c across all observations in the time series and for all maturities. The result shall be a single measure per currency.

 (b) If the average interest rate calculated as per point (a) for the first seven years is greater than 700 basis points, then data from the most recent 10 years or until when data is available shall be used; if not, the full 16 year time series of data shall be used.

 (c) The parallel, short and long Interest rate shock by currency shall be derived from applying the relevant global shock parameter from Table 1 to the average interest rate calculated in point (a).

Table 1. Baseline global interest rate shock parameters

Parallel	$\bar{\alpha}_{parallel}$	60%
Short	$\bar{\alpha}_{short}$	85%
Long	$\bar{\alpha}_{long}$	40%

(d) Institutions shall apply a floor of 100 basis points as well as variable caps of 500 basis points for the short-term shock, 400 basis points for the parallel shock and 300 basis points for the long-term shock, respectively.

(e) The set of interest rate shocks by currency shall then be rounded to the nearest 50 basis points.

Article 3

Parametrisation of supervisory shock scenarios

For each currency *c* the specified size of the parallel, short and long shocks to the 'risk-free' interest rate, the following parameterisations of the six supervisory shock scenarios shall be applied:

(a) *Parallel shock for currency c*: A constant parallel shock up or down across all time buckets:

$$\Delta R_{parallel,c}(t_k) = \pm \bar{R}_{parallel,c}$$

(b) *Short rate shock for currency c*:

$$\Delta R_{short,c}(t_k) = \pm \bar{R}_{short,c} \cdot e^{\frac{-t_k}{4}},$$

where t_k is the midpoint (in time) of the kth time bucket.

(c) *Long rate shock for currency c*:

$$\Delta R_{long,c}(t_k) = \pm \bar{R}_{long,c} \cdot \left(1 - e^{\frac{-t_k}{4}}\right)$$

(d) *Rotation shocks for currency c*:

$$\Delta R_{steepener,c}(t_k) = -0.65 \cdot |\Delta R_{short,c}(t_k)| + 0.9 \cdot |\Delta R_{long,c}(t_k)|;$$
$$\Delta R_{flattener,c}(t_k) = +0.8 \cdot |\Delta R_{short,c}(t_k)| - 0.6 \cdot |\Delta R_{long,c}(t_k)|.$$

Explanatory box - Examples of parameterisation of the supervisory interest rate shock scenarios are provided here. They reflect the implementation of formulas and parameters detailed in Article 3.

(a) *Short rate shock*: Assume a bank wants to calculate the shock size of a time band with midpoint t_k = 3.5 years. The scalar adjustment for the short shock would be: $e^{\frac{-3.5}{4}}$ = 0.417. Banks would multiply this by the value of the short rate shock to obtain the amount to be added or subtracted from the yield curve at that tenor point. If the short rate shock was +250 bps, the increase in the yield curve at t_k = 3.5 years would be 104.2 bps.

(b) *Steepener:* Assume the same point on the yield curve as above, t_k = 3.5 years. If the absolute value of the short rate shock was 250 bps and the absolute value of the long rate shock was 100 bps (as for the euro), the change in the yield curve at t_k = 3.5 years would be the sum of the effect of the short rate shock plus the effect of the long rate shock in basis points: $-0.65 \cdot 250 \text{ bps} \cdot 0.417 + 0.9 \cdot 100 \text{ bps} \cdot (1 - 0.417) = -15.3 \text{ bps}$.

(c) *Flattener:* The corresponding change in the yield curve for the shocks in the example above at t_k = 3.5 years would be: $+0.8 \cdot 250 \text{ bps} \cdot 0.417 - 0.6 \cdot 100 \text{ bps} \cdot (1 - 0.417) = 48.4 \text{ bps}$.

Article 4

Changes in the economic value of equity (EVE)

Institutions shall reflect in their calculation of the economic value of equity as referred to in Article 98 (5), point (a) of Directive 2013/36/EU, the following common modelling and parametric assumptions:

(a) All non-trading book positions from interest rate sensitive instruments shall be taken into account.

(b) Small trading book business, as defined by paragraph 1 of Article 94 of Regulation (EU) No 575/2013, shall be included unless its interest rate risk is captured in another risk measure.

(c) All CET1 instruments and other perpetual own funds without any call dates shall be excluded from the calculation of the supervisory outlier test.

(d) Institutions shall reflect automatic and behavioural options in the calculation. Institutions shall adjust key behavioural modelling assumptions of interest rate sensitive instruments to the features of different interest rate scenarios.

(e) Pension obligations and pension plan assets shall be included unless their interest rate risk is captured in another risk measure.

(f)   The cash flows from interest rate sensitive instruments shall include any repayment of principal, any repricing of principal and any interest payments.

(g)   Institutions with a non-performing exposures ratio of 2% or more shall include non-performing exposures as general interest rate sensitive instruments whose modelling should reflect expected cash flows and their timing. Non-performing exposures shall be included net of provisions. For these purposes, non-performing exposures are determined by non-performing debt securities, loans and advances, while the non-performing exposures ratio is calculated as the amount of non-performing exposures divided by the amount of total gross debt securities, loans and advances calculated at the level of the institution.

(h)   Institutions shall include instrument-specific interest rate caps and floors.

(i)   Commercial margins and other spread components in interest payments in terms of their exclusion from or inclusion in the cash flows shall be treated in accordance with the institutions' internal management and measurement approach for interest rate risk in the non-trading book. If commercial margins and other spread components are excluded, institutions shall (i) use a transparent methodology for identifying the risk-free rate at inception of each instrument; (ii) use a methodology that is applied consistently across business units; (iii) ensure that the exclusion of commercial margins and other spread components from the cash flows is consistent with how the institution manages and hedges IRRBB and (iv) notify their exclusion to the competent authority.

(j)   The change in EVE shall be computed with the assumption of a run-off balance sheet, where existing positions mature and are not replaced.

(k)   A maturity-dependent post-shock interest rate floor shall be applied for each currency starting with -150 basis points for immediate maturity. This floor shall increase by 3 basis points per year, eventually reaching 0% for maturities of 50 years and more. If observed interest rates are lower than the post-shock interest rate floor, institutions shall apply the lower observed interest rate.

(l)   When calculating the aggregate change for each interest rate shock scenario, institutions shall add together any negative and positive changes occurring in each currency. Positive changes shall be weighted by a factor of 50% or a factor of 80% in the case of Exchange Rate Mechanism - ERM II currencies with a formally agreed fluctuation band narrower than the standard band of +/- 15% to offset losses in EUR. However, if the absolute value of 80% of the ERM II currency gains is larger than the absolute value of the EUR loss then a factor of 50% shall apply to positive changes in ERM II currencies.

(m)   An appropriate general 'risk-free' yield curve per currency shall be applied (e.g. swap rate curves). That yield curve shall not include instrument-specific or entity-specific credit spreads or liquidity spreads.

(n)   In assessing the risk of interest rate-sensitive products that are linked to inflation or other market factors, prudent assumptions shall be applied. These assumptions shall be based on the current/last observed value, on forecasts of a reputable economic research institute or on other generally accepted market practices and shall be generally scenario-independent.

Explanatory box on currency aggregation

Example 1 - Material currencies EUR and USD

Changes in transactions/positions

USD (converted into EUR)		EUR	
Transaction/position 1	30	Transaction/position 4	100
Transaction/position 2	50	Transaction/position 5	-200
Transaction/position 3	-10		
Net change	70	Net change	-100

Currency aggregation

USD: 50% s/70 = 35

EUR: 100% s/ -100 = -100

Total aggregated impact = -65

Example 2 - Material currencies EUR and DKK

Changes in transactions/positions

DKK (converted into EUR)		EUR	
Transaction/position 1	30	Transaction/position 4	100
Transaction/position 2	50	Transaction/position 5	-200
Transaction/position 3	-10		
Net change	70	Net change	-100

Currency aggregation

DKK: 80% s/ 70 = 56, can be used up offset losses in EUR

EUR: 100% s/ -100 = -100

Total aggregated impact = -44

Example 3 - Material currencies EUR and USD

Changes in transactions/positions

USD (converted into EUR)		EUR	
Transaction/position 1	100	Transaction/position 4	10
Transaction/position 2	50	Transaction/position 5	-20
Transaction/position 3	-10		
Net change	140	Net change	-10

Currency aggregation

USD: 50% s/140 = 70

EUR: 100% s/ -10 = -10

Total aggregated impact = 60

Example 4 - Material currencies EUR and DKK

Changes in transactions/positions

DKK (converted into EUR)		EUR	
Transaction/position 1	100	Transaction/position 4	10
Transaction/position 2	50	Transaction/position 5	-20
Transaction/position 3	-10		
Net change	140	Net change	-10

Currency aggregation

DKK: 80% s/ 140 = 112, higher than the losses in EUR (-10).
Then a 50% applies: 50% s/140 = 70

EUR: 100% s/ -10 = -10

Total aggregated impact = 60

Article 5

Changes in the net interest income

(a) Institutions shall reflect in their calculations of the net interest income as referred to Article 98 (5), point (b) the following common modelling and parametric assumptions: Interest income and interest expenses over a one year horizon shall be considered regardless of the maturity and the accounting treatment of the relevant interest rate sensitive non-trading book instruments.

(b) ***For non-trading book financial instruments accounted at fair value with a maturity of more than one year, the annual change in their market value shall be considered.*** [this point b) will be kept if the option to add market value changes is finally decided by the EBA]

(c) The assumptions established in Article 4, except its points (i) and (j), of this Regulation, shall apply here.

(d) Institutions shall include commercial margins and other spread components.

(e) Institutions shall compute the change in the net interest income under the assumption of a constant balance sheet, where its total size and composition, including on- and off-balance sheet items, shall be maintained by replacing maturing or repricing cash flows with new instruments that have comparable features with regard to the currency, amount and repricing period of the instruments generating the repricing cash flows. Margins of the new instruments shall be based on the margins from recently bought or sold products with similar characteristics. In the case of instruments with observable market prices recent market spreads shall be used and not historical market spreads.

Explanatory box on common and modelling parametric assumptions in the SOTs

The EBA targets to ensure that the common modelling and parametric assumptions in the SOTs result in a good balance between comparability and flexibility of estimates. This would provide a valuable input for the SOTs while being susceptible to be implemented by institutions from an operational perspective.

The EBA considers that the established modelling and parametric assumptions are the necessary ones at least to harmonise and ensure good comparability of results. It still allows some flexibility for banks to keep the rest of the assumptions as in their internal measurement systems, like for example in the selection of an appropriate risk-free yield curve.

Using a one-year horizon and a constant balance sheet assumption in the NII SOT, rather than for example up to three years and a dynamic balance sheet, seems a better balance between accuracy, reliability of estimates and operational feasibility for its management.

In the NII SOT institutions are required to include commercial margins. For the purposes of new business, and in the context of a constant balance sheet assumption, the EBA deems it more appropriate to use current conditions, as historical/original commercial margins might no longer be representative under current market conditions.

In the NII SOT, the EBA will decide on the consideration of market value changes of fair value instruments in the assessment of the impact. The EBA seeks for a good balance between a comprehensive scope of all elements affected by interest rate changes in the short and medium term and a good harmonisation for comparability across banks. Differences between the various accounting frameworks need to be considered. This was one reason to not consider fees and commissions per se. Also, the Basel standards (para. 31.83) allow for supervisors to implement additional outlier test to the EVE to capture the bank's IRRBB relative to earnings. A good consistency with the IRRBB Guidelines for IMS and the RTS on the standardised approach is also relevant. The EBA seeks comments on including market value changes, particularly in terms of operational burdens.

The EBA has also considered the current low interest rate environment in the calibration of the post shock interest rate floor. Observed rates in 2020 proved to be below the lower bound established in the current EBA IRRBB GL. A recalibration of the lower bound has been made with gradual and moderated increases.

The EBA considers that, in the aggregation across currencies of changes in NII and EVE, a special approach should be envisaged for gains in ERM II currencies with lower fluctuations bands and for the only purposes of compensating losses in EUR. With this, the EBA intends to avoid unintended results in the SOTs where it comes to transactions and hedges to them denominated in these currencies.

Question 1: Do respondents find the common modelling and parametric assumptions for the purpose of the EVE SOT and the NII SOT in Articles 4 and 5 clear enough and operationally manageable? Specifically, the EBA is seeking comments on the recalibrated lower bound for post-shock IR levels in the EVE SOT and NII SOT as well as on the use of a one-year time horizon and a constant balance sheet with current commercial margins for new business for the NII SOT. Respondents are also kindly requested to express whether they find an inclusion of market value changes in the calculation of the NII SOT clear enough.

Article 6

Large decline [one of the two following options, A or B, will be decided by the EBA together with specific thresholds following the QIS analysis provided]

[Option A: metric 1 in the QIS analysis]

1. A decline of an institution's one-year net interest income by more than [threshold%] of its Tier 1 Capital, resulting from a sudden and unexpected change in interest rates as set out in any of the two supervisory shock scenarios set out in Article 1, shall constitute a large decline for the purpose of Article 95 (5), point (b) of Directive 2013/36/EU.

2. For the decline set out in paragraph 1 to be calculated, the following formulae shall be applied:

$$\frac{NII_{shock} - NII_{baseline}}{Tier\ 1\ Capital} < [\boldsymbol{threshold}]$$

[Option B: metric 2 in the QIS analysis]

1. A decline of an institution's one-year net interest income by more than [threshold%], resulting from a sudden and unexpected change in interest rates as set out in any of the two supervisory shock scenarios set out in Article 1, shall constitute a large decline for the purpose of Article 95 (5), point (b) of Directive 2013/36/EU.

2. For the decline set out in paragraph 1 to be calculated, the general administrative expenses and the operating income calculated according to the following formulae shall be taken into account:

$$\frac{NII_{shock} - \alpha \cdot Administrative\ expenses}{NII_{baseline} - \alpha \cdot Administrative\ expenses} - \boldsymbol{1} < [\boldsymbol{threshold}]^{[11]}\textbf{, where}$$

- **NII** shock is the level of forecasted net interest income in each supervisory shock scenario

- **NII** baseline is the level of forecasted net interest income in the baseline scenario

- **Administrative expenses** shall be taken from FINREP, as the amount of "Administrative expenses" reported in column 0010 of row 0360 of the template F02.00 on the "Statement of profit or loss" and referring to the latest end-year value.

- $\boldsymbol{\alpha} = \frac{NII_{hist}}{Operating\ income}$, where

---

[11] In case the denominator (NII_baseline - α · Administrative expenses) is negative, the sign of the decline has to be reverted (multiplication with -1) for a consistent interpretation.

o **NII$_{hist}$** is the latest year-end historical NII from FINREP, calculated for these purposes as the difference between the amount of "Interest income" and "Interest expenses", as reported in column 0010 of rows 0010 and 0090 respectively of the template F02.00 on the "Statement of profit or loss". [If market value changes are decided to be included by the EBA in the net interest income under Article 5 the following alternative drafting will be included: "*NII is the latest year-end historical NII from FINREP, calculated for these purposes as the difference between the amount of "Interest income" and "Interest expenses", as reported in column 0010 of rows 0010 and 0090, plus "Gains or (-) losses on non-trading financial assets mandatorily at fair value through profit or loss, net" and "Gains or (-) losses on financial assets and liabilities designated at fair value through profit or loss, net", as reported in column 0010 of rows 0287 and 0290, of the template F02.00 on the "Statement of profit or loss*".]

o **Operating income** shall be taken from FINREP, as the amount of "Total Operating Income, Net" reported in column 0010 of row 0355 of the template F02.00 on the "Statement of profit or loss" and referring to the latest end-year value.}

Explanatory box on metric 1 and metric 2 and currency aggregation

EUR denominated		USD denominated	
NII shock$_{EUR}$	100	NII shock$_{USD}$	20
NII baseline$_{EUR}$	70	NII baseline$_{USD}$	40
Operating income$_{EUR}$	120	Operating income$_{USD}$	50
NII historical$_{EUR}$	80	NII historical$_{USD}$	45
Administrative expenses$_{EUR}$	40	Administrative expenses$_{USD}$	15
Tier 1 capital$_{EUR}$	300		

NII shock$_{EUR}$ - NII baseline$_{EUR}$	30	NII shock$_{USD}$ - NII baseline$_{USD}$	-20

EUR Gains: contributions weighted by 50%   USD Losses: contributions weighted by 100%

METRIC 1

$$Metric\ 1 = \frac{\color{red}{NII\ shock} - \color{green}{NII\ baseline}}{Tier\ 1\ Capital} = \text{-0.017; where}$$

$\color{red}{NII\ shock}$ = 50% NII shock$_{EUR}$ + 100% NII shock$_{USD}$ = 70

$\color{green}{NII\ baseline}$ = 50% NII baseline$_{EUR}$ + 100% NII baseline$_{USD}$ = 75

METRIC 2

α$_{EUR}$ = (NII hist$_{EUR}$/Op income$_{EUR}$)	0.67	α$_{USD}$ = (NII hist$_{USD}$/Op income$_{USD}$)	0.9
α$_{EUR}$ × admn. Expenses$_{EUR}$	26.67	α$_{USD}$ × admn. Expenses$_{USD}$	13.5
NII shock$_{EUR}$ - α$_{EUR}$ × admn expenses$_{EUR}$	73.33	NII shock$_{USD}$ - α$_{USD}$ × admn expenses$_{USD}$	6.5
NII baseline$_{EUR}$ - α$_{EUR}$ × admn expenses$_{EUR}$	43.33	NII baseline$_{USD}$ - α$_{USD}$ × admn expenses$_{USD}$	26.5

$$Metric\ 2 = \frac{\color{red}{NII\ shock} - \alpha \times admn\ expenses}{\color{green}{NII\ baseline} - \alpha \times admn\ expenses} - 1 = \text{-0.1038; where}$$

$\color{red}{NII\ shock} - \alpha \times admn\ expenses$ = 50% (NII shock$_{EUR}$ - α_{EUR} × admn expenses$_{EUR}$) + + 100% (NII shock$_{USD}$ - α_{USD} × admn expenses$_{USD}$) = 43.17

$\color{green}{NII\ baseline} - \alpha \times admn\ expenses$ = 50% (NII baseline$_{EUR}$ - α_{EUR} × admn expenses$_{EUR}$) + + 100% (NII baseline$_{USD}$ - α_{USD} × admn expenses$_{USD}$) = 48.17

Explanatory box on NII SOT metrics

The EBA is assessing the policy advantages and disadvantages of using the two potential metrics for the definition of the large decline.

Option A refers to a capital related metric. It relates the losses in NII in the relevant shock scenario with respect to the Tier 1 capital. It is consistent with the idea behind the EVE SOT defined in the CRD (losses in EVE related to the Tier 1 capital) and seems to be the most manageable option from an operational perspective. It measures the losses of NII but does not cover other non-NII related elements in the assessment of the sustainability of the business operations.

Option B refers to a cost related metric. It reflects the relative losses of NII in the relevant shock scenario taking also into account general administrative expenses. The parameter alpha estimates the share of NII in the operating income of the institution and is used to infer the part of the administrative expenses attributable to the NII. Its main advantage is that it takes into account both the business model and cost structure of a bank in the assessment of the continuity of the business operations. However, it builds on some estimates of the share of NII in operating income for determining the alpha parameter.

In the QIS analysis, in section 5.1 of this consultation paper, the calibration of the large decline in the NII SOT pursues to ensure a comparable degree of strictness between the NII SOT and the EVE SOT. The thresholds proposed for the NII SOT provide a comparable number of outliers than in the case of the EVE SOT as established in the CRD. Indeed, Basel envisaged other additional SOT than the EVE one as long as they are at least as severe as it.

An illustrative example is provided on currency aggregation for metric 1 and metric 2.

Question 2: Do respondents have any comment related to these two metrics for the specification and the calibration of the test statistic for the large decline in Article 6 for the purpose of NII SOT? Specifically, do respondents find the inclusion of administrative expenses in metric 2 clear enough? Do respondents have any comment on the example on currency aggregation for metric 1 and metric 2?

Article 7

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Question 3: Do respondents consider that all the necessary aspects have been covered in the draft regulatory standard? Do respondents find the provisions clear enough or would any additional clarification be needed on any aspect?

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission
The President

[For the Commission
On behalf of the President

[Position]

ANNEX I

Specified size of interest rate shocks $\overline{R}_{shocktype,c}$

	ARS	AUD	BGN	BRL	CAD	CHF	CNY	CZK	DKK	EUR	GBP
Parallel	400	300	250	400	200	100	250	200	200	200	250
Short	500	450	350	500	300	150	300	250	250	250	300
Long	300	200	150	300	150	100	150	100	150	100	150

	HKD	HRK	HUF	IDR	INR	JPY	KRW	MXN	PLN	RON	RUB
Parallel	200	250	300	400	400	100	300	400	250	350	400
Short	250	400	450	500	500	100	400	500	350	500	500
Long	100	200	200	350	300	100	200	300	150	250	300

	SAR	SEK	SGD	TRY	USD	ZAR
Parallel	200	200	150	400	200	400
Short	300	300	200	500	300	500
Long	150	150	100	300	150	300

ARS	Argentine Peso	IDR	Indonesian Rupiah
AUD	Australian Dollar	INR	Indian Rupee
BGN	Bulgarian Lev	JPY	Japanese Yen
BRL	Brazilian Real	KRW	South Korean Won
CAD	Canadian Dollar	MXN	Mexican Peso
CHF	Swiss Franc	PLN	Poland Zloty
CNY	Chinese Yuan	RON	Romanian Leu
CZK	Czech Koruna	RUB	Russian Ruble
DKK	Danish Krone	SAR	Saudi Riyal
EUR	Euro	SEK	Swedish Krona
GBP	Pound sterling	SGD	Singapore Dollar
HKD	Hong Kong Dollar	TRY	Turkish Lira
HRK	Croatian Kuna	USD	United States Dollar
HUF	Hungarian Forint	ZAR	South African Rand

5. Accompanying documents

5.1 Draft cost-benefit analysis / impact assessment

1. Following Article 10 of Regulation (EU) No 1093/2010 (EBA Regulation), the EBA shall analyse the potential costs and benefits of draft Regulatory technical standards. RTS developed by the EBA shall therefore be accompanied by an Impact Assessment (IA) that analyses 'the potential related costs and benefits'.

2. This analysis presents the IA of the main policy options included in this Consultation Paper on the draft RTS on supervisory outlier tests, which the EBA is mandated to develop under Article 98(5a) of Directive 2013/36/EU, as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures, amended by Directive (EU) 2019/878.

3. The IA has built on the QIS on IRRBB conducted by the EBA during the first half of 2021 and has taken into account the EBA Guidelines "on the management of interest rate risk arising from non-trading book activities" published on 18 July 2018.

5.1.1 Supervisory shock scenarios in the SOTs

4. The EBA keeps the supervisory shock scenarios envisaged in the 2018 EBA Guidelines "on the management of interest rate risk arising from non-trading book activities" for the SOT on EVE.

5. For the SOT on NII, the EBA proposes to apply the parallel up and down supervisory shocks scenarios envisaged in the SOT EVE.

5.1.2 Recalibration of the lower bound in the SOTs

6. Point k of paragraph 115 of the 2018 EBA Guidelines "on the management of interest rate risk arising from non-trading book activities", in the context of the supervisory outlier test, envisages a maturity-dependent post-shock interest rate floor to be applied for each currency starting with -100 basis points for immediate maturities and increasing by 5 basis points per year, eventually reaching 0% for maturities of 20 years and more. It was established therein that the EBA might envisage revising this floor to ensure that the lower reference rate will be sufficiently prudent given future developments in the interest rates.

7. In particular, in March 2020 the AAA yields for all maturities longer than 5Y already were below the affine floor as given in the 2018 EBA Guidelines. This is also true for the yield curve as of 30 December 2020. Put otherwise, already the baseline scenario (before shock) was below the floor. Thus, a recalibration of the maturity-dependent post-shock interest rate floor to -150 bps with a slope of 3 bps per year, proposed in the draft RTS under consultation, seems appropriate.

Table 1: EUR AAA bond yields as published on the ECB website

	1Y	5Y	10Y	20Y	30Y
Minimum yields (EUR AAA) until Sep 2016	-0.73%	-0.61%	-0.17%	0.28%	0.44%
Minimum yields (EUR AAA) until Mar 2021	-0.91%	-1.00%	-0.82%	-0.51%	-0.43%
Change in minimum yields between Sep 2016 and Mar 2021	-0.19%	-0.39%	-0.65%	-0.79%	-0.87%
Yields (EUR AAA) as of 30 Dec 2020	-0.76%	-0.72%	-0.57%	-0.29%	-0.13%
Yields (EUR AAA) as of 12 Mar 2021	-0.67%	-0.61%	-0.28%	0.12%	0.23%

5.1.3 Time horizon and balance sheet assumption in the SOT on NII

8. Two time horizons have been assessed in the QIS, 1 year and 3 years, in the context of two potential balance sheet assumptions, constant versus dynamic balance sheet. Different factors have been considered in the assessment of the two options: operational complexity, reliability of the estimates of cash flows, comparability of the estimates between banks and calculation accuracy.

9. For avoidance of a doubt, institutions are expected to determine change in NII on a rolling basis so that a full year projection is available at each reporting date.

10. In a constant balance sheet maturing positions are replaced by new business with comparable characteristics regarding the volume, maturity and features (e.g. for caps/floors). However, the currently prevailing interest rate shall be used for setting interest rate characteristics.

11. In a dynamic balance sheet, future business expectations adjusted for the relevant scenario in a consistent manner, would be incorporated, including in terms of volumes and composition of the balance sheet.

12. A constant balance sheet measures IRRBB under the assumption of an unchanged policy, thus providing a practically relevant baseline for the IRRBB assessment. A constant balance sheet measure makes comparison between institutions for the purpose of the outlier test easier than a dynamic balance sheet measure.

5.1.4 Definition of large decline in the SOT on NII.

a. Elements of net interest income

13. Observed practices in the industry have shown that banks consider different elements as net interest income, leading to a lack of comparability of metrics, as well as IRRBB impacts. This heterogeneity would directly hamper the capacity of the upcoming SOT on NII to become an adequate outlier test. In the final RTS, the EBA will need to determine the elements comprising the net interest income.

14. For these purposes, and depending on the elements considered under net interest income, the following options are considered:

Option 1: Net interest income in the "narrow" sense - "narrow NII"

15. Here, net interest income is calculated as the difference between interest income and interest expenses from non-trading book items[12].

16. Overall, a harmonised determination of the elements the NII is composed of in the RTS for the purposes of the SOT is an overarching principle.

Option 2: "Wider" net interest income (including other elements) - Earnings

17. There is not a unique definition of earnings. In the current EBA GLs on IRRBB, it is stated that "*in the earnings perspective, institutions should consider not only the effects on interest income and expenses, but also the effects of the market value changes of instruments — depending on accounting treatment — either shown in the profit and loss account or directly in equity (e.g. via other comprehensive income).*"

18. The notion of earnings is linked to "profitability". Earnings cover a wider scope, which could be summarised under **two options: "narrow" NII and the effect of market value changes of instruments at fair value (option 1)**, or – the aim being to capture the impact of interest rate changes on future profitability, Earnings could technically also **include other P&L lines (option 2) such as fees and commissions**, as long as they are affected by the changes in interest rates (this should be appropriately justified and documented and is expected to remain stable over time). The definition of Earnings is then more open to interpretation than the "narrow" NII one.

Pros and cons of both measures ("narrow" NII/"wider NII" - Earnings) in the context of IRRBB SOT

	"Narrow" NII	**"Wider" NII – Earnings**
Pros	- **easier to standardise** and consequently more comparable between banks - **easier to compute** and to check (less computations are needed)	- covers the **bank's total short to medium term interest rate risk** (i.e. fair value changes (in Options 1& 2), fees and commissions (in Option 2), and impacts from offsetting between charging fees and setting (negative) interest rates - aims to **capture all different types of revenues and charges sensitive to interest rate** movements (not restricted to interest incomes/expense) recognizing the diverse IRRBB drivers across **business models**

---

[12] In BCBS IRRBB standards, NII is defined as "the difference between total interest income and total interest expense, taking account of hedging activity (e.g. via derivatives)".

		- closer approximation of the banks IRRBB level and **more in line with the applicable EBA/GL/2018/02** (compared to a narrow NII approach)
Cons	- **does not cover the bank's total short to medium term interest rate risk**, (e.g. fees and commissions, fair value changes)	- **hampered level playing field due to different accounting standards**, notably on the scope of items at fair value (higher dependency on accounting rule) - **standardisation and comparability is less easy** (e.g. different accounting standards)

19. The "narrow" NII captures, in comparison to earnings, a restricted list of charges and revenues. This increases comparability between institutions, but at the cost of potentially omitting IRRBB drivers of institutions' P&L where a significant part of interest sensitive net income is constituted by other elements than "narrow" NII. Earnings are wider than "narrow" NII and comprehensively capture the risk stemming from interest rate changes. This would allow for assessing the sensitivity of the various types of exposures, for different business models, to interest rate movements more extensively.

b. Metrics to define a large decline

20. The NII SOT targets to identify the decline of an institution's income (the so called "large decline") that, due to its non-trading book's IRRBB exposure, would jeopardise its normal business operations.

21. In order to define such large decline, two steps need to be followed: firstly, determine the metric for measuring a decline of the NII. Secondly, the threshold of such decline that would jeopardise normal business operation will be calibrated.

22. The EBA worked on the first step and established a number of metrics. With the QIS data, the EBA worked on the second step by assessing the impact of different thresholds on the different metrics. This allowed the EBA to ultimately come up with a specific proposal of metric and threshold as a definition of the large decline.

23. Two types of metrics have been elaborated:

Option A: Capital related metric

24. A first category of metrics focuses on the NII variability by linking the NII loss in the relevant scenario to a reference in capital terms (e.g., Tier 1 capital). These metrics are listed as metrics 1 in the following Table. Given that the denominator is not based on recurrent income or expenses but on Tier 1 capital levels, these metrics are applicable for all banks and different business models.

Option B: Income / expense related metric

25. An alternative category of metrics tests whether the level of net interest income under the relevant shock scenario would be sufficient to maintain normal business operations. Particularly, these measures test whether the NII after a shock would cover the attributable part of the general administrative expenses and relate this (shocked) "Net-NII" to the 1Y NII forecast in a baseline scenario (metric 2). The decline under a shock is measured in percentage points.

CAPITAL RELATED METRICS (applicable to "narrow" NII or earnings)

1 - ΔNII **ΔNII / Tier 1 < x** (ΔNII is the loss in the relevant scenario)	▪ The metric is following the same technical idea as the EVE-SOT and relates the change in NII to the Tier 1 capital	▪ It is possible to quickly verify the correctness of its calculation	▪ The metric does not show whether the post-shock NII can sustain normal business operations nor whether it is actually positive

INCOME- / EXPENSE RELATED METRICS (applicable to "narrow" NII or earnings)

2 – Income- / expense related metric $$\frac{NII_{shock} - \alpha \cdot AdmExpens}{NII_{baseline} - \alpha \cdot AdmExpens} - 1 < x,$$ where $\alpha = \frac{NIIhist}{Op.\,inc.}$ (NII_shock (NII_baseline) is the level of NII in the shock (baseline) scenario)	▪ It describes the decline in percentages of the NII that takes also general administrative expenses into account ("Net-NII"). ▪ The fraction of "attributable expenses" is given by α, which is an estimate of the share of NII on the operating income.	▪ It keeps a close link to the strength and stability of the NII stream in the overall profitability of a bank "normal business operations" ▪ It takes into account both the business model and cost structure of a bank ▪ One-offs are likely to affect the operating income and administrative expenses at the same time, and this metric captures both altogether	▪ Requires the assumption that expenses are attributed on a proportional basis to the NII (relative to the operating income) ▪ Requires bank- and time-specific parameters α that needs to be updated each year (though it is expected not to vary too strongly)

5.1.5   QIS analysis

26. The calibration of the threshold for the definition of the large decline in the SOT on NII builds on the EBA QIS from December 2020, where dedicated EU-specific IRRBB worksheets have been included in the Basel III monitoring exercise.

27. 121 banks have participated in the whole EBA QIS but less than half of them provided data on IRRBB. The following descriptive tables and charts indicate the number of banks that provided sufficient data for each assessment.

a.   Metric 1 – capital related metric. Description.

28. Table 2 describes the change of NII (i.e. the difference between the NII under each shock scenario and the NII under the baseline scenario) with respect to the amount of Tier 1 capital, for shock scenarios 1 (parallel shock up), 2 (parallel shock down) and 2 unconstrained (parallel shock down with the full shock disregarding the lower bound) for a one-year and a three-year risk horizon as defined in the instructions of the 2020 QIS. NII here is the difference between interest income and interest expenses only. The results are for each bank aggregated over all currencies considered in the IMS and under the assumption of a constant balance sheet.

Table 2: Metric 1 (NII: Interest income - Interest expenses) - Description

	Δ NII (as % of Tier 1 Capital)					
	NII Projection 1Y			**NII Projection 3Y**		
Scenario	**1**	**2**	**2 Unconstrained**	**1**	**2**	**2 Unconstrained**
Mean	**2.6%**	**-0.2%**	**-1.6%**	**10.5%**	**-18.0%**	**-8.1%**
S.D	**2.9%**	**2.2%**	**3.4%**	**10.5%**	**6.0%**	**10.5%**
5th	-0.7%	-3.3%	-7.6%	0.0%	-10.9%	-32.2%
10th	-0.1%	-2.2%	-7.2%	0.4%	-7.7%	-22.6%
25th	0.6%	-1.2%	-4.5%	2.5%	-4.4%	-17.5%
50th	2.1%	-0.6%	-1.4%	8.8%	-2.3%	-8.3%
75th	5.4%	0.0%	0.0%	16.9%	-0.2%	-0.2%
90th	7.2%	0.9%	1.6%	24.4%	1.3%	2.3%
95th	9.6%	1.9%	2.3%	38.9%	4.6%	4.5%
No of banks	54	54	46	50	50	44

29. Table 3 describes the change of NII, i.e. the difference between the NII under each shock scenario and the NII under the baseline scenario with respect to the amount of Tier 1 capital,

for shock scenarios 1 (parallel shock up), 2 (parallel shock down) and 2 unconstrained (parallel shock down with the full shock disregarding the lower bound) as defined in the instruction of the 2020 QIS. NII here is the difference between interest income and interest expenses plus fair value changes of the relevant interest rate sensitive non-trading book instruments accounted at fair value. The results are for each bank also at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet.

Table 3: Metric 1 (NII: Interest income - Interest expenses +- fair value changes) - Description

| | Δ NII including fair value (as % of Tier 1 Capital) | | | | | |
| | NII Projection 1Y | | | NII Projection 3Y | | |
Scenario	**1**	**2**	**2 Unconstrained**	**1**	**2**	**2 Unconstrained**
Mean	**2.2%**	**0.2%**	**-1.2%**	**11.5%**	**-0.6%**	**-7.2%**
S.D	**3.4%**	**2.3%**	**3.2%**	**9.2%**	**6.4%**	**10.2%**
5th	-7.3%	-2.0%	-6.4%	-9.7%	-8.6%	-29.4%
10th	-2.8%	-1.7%	-4.9%	0.0%	-6.0%	-23.1%
25th	0.0%	-0.7%	-3.7%	1.2%	-3.8%	-14.5%
50th	1.7%	-0.3%	-1.4%	7.6%	-2.0%	-7.6%
75th	4.2%	0.2%	0.0%	14.2%	0.0%	-0.2%
90th	5.9%	0.4%	1.4%	21.4%	1.2%	4.9%
95th	6.6%	0.9%	2.4%	35.5%	1.8%	7.0%
No of banks	44	44	41	40	40	39

b.   Metric 2 – Income / expense related metric. Description.

30. Table 4 describes under metric 2, $\frac{NII_{shock} - \alpha \cdot AdmExpens}{NII_{baseline} - \alpha \cdot AdmExpens} - \mathbf{1}$, the change of the NII, i.e. the difference between the NII under each shock scenario –and the NII under the baseline scenario considering the part of the administrative expenses that need to be covered, for shock scenarios 1 (parallel shock up), 2 (parallel shock down) and 2 unconstrained (parallel shock down with the full shock disregarding the lower bound) as defined in the instructions of the 2020 QIS. NII here is the difference between interest income and interest expenses only. The results are for each bank at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet. The coefficient alpha is defined as $\frac{NII_{hist}}{Op.\,inc.}$.

Table 4: Metric 2 (NII: Interest income - Interest expenses) - Description

	NII					
	NII Projection 1Y			**NII Projection 3Y**		
Scenario	**1**	**2**	**2 Unconstrained**	**1**	**2**	**2 Unconstrained**
Mean	**52.6%**	**-10.2%**	**-125.3%**	**63.0%**	**17.5%**	**-62.5%**
S.D	**45.1%**	**11.5%**	**100.8%**	**46.5%**	**32.6%**	**43.6%**
5th	-36.0%	-39.5%	-154.2%	-19.1%	-51.4%	-200.9%
10th	-11.0%	-30.6%	-121.1%	0.2%	-39.7%	-163.5%
25th	4.3%	-17.6%	-64.2%	10.8%	-21.6%	-80.5%
50th	33.2%	-9.5%	-19.9%	50.0%	-11.6%	-45.7%
75th	83.8%	-1.9%	-1.3%	103.5%	-5.2%	-9.5%
90th	151.1%	14.4%	9.3%	171.8%	20.7%	2.1%
95th	183.3%	32.0%	28.4%	212.9%	35.0%	23.2%
No of banks	49	48	45	44	44	42

31. Table 5 describes under metric 2, $\frac{NII_{shock} - \alpha \cdot AdmExpens}{NII_{baseline} - \alpha \cdot AdmExpens} - 1$, the change of the NII, i.e. the difference between the NII under each shock scenario and the NII under the baseline scenario) considering the part of the administrative expenses that need to be covered, for shock scenarios 1 (parallel shock up), 2 (parallel shock down) and 2 unconstrained (parallel shock down with the full shock disregarding the lower bound) as defined in the instructions of the 2020 QIS. NII here is the difference between interest income and interest expenses plus fair value changes of the relevant interest rate sensitive non-trading book instruments accounted at fair value. The results are for each bank at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet. The coefficient alpha is defined as $\frac{NII_{hist}}{Op.\,inc.}$.

Table 5: Metric 2 (NII: Interest income - Interest expenses +- fair value changes) - Description

	NII (including fair value)					
	NII Projection 1Y			NII Projection 3Y		
Scenario	**1**	**2**	**2 Unconstrained**	**1**	**2**	**2 Unconstrained**
Mean	**43.2%**	**-3.1%**	**-24.7%**	**58.2%**	**21.5%**	**-14.1%**
S.D	**42.7%**	**10.3%**	**27.6%**	**45.7%**	**31.4%**	**43.1%**
5th	-80.5%	-29.9%	-223.8%	-32.5%	-37.6%	-187.0%
10th	-37.6%	-19.8%	-93.5%	-0.3%	-30.9%	-121.7%
25th	-0.1%	-13.6%	-54.8%	9.5%	-20.8%	-79.4%
50th	28.8%	-4.6%	-24.8%	45.1%	-10.0%	-49.2%
75th	74.0%	0.2%	-1.1%	98.0%	-0.9%	-10.4%
90th	122.8%	15.2%	2.1%	142.3%	31.5%	2.7%
95th	221.3%	36.3%	3.7%	222.4%	52.7%	28.1%
No of banks	42	42	41	39	39	39

32. Figure 1 describes the evolution of the alpha coefficients over time, from 2017 to 2020, for each of those banks providing sufficient information for it. The alpha values are calculated with the historical amount reported of NII and operating income. The net interest income is reported as the result of Interest income from assets allocated to the banking book minus interest expense on liabilities allocated to the banking book. In 80% of the banks (43/54) the difference between the max and min alpha values of these four year references is lower than 0.10 and in 85% of the banks (46/54) it is lower than 0.15. Main outliers are banks that went through mergers/restructuring/acquisitions processes during the observation periods. Furthermore, to be noted that the IFRS 9 accounting standard came into force on 1 January 2018 with implications on the classification and measurement of financial instruments and hedge accounting. Considering only the observations in 2018, 2019 and 2020, and thus disregarding the impact due to changes in the accounting framework, only 3 banks (out of 54) would show a maximum difference higher than 0.1 (only 2 banks with a maximum difference higher than 0.15).

Figure 1-Evolution of alpha values
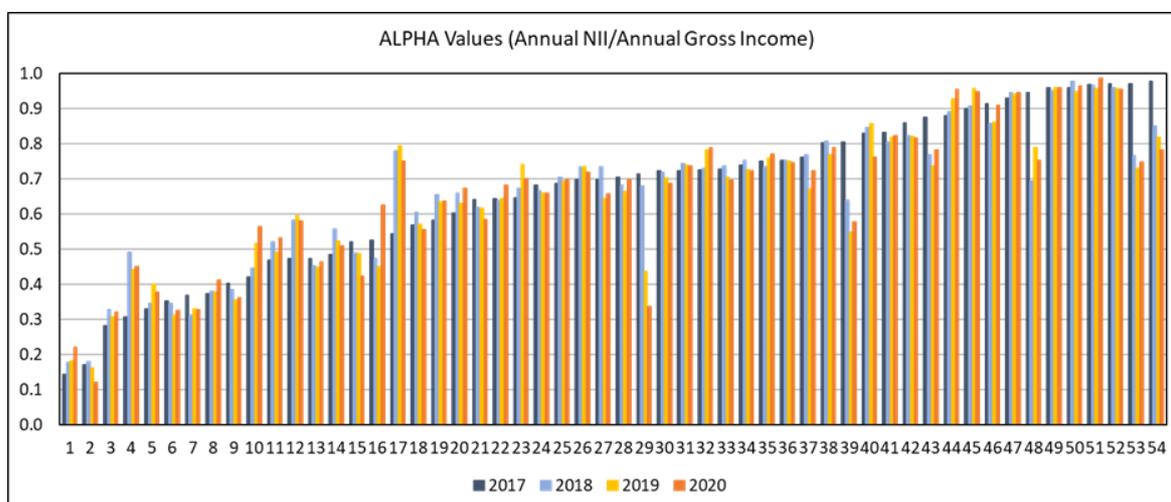
c. Delta EVE/Tier 1 capital. Description.

33. Table 6 shows the changes of EVE without own equity, i.e. the difference between the EVE under each shock scenario and the EVE under the baseline scenario with respect to the amount of Tier 1 capital, for shock scenarios 1 (parallel shock up), 2 (parallel shock down), 3 (steepener), 4 (flattener), 5 (short rate up) and 6 (short rate down) as defined in the instructions of the 2020 QIS. The results are for each bank at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet with a run-off profile.

Table 6: Delta EVE/Tier 1 capital - Description

	Delta EVE without own equity (as % of Tier 1 Capital)					
Scenario	**1**	**2**	**3**	**4**	**5**	**6**
Mean	**-4.47%**	**1.02%**	**-1.29%**	**0.21%**	**-0.34%**	**-1.39%**
S.D	**18.66%**	**6.57%**	**18.50%**	**2.70%**	**4.10%**	**18.13%**
5th	-13.14%	-11.70%	-8.40%	-2.28%	-4.21%	-8.75%
10th	-11.67%	-6.49%	-4.80%	-1.16%	-3.87%	-4.57%
25th	-8.04%	-1.04%	-2.53%	-1.08%	-2.88%	-0.39%
50th	-2.23%	0.27%	-0.31%	0.10%	-0.94%	0.26%
75th	3.17%	1.60%	1.41%	1.45%	1.22%	1.59%
90th	8.46%	4.23%	3.29%	4.40%	6.95%	3.48%
95th	14.48%	5.49%	7.19%	6.83%	11.03%	4.51%
No of banks	52	52	53	51	51	53

d.   Metric 1 vs delta EVE. Comparative results and outliers.

34. Figure 2 compares the values of metric 1 and delta EVE/Tier 1 capital. The NII in metric 1 is the difference of interest income and interest expenses of banking book instruments. The figure considers only the minimum value of metric 1 (maximum loss) under the shock scenarios 1 and 2, and the minimum value of delta EVE/Tier 1 under shock scenarios 1 to 6. The EVE does not include own equity. It considers a common sample of the 46 banks for which sufficient data is provided for this comparison. The results are for each bank at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet.

35. Table 7 provides information of the number of banks, out of the 46 banks mentioned, that would show a delta EVE/Tier 1 above or below -15% (outliers following Article 98(5)(a) of the Directive 2013/36/UE) and simultaneously metric 1 values for various intervals.

36. Figure 3 and Table 8 provide similar information under the consideration that NII here is the difference between interest income and interest expenses plus fair value changes of the relevant interest rate sensitive non-trading book instruments accounted at fair value. A sample of 37 banks is available for these purposes.
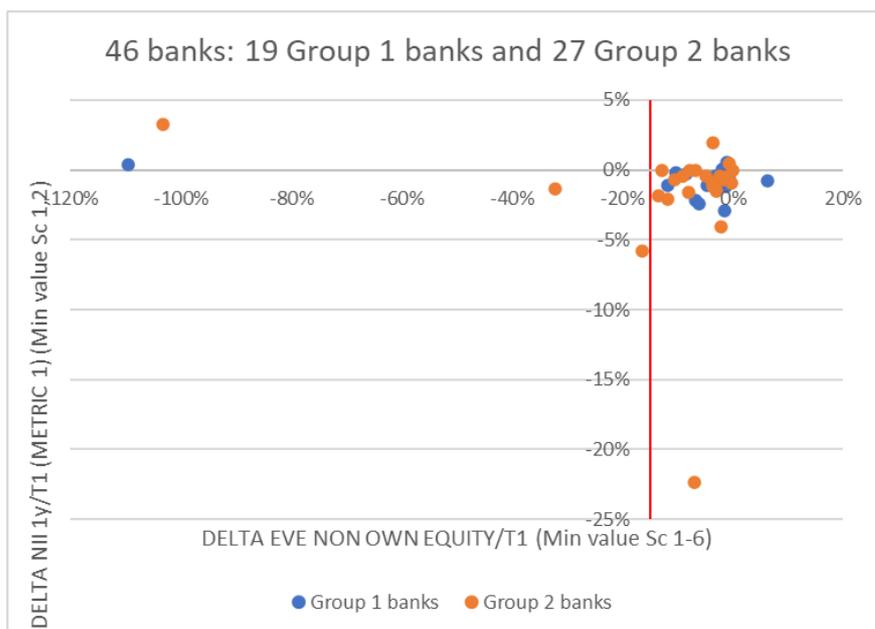
Figure 2: Metric 1 vs delta EVE/Tier 1

Table 7: Metric 1 vs delta EVE/Tier 1 - Number of banks

| | | Delta EVE | |
		< -15% (Outliers)	≥ -15%
Delta NII	**≥ 0%**	2	4
	[-1%, 0%)	0	22
	[-2%, -1%)	1	10
	[-3%, -2%)	0	4
	[-4%, -3%)	0	0
	[-5%, -4%)	0	1
	< -5%	1	1
	Total	4	42

Figure 3-Metric 1 (NII & FV) vs delta EVE/Tier 1
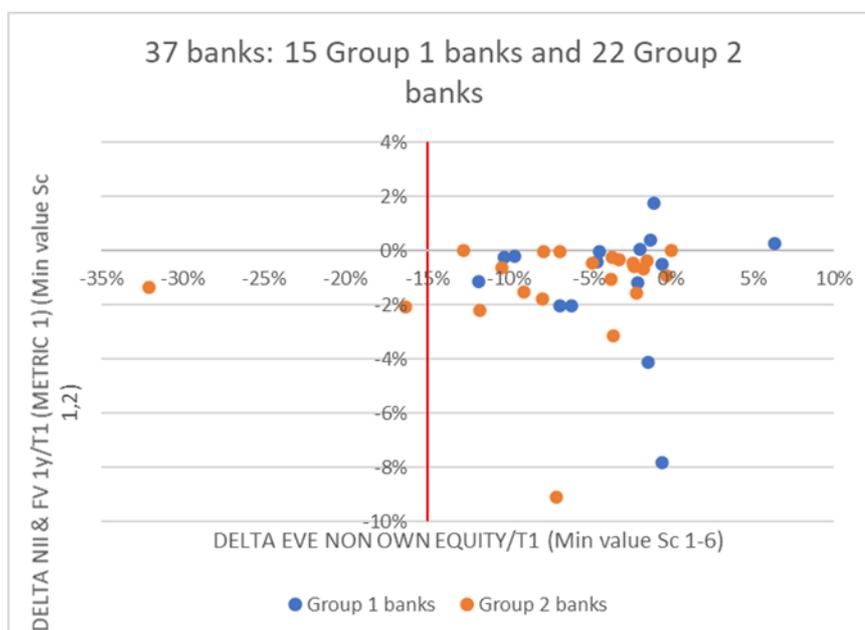
Table 8-Metric 1 (NII & FV) vs delta EVE/Tier 1 - Number of banks

		Delta EVE	
		< -15% (Outliers)	≥ -15%
	≥ 0%	0	4
	[-1%, 0%)	0	18
	[-2%, -1%)	1	6
Delta NII	[-3%, -2%)	1	3
	[-4%, -3%)	0	1
	[-5%, -4%)	0	1
	< -5%	0	2
	Total	2	35

e.   Metric 2 vs delta EVE. Comparative results and outliers.

37. Figure 4 compares the values of metric 2 and delta EVE/Tier 1 capital. The NII in metric 2 is composed by interest income minus interest expenses of banking book instruments. The figure considers only the maximum value of metric 2 (maximum loss) under the shock scenarios 1 and 2 and the minimum value of delta EVE/Tier 1 under shock scenarios 1 to 6. The EVE does not include own equity. It considers a common sample of the 38 banks for which sufficient data is provided for this comparison. The results are for each bank at an aggregated level over all currencies considered in the IMS and under the assumption of a constant balance sheet.

38. Table 9 provides information of the number of banks, out of the 38 banks mentioned, that would show a delta EVE/Tier 1 above or below -15% (outliers following Article 98(5)(a) of the Directive 2013/36/UE) and simultaneously metric 2 values for various intervals.

39. Figure 5 and Table 10 provide similar information under the consideration that NII here is the difference between interest income and interest expenses plus fair value changes of the relevant interest rate sensitive non-trading book instruments accounted at fair value. A sample of 33 banks is available for these purposes.
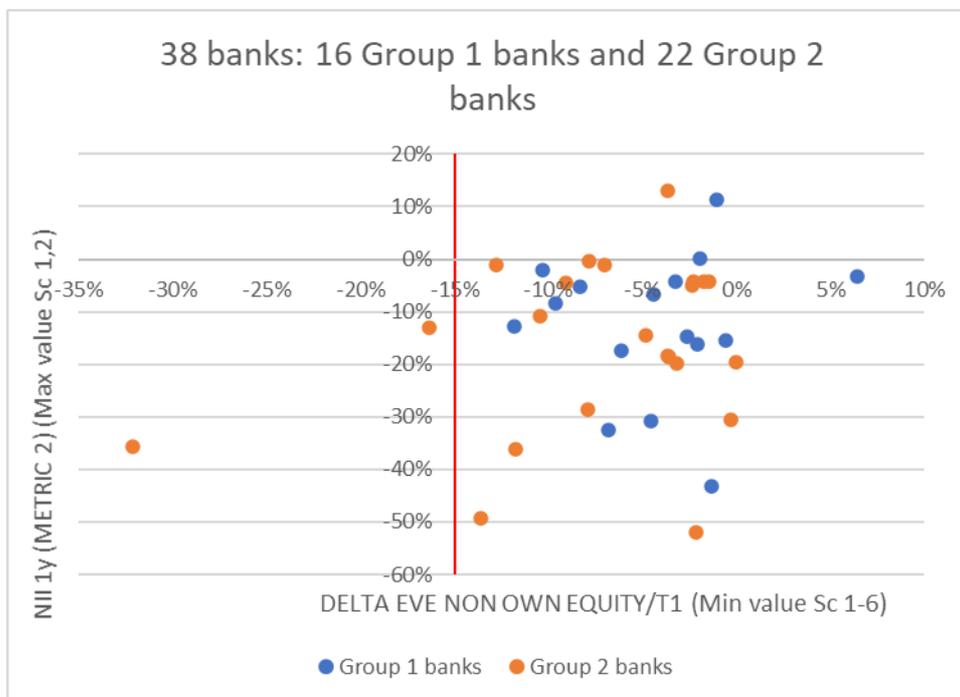
Figure 4: Metric 2 vs delta EVE/Tier 1

Table 9: Metric 2 vs delta EVE/Tier 1 - Number of banks

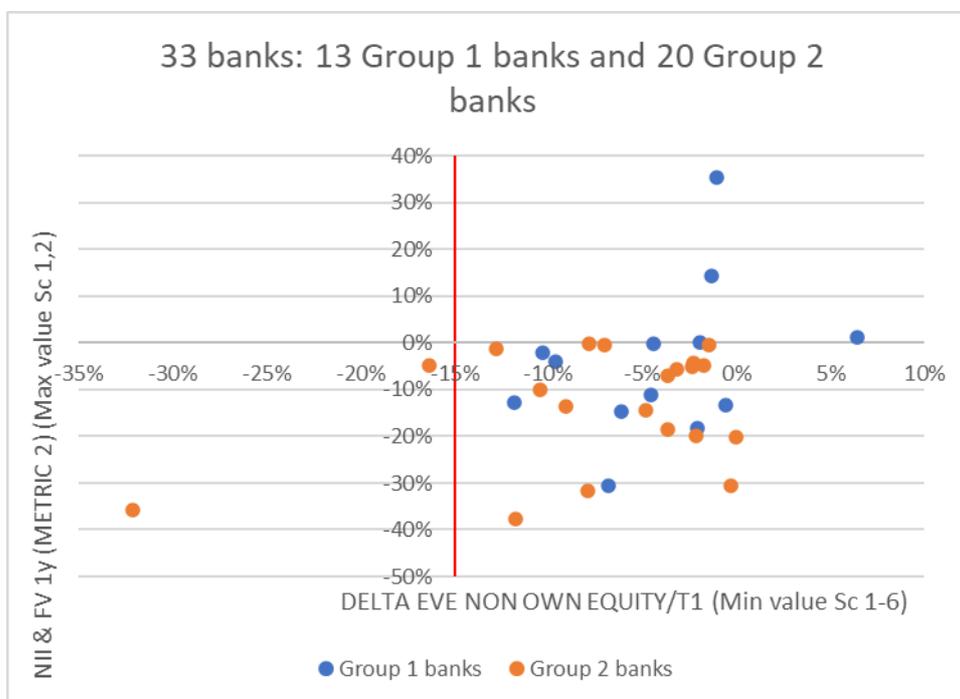| | | Delta EVE | |
		< -15% (Outliers)	≥ -15%
	< -50%	0	1
	(-40%, -50%]	0	2
	(-30%, -40%]	1	4
Delta NII	**(-20%, -30%]**	0	1
	(-10%, -20%]	1	11
	(0%, -10%]	0	14
	> 0%	0	3
	Total	2	36

Figure 5-Metric 2 (NII & FV) vs delta EVE/Tier 1

Table 10-Metric 2 (NII & FV) vs delta EVE/Tier 1 - Number of banks

		Delta EVE	
		< -15% (Outliers)	**≥ -15%**
	< -50%	0	0
	(-40%, -50%]	0	0
	(-30%, -40%]	1	4
Delta NII	**(-20%, -30%]**	0	2
	(-10%, -20%]	0	9
	(0%, -10%]	1	12
	> 0%	0	4
	Total	2	31

f.   Results from qualitative questions

40. Responses to qualitative questions show that first there is a heterogeneity regarding the inclusion or exclusions of commercial margins. The EBA is of the view that banks should include commercial margins in the net interest income in the case of the NII SOT. However, in the case of the EVE SOT, the EBA considers that banks should be allowed to exclude commercial margins if they met several criteria. Second, banks use different interest rates for discounting cash flows. Thus, the EBA wants banks to give the opportunity to select an appropriate yield curve. Third, there is heterogeneity regarding using historical/original or current commercial margins for maturing positions that are renewed. The EBA deems it more appropriate to use current

conditions, as historical/original commercial margins might no longer be appropriate under current market conditions.

5.1.6 Conclusions – Definition of the large decline in the SOT on NII

a. Time horizon (1 year versus 3 years)

41. The EBA understands that a one year time horizon offers a better balanced solution from the perspective of the reliability of the data to be used, the comparability across banks and the operational complexity for the calculations.

b. Determination of the net interest income

42. The EBA has assessed two options:

(a) Option 1, where the net interest income would be determined by the interest income minus the interest expenses; and

(b) Option 2, where the net interest income would be determined by the interest income minus the interest expenses plus the fair value changes of those instruments in the banking book accounted at fair value.

43. The EBA considers that Option 1 seems less complex and more harmonised in its calculation. It contributes to avoid differences in the calculation of fair value changes across various accounting frameworks. However, the EBA acknowledges that the inclusion of fair value elements provides a more comprehensive view.

44. The QIS data does not show strongly different results if fair value changes are included or not. Therefore, based on this data, the final calibration should not be too much influenced by one or another option.

c. Calibration of the outlier threshold

45. The SOT on NII is expected to be at least as stringent as the SOT on EVE. Paragraph SRP 31.83[13] of the consolidated version of the BCBS standards, within chapter on Supervisory review process - IRRBB, indicates that in addition to the SOT on EVE supervisors also implement additional outlier tests. It indicates that for the additional outlier tests, the threshold for defining an outlier bank should be at least as stringent as in the case of the SOT on EVE.

46. Considering this, the EBA targets to fix the threshold in a way that the number of banks becoming outliers in the SOT on EVE is at least the number of outlier banks under the SOT on NII. For these purposes the EBA has used the QIS data and has calculated the percentile for a 15% EVE decrease, which is the level triggering outliers in the SOT on EVE in accordance with

---

[13] https://www.bis.org/basel_framework/chapter/SRP/31.htm?inforce=20191215&published=20191215

point (b) of paragraph 5 of Article 98 of the CRD. This percentile has been used to identify the threshold for outliers in the SOT on NII.

47. For each of the 53 banks, as described in Table 6, the minimum value of delta EVE (without own equity) under the six shock scenarios has been calculated. The percentile for these values below -15% is 0.086.

In the case of Metric 1, for a one year time horizon and considering interest income and interest expenses only in the delta NII with respect to Tier 1 capital, the threshold for the 0.086 percentile on the minimum values (maximum loss) of metric 1, for shock scenarios 1 and 2 over the 46 banks as described in

48. Table 7 and Figure 2, is -2.5%. This threshold is -3.0% if the delta NII includes market value changes in addition to interest income and expenses for the 37 banks considered in Table 8 and Figure 3.

49. In the case of Metric 2, for a one year time horizon and considering interest income and interest expenses only in the value of net interest income under shock and baseline scenarios, the threshold for the 0.086 percentile on the maximum values (maximum loss) of metric 2, for shock scenarios 1 and 2 over the 38 banks described in Table 9 and Figure 4, is -35%. This threshold is -30% if the delta NII includes market value changes in addition to interest income and expenses for the 33 banks considered in Table 10 and Figure 5.

d.   Final definition of the large decline in the SOT on NII

50. Following these discussions, the EBA proposes to use a one-year horizon for measuring NII but has to make two decisions on the design of the SOT:

Definition of NII:

— NII (net interest income), determined as interest income minus interest expenses; or

— NII (net interest income), determined as interest income minus interest expenses including fair value changes.

Selection of the metric:

— Metric 1: ΔNII / Tier 1 < x, where x is the calibration of the threshold of a large decline and where:

- o the threshold x = -2.5%, if NII does not include fair value changes;

- o the threshold x = -3.0%, if NII includes fair value changes.

  A decline of more than 2.5% / 3.0% of NII, in each of those cases, with respect to Tier 1 capital triggers outliers; or

— Metric 2: $\frac{NII_{shock} - \alpha \cdot AdmExpens}{NII_{baseline} - \alpha \cdot AdmExpens} - 1 < x$, where x is the calibration of the threshold of a large decline and where:

  - o the threshold x = -35%, if NII does not include fair value changes;

  - o the threshold x = -30% if NII includes fair value changes.

  A decline of more than 35% / 30% triggers outliers

  Under metric 2, if the NII after a shock, adjusted by the attributable part of the general administrative expenses, (i.e. $NII_{shock} - \alpha \cdot AdmExpens$) is negative, an outlier is expected to be triggered reflecting that the continuity of the business is directly challenged under this metric if the shock leads to losses.

5.2   Overview of questions for consultation

51.Feedback on the following questions is sought:

Question 1: Do respondents find the common modelling and parametric assumptions for the purpose of the EVE SOT and the NII SOT in Articles 4 and 5 clear enough and operationally manageable? Specifically, the EBA is seeking comments on the recalibrated lower bound for post-shock IR levels in the EVE SOT and NII SOT as well as on the use of a one-year time horizon and a constant balance sheet with current commercial margins for new business for the NII SOT. Respondents are also kindly requested to express whether they find an inclusion of market value changes in the calculation of the NII SOT clear enough.

Question 2: Do respondents have any comment related to these two metrics for the specification and the calibration of the test statistic for the large decline in Article 6 for the purpose of NII SOT? Specifically, do respondents find the inclusion of administrative expenses in metric 2 clear enough? Do respondents have any comment on the example on currency aggregation for metric 1 and metric 2?

Question 3: Do respondents consider that all the necessary aspects have been covered in the draft regulatory standard? Do respondents find the provisions clear enough or would any additional clarification be needed on any aspect?