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EBA FINAL draft Regulatory Technical Standards

on liquidity horizons for the Internal Model Approach (IMA) under points (a) to (d) of Article 325bd(7) of Regulation (EU) No 575/2013 (revised Capital Requirements Regulation — CRR 2)



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1. Executive summary

The amendments to Regulation (EU) No $575/2013^1$ (the revised Capital Requirements Regulation - CRR 2) implement in EU legislation, inter alia, the revised requirements to compute own funds requirements for market risk.

As per Article 325bd of CRR 2, institutions are required to map each risk factor to one of the risk factor categories and to one of the risk factor subcategories listed in Table 2 for the purpose of identifying the relevant liquidity horizon under the internal model approach (IMA). In this context, the European Banking Authority (EBA) is mandated to develop regulatory technical standards (RTS) to specify:

- (i) how institutions must map risk factors of trading book positions to risk factor categories and subcategories;
- (ii) the currencies that constitute the most liquid currencies for interest rate risk;
- (iii) the currency pairs that constitute the most liquid pairs for foreign exchange (FX) risk;
- (iv) the definition of small and large capitalisation for equities.

The draft RTS cover all of the four aspects of the EBA mandate in four separate sections. The first section relates to the mapping of risk factors to risk factor categories and subcategories. Ad hoc treatments for some specific risk factors are provided. Despite the expectation that the vast majority of risk factors will clearly be mapped on to a single subcategory, a general approach covering less obvious cases is also provided.

The second section of the draft RTS specifies the definition of the most liquid currencies for interest rate risk. In particular, the most liquid currencies are defined by also considering the Triennial Central Bank Survey of OTC interest rate derivatives turnover, compiled by the Bank for International Settlements (BIS), which also reports on over the counter ('OTC') interest rate derivatives turnover.

In their third section, the draft RTS specify the most liquid currency pairs for FX risk, defining them by also considering the Triennial Central Bank Survey of foreign exchange turnover, compiled by the BIS, which also reports on OTC FX derivatives turnover by currency pair.

In their fourth section, these draft RTS provide a definition of large capitalisation for equity risk, relying both on an absolute threshold and on the implementing technical standards (ITS) specifying main indices and recognised exchanges. Those draft ITS were submitted by the European Securities

¹ Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012.



and Markets Authority (ESMA) to the European Commission pursuant to Article 197(8) of the CRR and supplemented in 2016 by the ESMA opinion on the 'main indices and recognised exchanges whose components can be used as collateral'.

These draft RTS have been finalised considering the comments received to the Consultation Paper (CP). The comments were broadly supportive of the approach set out by the EBA, but a number of technical suggestions were also put forward, which were considered during the finalisation and included where relevant.



2. Background and rationale

In December 2018, the Basel Committee on Banking Supervision (BCBS) finalised and published standards on minimum capital requirements for market risk². The text replaces the previous minimum capital requirements for market risk in the global regulatory framework, which are implemented in the EU via Regulation (EU) No 575/2013 (CRR).

One of the key enhancements of the new market risk standards is the incorporation of the risk of market illiquidity. In particular, instead of the uniform 10-day horizon assumed for all traded instruments under the previous framework, requirements for reporting varying liquidity horizons have now been introduced both in the standardised approach (SA) and in the IMA, with the aim of mitigating the risk of a sudden and severe impairment across asset markets.

The amendments to Regulation (EU) No 575/2013³ (CRR 2) implement the requirements for the new market risk framework provided by the BCBS standards in EU legislation.

As per Article 325bd of CRR 2, institutions must map each risk factor of positions, attributed to trading desks for which they have been granted the permission to use the IMA or are in the process of getting that permission, to one of the broad risk factor categories and one of the broad risk factor subcategories listed in Table 2 of the same article.

Mapping risk factors to risk factor categories and subcategories is a key step in the assignment of a liquidity horizon to each risk factor for the purpose of scaling the calculated capital requirements based on the risk of illiquidity of the given risk factor of a position.

Article 325bd of CRR 2 mandates the EBA to develop RTS to specify:

- how institutions must map risk factors to risk factors categories and subcategories;
- the currencies that constitute the most liquid currencies for interest rate risk;
- the currency pairs that constitute the most liquid pairs for FX risk;
- the definition of small and large capitalisation for equities.

These draft RTS cover all four mandates included in the above article. In the following sections, the four mandates are discussed separately and focus is given to the rationale behind the relevant proposed draft RTS.

² Minimum capital requirements for market risk: January 2019 (rev. February 2019).

³ Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012.



2.1 Mapping of risk factors to broad risk factor categories and subcategories

In CRR 2, the risk of market illiquidity is catered for by incorporating varying liquidity horizons to mitigate the risk of sudden and severe impairment or market illiquidity across asset markets. Liquidity horizons work as scaling factors to take into account the fact that various risk factors have different underlying liquidities and should therefore attract different capital requirements. Liquidity horizons are relevant to large parts of the new market risk framework and can have a decisive impact on the composition of institutions' trading books, as well as on their modelling decisions.

These draft RTS set up requirements for institutions using the IMA on how to map risk factors of positions attributed to trading desks to the broad risk factor categories and subcategories in Table 2 of Article 325bd of CRR 2. Mapping risk factors to risk factor categories and subcategories is a key step in the assignment of a liquidity horizon to each risk factor for the purpose of scaling the calculated capital requirements based on the risk of illiquidity of the given risk factor of a position.

2.1.1 General approach

These draft RTS set out that institutions should perform the mapping at risk factor level. In addition, in the event of one risk factor embedding different risks, the risk factor would be mapped to the longest liquidity horizon of the embedded risks.

These draft RTS define a general methodology that institutions should use for mapping a risk factor to the relevant risk factor category and risk factor subcategory. In particular, the draft RTS clarify that institutions should identify the most appropriate risk factor category and subcategory by considering the type of risk factor and the data that have been used as inputs in the risk-measurement model for this risk factor.

While it is expected that the vast majority of risk factors will plainly map to a single subcategory, the methodology prescribes, where this is not the case, how the relevant liquidity horizon for a risk factor should be set. For example, there may be risk factors that could potentially be mapped to more than one category/subcategory; an example of a risk factor embedding risks reflected in more than one subcategory is the case of a single risk factor capturing market-wide movements for a given economy, region or sector and not the specific dynamic of a given issuer. If such a risk factor was built considering both large capitalisation and small capitalisation, then it would embed the risk reflected in both equity subcategories. Finally, the draft RTS specify that a risk factor that embeds risks that cannot be mapped to any broad risk factor category should be mapped to the broad risk factor subcategory 'other types' of the broad risk factor category commodity', with a liquidity horizon of 120 days. The outlined methodology is expected to enhance capital comparability through the harmonisation of practices among different institutions.



2.1.2 Ad hoc treatments

The general approach is complemented in the draft RTS by various specifications. Specifications have been introduced to reflect the Fundamental Review of the Trading Book (FRTB) frequently asked questions (FAQs) on liquidity horizons, which are meant to clarify the uncertainty around the categorisation of some risk factors and thus map them to the appropriate liquidity horizon.

The draft RTS specify the following:

- The liquidity horizon for equity large capitalisation repo and dividend risk factors is 20 days. All other equity repo and dividend risk factors are subject to a liquidity horizon of 60 days.
- (ii) For mono-currency and cross-currency basis risk, liquidity horizons of 10 days and 20 days for interest rate most liquid currencies and other currencies, respectively, are applied.
- (iii) The liquidity horizon for inflation risk factors should be consistent with the liquidity horizons for interest rate risk factors for a given currency.

In addition, the draft RTS set out that institutions may determine the liquidity horizon of a risk factor modelling an index by first performing a weighted average of the liquidity horizons of the index's components and then choosing the liquidity horizon (out of 10, 20, 40, 60 or 120 days) that is greater or equal to the computed weighted average. Alternatively, institutions can use the general mapping methodology to map the risk factor modelling the index to the relevant category.

2.2 Most liquid currencies for interest rate risk

The FRTB standards specify explicitly the currencies that constitute the most liquid currencies subcategory in the interest rate broad risk factor category, namely USD, EUR, GBP, AUD, JPY, CAD and SEK, as well as the domestic currency of the bank.

It is worth mentioning that Table 2 in Article 325bd specifies that the domestic currency of the institution has a liquidity horizon equal to 10 days; accordingly, as the treatment for the domestic currency is included in the Level 1 text, the draft RTS do not include this provision.

Based on the data from the 2013 report of statistics compiled by the BIS every 3 years on OTC interest rate derivatives, it appears that the currencies that underlie net OTC interest rate derivative contracts with an average daily turnover of more than USD 30 billion have been classified as 'the most liquid currencies'.

The underlying assumption could be that currencies with a higher volume of underlying OTC interest rate derivative contracts are less prone to liquidity shocks. This in turn would justify a lower



liquidity horizon to be applied to interest rate instruments denominated in those selected currencies.

The draft RTS provide a list of the currencies that should be mapped to the most liquid currencies subcategory in the interest rate broad risk category, considering the list established in the FRTB standards. Accordingly, the most liquid currencies correspond to those underlying net OTC interest rate derivative contracts with a sufficient average daily turnover. The statistics, which the draft RTS consider for the assessment of the average daily turnover, are those contained in the BIS report of statistics on OTC interest rate derivatives. In the future, the regulation, once adopted, could be amended, if and as appropriate, including on the basis of the issuance of a new BIS report.

2.3 Most liquid currency pairs for FX risk

As in the case for the interest rate broad risk factor category, the FRTB standards specify the currency pairs that constitute the most liquid currency pairs in the FX broad risk factor category.

Based on the data from the 2013 report of statistics compiled by the BIS every 3 years on the FX turnover of OTC products compiled by the BIS, it appears that currencies that underlie net OTC FX derivative contracts with an average daily turnover of more than USD 45 billion have been classified as 'the most liquid currency pairs'.

The BCBS specified in the FRTB that, besides currency pairs satisfying the abovementioned criteria, currency pairs forming first-order crosses across these specified currency pairs should also be considered most liquid in the context of FX risk.

These draft RTS set out a list of the currency pairs that should be mapped to the most liquid currency pairs subcategory in the FX broad risk factor category, considering the list established in the FRTB standards. Accordingly, the most liquid currency pairs are those underlying net OTC FX derivative contracts with a sufficient average daily turnover.

The list of currency pairs in the RTS already provides the currency pairs obtained through a firstorder cross. Accordingly, most liquid currency pairs attracting a 10-day liquidity horizon would be made of:

(i) the currency pairs in the list provided in the RTS;

(ii) the currency pairs that are composed of the euro and a currency other than the euro of an EU Member State participating in the second stage of the economic and monetary union.

The statistics that the draft RTS consider for the assessment of the average daily turnover are those contained in the BIS report of statistics on OTC FX derivatives. In the future, the regulation, once adopted, could be amended, if and as appropriate, including following the issuance of a new BIS report.



2.4 Definition of large capitalisation for equity risk

For defining what constitutes a large market capitalisation for equities, the FRTB establishes a threshold of USD 2 billion. Entities are then to be allocated to large or small capitalisation according to whether their capitalisation is above or below the threshold.

The EBA has tested this capitalisation threshold for European equity markets. These tests showed that there are many differences across Member States in terms of market capitalisation. For larger markets, the scope would include many equities from large capitalisation indices (and some from mid-capitalisation indices). However, many smaller jurisdictions would have no or a very limited number of equities above this threshold.

As a result, a threshold of USD 2 billion does not appear to be sufficient, in itself, to capture the diversity of equity markets in the EU. Accordingly, the draft RTS combine this absolute threshold by identifying large capitalisation by also leveraging on the ITS, submitted by ESMA to the European Commission pursuant to Article 197(8) of the CRR and complemented in 2016 by the ESMA opinion on the 'main indices and recognised exchanges', the components of which can be used as collateral.

In order to also capture EU equity markets' specificities, the draft RTS define the scope of large capitalisation as follows:

- (i) A market capitalisation equal to or greater than EUR 1.75 billion is considered large market capitalisation.
- (ii) Equities in indices listed in the ESMA ITS, the components of which are all quoted in the EU, are considered large market capitalisation.

As a result, all capitalisation that does not fall within the scope of large capitalisation should be considered small capitalisation for the equity price and volatility subcategory in the equity broad risk factor category.



3. Final draft regulatory technical standards on liquidity horizons for the Internal Model Approach (IMA) under points (a) to (d) of Article 325bd(7) of Regulation (EU) No 575/2013 (revised Capital Requirements Regulation - CRR2)





Brussels, XXX [...](2020) XXX draft

COMMISSION DELEGATED REGULATION (EU) .../...

of XXX

on supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards on liquidity horizons for the Internal Model Approach (IMA) under points (a) to (d) of Article 325bd(7)

(Text with EEA relevance)



THE EUROPEAN COMMISSION,

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

Having regard to Regulation (EU) No 575/2013 of 26 June 2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No $648/2012^4$, and in particular the third subparagraph of Article 325bd(7) thereof,

Whereas:

- (1) The methodology for fulfilling the requirement of mapping a risk factor of a position to a broad risk factor category for the purpose of paragraph 1 of Article 325bd of Regulation (EU) No 575/2013 should enable institutions to identify broad risk factor categories and broad risk factor subcategories corresponding to the risks embedded in the risk factor. But while the identification of the relevant broad risk factor category under this mapping has the sole objective of determining the appropriate liquidity horizon to be assigned to the relevant risk factor. As a result, given the particularities of the risk factors of certain positions, it is necessary to provide the mapping of those risk factors to specific risk factor subcategories corresponding to a certain liquidity horizon, even if they would not necessarily conceptually fall under the corresponding risk factor categories. This is the case for example of dividend risk factor for a given equity which should be treated as a risk factor corresponding to the volatility of that equity for the purposes of determining a liquidity horizon.
- (2) Given the particularities of the risk factors of certain positions, it is necessary to provide specific rules for their mapping to ensure harmonisation of practices and avoid regulatory arbitrage. Accordingly, the general methodology should also specify the treatment for risk factors embedding risks not falling under any broad risk factor category among those included in Table 2 of Article 325bd of Regulation (EU) No 575/2013.
- (3) Currencies that underlie net Over The Counter (OTC) interest rate derivatives with a high volume of daily average turnover tend to be less prone to liquidity shocks. As a result, it is appropriate to use the volume of the daily average turnover of OTC interest rate derivatives as a criterion for defining the most liquid currencies for the purposes of Article 325bd(7)(b) of Regulation (EU) No 575/2013. Further, the Bank for International Settlements (BIS) Triennial Central Bank Survey of OTC interest rate derivatives turnover constitutes a reliable source of statistics to evaluate the OTC interest rate derivatives turnover per instrument and currency. For that reason, and in order to ensure consistency with international practices, it is appropriate to use the results of that survey for the purpose of defining the currencies constituting the most liquid currencies subcategory.
- (4) The list of the currencies constituting the most liquid currencies subcategory for the purposes of Article 325bd(7)(b) of Regulation (EU) No 575/2013 should be updated as appropriate, where changes occur in the liquidity of the currencies. Further, given that the most liquid currencies subcategory of Table 2 of Article 325bd of Regulation (EU) No 575/2013 includes the domestic currency, the most liquid currencies for an institution should be those specified in Annex I as well as the institution's domestic currency.
- (5) Currency pairs that underlie net OTC foreign exchange derivatives with a high volume of daily average turnover tend to be less prone to liquidity shocks. As a result, it is appropriate to use the volume of the daily average turnover of OTC foreign exchange derivatives as a criterion for defining the most liquid currency pairs for the purposes of Article 325bd(7)(c)



of Regulation (EU) No 575/2013. Further, the BIS Triennial Central Bank Survey of OTC foreign-exchange derivatives turnover constitutes a reliable source of statistics to evaluate the OTC interest rate derivatives turnover by instrument and currency. For that reason, and in order to ensure consistency with international practices, it is appropriate to use the results of that survey for the purpose of defining the currencies constituting the most liquid currency pairs subcategory.

- (6) The list of the currencies constituting the most liquid currency pairs subcategory for the purposes of paragraph 7(c) of Article 325bd of Regulation (EU) No 575/2013 should be updated as appropriate, where changes occur in the liquidity of the currency pair. Further, given that the most liquid currency pairs subcategory of Table 2 of Article 325bd of Regulation (EU) No 575/2013 includes those specified in paragraph 5 of Article 325bd of Regulation (EU) No 575/2013, the most liquid currency pairs subcategory should be constituted both by the currency pairs specified in paragraph 5 of Article 325bd of Regulation (EU) No 575/2013 and by the currency pairs specified in Annex II.
- (7) Given the diversity of equity markets in the EU, it is necessary to define small and large capitalisation for the equity price and volatility subcategory in the equity broad risk factor category of Table 2 of Article 325bd of Regulation (EU) No 575/2013 on the basis of a combination of an absolute threshold that is adjusted by a relative one. Given the need for consistency with international regulatory standards, the absolute threshold should be based on the threshold established by the Basel Committee for Banking Supervision⁵. Further, given that Commission Implementing Regulation (EU) 2016/1646⁶ provides a list of indices based on the liquidity of the components of the indices, and given that the methodology for the production of that list is based on market capitalisation and free float, on the condition of a minimum liquidity threshold, it is appropriate to establish the relative threshold consistently with that Regulation. As a result, the equities in the indices listed in that Regulation whose components are all quoted in the Union should be considered as of large market capitalisation, with all remaining ones being considered as of small market capitalisation.
- (8) This Regulation is based on the draft regulatory technical standards submitted by the European Banking Authority to the Commission.
- (9) EBA has conducted open public consultations 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 1093/2010⁷,

⁵ Minimum capital requirements for market risk: January 2019 (rev. February 2019).

⁶ Commission Implementing Regulation (EU) 2016/1646 of 13 September 2016 laying down implementing technical standards with regard to main indices and recognised exchanges in accordance with Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (OJ L 245, 14.9.2016, p. 5).

⁷ Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2020, p. 12).



HAS ADOPTED THIS REGULATION:

SECTION 1

MAPPING OF RISK FACTORS

Article 1

General mapping methodology

1. Institutions shall map risk factors of positions referred to in paragraph 1 of Article 325bd of Regulation (EU) No 575/2013 to the broad risk factor categories and broad risk factor subcategories of Table 2 of that Article in accordance with the following:

- (a) they shall map the risk factor to the most appropriate broad risk factor category, having regard to the nature of the risk captured by the risk factor and the data used as inputs for the risk factor in the risk measurement model;
- (b) they shall map the risk factor to the most appropriate broad risk factor subcategory under the broad risk factor category identified in accordance with point (a), having regard to the nature of the risk captured by the risk factor and the data used as inputs for the risk factor in the risk measurement model.

2. Where the nature of the risk factor does not correspond to any broad risk factor category, they shall map that risk factor to the broad risk factor category 'commodity' and to the broad risk factor subcategory 'other types' under the 'commodity' broad risk factor category.

3. Where the nature of the risk captured by the risk factor and the data used as inputs for that risk factor correspond to risk factors that could fall under more than one broad risk factor category or broad risk factor subcategory, institutions shall apply the following steps in sequence:

- (a) they shall first identify the broad risk factor categories and the corresponding broad risk factor subcategories that could be identified for that risk factor on the basis of its nature and the data used as inputs;
- (b) among the broad risk factor categories and the corresponding broad risk factor subcategories identified in accordance with point (a), they shall map the risk factor to the broad risk factor category and the corresponding broad risk factor subcategory that results in the longest liquidity horizon;
- (c) where, based on the process referred to in point (b), more than one broad risk factor category and corresponding broad risk factor subcategory would result in the longest liquidity horizon, institutions may map the risk factor to any of those broad risk factor categories and their corresponding broad risk factor subcategories.



Article 2

Mapping methodology for index instruments

1. By way of derogation from Article 1, where a single risk factor is used to model a homogeneous index instrument, institutions may apply instead the following steps in sequence:

(a) they shall map the risk factor to the broad risk factor category corresponding to the risk embedded in the homogenous index.

(b) they shall apply Article 1 to each of the constituents of the index to obtain the liquidity horizons of each constituent.

(c) they shall compute the weighted average of the liquidity horizons obtained pursuant to point (b) by first multiplying the liquidity horizon of each individual constituent of the index by its weight in the index and then by summing the weighted liquidity horizons for all constituents of the index.

(d) they shall map the risk factor to that subcategory of Table 2 of Article 325bd of Regulation (EU) No 575/2013, among those belonging to the broad risk factor category identified in accordance with point (a), that has the shortest liquidity horizon which is greater or equal to the liquidity horizon identified in accordance with point (c).

2. For the purpose of point (a) of paragraph 1, where the risk factor is the price of a homogenous index made of bonds and indices composed by bonds only, the institution shall map that risk factor to the credit spread broad risk factor category.

3. For the purposes of paragraphs 1 and 2, 'homogeneous index' shall refer to an index that has one of the following compositions:

- (a) equities and indices composed by equities only;
- (b) bonds and indices composed by bonds only;
- (c) credit default swaps and indices composed of credit default swaps only;
- (d) commodities and indices composed of commodities only.

Article 3

Mapping of inflation, mono-currency and cross-currency basis risk factors

1. By way of derogation from Article 1, inflation risk factors for a given currency shall be mapped to the interest rate broad risk category and to the broad risk factor subcategory of that currency.

2. By way of derogation from Article 1, mono-currency basis risk and cross-currency basis risk factors shall be mapped to the interest rate broad risk factor category and to the broad factor subcategory of the currency denominating the basis.



Article 4

Mapping of repo and dividend risk factors

1. By way of derogation from Article 1, equity repo rates and dividend risk factors shall be mapped to the equity broad risk factor category.

2. By way of derogation from Article 1, for the purpose of determining the broad risk factor subcategory, equity repo rates and dividend risk factors for a given equity shall be treated as risk factors corresponding to the volatility of that equity.

SECTION 2

DEFINITION OF THE MOST LIQUID CURRENCY SUBCATEGORY

Article 5

The currencies that constitute the most liquid currencies for the purposes of the relevant subcategory in the interest rate broad risk factor risk factor category of Table 2 of Article 325bd of Regulation (EU) No 575/2013 shall be, in addition to the domestic currency mentioned in that Table, those set out in Annex I to this Regulation.

SECTION 3

DEFINITION OF THE MOST LIQUID CURRENCY PAIRS SUBCATEGORY

Article 6

The currency pairs that constitute the most liquid currency pairs subcategory in the foreign exchange broad risk factor category of Table 2 of Article 325bd of Regulation (EU) No 575/2013 shall be, in addition to those established in paragraph 5 of that Article, those set out in Annex II to this Regulation.

SECTION 4

DEFINITION OF SMALL AND LARGE CAPITALISATION

Article 7

An equity shall be considered as an equity with large capitalisation where either of the following conditions is met:

(a) its market capitalisation is greater than EUR 1,75 billion;



(b) it is included in one of the indices set out in Annex I of Commission Implementing Regulation (EU) 2016/1646⁸ the components of which are all quoted in the Union.

All other equities shall be considered as equities with small capitalisation.

Article 8 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*.

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]

⁸ Commission Implementing Regulation (EU) 2016/1646 of 13 September 2016 laying down implementing technical standards with regard to main indices and recognised exchanges in accordance with Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (OJ L 245, 14.9.2016, p. 5).



ANNEX I

List of most liquid currencies⁹ for the purpose of Article 5:

EUR, USD, GBP, AUD, JPY, SEK, CAD.

⁹ For the purpose of this Annex:

EUR = Euro, USD = US Dollar, GBP = Pound Sterling, JPY = Japanese Yen, AUD = Australian Dollar, SEK = Swedish Krona, CAD = Canadian Dollar



ANNEX II

List of currency¹⁰ pairs for the purpose of Article 6:

EUR/USD, EUR/JPY, EUR/GBP, EUR/CHF, EUR/CAD, EUR/MXN, EUR/CNY, EUR/NZD, EUR/RUB EUR/HKD, EUR/SGD, EUR/TRY, EUR/KRW, EUR/SEK, EUR/ZAR, EUR/INR, EUR/NOK, EUR/BRL, EUR/AUD.

USD/JPY, USD/GBP, USD/AUD, USD/CAD, USD/CHF, USD/MXN, USD/CNY, USD/NZD, USD/RUB, USD/HKD, USD/SGD, USD/TRY, USD/KRW, USD/SEK, USD/ZAR, USD/INR, USD/NOK, USD/BRL, USD/DKK.

JPY/GBP, JPY/CAD, JPY/CHF, JPY/MXN, JPY/CNY, JPY/NZD, JPY/RUB, JPY/HKD, JPY/SGD, JPY/TRY, JPY/KRW, JPY/SEK, JPY/ZAR, JPY/INR, JPY/NOK, JPY/BRL, JPY/DKK, JPY/AUD.

GBP/AUD, GBP/CAD, GBP/CHF, GBP/MXN, GBP/CNY, GBP/NZD, GBP/RUB, GBP/HKD, GBP/SGD, GBP/TRY, GBP/KRW, GBP/SEK, GBP/ZAR, GBP/INR, GBP/NOK, GBP/BRL, GBP/DKK.

AUD/CAD, AUD/CHF, AUD/MXN, AUD/CNY, AUD/NZD, AUD/RUB, AUD/HKD, AUD/SGD, AUD/TRY, AUD/KRW, AUD/SEK, AUD/ZAR, AUD/INR, AUD/NOK, AUD/BRL.

CAD/CHF, CAD/MXN, CAD/CNY, CAD/NZD, CAD/RUB, CAD/HKD, CAD/SGD, CAD/TRY, CAD/KRW, CAD/SEK, CAD/ZAR, CAD/INR, CAD/NOK, CAD/BRL.

CHF/MXN, CHF/CNY, CHF/NZD, CHF/RUB, CHF/HKD, CHF/SGD, CHF/TRY CHF/KRW, CHF/SEK, CHF/ZAR, CHF/INR, CHF/NOK, CHF/BRL, CHF/DKK.

MXN/CNY, MXN/NZD, MXN/RUB, MXN/HKD, MXN/SGD, MXN/TRY, MXN/KRW, MXN/SEK, MXN/ZAR, MXN/INR, MXN/NOK, MXN/BRL.

CNY/NZD, CNY/RUB, CNY/HKD, CNY/SGD, CNY/TRY, CNY/KRW, CNY/SEK, CNY/ZAR, CNY/INR, CNY/NOK, CNY/BRL.

NZD/RUB, NZD/HKD, NZD/SGD, NZD/TRY, NZD/KRW, NZD/SEK, NZD/ZAR, NZD/INR, NZD/NOK, NZD/BRL.

¹⁰ For the purpose of this Annex:

EUR = Euro, USD = US Dollar, JPY = Japanese Yen, GBP = Pound Sterling, CHF = Swiss Franc, CAD = Canadian Dollar, MXN = Mexican Peso, CNY = Chinese Yuan, NZD = New Zealand Dollar, RUB = Russian Ruble, HKD = Hong Kong Dollar, SGD = Singapore Dollar, TRY = Turkish Lira, KRW = South Korean Won, SEK = Swedish Krona, ZAR = South African Rand, INR = Indian Rupee, NOK = Norwegian Krone, BRL = Brazilian Real, AUD = Australian Dollar, DKK = Danish Krone



RUB/HKD, RUB/SGD, RUB/TRY, RUB/KRW, RUB/SEK, RUB/ZAR, RUB/INR, RUB/NOK, RUB/BRL.

HKD/SGD, HKD/TRY, HKD/KRW, HKD/SEK, HKD/ZAR, HKD/INR, HKD/NOK HKD/BRL.

SGD/TRY, SGD/KRW, SGD/SEK, SGD/ZAR, SGD/INR, SGD/NOK, SGD/BRL.

TRY/KRW, TRY/SEK, TRY/ZAR, TRY/INR, TRY/NOK, TRY/BRL.

KRW/SEK, KRW/ZAR, KRW/INR, KRW/NOK, KRW/BRL.

SEK/ZAR, SEK/INR, SEK/NOK, SEK/BRL.

ZAR/INR, ZAR/NOK, ZAR/BRL.

INR/NOK, INR/BRL.

NOK/BRL.



4. Accompanying documents

4.1 Draft cost-benefit analysis/impact assessment

Article 325bd of CRR 2 requires the EBA to develop draft RTS to specify in greater detail:

- how institutions must map risk factors to risk factors categories and subcategories;
- the currencies that constitute the most liquid currencies for interest rate risk;
- the currency pairs that constitute the most liquid pairs for FX risk;
- the definition of small and large capitalisation for equities.

As per Article 10(1) of Regulation (EU) No 1093/2010 (EBA Regulation), any RTS developed by the EBA must be accompanied by an impact assessment (IA), which analyses 'the potential related costs and benefits'.

This section presents the cost-benefit analysis of the provisions included in the RTS. The analysis provides an overview of the problems identified, the options proposed to address those problems and the costs and benefits of those options.

A. Problem identification

In January 2019, the BCBS finalised the standards on minimum capital requirements for market risk¹¹. One of the key enhancements is the incorporation of the risk of market illiquidity. In particular, the new expected shortfall (ES) metric prescribes different liquidity horizons for different risk factors instead of the uniform 10-day horizon under the previous framework. The liquidity horizon is the time assumed to be required to exit or hedge a risk position without materially affecting market prices in stressed market conditions. The longer the liquidity horizon, the less liquid the risk factor is and thus the higher the capital requirements tend to be.

The Basel standards set out a pre-described list of liquidity horizons for each broad category and subcategory of risk factor. Mapping risk factors to risk factor categories and subcategories is a key step in the assignment of a liquidity horizon to each risk factor. However, the Basel standards do not provide any specific guidance on how this mapping should be performed. Consequently, CRR 2, which implements the FRTB standards in the EU, requests that the EBA specify this mapping methodology. The lack of a common specification would result in an inconsistent implementation of the IMA for the calculation of the own funds requirements for market risk across banks.

Regarding the currencies (and currency pairs) that constitute the most liquid currencies (and currency pairs) for interest rate risk (and FX risk), the Basel text already specifies a list of currencies

¹¹ <u>https://www.bis.org/bcbs/publ/d457.htm</u>



(and currency pairs) that would benefit from a lower liquidity horizon. However, CRR 2 leaves this specification to the EBA. Similarly, the Basel text defines the meaning of small and large market capitalisation in the context of the equity risk, while, under CRR 2, the EBA is mandated to specify this definition.

B. Policy objectives

The specific objective of the RTS is to establish a harmonised methodology for mapping risk factors to risk factor categories and subcategories. Moreover, the RTS aim to establish a common list of currencies constituting the most liquid currencies for interest rate risk and currency pairs constituting the most liquid pairs for FX risk, as well as a definition of small and large capitalisation for the purpose of mapping a risk factor falling within the equity broad risk factor category.

Generally, the RTS aim to create a level playing field, promote the convergence of institution practices and enhance comparability of own funds requirements across the EU. Overall, the RTS are expected to promote the effective and efficient functioning of the EU banking sector.

C. Baseline scenario

The baseline scenario aims to describe the regulatory environment and regulatory developments, as well institutions' practices.

In terms of regulatory environment, the baseline assumes the entry into force of CRR 2, which does not provide any methodology for mapping risk factors to risk categories or subcategories. The FRTB FAQs provide some guidance on the liquidity horizon to apply to specific risk factors, such as risk factors representing equity dividends, equity repo risk factors, risk factors capturing mono-currency and cross-currency basis risk, inflation risk factors and risk factors modelling multi-sector credit and equity indices. Regarding the most liquid currencies for interest rate risk and currency pairs that constitute the most liquid pairs for FX risk, one source of information for institutions could be the prescribed list in the Basel standards, or alternatively institutions could rely on other statistics or liquidity indicators. For the definition of large and small capitalisation for equities, institutions could rely on the definition provided in the Basel standards.

In terms of institutions' practices, the baseline scenario assumes that no common approach exists regarding the mapping of risk factors to risk categories or subcategories for the certain types of risk factors for which mapping is non-trivial, given that such a specification is not present in the current CRR or CRR 2.

D. Options considered, cost-benefit analysis and preferred options

In the Discussion Paper (DP) on EU implementation of MKR and CCR revised standards¹² the EBA put forward two possibilities on how the mapping of risk factors could be performed:

¹² <u>https://eba.europa.eu/regulation-and-policy/market-risk/discussion-paper-on-eu-implementation-of-mkr-and-ccr-revised-standards</u>



Option 1a: apply mapping at risk factor level.

Option 1b: apply mapping at instrument level.

Under option 1a, institutions would need to map each risk factor to its relevant board risk category and subcategory. Under option 1b, institutions would need to map all the risk factors of a given instrument to the liquidity horizon of the most relevant risk factor or the longest liquidity horizon among those corresponding to the risk factors.

In the feedback on the DP, the industry expressed concerns regarding option 1b. Specifically, some respondents highlighted that mapping the whole instrument (i.e. all risk factors of a given instrument) to the category and subcategory (and therefore to the liquidity horizon) of the most relevant risk factor in terms of materiality could potentially lead to capital benefits and certainly lead to different capital requirements among institutions for the same exposures.

The EBA put forward option 1a for consultation. In the feedback received, all respondents broadly agreed with the general methodology.

Option 1a has been retained.

The vast majority of risk factors are expected to plainly map to a single category and single subcategory; however, a general methodology is also needed to reflect non-trivial cases. In particular, two options can be identified for mapping a risk factor that could be mapped to multiple categories (or subcategories).

An example of a risk factor embedding risks reflected in more than one subcategory is the case of a single risk factor capturing market-wide movements for a given economy, region or sector and not the specific dynamic of a given issuer. If such a risk factor was built considering both large capitalisation and small capitalisation, then it would embed the risk reflected in both equity subcategories.

Option 2a: map the risk factor to the broad risk factor category (or subcategory) with the longest liquidity horizon among the identified broad risk factor categories (or subcategories).

Option 2b: map the risk factor to the broad risk factor category (or subcategory) based on a materiality threshold among the identified broad risk factor categories (or subcategories).

Option 2a provides for a simple and straighforward approach to dealing with situations in which a risk factor may be mapped to several broad risk factor categories (or subcategories). It can be more conservative than option 2b, which for a given risk factor would require banks to identify the most relevant broad risk factor category (or subcategory) and perform the mapping accordingly. However, there is no straightforward way to assess the material of a risk factor, and different approaches could be considered. Given that this treatment would apply only for a limited number of cases, the additional operational burden of implementing option 2b does not overcome the benefits of having more accurate mapping.



The EBA put forward option 2a for consultation. In the feedback received, all respondents broadly agreed with the general methodology.

Option 2a has been retained.

Liquid currencies for interest rate risk

Option 3a: retain the list of currencies for interest rate risk prescribed in the FRTB standards.

Option 3b: extend the list above to more currencies.

Option 3a aligns with the FRTB standards and provides for a level playing field for internationally active banks. Under Option 3b, alternative currencies were explored based on, among other sources, the Triennial Central Bank Survey of OTC interest rate derivatives turnover statistics, published by the BIS every 3 years.

To align with international standards, option 3a has been retained. In the future, the regulation, once adopted, could be amended, if and as appropriate, including on the basis of the issuance of a new BIS report.

Liquid currency pairs for FX risk

The FRTB defines a list of specified currency pairs that are subject to a lower liquidity horizon. Currency pairs forming first-order crosses across these specified currency pairs (triangulation) are also subject to the same liquidity horizon. Article 325bd of CRR 2 requires the EBA to develop draft RTS to specify in greater detail the currency pairs that constitute the most liquid currency pairs subcategory in the FX broad risk factor category. Notwithstanding this, the Level 1 text already prescribes that currency pairs that are composed of the EUR and a currency other than EUR of a Member State participating in the second stage of the economic and monetary union should be included in the most liquid currency pairs for FX risk.

Option 4a: retain the list of specified currency pairs prescribed in the FRTB standards and perform triangulation on this list.

Option 4b: retain the list of specified currency pairs prescribed in the FRTB and perform triangulation on an extended list, which includes both the specified currency pairs prescribed in the FRTB and the currency pairs prescribed in the Level 1 text.

Option 4a aligns with FRTB standards and provides a level playing field for internationally active banks. Option 4b takes into account the provision in the CRR 2 proposal under Article 325bd (5), which includes all the currency pairs that are composed of the EUR and a currency other than the EUR of a Member State participating in the second stage of the economic and monetary union in the most liquid currency pairs. The only currency pair of this type that is not already included in the FRTB standards list is DKK/EUR. Option 4b thus considers all the currency pairs forming first-order crosses across the specified currency pairs that are to be subject to the same liquidity horizon. This means that USD/DKK, JPY/DKK, CHF/DKK and GBP/DKK are included in the list of liquid pairs.



Option 4b thus remains consistent with the philosophy of the FRTB standards, which considers combining two liquid currency pairs to create a new triangulated pair that, by virtue of being the result of combining two liquid instruments, is also liquid.

Option 4b has been retained.

Definition of small and large capitalisation for equities

Option 5a: definition of small and large capitalisation prescribed in the FRTB standards.

Option 5b: definition of small and large capitalisation prescribed in the Basel standards, supplemented by the constituents of one of the indices set out in Annex I of Commission Implementing Regulation (EU) 2016/1646, whose components are all quoted in the Union standards.

Option 5a aligns with FRTB standards and provides a level playing field for internationally active banks. Option 5b takes into account the heterogeneity of financial markets across the EU in terms of size and allows for a more proportionate treatment for smaller economies. Figure 11 shows the share of constituents that will fall below the EUR 1.75 billion threshold of the total market capitalisation of the respective index (left panel) and the total number of constituents in the index (right panel). This can give an indication of how many additional equities will be assigned to the large capitalisation category, even if they fall below the EUR 1.75 billion threshold. When looking at the share in terms of total market capitalisation of the index, it appears that not many equities will benefit. However, when looking at the results by the number of constituents that will be classified as large capitalisation, the results show that a significant share of the ATX Prime Index (47%), S&P BM France (48%), ISEQ20 (55%) and PSI20 (61%) will qualify for large capitalisation.

Both option 5a and option 5b have been put forward for consultation. All respondents to the CP preferred option 5b, as it better reflects the EU capital market. Some respondents propose enlarging the scope of the provision to all indices in Annex I of Commission Implementing Regulation (EU) 2016/1646 and not just those 'quoted in the EU'.

Given the feedback provided by the respondents and on the basis that option 5b better reflects the EU capital market, option 5b has been retained. The EBA did not amend option 5b to enlarge the scope of the provision to all indices in Annex I of Commission Implementing Regulation (EU) 2016/1646 (and not just those 'quoted in the EU'), since the provision is meant to reflect the EU specificities of its capital market.





Figure 1: Market capitalisation of constituents of selected European indices set out in Annex I of Commission Implementing Regulation (EU) 2016/1646

Source: Bloomberg.

Note: Data as of end December 2018.



4.2 Feedback on the public consultation

The EBA publicly consulted on the draft proposal contained in this paper.

The consultation period lasted for 3 months and ended on 4 September 2019. Nine responses were received, of which seven were published on the EBA website.

This section presents a summary of the key points and other comments arising from the consultation, the analysis and discussion triggered by these comments and the actions taken to address them if deemed necessary.

In a number of cases, several industry bodies made similar comments, or the same body repeated its comments in its responses to different questions. In such cases, the comments and the EBA's analysis have been included in the section of this paper where the EBA considers them most appropriate.

Changes to the draft RTS have been incorporated as a result of the responses received during the public consultation.

Summary of key issues and the EBA's response

In the feedback table that follows, the EBA has summarised the comments received and explains which responses have and have not led to changes, and the reasons for this.

Respondents broadly agreed with the methodology put forward in the draft RTS for consultation. In this respect, the EBA decided to keep unchanged the general methodology for mapping risk factors to the relevant risk factor category and risk factor subcategory. Respondents also provided some examples of risk factors that could potentially be mapped to more than one category/subcategory.

Some respondents considered the methodology for mapping indices modelled by a single risk factor overly burdensome from an operational point of view. One respondent proposed to keep the proposed treatment as a possibility for institutions, since the information for each indices constituents are not always available, and suggested considering the proposed methodology not as mandatory but as a possibility for those institutions that are able to assign each constituent to the proper liquidity horizon. The EBA acknowledges that institutions may face operational issues in applying the methodology designed for indices; accordingly, the EBA decided to keep the methodology identified in the RTS (which is based on a Basel FAQ) unchanged while allowing institutions to apply alternatively the general methodology, which always leads to a greater (or equal) liquidity horizon than the one obtained by applying the ad hoc treatment for indices or an equal liquidity horizon.

Furthermore, in order to ensure alignment with the international standards, the EBA decided not to amend the RTS to reflect the comments of some respondents requesting that the treatment for indices be applied, e.g. to funds.



With respect to the most liquid currency for interest rate risk, respondents agreed with the draft RTS proposed for consultation. The EBA decided not to amend the provisions on this aspect.

With respect to the most liquid currency pairs for FX risk, respondents agreed with the draft RTS proposed for consultation. Some respondents mentioned that for consistency the currency pair CHF/DKK should be included in Annex II; the EBA agrees with this comment and included the currency pair CHF/DKK as part of those to be considered as most liquid.

With respect to the definition of equities with large capitalisation, respondents supported option B among those proposed for consultation highlighting that it better reflects the EU equity market. The EBA decided to retain option B.



Comments Sum	mary of responses received	EBA analysis	Amendments to the proposals
General comments			
Inclusion of 'CHF/DKK' in the most liquid currency pairs list	Some respondents highlighted that the currency pair 'CHF/DKK' should be included among the most liquid ones in Annex II of these RTS, since such a currency pair can built by triangulating the currency pairs 'EUR/DKK' and 'EUR/CHF'.	Both 'EUR/CHF' and 'EUR/DKK' have been considered currencies from which a first cross order pair can be built. The EBA agrees with the comment made regarding this aspect by some respondents and accordingly decided to add 'CHF/DKK' to the most liquid currency pairs for FX risk.	Inclusion of 'CHF/DKK' in Annex II.
Capping of liquidity horizon	While highlighting that the following aspect is beyond the scope of the EBA mandate, some respondents raised concerns with respect to the cap on liquidity horizons, as defined in Article 325bd(4). In particular, respondents proposed that capping at instrument maturity should be an option rather than a mandatory requirement.	As mentioned by the respondents raising this point, this aspect goes beyond the scope of the EBA mandate. Accordingly, no amendments have been made to the draft RTS.	None.
Domestic currency	While highlighting that the following aspect is beyond the scope of the EBA mandate, one respondent suggested amending the CRR so that it permits the relevant national competent authority to classify a local currency as 'domestic' for specific banks domiciled elsewhere (where some conditions are met).	As mentioned by the respondent raising this point, this aspect goes beyond the scope of the EBA mandate. Accordingly, no amendments have been made to the draft RTS.	None.

Responses to questions in Consultation Paper EBA/CP/2019/05

Question 1. Do you agree with	All respondents broadly agreed with the general	Based on the feedback, the EBA decided to keep	
the general methodology? If	methodology.	Based on the feedback, the EBA decided to keep unchanged Article 1 of the draft RTS.	None.
not, please explain why.	methodology.	unchanged Article 1 of the draft KTS.	



EBA analysis

Amendments to the proposals

Question 2. Besides systemic risk factors (i.e. risk factors capturing the market/systemic component of the modelled risk), are there other risk factors/parameters that would reflect risks embedded in more than one category or more than one subcategory?

Comments

One respondent identified proprietary indices, funds and baskets, based on multi-asset class components, as reflecting more than one subcategory. In this context, the respondent also provided a way for identifying the relevant liquidity horizon.

Summary of responses received

One respondent specified that there might be other risk factors that can be mapped to more than one category and pointed out that risk factors modelling 'gold and precious metals' could represent ambiguous cases. The EBA recognises that funds and baskets based on multi-asset class components may also be mapped to more than one category or subcategory. However, in line with the reasoning outlined in the 'EBA analysis' in question 4 of this feedback table, the EBA decided not to create any specific provision related to these types of instruments, and accordingly the general methodology in Article 1 will apply.

None.

Risk factors modelling precious metals should fall into the broad risk factor category 'commodity'; accordingly, gold, being a precious metal, should also be mapped to that risk class.

No additional specifications in the final RTS have been made regarding this aspect.

Some respondents considered the treatment of The methodology proposed in Article 2 for homogenous indices punitive and operationally homogenous indices is in line with the treatment burdensome. It was proposed that where the proposed in a Basel FAQ included in the final composition of an index is standardised the liquidity standards. Accordingly, the EBA retains the proposed horizon should be determined consistently with the treatment. nature of the index; otherwise, the weighted However, the EBA also recognises the potential Question 3. Do you agree with average liquidity horizon may be used and assigned burden that such a methodology may lead to. Amendments to the treatment reserved for to the closest corresponding liquidity horizon (and Accordingly, the EBA amends Article 2 to make the Article 2. homogenous indices? not the closest higher liquidity horizon among those methodology set out for indices a possibility for proposed in Table 2 of Article 325bd). institutions rather than mandatory treatment. As a One respondent agreed with the treatment of result, institutions would be free to use the general homogenous indices. However, that respondent methodology set out in Article 1, including in the expressed some concerns about the operational context of indices. It should be noted that, by applying burdens that the approach would imply and the methodology in Article 1, institutions would proposed leaving the methodology as a possibility directly map an index that is made of large



Comments Sun	nmary of responses received	EBA analysis	Amendments to the proposals
	(i.e. not making it mandatory) for banks. In addition, it was suggested that the listed equity indices be assigned a liquidity horizon of 10 days by default.	capitalisation only to the large capitalisation equity subcategory.	
	Two respondents had no objection to the proposed treatment.		
Question 4. Do you have any example of other risk factors that should be subject to the	should be subject to the same treatment as that	The final Basel standards require an institution to adopt a look-through approach for its positions in funds when including them in the scope of their internal model. In other words, institutions are required to treat the underlying positions of the fund as if they were held directly by the institution. As a result, the institution cannot model, for example, the fund with a single factor, and consequently an ad hoc treatment for mapping this single risk factor to the appropriate category/subcategory would not be meaningful.	None.
treatment specified for indices?		Although CRR 2 did not reflect the Basel standards in this regard, CRR 3 may do so. Accordingly, in order to avoid creating ad hoc treatments for cases that may not be significant in the context of CRR 3, the EBA decided not to implement any amendment.	
		However, should CRR 3 not reflect this aspect of the Basel standards, the EBA will potentially amend these RTS for specifying the treatment to which funds, for example, should be subject.	
Question 5 . Are there any other risk factors for which an ad hoc treatment should be specified?		Based on the responses received, the EBA decided to keep the list of risk factors, subject to an ad hoc	None.



Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	Two respondents believe that ad hoc treatments for other risk factors, such as correlation parameters, should be specified. One respondent pointed out that the RTS do not formally cover rates indices (interest rate swap- based indices).		
· .	All respondents preferred option B as it better reflects the EU capital market. Some respondents proposed enlarging the scope of the provision to include all indices in Annex I of Commission Implementing Regulation (EU) 2016/1646 and not just those 'quoted in the EU'.	Following the feedback provided by the respondents and on the basis that option b better reflects the EU capital market, the EBA decided to retain option b. The EBA did not amend option b to enlarge the scope of the provision to include all indices in Annex I of Commission Implementing Regulation (EU) 2016/1646 (and not just those 'quoted in the EU'), since the provision is meant to reflect the EU specificities of its capital market.	Option B has been retained.

