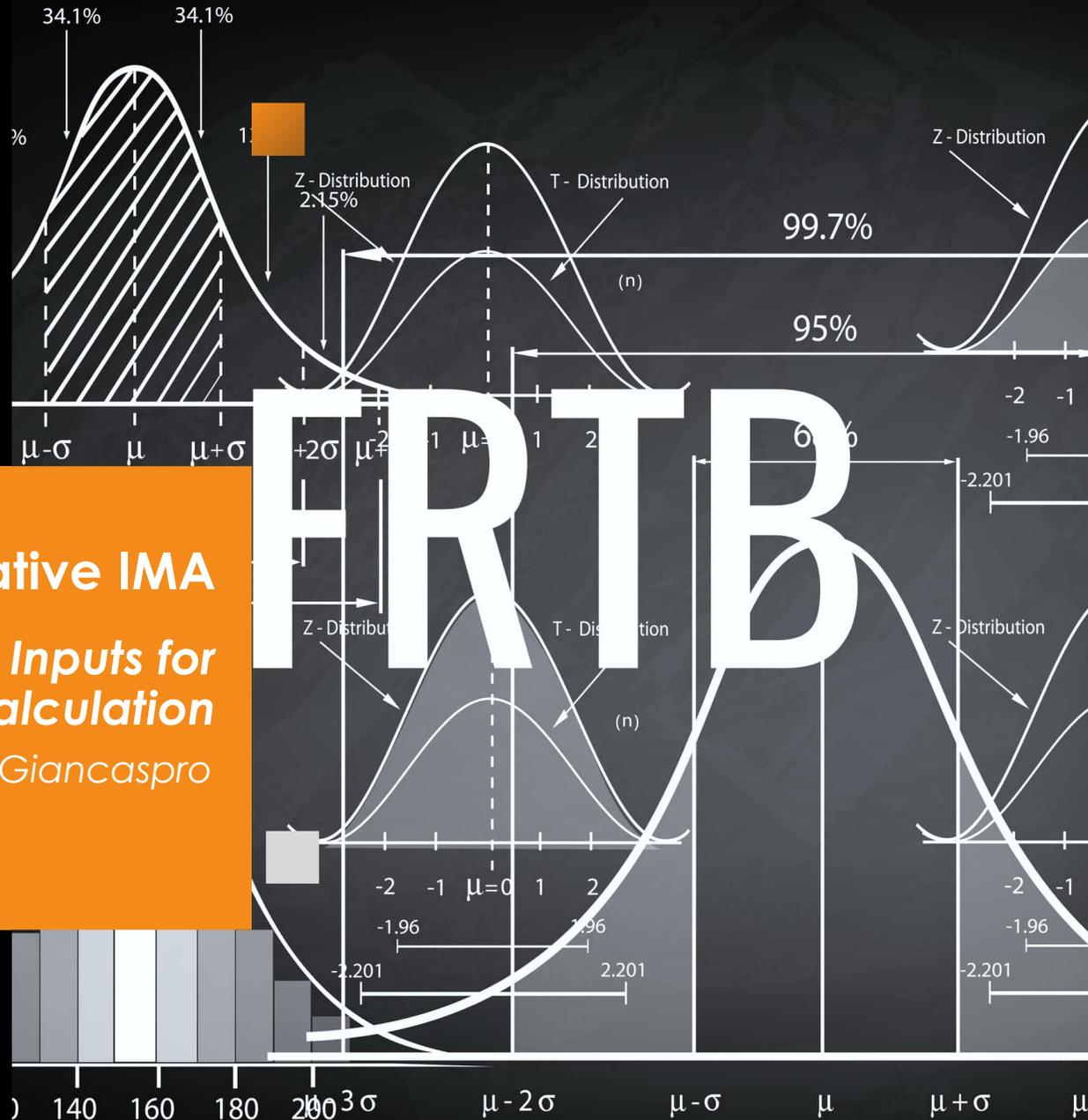


Just in Time

FRTB – The Alternative IMA
Guidelines on Data Inputs for
the Partial ES Calculation
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At a Glance



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01

Overview



Overview

Introduction

Regulation (EU) No 2020/876 (the Capital Requirements Regulation 2 – CRR2) introduces the revised framework for minimum capital requirements for market risk. The alternative internal model approach (IMA) is one of the novelties introduced by the CRR2. The IMA is designed to capture market risks considering tail risks, risk of market illiquidity and the default risk through the sum of three components: i) the Expected Shortfall risk measure; ii) the Stress Scenario Risk Measure for risk factors with limited observable data; iii) the own funds requirement for default risk associated with credit and equity positions.

Component of alternative IMA:

- **ES:** which determines capital requirements for those risk factors with a sufficient amount of available observable market data;
- **SSRM:** suitable for determining capital requirements for risk factors with limited observable market data;
- **Own funds requirements:** credit and equity positions are subject to own funds requirements for the associated default risk.

Article 325bh(3) of the CRR gives the mandate to the EBA to develop guidelines (GLs) specifying the criteria for the use of data inputs referred to in Article 325bc of the CRR and used in calculating the partial expected shortfall in accordance with the same article. The scope of GL is to clarify the qualitative conditions that the data related to modellable risk factors should meet to be used in the institution's expected shortfall calculations.

Overview

Modellability of Risk Factors

According to Article 325be of the CRR, institutions are required to assess the **modellability** of the risk factors. In that way institutions should verify that the modellable risk factors meet the criteria specified in the relevant RTS ('Draft Regulatory Technical Standards on Criteria for assessing the **modellability** of risk factors under the Internal Model Approach (IMA) under Article 325be(3) of Regulation (EU) No 575/2013).

Assessment criteria for the modellability of risk factors

- the institution has identified at least 24 verifiable prices that are representative for the risk factor over the preceding 12-month period;
- there must be no 90-day period with less than four verifiable prices that are representative for the risk factor over the preceding 12-month period.
- at least 100 verifiable prices that are representative for the risk factor over the preceding 12-month period.

Those criteria relate to the identification of a sufficient number of verifiable prices, being representative for the risk factor over the preceding 12-months. Those quantitative criteria are intended to ensure that the risk factors, which institutions include in their Expected Shortfall risk measure, are sufficiently **LIQUID** and **OBSERVABLE**.

Overview

Data Inputs of Risk Factors

Once the set of modellable risk factor has been determined in accordance with Article 325be of the CRR, institutions should choose the most **appropriate data inputs** for each of those modellable risk factors in order to compute their ES risk measure.

Assessment Criteria for the Data Input of Risk Factors

In accordance with Article 325bh(3) of the CRR, the EBA has developed criteria for the use of the data inputs in the ES model referred to in Article 325bc of the CRR. Those criteria are related to the data inputs that should be:

ACCURACY	APPROPRIATENESS
COMPLETENESS AND CONSISTENCY	FREQUENCY FOR UPDATING

In the GL, on top of general provisions that should always apply, specific provisions are included to cover specific cases where the EBA identified the need of addressing issues. Specific provisions are included to cover the following specific cases:

- (a) multifactor models ("Beta approximations" throughout the rest of the GLs) used for generating data inputs;
- (b) multiple sources of data inputs used in the internal risk-measurement model;
- (c) interpolation and/or extrapolation techniques used for replacing missing or inconsistent data inputs.

02

Accuracy of Data Inputs



For the data inputs referred to in Article 325bc of Regulation (EU) No 575/2013 to be considered **accurate**:

1.

Institutions should ensure that there is **no material difference between the values of risk factors used as data inputs and the values of risk factors** obtained from either of the following for a given observation date:

- (a) **the verifiable prices** if a verifiable price is available;
- (b) **prices based on the institutions' front-office or back-office pricing models** if a verifiable price is not available.

2.

Volatility of the risk factors should be reflected by input data. This means that there shouldn't be material difference between RFs volatility estimated from input data used in the risk-measurement model and estimated with one of the following:

- (a) **verifiable prices**, if the number of verifiable prices allows to perform this assessment with accuracy;
- (b) **time series of values for that risk factor used in the institution's front-office or back-office pricing models**, if the number of verifiable prices don't allow to perform this assessment with accuracy.

3.

Correlations among the risk factors should be reflected by input data. This means that there shouldn't be material difference between RFs correlations estimated from input data used in the risk-measurement model and estimated with one of the following:

- (a) **verifiable prices**, if the number of verifiable prices allows to perform this assessment with accuracy;
- (b) **time series of values for that risk factor used in the institution's front-office or back-office pricing models**, if the number of verifiable prices don't allow to perform this assessment with accuracy.

In addition to previous three points:

4.

Institutions should **carry out the assessment** mentioned in point 1,2 and 3 **at least on quarterly basis**.

5.

If Beta approximations are used for generating data inputs, the Beta coefficients should be **calibrated to the historical data**.

Instead, if the Beta coefficients are also based on judgmental considerations, the obtained data inputs shouldn't be considered accurate, unless:

- (a) **institution explains the reason why** the coefficients cannot be calibrated to the historical data only;
- (b) **institution describes the methodology used** to obtain the values for the coefficients, including any adjustments made to coefficients calibrated to the historical data only;
- (c) **institution demonstrates** that the choice of the coefficients does **not underestimate risk**.

6.

The data inputs should be **calibrated to historical data from a continuous 12-month period of financial stress** identified by the institution. If institutions use also more recent historical data in order to reflect the effect of fundamental changes that occurred in the characteristics of financial instruments or in the characteristics of the market, the obtained data inputs shouldn't be considered accurate, unless:

- (a) institution provides **documented analyses supported by empirical evidence** to justify the additional use of historical data for the calibration of the data inputs;
- (b) institution demonstrates that the data inputs used accurately reflect **changes in prices or spreads of similar instruments** during the identified period of financial stress;
- (c) the institution **demonstrates** that the data inputs used do **not underestimate risk**.

03

Appropriateness of Data Inputs



Appropriateness of Data Inputs

For the data inputs referred to in Article 325bc of Regulation (EU) No 575/2013 to be considered **appropriate**:

1. If considered relevant, the data inputs should **capture** all **general market risks** and all **specific market risks**.
2. Institutions should produce **documented analyses supported by empirical evidence** to prove point 1).
3. If historical data from market indices or other historical data representing characteristics shared by different instruments are used to generate the data inputs with a view to representing the general market risks of single-name instruments, the **choice of historical data should be conceptually sound**.
4. If Beta approximations are used to generate the data inputs, **empirical evidence**, including **statistical measures** expressing the goodness-of-fit of the approximation, should be used to show that **general market risks are properly captured by those data inputs**. Furthermore, any assumption that the residuals from the Beta approximations are uncorrelated to each other should be justified. Lastly, institutions should **recalibrate the Beta coefficients on at least a monthly basis**
5. The data inputs should allow to capture all **material risks arising from specific differences between similar positions**.

04

Frequency for Updating the Data Inputs



Frequency for Updating the Data Inputs

For the data inputs referred to in Article 325bc of Regulation (EU) No 575/2013 to be considered **frequent**:

1. Institutions should **update the historical data** used to calibrate the data inputs **more frequently than monthly**
2. Where Beta approximations are used to generate data inputs, institutions should **recalibrate the Beta coefficients at least on monthly basis**.

05

Completeness of the Data Inputs



Completeness of the Data Inputs

For the data inputs referred to in Article 325bc of Regulation (EU) No 575/2013 to be considered **complete**:

1. If multiple data sources for the data inputs are available, the **choice of one data source should not lead to an underestimation of the volatility** when compared to other available data sources.
2. Institutions should have **procedures** in place to ensure they can **obtain the data inputs from alternative data sources in a timely manner**, in case their data sources cease to be available.
3. Institutions should **have clear policies for the replacement of missing or inconsistent values** in the historical time series of data inputs.
4. Institutions should **not use old and unchanged (“stale”) data as replacement** of missing or inconsistent values in the historical time series of data inputs.
5. Institutions should **neither filter data nor exclude outliers**, unless the excluded data correspond to inconsistent or stale data or data that does not satisfy the conditions referred to points 1,2 and 3 of accuracy criteria.
6. **Values of other risk factors may be used in the replacement** of missing or inconsistent values in the historical time series of data inputs, **if they are considered modellable**.

Completeness of the Data Inputs

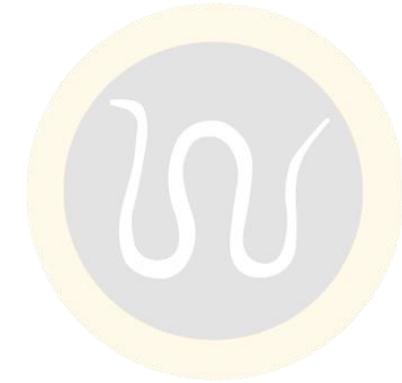
In addition to points highlighted in previous slide:

7. If interpolated values are used as replacement, **the interpolated values should appropriately represent the missing values regardless of the interpolation methodology used.**
8. If extrapolated values are used as replacement, the **estimated volatility should be equal to or higher than the volatility estimated from the data used for extrapolating.** Furthermore, all the following conditions should be met:
 - (a) extrapolation methodology should be based on the **closest risk factor in each dimension of that risk factor;**
 - (b) extrapolation methodology should be based on **at least two risk factors for each dimension;**
 - (c) values of RFs in point (b) shouldn't have been obtained by extrapolation.

Company Profile

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