

7 September 2012

Mr. Wayne Byres  
Secretary General  
Basel Committee on Banking Supervision  
Bank for International Settlements  
Centralbahnplatz 2, CH-4002 Basel, Switzerland  
Sent by email to: baselcommittee@bis.org

**Regarding Consultative Document: Fundamental review of the trading book**

Dear Mr. Byres,

Credit Suisse Group AG (CS) would like to thank the Basel Committee on Banking Supervision (Committee) for the opportunity to comment on the consultative document: "Fundamental review of the trading book" <sup>1</sup> (FRTB), (Basel 219). Please find below our response to the questions and most important aspects set out in the document. Next to this letter, we further support the joint response provided by the International Institute for Finance (IIF), the Global Financial Markets Association (GFMA), the International Swaps and Derivatives Association, Inc. (ISDA), and The Clearing House Association L.L.C. (TCH).

CS broadly supports the Committee's proposal moving from value-at-risk (VaR) to expected shortfall (ES) methodology, capturing tail risk, and having a coherent framework. The existing framework has shown limited consideration to tail risk and was based on overly simplified assumptions regarding market liquidity scenarios. Basel 2.5 introduced expedited, temporary solutions but gave rise to potential double-counting of the same risk via VaR, stressed value-at-risk (SVaR), incremental risk charge (IRC), and comprehensive risk measure (CRM), to some extent. CS supports the removal of the overlapping risk measures. Furthermore, CS supports the Committee's increased focus on achieving a risk sensitive framework that can be implemented consistently by supervisors and which achieves comparable levels of capital across jurisdictions while promoting a more resilient banking sector.

The following comments are provided for the Committee's consideration with more detail in the Appendix based on the specific questions raised in the consultative document.

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<sup>1</sup> <http://www.bis.org/publ/bcbs219.pdf>

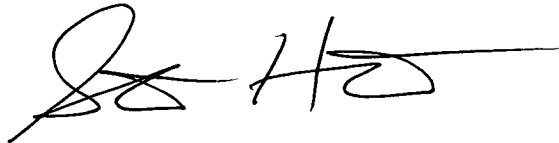
## General comments

- The document proposes significant strategic and operational changes in methodology for computing market risk capital requirements at a time when Basel III (BIII) implementation is occurring. In addition, Basel 2.5, which was implemented for Swiss banks at the start of this year, will apply to other jurisdictions from the end of this year. The industry needs sufficient lead time from rule finalisation to implementation of at least two years for orderly implementation of any new extensive capital measures that would affect banks' strategic operational systems.
- For the planned Quantitative Impact Study (QIS) involving advanced bank participation, we request 1) at least six months' notice of the study for resource planning and 2) sufficient time to accomplish the study.
- The framework has a broad series of changes. For some of the proposals (e.g., interest rate risk in the banking book, robust backtesting, and revised standardised model), more detailed information in the form of a further consultative paper would be appreciated in order to give a fuller response.
- A constraining regulatory floor calls into question the business case for large financial institutions to invest in the expertise and operational infrastructure required for internal modelling. Given the model management overhead associated with the proposed desk-level internal modelling permissions, it may no longer be a given that large trading financial institutions would invest in internal models. Therefore, a floor is not supported by CS.
- We understand the rationale behind the Committee's request for a mandatory calculation of standardised capital requirements for all banks. However, for banks that apply an internal models approach in a parallel environment, the costs for building the infrastructure and maintaining data are high.
- The Committee should consider if every conceivable risk must be simultaneously capitalised to the 99% level.
- We agree that the capital rules should not only be consistent across jurisdictions, but implementation, model approval standards, and supervision should also be harmonised.
- The framework should link capital requirements more closely to economic losses. For example, for some financial instruments, current SVaR capital requirements exceed the maximum loss which would theoretically be possible (i.e., economic losses).
- We support the Committee on developing a workable credit value adjustment approach.

Overall, Credit Suisse finds these proposals reasonable, though lacking in detail in a number of key areas. The thinking on liquidity, in particular, is valuable and well received as guidance. ES is clearly a more stable risk measure than VaR, so moving to this approach represents a sensible incremental improvement. CS is concerned that the proposal for internal models approach with a regulatory floor based on standard rules may result in little incentive for large trading financial institutions to improve internal models, especially if these firms only use internal models for capital measurement and not also for risk management. As the Committee has noted, much remains to be done though, especially developing the standard rules proposals.

We appreciate the opportunity to comment on the consultative document and are available to discuss our comments in greater detail. As for the planned QIS, we support the Committee in developing a robust, useful study. To ensure a quality return, we would appreciate an appropriate lead time plus sufficient time to complete the study.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'S. Haratunian', with a long horizontal line extending to the right.

Stephen H. Haratunian  
Managing Director/  
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**Question 1.**

***Which Boundary Option do you believe would best address the weaknesses identified with the current boundary, whilst meeting the Committee's objectives?***

Either the Trading evidence or Valuation-based boundary option would address some of the current weaknesses and fulfill some of the Committee's objectives. However, we have concerns with each methodology. Changes common to both options are: disclosure requirements; restricted ability to change designation between trading book and banking book (TB/ BB); and stronger prudent valuation requirements. We have set out below concerns and suggestions with each methodology.

***Trading evidence boundary:***

- We do not believe that the barrier should be impermeable: as exogenous factors change (i.e., the "evidence") classification should change. We recommend that firms adopt strong governance to monitor, document, and control any movements between trading and banking books.
- Available-for-sale (AfS) securities should be separated from the interest rate risk in the banking book (IRRBB) and could be captured directly under Pillar 1.
- It is important that the definition of IRRBB includes not only the banking book assets and liabilities, but also the hedges, which are usually derivatives and which are actively managed. These positions should stay exclusively in Pillar 2. Furthermore, these positions are managed differently than trading assets with a longer-term horizon.
- We do not believe internal audit should be first line of control to ensure positions meet the criteria. Instead firms should rely on established control structures with the first line of control being front office supervision, the second line of control being risk management, and the third being internal audit.

*Valuation-based boundary:*

- We would need clearer guidance on GAAP in order to form an assessment. Our assumption is that an entity's primary GAAP will be the driver for regulatory classification of fair value, in which case comparability across the industry is diminished. If the entity's primary GAAP is not the main driver, implementation of fair value standard will become complex and will not serve the Committee's goal of simplicity and transparency.
- Under the valuation boundary option a firm's risk management practice would no longer be the driver for trading book treatment, its accounting rules would. In practice this would create non-intuitive results.

The choice of the boundary will have several implications for the rest of the framework (e.g., treatment of liquidity). Also of note, many arbitrage opportunities have already been addressed by Basel 2.5, which has significantly raised TB capital requirements. Therefore, many of the Committee's objectives have already been met without a significant change in TB definition required.

We fully agree that IRRBB should not be mixed into Pillar 1, for the following reasons:

- A large part of banks' books are driven by non-maturing products (NMP) and non-interest bearing assets and liabilities (NIBAL) and the behavior of these positions are bank specific. It is not possible to come up with a standard approach of how these positions should be treated from an interest rate risk point of view.
- It would be erroneous to incentivise treasury to manage long-term risk as you would traders to manage short-term risk. This is consistent with the point in the *Trading evidence boundary* section (third bullet point) made regarding the distinction between the risks in a TB as opposed to a BB based on how each portfolio is managed.
- In addition, we would like to point out that interest rate risk related to capital instruments (e.g., Cocos or BCNs) need to be part of the IRRBB and not trigger any capital requirements under Pillar 1.

**Question 2.**

***What are commenters' views on the likely operational constraints with the Committee's proposed approach to capturing market liquidity risk including the endogenous component and how might these be best overcome?***

There is currently no consistent approach across the industry for capturing and defining the effect of market liquidity. For many banks, it will be a completely new concept to implement, measure, and price with inevitable process implications for the treasury and finance functions as well as risk management. Therefore, we appreciate the Committee's desire to more completely address liquidity risk and the recognition of the limitation of the current TB framework to capture the effects of market illiquidity across

a range of asset classes. While we understand that applying any single approach across all industry participants presents challenges, we have outlined several operational challenges and suggestions relative to the Committee's proposal:

- The use of variable liquidity horizons is artificial. We propose a more flexible Committee view where one could redraft a combination of liquidity horizon(s) and other measures. An example would be to compute liquidity using an approach based upon transaction costs for the impact of exiting the entire position immediately, rather than estimate time to exit. This would also have the advantage that risk from endogenous liquidity costs could be computed directly.
- In the event that liquidity horizons are adopted, we believe a smaller number of horizons (i.e., 2 or 3) would be operationally preferable.
- The use of Committee-determined benchmark volatilities may not be sufficiently timely to reflect current market conditions given some liquidity crises can emerge very quickly and the use of historic volatilities may not be indicative of where future liquidity crises may occur. We recommend that determining volatilities be done by the industry or individual banks which would be subjected to validation/ approval by regulators.
- Extraction of liquidity premia from historic data will likely be very difficult. For example, during the recent crisis, it was difficult to determine how much of structured products' price decline was due to liquidity rather than to change in credit worthiness. We suggest that a solution be derived by joint industry and regulator dialogue.
- Accounting for most industry participants already incorporates liquidity in the determination of fair value, albeit not necessarily in a stressed environment. Therefore, double-counting of the liquidity risk should be avoided by providing credit for any liquidity adjustments already incorporated in fair value.
- The process of starting with a product and then identifying risk factors associated with those products is less than ideal as some products will have a mix of risk factors. We recommend a combination of product and/or risk factor because of basis risk. This can be accomplished by having a grid which can be worked into the time series.
- In general, while the add-on approach may be more transparent, and considered more comparable across industry participants, we would suggest to model liquidity premia, rather than following a punitive add-on approach which is simply summed.

In summary, capturing all the subtleties, all of which can be very material and similarly important individually, is extraordinarily difficult. Asking banks to hold more capital for positions that are considered more illiquid than others makes them more illiquid by construction.

**Question 3.**

***What are commenters' views on the proposed regime to strengthen the relationship between the standardised and internal models-based approaches?***

CS supports making the standardised approach more risk sensitive; thereby, aligning more with the internal model-based approach. We understand the rationale behind the Committee's request for a mandatory calculation of standardised capital requirements for all banks would be beneficial as a uniform benchmark. However, it is very important that banks which apply an internal-model based approach are not overburdened with too many parallel regulatory capital processes. For a parallel environment, the cost, resources, and human capital for building the infrastructure and maintaining data are high. In addition, this environment would have high reporting frequencies (e.g., daily) for a metric which is not relevant in day-to-day risk management.

CS does not support a constraining regulatory floor as it calls into question the business case for large financial institutions investing in the expertise and operational infrastructure required for internal modelling. Factoring in the model management overhead associated with the proposed desk-level internal modelling permissions, it may no longer be a given that large trading financial institutions should or would be able to invest in internal models. The floor would have a dysfunctional incentive for the use and further development of internal models resulting in weakening risk management.

Furthermore, the proposal is not overly clear on whether the book categorisation would be at the level of the portfolio or trading instrument level. Instrument level would place an enormous operational burden on firms and may in certain cases break trading-desk portfolios into BB and TB instruments. Therefore, we suggest the categorisation be done at the portfolio level.

By more closely aligning the treatment of hedging and diversification between the standard rules and internal models this will reduce the diversification (and perhaps hedging) benefits for banks with internal model permissions, while increasing benefits for standard rules banks. The challenge here will be improving the standard rules. This is an area that will benefit from the QIS.

**Question 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?***

CS supports the general desk-level approach including elimination of double counting between SVaR and VaR and the assessment of model performance against qualitative and quantitative criteria at 1) the overall trading book level (step 1), and 2) including backtesting and profit and loss (P&L) attribution, at the trading-desk level (step 2). The desk-based approach for inclusion in models could lead to severe

volatility in capital requirements if there is significant diversification between desks/portfolios removed from internal models and desks remaining in internal models.

For example, consider a position A with standalone risk of 100 which is hedged by position B with standalone risk of 100, such that the combined position A + B has risk of 20. If A and B are booked on separate desks and internal model approval is revoked for A, but not revoked for B, then risk would jump from 20 to 200 (assuming the standardised charge for A is also 100). This is because B, which actually serves as a hedge for A, would now be counted as an outright exposure within the internal model.

By contrast, if model approval were revoked for both A and B, then the capital impact would be much smaller (e.g., risk could jump from 20 to 40, assuming that the standardised approach is twice as large as the internal models approach). It would not jump from 20 to 200.

Therefore, since capital requirements would be subject in large part to arbitrary distinctions (e.g., whether to withdraw model approval for A or to withdraw model approval for both A and B), then the ability for banks to plan for capital requirements would be severely limited and the capital requirements themselves would be highly volatile and unstable. This is because capital would be driven by these arbitrary distinctions, around which there would be large uncertainty.

For the more granular assessment of models at a trading-desk level, CS agrees that it is appropriate to measure the performance of internal models using, among other metrics, P&L attribution and backtesting. However, it should be noted that these are two separate metrics which measure fundamentally different characteristics of the models. Therefore, a separate set of risk factors would be required for P&L attribution vs. backtesting.

P&L attribution is a backward-looking metric (i.e., it seeks to replicate exactly what happened on a particular trading day or days in the past). Therefore, P&L attribution can be viewed as a completeness test, to reconcile the list of risk factors used in the VaR model with those included in the pricing model. By contrast, backtesting is a forward-looking metric (since VaR seeks to use what happened on a particular trading day to predict the future P&L distribution; therefore, backtesting is an out-of-sample test on the accuracy of the prediction). Therefore, as P&L attribution and backtesting serve different purposes, there should be flexibility in the specification of risk factors used for each (e.g., could specify a risk factor for IR Vega P&L attribution and a different risk factor for IR Vega backtesting).

Note that if the identical set of risk factors were used for both P&L attribution and backtesting, then dysfunctional incentives could be created where inclusion of risk factors could improve the performance of one metric at the expense of the other. For example, a very granular specification of a given risk factor might improve the accuracy of P&L attribution but worsen the accuracy of backtesting. By contrast, a less granular specification could improve the accuracy of backtesting but worsen the accuracy of P&L attribution.



Therefore, as stated above, to avoid competing sets of incentives for P&L attribution and backtesting, we propose that there be flexibility to specify each given risk factor in two different ways, for purposes of P&L attribution vs. backtesting.

As a further example of the issues concerning P&L attribution vs. backtesting referred to in the previous paragraphs, CS questions how the test would work on specific risks where banks that model these risks used regression based models. Would the approach effectively force all banks to use single time series modeling to enhance accuracy of P&L attribution? If so, this could potentially be at the expense of backtesting's accuracy. It could also lead to abnormal behavior when the model is calibrated for a stressed period; depending on how stressed the company was during the relevant period.

Also, the P&L attribution test for inclusion in the internal model is only valid if the revaluation and data techniques used in the model are compared with total desk P&L (i.e., one would not use a separate Product Control based P&L attribution for this test). The test should also include non-modellable risk factors which are included in the non-modellable charge.

Finally, CS would like to further discuss with the Committee Question 4 as part of the QIS preparation.

#### **Question 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?***

CS supports the use of ES with stressed calibration and, in particular, the elimination of simple sum of VaR plus SVaR. On the direct vs. indirect approach, CS suggests use of proxy data for risk factors where there is not a full set of data, and then use the direct method on all risk factors simultaneously. This proposal has the benefit of removing inconsistencies between risk factors used for calibration of the stressed period and risk factors used for calculation of VaR or ES during the stressed period, since both sets of risk factors would be identical under the proposal.

#### **Question 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?***

CS suggests using the first approach (i.e., base risk factors around asset classes, rather than desks) to convert trading desks into risk factor classes for capital calculation, so that banks can achieve diversification benefits across the same risk type as much as possible. For example, banks should reflect offsets in interest rate risk where taken by the rates, equities, commodities, and credit desks.

**Question 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 (e.g., choice of quantile parameter for ES, the P&L attribution and backtesting processes, etc.)?***

CS suggests integrating market and discrete credit risk to avoid double counting, particularly on migration risk. This is particularly important in the event of a 1-year horizon. Robust supervision could be obtained through ensuring vigorous backtesting and validation processes. The backtesting should take into account discrete credit events. Exceptions due to credit events would be acceptable if the portfolio was sufficiently granular, though difficult to bring in to a 1-day horizon.

**Question 8.**

***What are the likely operational constraints with moving from VaR to ES, including any challenges in delivering robust backtesting, & how might these be best overcome?***

While ES is expected to behave in a similar way to SVaR, the operational implications of this change will be extensive in respect of the computational, data, and validation challenges. Some of the challenges on backtesting and possible solutions are listed below.

- Backtesting is typically on 1-day's P&L, so the ES measure would need to be scaled down to a 1-day measure. This may be challenging with multiple liquidity horizons. Banks may need to employ an expected positive exposure style of backtesting.
- The P&L from illiquid risk factors (e.g., monthly price testing adjustments) would need to be prorated to a daily measure for this test.
- Multipliers should reflect the size of the exception. This could be handled for the ES measure through various statistical tests (e.g., comparing the average loss over the straight 99<sup>th</sup> percentile with the ES measure and providing confidence levels for this distribution, or computing the weighted average loss in the tail of the P&L distribution and comparing to the shortfall).

On hedge roll-over assumptions, the proposed approach is reasonable provided that banks have the opportunity to reduce the shock size if the time to maturity of a risk factor is less than the liquidity horizon.

We believe that a lower percentile than 99% would be a more appropriate threshold from which to calculate ES for increased risk sensitivity.

- ES with a lower confidence level is equivalent to VaR under certain general assumptions about distribution and tail shape, and will deliver a similar capital standard. Statistical tests can be used to equate a VaR percentile to an ES percentile. This equivalence can be backtested.

- ES is defined as the average of VaRs beyond a given percentile in the “tail” of the distribution. Any approach (parametric, Monte Carlo, historical simulation, empirical distribution, numerical integration) will benefit from choosing a lower percentile threshold (that is, averaging over a larger portion of the tail), as it will incorporate more observations from which to form the average, thereby giving a better approximation. A lower threshold would give a larger number of excess P&L observations to average over, increasing the statistical significance and robustness of any calculations. Also, for those using historical simulation, estimations beyond the 99<sup>th</sup> percentile would be unacceptably volatile when new trades are added and maturing trades roll-off.

**Question 9.**

***Which of the two approaches better meets the Committee’s objectives for a revised standardised approach?***

CS believes that the ideas underlying the revised standardised approaches constitute a step in the right direction as they consider key elements of modern market risk measurement, in particular long-/ short offsetting and risk driver dependencies. However, both approaches would require a substantial investment both at inception (e.g., feeding all relevant information into the regulatory calculation process) and for regular production (market data, mapping maintenance, etc.). At this stage, CS is not in a position to decide which of the two proposed new standardised approaches should be preferred. Such a decision should be based on a thorough QIS following a detailed model description and an initial parameterisation proposal.

**Question 10.**

***Do commenters propose any amendments to these approaches?***

As indicated above, we believe substantial contemplation is required to move the standardised approach to a more contemporary, risk sensitive market risk measurement. As specified in our answers, ES would benefit from deliberations; thus, we fully support such aspects to be addressed following the QIS.