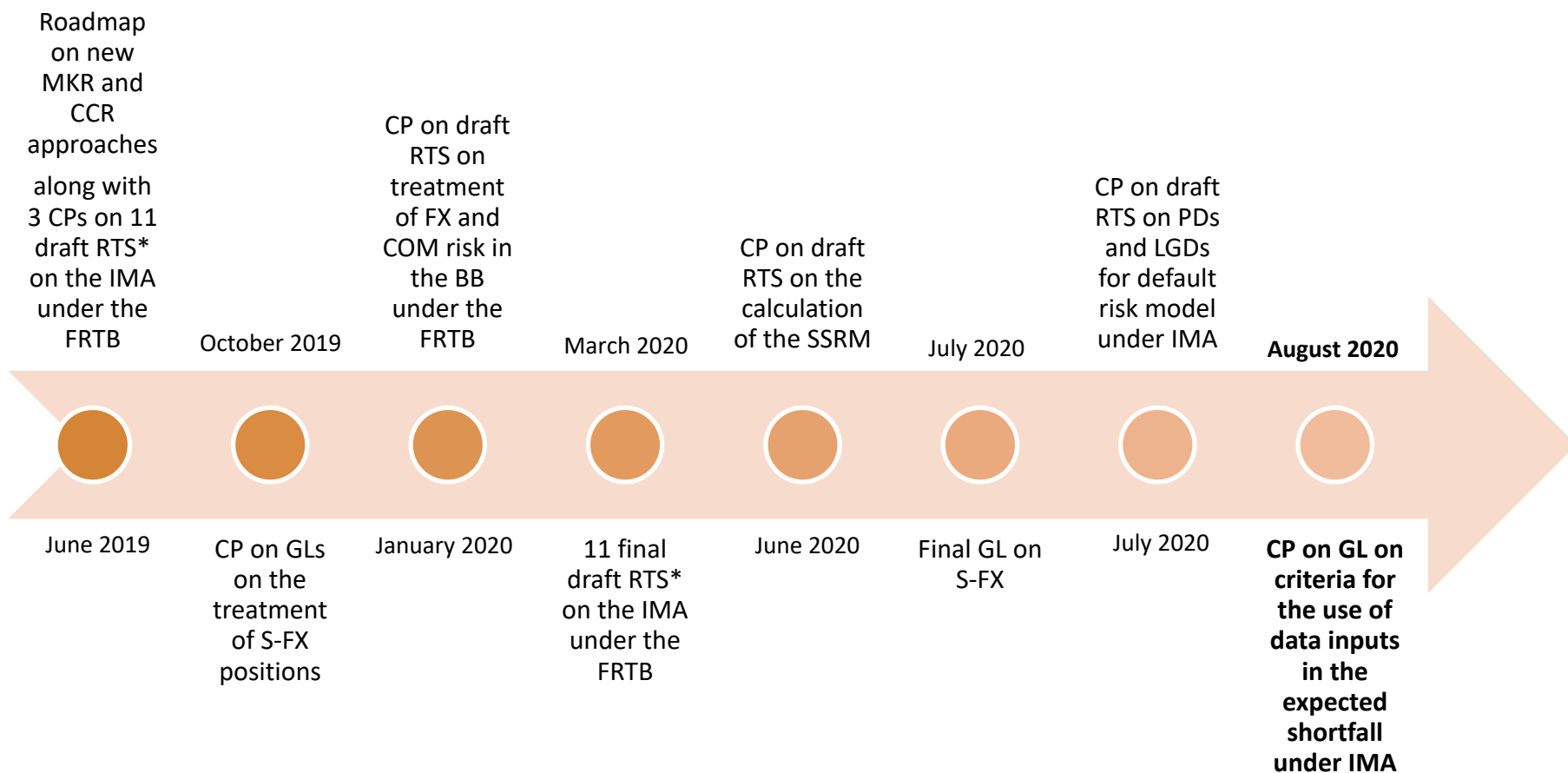**Public Hearing on CP draft GL on criteria for the use of data inputs in the expected shortfall risk measure under the IMA**

5 October 2020

Recent cycle of EBA regulatory products under market risk

Roadmap on new MKR and CCR approaches along with 3 CPs on 11 draft RTS* on the IMA under the FRTB

October 2019

CP on draft RTS on treatment of FX and COM risk in the BB under the FRTB

March 2020

CP on draft RTS on the calculation of the SSRM

July 2020

CP on draft RTS on PDs and LGDs for default risk model under IMA

August 2020

June 2019

CP on GLs on the treatment of S-FX positions

January 2020

11 final draft RTS* on the IMA under the FRTB

June 2020

Final GL on S-FX

July 2020

CP on GL on criteria for the use of data inputs in the expected shortfall under IMA

Legal basis and scope of the GL

EBA EUROPEAN BANKING AUTHORITY

Article 325bh(3) - Requirements on risk measurement

- By 28 September 2020, EBA shall issue guidelines, in accordance with Article 16 of Regulation (EU) No 1093/2010,

  - specifying <u>criteria for the use of data inputs in the risk-measurement model</u> referred to in <u>Article 325bc</u>.

Scope of the GL

- The mandate in Art. 325bh(3) explicitly restricts the scope of the present GL to data inputs used for the determination of the scenarios of future shocks applied to the <u>modellable risk factors</u> (RFs) only.

Interactions with the CRR

Interactions with the CRR

- Article 325bc of the CRR requires the data inputs used in PES_t^{RS} and $PES_t^{RS,i}$ to be calibrated to <u>historical data from a continuous 12-month period of financial stress</u> (how institutions shall identify that period is specified).

- Article 325bc of the CRR requires the data inputs used in PES_t^{RC}, $PES_t^{RC,i}$, PES_t^{FC} and $PES_t^{FC,i}$ to be calibrated to <u>historical data from the preceding 12-month period</u> (such historical data to be updated at least monthly).

- Article 325bi of the CRR requires institutions to conduct an independent review of its internal models, assessing:
    - the accuracy and completeness of position data,
    - the accuracy and appropriateness of volatility and correlation assumptions,
    - the accuracy of valuation and risk sensitivity calculations,
    - the accuracy and appropriateness of data proxies.

Structure of the GL

General structure

- The EBA has developed criteria for the use of the data inputs referred to in Article 325bc of the CRR. Those criteria relate to:
  - Accuracy of data inputs (Section 4.1),
  - Appropriateness of data inputs (Section 4.2),
  - Frequent update of data inputs (Section 4.3),
  - Completeness and consistent use of data inputs (Section 4.4).

Specific provisions

- Provisions have been included to cover the following specific cases:
  - multifactor models ('Beta approximations'),
  - multiple sources of data inputs,
  - interpolation and/or extrapolation techniques.

Section 4.1: Accuracy of data inputs (1)

General provision

- The data inputs used in the ES model, in order to be accurate, should be reflective of prices observed and/or quoted in the market. The first source of such prices should be represented by verifiable prices collected for the modellability assessment of RFs.

- Para 12: institutions should ensure that there is no material difference between the values of RFs used as data inputs and the values of RFs obtained from either 1) verifiable prices or 2) front-office or back-office prices (where a verifiable price is not available for a given observation date).

- Para 13 and 14: institutions should ensure that there is no material difference between the volatilities of/correlations among RFs as estimated from the data inputs used in the ES model and the volatilities/correlations as estimated from either 1) verifiable prices or 2) front-office or back-office prices (where the number of verifiable prices is not sufficient to perform this assessment with accuracy).

- Para 15: such assessments should be carried out at least on a quarterly basis.

Section 4.1: Accuracy of data inputs (2)

Beta Approximations

- According to para MAR31.26(7) of the FRTB, in general institutions should not be allowed to set the parameters of Beta approximation based on judgement. Para MAR99.22(1) seems to encompass specific cases where, in derogation to the general principle and under specific conditions, institutions could be allowed to apply judgmental considerations.

- The CRR requires institutions to calibrate data inputs to historical data, ruling out any calibration of parameters purely based on judgmental considerations. The only cases that could seem to be admissible are those where the <u>calibrated coefficients are additionally adjusted</u> based on judgemental considerations.

- <u>Para 16</u>: the EBA considers such cases as exceptional, and any judgemental adjustment should be adequately justified. Institutions should:
    - explain why the coefficients cannot be calibrated to historical data only,
    - describe the methodology used to obtain the coefficients, including any adjustments made,
    - demonstrate that the choice of the coefficients does not underestimate risk.

> ▸ Q1. To which extent do you intend to apply paragraph 16 of the present GL? Please provide concrete examples that could fall under the scope of paragraph 16 and explain why the coefficients cannot be calibrated to the historical data only.

Section 4.1: Accuracy of data inputs (3)

Data from a period of financial stress

- According to para MAR31.26(6) of the FRTB, in general institutions should source the data for the PES_t^{RS} and $PES_t^{RS,i}$ directly from the identified stress period whenever possible. In some cases the characteristics of current instruments in the market differ from those in the stress period. Institutions should empirically justify any cases where the market prices used for the stress period are different from the market prices actually observed during such stress period.

- <u>Para 17</u>: such effects have to be appropriately disentangled and quantified, in particular based on the use of more recent data <u>in addition</u> to the historical data observed in the stress period. Institutions should:
  - be able to provide documented analyses supported by convincing empirical evidence to justify the additional use of historical data not observed in the stress period,
  - demonstrates that the data inputs used accurately reflect changes in prices or spreads of similar instruments during the stress period,
  - demonstrates that the data inputs used do not underestimate risk.

▶ Q2. To which extent do you intend to apply paragraph 17 of the present GL? Please provide concrete examples that could fall under the scope of paragraph 17.

Section 4.2: Appropriateness of data inputs

General provision

- <u>Para 18 and 19</u>: data inputs should capture both general and specific market risks. Documented analyses supported by convincing empirical evidence should be produced.

Data inputs capturing general market risks

- <u>Para 20</u>: if market indices or other historical data representing shared characteristics are used (with a view to representing the general market risks of single-name instruments), the choice of such historical data should be conceptually sound.

Beta Approximations

- <u>Para 21</u>: if Beta approximations are used to generate the data inputs, empirical evidence (including statistical measures expressing the goodness-of-fit), should be used to show that general market risks are properly captured by those data inputs.

Data inputs capturing specific market risks

- <u>Para 22</u>: data inputs should capture all material risks arising from specific differences between similar, but not identical, positions.

Beta Approximations

- <u>Para 23</u>: if Beta approximations are used to generate the data inputs, any assumption that the residuals are uncorrelated to each other should be justified.

Section 4.3: Frequency for updating data inputs

General provision

- Para 24: historical data used to calibrate the data inputs used in PES_t^{RC}, $PES_t^{RC,i}$, PES_t^{FC} and $PES_t^{FC,i}$ should be updated more frequently than monthly, if updating those data monthly leads to an inaccurate estimation of the market risk.

Beta Approximations

- Para 25: if Beta approximations are used to generate the data inputs, institutions should recalibrate the Beta coefficients on at least a monthly basis.

Section 4.4: Completeness and consistent usage of data inputs (1)

Multiple sources of data inputs

- <u>Para 26</u>: if multiple data sources are available, the choice of one data source should not lead to an underestimation of the volatility (compared to the volatility resulting from the other available data sources).

- <u>Para 27</u>: procedures should be in place to ensure data inputs can be obtained from alternative data sources in a timely manner, in case one source ceases to be available.

**Replacement of missing or inconsistent values**

- <u>Para 28</u>: clear policies should be in place for the replacement of missing or inconsistent values in the historical time series of data inputs (including policies for verifying that such replacement complies with para 12, 13 and 14 of the GL).

- <u>Para 29</u>: old and unchanged ('stale') data should not be used.

- <u>Para 30</u>: filtering data or excluding outliers should not be allowed, unless the excluded data are inconsistent or stale data, or they do not comply with para 12, 13 and 14 of the GL.

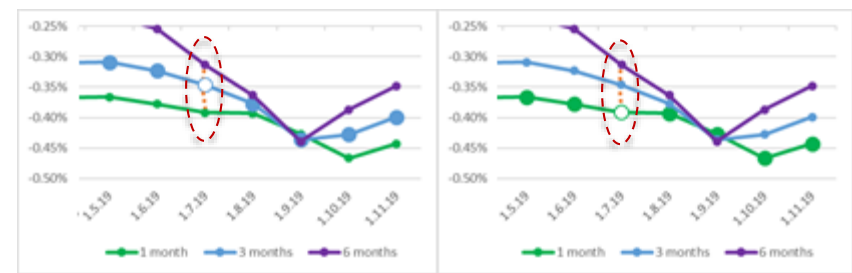# Section 4.4: Completeness and consistent usage of data inputs (2)

Replacement of missing or inconsistent values

- Data inputs for a given RF could be generated using replacing methodologies (including interpolation and extrapolation techniques) for filling gaps in times series and such methodologies could involve data from other RFs.

- Para 31: if data inputs for a given RF are generated using a method for filling gaps in times series and the method involves data from other RFs, institutions should guarantee that also the other RFs employed in the method are modellable.

- Examples:

Case 1) no other RFs employed
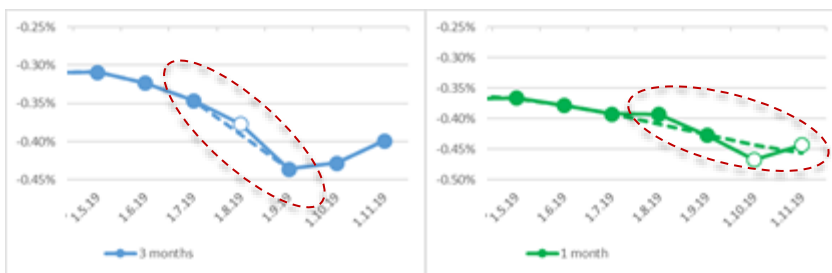
Case 2) other RFs employed

> Q3. Do you agree with the inclusion of paragraph 31 in the GL? Do you envisage any issues that could be associated with paragraph 31?

Section 4.4: Completeness and consistent usage of data inputs (3)
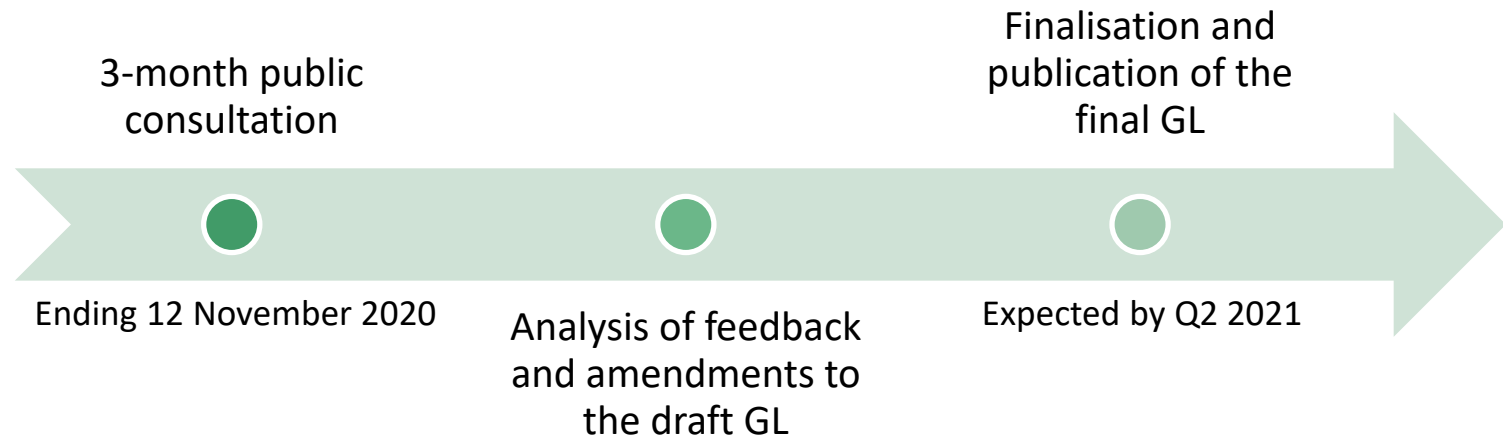
Interpolation techniques

- Para 32: if interpolated values are used, such interpolated values should appropriately represent the missing values regardless of the interpolation methodology used.

Extrapolation techniques

- Para 33: if extrapolated values are used, the volatility as estimated from the extrapolated values should be equal to or higher than the volatility as estimated from the data used for extrapolating.

- Para 34: if extrapolated values are used for a given RF starting from the values of other RFs, the following conditions should be met:
  - the extrapolation methodology should be based on the closest RF in each dimension of the given RF (meaning of closest RF is provided in the GL),
  - the extrapolation methodology should be based on at least two RFs for each dimension of the given RF,
  - the values of the two RFs, including the closest RF, should not have been obtained by extrapolation.

> ▸ Q4. Do you agree with the inclusion of paragraph 34 in the GL? Do you envisage any issues that could be associated with paragraph 34?

Next steps

3-month public
consultation

Finalisation and
publication of the
final GL

Ending 12 November 2020

Expected by Q2 2021

Analysis of feedback
and amendments to
the draft GL

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