2019.10.04

FBF RESPONSE TO EBA CONSULTATION PAPER ON DRAFT REGULATORY TECHNICAL STANDARD 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 (CRR2)

The French Banking Federation (FBF) represents the interests of the banking industry in France. Its membership is composed of all credit institutions authorised as banks and doing business in France, i.e. more than 340 commercial, cooperative and mutual banks. FBF member banks have more than 38,000 permanent branches in France. They employ 340,000 people in France and around the world, and serve 48 million customers.

The FBF welcomes the opportunity to comment on the EBA's Consultation (EBA/CP/2019/06)[1] on Draft Regulatory Technical Standards (RTS) 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 (Capital Requirements Regulation 2 - CRR2). Please find detailed feedback within our answers to the EBA's questions.

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[1] Please see : https://eba.europa.eu/news-press/calendar?p_p_id=8&_8_struts_action=%2Fcalendar%2Fview_event&_8_eventId=2844510

I-   Article 2 : Verifiable prices

> **Question 1:** Do you agree that a committed quote, to be considered verifiable, should be required to have both a firm bid and offer price? If you think that solely a bid or offer price should be sufficient please provide a convincing rationale.

FBF answer: The French Banking Federation deems necessary that a committed quote, to be considered a verifiable price, should have a firm bid **or** offer price:

- The international Basel standard (Frequently asked question n°1 of MAR31.12) doesn't require to have both bid and offer committed quotes. Instead, having either a bid or an offer quote is deemed sufficient to make it a verifiable price.
- It is expected that other jurisdictions will transcribe in their local regulation the Basel text faithfully, requiring only a committed quote to buy or sell. This can already be witnessed for example in the Hong-Kong consultation paper on Market Risk (CP19.01[2], Article 317):

    "… A price will be considered real if it meets at least one of the following criteria: …
       • It is a verifiable price for an actual transaction between other arms-length parties …".

Requesting at the European level to have both a quote to buy and to sell is an unfortunate gold plating choice by European authorities. It will create an uneven playing field whereby institutions from third countries will be able to consider as verifiable many more quotes than European institutions resulting in them having fewer non-modellable risk factors and ultimately lower own funds requirements.

For some markets/instruments only one sided quotes may be available. For instance, retail bonds quotes often are one-sided, with a bank only quoting a price at which it is prepared to buy the instrument from its retail clients. Besides, many quotes are made on requests (RFQs): even when made public under MiFID II, the quote is likely to be one-sided as pre-trade transparency obligation do not mandate two-sided quotes. Not recognising those quotes as verifiable prices is likely to result in a sharp reduction of quotes useable toward the Risk Factor Eligibility Test (RFET).

Also, some regulations may result in the inability for an institution to provide two-sided quotes. For instance short-selling ban will prevent the bank to quote a selling price if it does not have a position in the instrument. Other regulatory restrictions exist such as the French Banking Law (FBL) or the Volker Rule (VR) on proprietary trading positions that may restrict the ability to make two-sided quotes.

Nevertheless, if the EBA persists in requiring both bid and offer committed quotes, some flexibility should be introduced in the framework:

- The bid and offer quotes should not necessary emanate from the same party. As long as a bid quote and an offer quote is made, the price should be deemed verifiable;
- A time delay (i.e. number of days) could be considered between a bid price and an offer price.

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[2] Please see: https://www.hkma.gov.hk/media/eng/regulatory-resources/consultations/CP19_01_Market_Risk.pdf

> **Question 2:** Please provide an estimation of the impact of requiring solely a firm bid or offer price compared to requiring both. Please provide this impact e.g. in terms of number of non-modellable risk factors, stress scenario risk measure charge or number of eligible committed quotes for different risk factors/risk factor categories.

FBF answer: Considering the ongoing assessment, by banks, of the impact of the Basel standard for market risk, published in January 2019 (i.e. BCBS d457[3]), it is too early to provide an estimation of the impact of requiring a firm bid price or offer price, or both. However, we heard from some data providers that requirement for a two-sided quotes will reduce the amount of quotes considered as verifiable prices to almost zero.

> **Question 3:** How would you define and check for a "non-negligible volume of a transaction or quote, as compared to usual transaction sizes for the bank, reflective of normal market conditions" for the purpose of assessing the validity of a price observation?

FBF answer: We would like to raise to the attention of the EBA that existing market integrity rules, which are applicable across jurisdictions, should provide regulators comfort that no quote or transaction is made for the sole purpose of identifying a sufficient number of verifiable prices.

Banks' internal compliance rules include provisions against market manipulation in the context of Market Abuse regulations. For instance, there is no specific thresholds regarding off-market trades in the regulation, however, internal rules based on market practices are defined, thresholds fixed internally, and controls realised and documented whenever thresholds are exceeded.

The industry believes that EBA RTS should not address a prescriptive definition of "*non-negligible volume of a transaction or a quote*" as it is operationally not feasible to implement explicit volume-based limit. The EBA RTS should remain principle based on this topic whereby internal rules and appropriate procedures and controls could be put in place and made available to supervisors in the context of modellability.

Finally, requiring limits on the quote or transaction size or bid-offer spread may turn out to be an operational nightmare. If the EBA is really intent on enforcing such a requirement, it should be made clear that it should be kept as simple as possible, likely under the responsibility of the compliance department.

Smaller banks may not have the technical infrastructure that would be required in order to implement a monitoring of "*non-negligible volume*" for each quote.

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[3] Please see: https://www.bis.org/bcbs/publ/d457.htm

> **Question 4:** How would you define and check for an "unreasonably large bid-offer spread as compared to usual bid-offer spreads, reflective of normal market conditions" for the purpose of assessing the validity of a price observation obtained from a committed quote? In your response, please provide a detailed reasoning.

FBF answer: Firstly, we would like to remind the FBF view that committed quotes satisfying the requirements of Article 2, Paragraph 6, should be considered verifiable prices even when one-sided. In which case Question 4 would be irrelevant.

Similarly to what was stated in the answer to question 3, industry believes that EBA RTS should remain principle based as well with regards to bid-offer spread definition. Internal rules and procedures controls should include provisions in the context of committed quotes for modellability. Besides, it is difficult to test if a bid-offer spread is "*unreasonably large*" regardless of the market regime on which the instrument is traded.

For example, on Monday 5 February 2018, the S&P 500 Index fell 4% while the VIX (a measure of its implied volatility) jumped 20 points. The bid-offer spread of a 6 month At-The-Money Put on the S&P500 Index went from 1.5 points on February 2, 2018 to 16 points on February 5, 2018 (source CBOE[4]). One of the most liquid equity derivative contract saw its bid-offer spread increase by more than 1000% in the course of 2 consecutive business days. Hence, what may be considered unreasonable one day (16 points vs a more usual 1.5 point), may look reasonable the day after.

Requiring the definition of unreasonably large bid-offer spread as compared to usual bid-offer spreads, reflective of normal market conditions may turn to be an operational nightmare. If really the EBA would like to enforce such requirement, it should be made clear that it should be kept as simple as possible, typically under the responsibility of the compliance department.

> **Question 5:** Do you see any problems with requiring that institutions are allowed to use data from external data providers as input to the modellability assessment only where the external data providers are regularly subject to an independent audit (independent of whether the price is shared with the institution or not)? If so, please describe them thoroughly (i.e. for which data providers and the reasons for it).

FBF answer: The FBF supports the use of data from external data providers as input to the modellability assessment, where external data providers are regularly subject to an independent audit.

For level playing field issues, not to raise problems, audit conditions should be internationally agreed, not applying uneven requirements from a jurisdiction to another.

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[4] Please see : https://www.cboe.com/

> **Question 6:** Do you have any proposals on additional specifications that could be included in the legal text in order to ensure that verifiable prices provided by third-party vendors meet the requirements of this Regulation?

FBF answer: We have no proposal on additional specifications.

II-   Article 5 : Modellability of risk factors belonging to parametric curves, surfaces and cubes

> **Question 7:** How relevant are the provisions outlined above for your institution? How many and which curves, surfaces or cubes are (planned to be) represented by a mathematical function with function parameters chosen as risk factors in your (future) internal model?

FBF answer: Curve, surface or cube parameterization is of practical use in risk modelling as it enables to represent the joint dynamic of a whole set of market data in a vector space of smaller dimension. A common example is the use of SABR model to summarize the dependency of implied volatility on option strikes through three parameters (ATM level, skew and smile).

Recourse to parametric functions might vary across institutions and it is difficult to provide an exhaustive list of possible use cases.

Nevertheless, it is expected that the use of parametric functions could increase with FRTB standards, as eligibility rules (e.g. PLA) or capitalization rules may lead institutions to review their risk factor definition towards less redundant and somewhat more orthogonal risk factors.

> **Question 8:** Do you have a preference for any of the options outlined above? For which reasons? Please motivate your response.

FBF answer: The industry does not support any of the proposed options, both of them being considered as impractical. Please refer to the answer to question 9 for more details and motivated answers.

That being said, the FBF considers that the general modellability criteria outlined in articles 5.3(a) and 5.3(b) of the draft Regulatory Technical Standards (whereby the function parameters are modellable if and only if all the buckets covering the related dimensions are modellable) are far more stringent than the BCBS provision [MAR 31.19] itself and shares EBA's concern that a full curve, surface or cube could be pushed into the SSRM "*just because one bucket is non-modellable*".

We believe the general eligibility criteria should be adaptive to the nature specific of parameters and offer recognition for a potential hierarchy between parameters where relevant. For instance, the ATM vol parameter plays a central role in the calibration of a SABR model. Assessing its modellability based on the ATM bucket makes sense, whether or not DITM bucket passes the RFET.

> **Question 9:** Do you consider any of the options outlined above as impossible or impractical? For which reasons? Please motivate your response.

FBF answer: The Industry believes that both options are impractical (if not impossible):

Option 1 requires recalibration of historical parameters beyond capacity:

- ➢ From an operational standpoint, the marking of a set of parameters {a,b,c} is driven by the market information available at a given point in time, and completed if needed by human expertise. Stripping a set of alternative parameters {a',b',c'} only from RFET qualifying data is possible only if a full history of RFET qualifying data (since 2007) is still available and if the human expertise is replaced by some algorithmic intelligence to solve operational issues;
- ➢ The modellability of the underlying instrument buckets evolve through time. If N is the number of buckets supporting the modellability of the parameters {a,b,c}, then there are $2^N - 1$ versions of possible alternative sets {a',b',c'} to maintain.

Option 2 requires the alternative pricing functions to be built in the risk engine:

- ➢ If {x1,x2,x3,x4} are the "*output risk factors*" chosen to discretize the curve, surface or cube, then the pricing function $\phi(a, b, c)$ has to be replaced by an equivalent pricing function of the form $\Psi(x_1, x_2, x_3, x_4)$. Otherwise it would be impossible to unshock x1 separately from the other risk factors in the ES, or shock it separately from the other in the SSRM, should it be NMRF;
- ➢ Ultimately, introduction of new pricing functions makes the parametric function almost useless in the risk engine.

> **Question 10:** Do you have alternative proposals to define the consequence on the modellability of the parameters where some buckets of a curve, surface or cube are modellable whilst others are non-modellable?

FBF answer: It is not possible to cover all type of models, hence the alternative proposal put forward below may not address all cases and models. However, it sets an approach that should be adapted to other types of models.

We will focus on volatility cube representations where the maturity and tenor dimensions are not parameterised but the strike dimension is. We believe this is a common representation of a volatility cube though some banks may have different approaches.

For the non-parameterised dimensions, maturity and tenor in our example, a usual own or supervisory bucketing may be used.

The parameterised dimension, strike in our example, is often represented by the ATM volatility and a skew and smile parameters. The ATM volatility (for a given maturity and tenor bucket) modellability may be assessed directly from a strike bucket around the ATM volatility. We could for instance use bucket 3 of Table 1 – Row (iv) for that purpose.

The skew and the smile generally are calibrated based on the differences between OTM, ATM and ITM volatilities. For that reason, we may consider that skew and smile may be modellable only if the ATM volatility is. In such cases, the skew will be deemed modellable if either the OTM or the ITM bucket passes the RFET, the smile will be deemed modellable if both the OTM and ITM buckets pass the RFET.

When doing so, OTM may be defined as all strikes lower than strikes of the ATM bucket, i.e. the union of supervisory buckets 1 and 2 of Table 1, Row (iv) while ITM may be defined as all strikes higher than the strikes of the ATM bucket, i.e. the union of supervisory buckets 4 and 5 of Table 1, Row (iv). In such way, there is a bucketing consistent with the parameterisation granularity (3 parameters, 3 non-overlapping buckets).

Some models may involve more parameters and the above proposal would need adaptation. Due consideration should be taken to the importance of a parameter in the strike dimension calibration: the modellability assessment of additional parameters that are rarely updated and have limited effect may be linked to those of other parameters (ex. skew and smile).

III-   Article 6 : Bucketing approaches for risk factors belonging to curves, surfaces or cubes

> **Question 11:** Do you intend to apply paragraph 4? If so, for which risk factors will it be relevant? Do you expect any implementation issues related to it? Please explain expected issues thoroughly.

FBF answer: Paragraph 4 of Article 6 of the draft technical standard on criteria for assessing the modellability of risk factors under the Internal Models Approach (IMA) under Article 325be(3) seems operationally very complex.

IV-   Article 7 : Documentation

> **Question 12:** Do you agree with the outlined methodology for the assessment of modellability of risk factors? If not, please explain why.

FBF answer: No answer.

> **Question 13:** Do you expect any problems for the modellability assessment arising from the upcoming benchmark rate transition that could be addressed via this regulation? If so, please provide a thorough description and potential solutions if any.

FBF answer: FBF member banks expect problems raised by the reuse set of deals without migration agreement.

Grandfathering conditions should be precised.

Question 14: How do you intend to integrate the risk factor modellability assessment (i.e. RFET) into the processes of your institution? Do you expect those data to be used for the purpose of the RFET only or do you think those data would increase the data availability used e.g. for the calibration of your internal model (under para 31.26 of 2019 Basel rules)? What percentage of data used for the RFET do you think will be used also for the calibration of your internal model?

FBF answer: Institutions do not expect to integrate the RFET (i.e. risk factor modellability assessment) into the calibration on internal models.