MARKET RISK MANAGEMENT BANK

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Basel Committee on Banking Supervision

Department
MRMB Trading
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FRTB Response

Subject
Response to Fundamental review of the trading book

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Dear Sir / Madam,

With this letter we would like to take the opportunity to respond to the consultative document on the Fundamental review of the trading book published in May 2012.

We appreciate the efforts of the Committee to enhance the capital framework for the trading book and support a large part of the proposals. The sections below discuss our comments to the consultation paper by topic. Additionally, we have been fully involved in and support the response to the consultation paper by the Dutch Banking Association (NVB). Furthermore we support the industry response as written by ISDA, GFMA, IIF and TCH (further referred to as 'Industry response').

We look forward to the next version of the Fundamental Review and will be pleased to answer any questions that may arise from our response. We are more than willing to work with the Committee to further develop a consistent trading book framework.

Sincerely,

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Global Head Market Risk Management Bank / Trading

1. General Comments

In general, we support the majority of the proposals by the Committee to strengthen the capital framework for trading books.

We especially appreciate the steps made to replace the current patchwork of Basel 2.5 risk measures, the strong role of market liquidity in the framework and the concept of desk level validation. The implementation of each of these concepts should however not become too rigid as this can have unintended consequences. In the sections below, we further discuss the potential practical implications for consideration.

Although we have had no issues with the current framework based on VaR, we understand the reasons of the Committee to move from VaR to Expected Shortfall and can support this if it is possible to backtest and the appropriate confidence level is set as discussed in section 3.

We consider the possibility of backtesting VaR a very strong element in the current trading risk framework. This allows banks to validate their models, demonstrate to their supervisors that the internal model sufficiently captures the risks in the trading portfolio, and identify areas for improvement. We would like to receive further guidance how the new framework can be backtested to provide similar levels of comfort to all stakeholders.

Regarding the standardised approach, we are worried that the stronger role of this approach as proposed in the consultation paper will provide a false sense of security as a fallback for internal models as well as for the purpose of comparison, which we will explain further in section 6. Given the fundamental character of the review we would have liked a more integrated and consistent approach to credit risk, including the current IRC, CRM and CVA for trading books. We are willing to work with the Committee to further integrate these concepts in one consistent framework.

We are also concerned that the Committee seems to deviate from the concept of a ‘use test’. In our view this is a very strong concept in the current framework, forcing banks to improve their internal models used for risk management by a strong regulatory validation process. At the same time, use of the the models in practice and discussions with traders also highlight issues in the model and provide an incentive to improve models used for regulatory purposes. The decreased transparancy of the proposed capital measures, by including varying liquidity horizons, a stressed period and regulatory-defined correlations in the risk measures will cause banks to move away from using regulatory capital models for internal risk management purposes.

We would like to highlight that we have not had any backtesting issues during the recent credit and sovereign crises. Therefore, although we support an improved trading book framework, we feel that a pragmatic approach should be taken and the operational burden of implementing a new framework and the associated monitoring processes for both banks and their regulators should not outweigh the benefits of this new framework.

Finally, the real impact of the proposals can only be assessed via a Quantitative Impact Study (QIS). We would like to highlight that in order for the QIS to be effective, close involvement between the industry and supervisors is essential and sufficient time and resources should be allocated from both sides.

2. Trading Book Banking Book Boundary

In order to have a better view on what should be in scope of the trading book, it would help to know what the Committee intends to do with the banking book. We therefore look forward to the upcoming proposals for Interest Rate Risk in the Banking Book (IRRBB).

In line with the Industry response, we prefer the Trading Evidence Based boundary approach.

The valuation based approach will create significant asymmetry in treatment of instruments due to the specific implementation of certain accounting rules. This makes the valuation-based boundary less desirable. Accounting regimes differ across jurisdictions such that similar portfolios may lead to different capital requirements, which is not in line with one of the main targets of the new regulations to create a level playing field. Furthermore, it creates a material break between the regulatory categorization of risk and how risk is actually managed. The AFS books generally have a longer horizon. If treated under a trading framework, it is important to also take the related balance sheet liabilities and funding decisions into account.

The evidence based approach overcomes most of the shortcomings of the valuation based approach. However, we feel that a pragmatic approach needs to be taken:

- The boundary needs to be defined at the portfolio, and not the trade level to avoid that trades and their hedges fall under two different frameworks leading to a disincentive to hedge.
- The efforts to evidence trading activity should not be too burdensome on both banks and their supervisors. Clear and specific guidelines in the regulation how to evidence trading activity could assist to create a level playing field and to maintain a balance between objective evidence and operational burden for both parties.
- We believe that assessment of the trading liquidity of instruments should include focus on the liquidity of market risk factors (i.e. the ability to hedge) and not on the liquidity of the instruments alone. For example, for structured derivatives the risk factors can be perfectly hedged, whereas there is no intent to trade the instruments themselves. We do not feel the banking book would provide the appropriate capital treatment for these instruments.
- As markets can change, the rules for transferring assets from the trading book to the banking book should not be so rigid as to prevent a bank from making that switch, on a one time basis. This could occur if market liquidity dries up and the bank chooses to keep the positions until maturity rather than continue to trade the assets in a trading portfolio.

3. Expected Shortfall

3.1 From VaR to Expected Shortfall
Although we have had no issues with the current framework based on VaR, we understand the reasons of the Committee to move from VaR to Expected Shortfall (ES) and can support it. Expected Shortfall explicitly considers the magnitude of the losses beyond a certain confidence level, and – contrary to VaR – is a coherent risk measure. Care should however be taken not to modify the model in such a way that the coherence property is violated, for example by regulatory-prescribed correlations.

We believe that a lower confidence level than 99% would be appropriate, for example 95%. If a high confidence level is maintained, this could produce unstable results, the need to fit a distribution in a tail that is hardly observable and difficult to backtest, and significant infrastructure changes for banks currently using historical simulation.

3.2 Backtesting Expected Shortfall
We consider the possibility of backtesting VaR a very strong element in the current trading risk framework. This allows banks to validate their models, demonstrate to their supervisors that the internal model sufficiently captures the risks in the trading portfolio, and identify areas for improvement.

We would like to receive further guidance how ES can be backtested, especially if calibrated to a stressed period, with multiple liquidity horizons and pre-set correlations.

3.3 Direct or Indirect approach
When determining the period of stress that is most relevant to an institution's portfolio, our most preferred option is to calculate the impact only for the most relevant risk factors in the portfolio. The longer the historical period is used the more significant will be the data gathering and calculation efforts, especially when a full revaluation approach is used.

When calculating stressed ES on a daily basis, we prefer as much as possible to implement a direct approach, as this will lead to more accurate results and fewer issues interpreting the end-result. Furthermore the current ratio between the risk of all risk factors and a partial set of risk factors need not be the same as the ratio in times of stress.

4. Market liquidity

We fully agree that market liquidity is an important risk in the trading book that is currently lacking in the trading risk framework and appreciate this is addressed in the new framework. We also support the fact that liquidity should be determined on the basis of risk factors rather than per instrument, as basing liquidity on instruments will give a disincentive to hedge the liquid risk factors in each product.

However, we feel that the current proposals to include multiple liquidity horizons into one risk measure lead to over-engineering of the risk measure and a framework which is too

complex to interpret, supervise and manage, and this will result in a disincentive for certain elements of best-practice risk management.

Examples of the complexity of the proposed framework:
- Many products are subject to multiple risk factors. Incorporating these with different liquidity horizons will not work in a full revaluation framework, which most accurately reflects the cross-effects if risk factors are shocked simultaneously.
- The current proposal could give an incentive not to hedge positions. For example, if an illiquid product is (proxy-)hedged using a liquid product (e.g., corporate bond hedged with CDS), only the basis risk should receive a higher capital charge for illiquidity. If these products are mapped to different liquidity buckets, the hedge will not give the appropriate offset which could provide an incentive to keep the position open.
- When incorporating multiple liquidity horizons into one risk measure, the results are no longer interpretable. With one horizon one can interpret the figure as 'potential losses over a horizon of x days/weeks'. With multiple horizons the results can no longer be interpreted and is very hard to validate and compare. Furthermore, it will lead to the daily management of the trading book to be substantially different from the capital treatment.
- Depending on the granularity of risk factors for which to set liquidity horizons, the effort to justify and continuously monitor settings can be extremely high both for banks and for their supervisors. In order to limit the burden and ensure a level playing field, clear and specific guidelines need to be established about how to set liquidity horizons in stressed markets.
- The proposed framework seems to double-count the effects of illiquidity on various levels. For example an illiquid risk factor – if justified to be part of the trading book – will be given higher capital due to a longer liquidity horizon, an add-on for jumps in liquidity premia, and an add-on for un-modellable risk factors.

We therefore propose the following:
- As proposed by the Committee, request banks to assess market liquidity for the risk factors in their trading book. This should be done under very specific guidelines in order to maintain a level playing field and to limit the burden of proof for both banks and regulators.
- Calculate Expected Shortfall based on the lowest common denominator of the liquidity horizons in the trading book.
- For risk factors with a longer liquidity horizon, apply an add-on. This add-on could be based either on a bid/ask spread in stressed circumstances given the liquidity horizon, or on an assessment of the ES or other stressed estimation of the potential losses in the risk factor over the remaining time to liquidate.
- For risk factors that are proxy-hedged with another liquid risk factor, only request an add-on for the illiquid specific risk or basis risk.

This proposal will allow for an ES that can be used for effective risk management and interpretation, giving the correct incentives to hedge relatively liquid risk factors, while at the same time requiring a higher capital charge for more illiquid risk factors.

5. Hedging and diversification

We understand the objective of the Committee to reduce the benefit of diversification, which may be less in practice than predicted by the internal model. However, a stressed calibration will already address this concern to a large extent. Furthermore, we think there are many more hedging and diversification trades executed within risk categories, that are not covered in this proposal, than between broad risk categories.

We see a number of practical issues with the proposed approach

- The regulatory capital formula requires firms and/or regulators to determine whether a category of risk is 'long' or 'short'. It is not always clear how this should be done in practice. We refer to the Industry response for examples.
- It is not clear how regulators will calibrate the correlations set in the regulatory formula. The correlation highly depends on the portfolio composition. Whichever correlation is set by the regulators will create scope for regulatory arbitrage and / or incorrect incentives for hedging. For example, a bank could have a long position in equities, which is naturally hedged in times of stress with a long position in Index CDS. If limited capital benefit is given for this natural hedge, a bank could decide to reduce part of the Index CDS position purely for capital relief purposes, whereas this is not risk reducing from an economic perspective. This is not only relevant for the bank as a whole, but also for individual traders as many products are sensitive to multiple risk factors.
- As discussed in section 4, many products are subject to multiple risk factors. Shifting these individually and then applying regulatory-based correlations will not work in a full revaluation framework, which most accurately reflects the cross-effects if risk factors are shocked simultaneously.
- By setting the correlations in the regulatory formula, the resulting risk measure is no longer coherent.

If the Committee wishes to reduce the benefit of diversification between high level risk classes, we propose that this is done in a simpler way than the correlation formula proposed, for example by adding a fraction of the undiversified risk across risk classes to the diversified ES as calculated by the internal model.

6. Standardised Approach

6.1 Standardised approach as fallback or benchmark

Although we understand the desire of the Committee to obtain a standardised approach that is a more credible fallback for internal models and can serve as a benchmark, we think that a standardised approach likely fails to serve this purpose. The simplicity of a standardised approach will unlikely capture the situations where the internal model fails.

In practice, internal models have been shown to fail in the following situations:

- Basis, fixing and spread risks between different risk factors. It is unlikely that the standardised approach will be able to capture all these basis risks without becoming both

very complicated and extremely burdensome on regulators to specify risk weights for each detailed risk factor.
- Risk factors of complex instruments, like implied correlation and skew risk, are not included in the internal model, or the non-linearity is not modelled sufficiently, such as was the case in correlation trading products during the credit crisis. Again, these risk factors are likely not set up with the correct granularity and/or risk sensitivity in the standardised framework.
- Market circumstances change, like credit products and securitisations which were considered liquid before the credit crisis and which became illiquid during the crisis. Furthermore, when time series data is not updated frequently, internal models do not pick up changed circumstances. Unless regulators continuously recalibrate the inputs for the standardised model, the standardised approach will lag in recognizing these changed market circumstances and also fail to capture this risk.

Considering the above, the standard model will likely not capture the missing risks in cases where the internal models fail. Furthermore, it could lead to incorrect conclusions when used as a benchmark: If two banks have the same result for the standardised approach, one of these banks can still have a much riskier portfolio than the other if it has exposures to the types of risks above that are not captured in the standardised approach.

We therefore feel that the revised standardised approach can provide improved capital estimates for banks with small and relatively simple portfolios, but will provide a false sense of security and an unreliable benchmark for more complex portfolios.

Only an extremely advanced and detailed standardised approach which is continuously adapted to new products will provide a truly credible fallback. This also means that regulators will need to stay ahead of the markets in assessing the risks of new products. In that situation, there is no longer a need for an internal model.

It would in this case be preferable for both the banking industry and regulators to continue analysing and improving internal models rather than spend significant effort on implementing a standardised approach which will not serve the main purposes. In our opinion, applying add-ons for missing or non-modellable risk factors, in combination with stress testing exercises that allow for comparability of banks will much better serve the purposes set out in the Fundamental Review and will allocate resources of both banks and their supervisors in a more effective way.

6.2 Partial or fuller risk factor approach?

Both the partial and fuller approach will require significant effort in implementation, which will increase with the level of granularity in which buckets are defined. In general, the partial approach will give appropriate levels of risk for relatively simple linear or plain vanilla option portfolios, whereas the fuller approach is more complex but will better capture non-linear risks. With a less granular set of risk factors, the fuller approach will be very close to the partial approach.

If the standardised approach is imposed on all banks with an internal model, we prefer to implement the fuller approach, as it better aligns with the availability of information in the trading risk infrastructure. Alternatively, the partial approach could be adjusted to also make use of sensitivities to risk factors. Banks that have a trading book generally monitor sensitivities to risk factors on an ongoing basis, whereas mapping market values of individual instruments to buckets and/or splitting instruments in more elementary values (such as cash flows) can require a significant change in infrastructure.

6.3 Standardised approach as a floor
We have concerns with the introduction of a regulatory capital floor based on a standardised approach, as it will give a disincentive to use and improve internal models. As the standard approach will likely be less risk sensitive than the internal model, posing a floor could also give desks the incentives to arbitrage the standard approach, where the internal model would give the correct incentives to hedge economic risks.

7. Desk level validation

We support the main ideas behind the Committee proposals for desk level validation of internal models:
- Testing on desk level could highlight certain basis risks that are initially not significant on bank level, but can be substantial on desk level. The approach to validate the model at a more granular level can therefore assist in enforcing improved risk modelling for certain risk factors.
- We welcome the addition of P&L attribution in the validation process, as it forces banks to carefully investigate the P&L components and consider all relevant risk factors in the internal model.
- Additionally, for some asset classes it can be difficult to determine a reliable estimate of the market risk capital needed, which can be overcome by using capital add-ons for non-modellable risk.

However, the practical implications of the validation approach should be carefully considered to avoid unintended consequences:
- Desks should not by default fail the test where risks are modelled with sufficient conservatism as this will provide less incentive to improve modelling in those areas. For example where conservative market data proxies are used in the internal model (such as implied correlation, specific interest rate risk), the P&L attribution test will likely fail. The capital add-ons for non-modellable risk factors is already intended to capture most of these risks in a conservative way, but a strict application of the validation rules will never allow a desk to come to this stage.
- As discussed above, the standardised approach will generally not capture the risks that cause the internal model to fail. Therefore we think that by default falling back to the standardised approach on desk level will not serve its purposes in this context.

- Furthermore, if the desk based validation leads to individual desks moving to the standardised approach, this could disincentify actively diversifying between desks, or implement macro (portfolio level) hedging strategies.
- Rules should not be too binary where a small violation of the requirement (which could be the result of statistical noise) would lead to a desk being unapproved.
- As discussed in the section on Expected Shortfall, backtesting ES will highly likely only be possible based on a 1-day horizon and under current market circumstances. The overall framework also takes into account longer liquidity horizons and stressed market data inputs. Model approval or failure based on 1-day backtesting and P&L attribution should therefore not be a mechanical exercise.

Given the practical implications, we suggest that step 2 in the proposed process should allow for more flexibility. We fully support desk level testing to identify issues in the model and to address these issues. However, we propose it does not automatically lead to a switch from an internal model to the standardised model, but that desks can remain on the internal model with penalties via capital add-ons, either based on a form of standardised approach or based on other stressed measures agreed with the supervisor. This will provide a more conservative level of capital but also a better incentive to improve the internal models.

8. Credit Risk in the Trading Book

Given that the current framework is far from ideal and that IRC and CVA are very significant components of the current regulatory framework, we think that it is important to address these risks in a fully aligned framework.

For IRC, the constant level of risk over the capital horizon and confidence level are inconsistent with the framework set out for other market risk factors. Furthermore, we think that the credit migration risk is already captured in the credit spread risk in ES, especially when a stressed period and longer liquidity horizon are taken into account. As pointed out in the Industry response, the incremental economic risk of a downgrade will tend to be negligible. This is because markets spreads tend to be a leading rather than a lagging indicator of ratings changes. So long as changes in credit spreads over a liquidity horizon have been robustly simulated, they will tend to fully include the consequence of a downgrade.

For CVA VaR, the Basel 3 implementation in 2013 captures only credit spread risk. For banks that mark CVA to market, this methodology does not reflect the real P&L volatility as a result of market movements and does not provide an incentive to hedge that volatility. Furthermore the scope is different from the way CVA is included in the P&L (collateralised deals included / excluded). We think that the market risks (including credit spread risk) in CVA can be perfectly integrated in the modelling of market risk via VaR or ES which would lead to a much better capturing of the risk than the current Basel 3 proposals.

We are willing to work with the Committee to establish a more consistent framework including default risk and CVA.

Annex I – Summary of Consultation questions linked to sections in response

1. Which boundary option do you believe would best address the weaknesses identified with the current boundary, whilst meeting the Committee's objectives?
Please refer to section 2.

2. What are commenters' views on the likely operational constraints with the Committee's proposed approach to capturing market liquidity risk and how might these be best overcome?
Please refer to section 4.

3. What are commenters' views on the proposed regime to strengthen the relationship between the standardised and internal models-based approaches?
Please refer to section 6.

4. What are commenters' views on the Committee's proposed desk-level approach to achieve a more granular model approval process, including the implementation of this approach for banking book risk positions? Are there alternative classifications that might deliver the same objective?
Please refer to section 7.

5. What are commenters' views on the merits of the "direct" and "indirect" approaches to deliver the Committee's objectives of calibrating the framework to a period of significant financial stress?
Please refer to section 3.3.

6. What are commenters' views on the merits of the desk-based and risk-factor-based aggregation mechanisms to deliver the Committee's objectives of constraining diversification benefits?
Please refer to section 5.

7. How can regulators ensure robust supervision of integrated market and credit risk modelling? In particular, how would an integrated modelling approach affect other elements of the proposed framework (eg the choice of the quantile parameter for ES, the P&L attribution and backtesting processes, etc)?
Please refer to section 8.

8. What are the likely operational constraints with moving from VaR to ES, including any challenges in delivering robust backtesting, and how might these be best overcome?
Please refer to section 3.

9. Which of the two approaches better meets the Committee's objectives for a revised standardised approach?
10. Do commenters propose any amendments to these approaches?
For question 9 and 10, please refer to section 6.