

# HSBC



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Trading Book Group  
Basel Committee on Banking Supervision  
Bank for International Settlements  
Centralbahnplatz 2, CH-4002 Basel, Switzerland

Dear Sirs,

**Subject: Second Consultative Document Fundamental Review of the Trading Book**

HSBC welcomes the opportunity to respond to the Basel Committee on Banking Supervision (BCBS) Second Consultative Document Fundamental Review of the Trading Book (FRTB) dated October 2013.

HSBC is one of the world's largest banking and financial services organisations with assets of USD2,723 billion at 30 September 2013. Headquartered in London, HSBC serves customers worldwide from around 6,600 offices in 80 countries and territories in six geographical regions: Europe, Hong Kong, Rest of Asia-Pacific, Middle East and North Africa, North America and Latin America.

The industry has submitted two papers via ISDA/GFMA/IIF in respect of the FRTB consultation which we have contributed to and fully support. We support the direction of the FRTB to the extent that it harmonises the trading book across jurisdictions. However, we do not agree with some aspects of the proposed framework such as: the removal of trading intent as the key driver in defining the boundary between trading book and banking book; and the calibration and level of granularity of liquidity horizons. These are some of the issues which HSBC would like to draw the attention of the Committee in the annex to this letter.

There are a number of items from the consultation where we would be grateful for further clarification to limit inconsistent interpretation. Also, it would improve transparency and understanding if the Committee would publish the analysis which led to aspects of the proposals, in particular the derivation of the liquidity horizons.

I would be happy to answer any questions on the points enclosed.

Yours sincerely

Manoj Bhaskar

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# Annex

This Annex draws attention to the following topics of the Second Consultative Document FRTB dated October 2013:

- 1. Trading and Banking Book Boundary**  
Issues with the proposed boundary
- 2. Trading Desks**
  - 2.1 Desk level tests
  - 2.2 Public disclosure
  - 2.3 Separation of trading desks
  - 2.4 Clarification points
- 3. Entity Level Aggregation**
  - 3.1 Clarification point
- 4. Liquidity Horizons**
  - 4.1 Calibration of Liquidity Horizons
  - 4.2 Stressed Liquidity Horizons
  - 4.3 Use of Liquidity Horizons across Risk Factors
  - 4.4 Clarification points
- 5. Choice of Market Risk Metric and Calibration to Stress Conditions**
  - 5.1 Expected Shortfall
    - 5.1.1 Clarification points
    - 5.1.2 References
  - 5.2 Incremental Default Risk Charge (IDRC)
    - 5.2.1 Clarification points
- 6. Standardised Approach**
  - 6.1 Examples of Risk Misrepresentation
  - 6.2 Clarification points

## 1. Trading and Banking Book Boundary

Trading intent ensures that the trading book is in line with the risks a bank is trading. Therefore, we do not agree with the replacement of trading intent as the key determinant for the boundary with ‘instrument’ level designations.

The revised boundary can be interpreted in many different ways, which can result in a number of different outcomes:

- One interpretation means all positions in a specific instrument have to be designated only to either the trading or banking book at an entity level. If this were the case, a significant proportion of the positions hedging a bank’s structural interest rate risk arising from core banking business, would have to be designated as trading book positions. This is because the instruments used are most likely to be traded by a bank’s trading desk e.g. Gilts and Interest Rate Swaps. This interpretation would be inconsistent with the bank’s risk management, and would result in hedges of structural interest rate risk treated as open risk positions.
- We note that the only instrument that is specified, where all positions have to be either in the trading book or the banking book (Paragraph 35 (page 54)) is term trading-related repo-style transaction (“term repo”). This can be interpreted to mean that for all other instruments, it is possible to have positions in the same instrument in both the trading book and the banking book. Under this interpretation Gilts and Interest Rate Swaps traded for hedging structural interest rates risk would be designated to the banking book, while Gilts and Interest Rate Swaps traded by a trading desk would be designated to the trading book.
- Other interpretations covered in the industry response<sup>1</sup> leading to other concerns.

This will lead to capital charges which are inconsistent with the risk management of a bank’s activities and will be sensitive to interpretation. Further, the capacity for supervisory discretion in setting presumptive lists and re-designating instruments will lead to greater inconsistencies between jurisdictions in reflecting the risk that is traded.

We understand and support the Committee’s goals of setting objective criteria for determining the boundary, and the concern that currently this is based upon banks’ effectively self-determined intent to trade. We believe these goals can be achieved by setting more prescriptive requirements on evidencing trading intent, such as velocity of turnover.

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<sup>1</sup> ISDA/GFMA/IIF January 2014 response

## **2. Trading Desks**

We do not agree with the proposals for stringent tests of models at desk level for model approval purposes and see limited value in the public disclosure of desk structure, policies and risks.

### **2.1 Desk level tests**

The traded risk of banks is often primarily measured and monitored at the bank level and the model development process itself is based on a holistic view of the bank's portfolio. Therefore the stringent testing of models and the approval process itself should also be performed at bank level, and not at desk level. Internal processes will of course include the testing of models at the desk level in order to ensure that they capture each desk's traded risk.

Expanding further, the combination of the stringent desk level tests and stringent risk factor requirements may adversely impact a desk's ability to venture into new markets/facilitate client hedging requirements. This could occur where a desk's capital charges will change significantly because the incorporation of a new risk factor results in failure of the test/requirements.

### **2.2 Public disclosure**

Every bank should have a well-defined desk structure with documented policies and mandates and this should be fully reported to supervisors and regulators but not disclosed publicly. We believe there would be little or no value for comparison purposes in the proposed public disclosure of desk structure, policies and risks. Such disclosure would lead instead to inappropriate comparisons across desks both internally and across institutions. This inconsistency would be compounded by the complex nature of the standardised method as well as the potential for desks trading the same products to be using differing capital calculation methodologies.

### **2.3 Separation of trading desks**

In order optimally to meet client requirements, P & L sharing joint ventures may be established between desks, whereby the P & L is attributed based on the risks of the transaction as whole. This encourages a desk to service a client's need where it might not be viable on a risk return basis for that desk in isolation. The complete separation of trading desks would adversely impact client servicing capabilities. We believe that this was not the intention of the committee and that these ventures should still be permitted.

### **2.4 Clarification points**

- Positions not held on a trading desk (page 26). FX or commodity positions that are not held on a "trading desk" would be treated as if they were held in notional trading desks within the trading book. Banks would be required to internally construct an "actual" P&L for those instruments and the notional desks would be subject to the same tests of model accuracy that are applied to other desks. Can we assume that positions that arise due to holding capital in currencies other than the group's reporting currency would not be included in this?
- Aggregation of modellable risks (page 28). The stress period used at desk level is the same as for the global portfolio. This will lead to cases where the ratio of stressed to current ES for the reduced risk factors is less than one, will there be any flooring of this ratio?

### **3. Entity Level Aggregation**

It is not clear in the text (paragraph 36, page 54) which criteria regulators would need to apply to permit capital calculation at a global consolidated book level. If there is not a clear rational in place indicating when supervisory authorities can determine that a subsidiary is not to be consolidated then it will lead to an uneven regulation.

In particular, national authorities can permit banking and financial entities in a group to include just the net of short and long risk positions no matter where they are booked (provided they are running a global consolidated book the capital of which is assessed on a global basis). The uncertainty arises because the capital requirements for offsets within the standard method are unclear, as are the relevant “other” circumstances.

#### **3.1 Clarification point**

- Given these concerns stated above, can the Committee expand on this guidance (paragraph 36, page 54) and provide well defined criteria as to when offsetting will not apply?

## 4. Liquidity Horizons

The proposed liquidity horizons are too long and their links to usual measures of risk close out do not appear to be calibrated against appropriate measures for risk close out.

### 4.1 Calibration of Liquidity Horizons

The equity price (large cap) risk factor is the only risk factor with a 10 day horizon (implying that this risk factor is the most liquid), whereas in reality the Interest Rate risk can be flattened considerably quicker, as can FX, since these markets are considerably larger and more liquid. No evidence has been provided as to why the Interest Rate and FX risk categories have a 20 day horizon.

It would be helpful if the Committee could publish the analysis which led to the conclusion that broad risk factor categories for Interest Rate and FX should be grouped at the highest level, whereas equity and credit should be split into subcategories. This approach encourages trading desks with FX risk not to trade in liquid currency pairs as part of their risk management strategy, whereas liquidity would play a part in an equity desk strategy. We encourage the Committee to use a consistent level of granularity for all broad risk factor categories in order to incentivise risk management in appropriate liquidity categories.

### 4.2 Stressed Liquidity Horizons

The liquidity horizons are based on stressed market conditions, therefore their proposed use for prudent valuation requirements is inconsistent with the general aim of prudent valuation, which is to capture concentration at a given point in time according to current market conditions. The use of the stressed liquidity horizons would have a significant impact on even the most liquid assets, such as sovereign bonds, and could potentially disincentivise their purchase given the level of adjustments that would need to be applied. As such we encourage the Committee to not link the liquidity horizons based on stressed market conditions to prudent valuation requirements.

It seems that the intention of the committee is to capture the impact that reduced liquidity (during period of stress) has on the time taken to flatten the risk positions from the definition of liquidity horizon (paragraph 2, page 4). We believe this could be better achieved using an alternative approach whereby liquidity horizons are set based on the size and/or concentration of the exposure to the risk factor.

### 4.3 Use of Liquidity Horizons across Risk Factors

The use of different liquidity horizons across the different risk factors generates incoherent scenarios that introduce an arbitrary behaviour. In case of full revaluation pricing, the price of the product is a function of the different risk factors for which liquidity horizons will be different: breaking the correlations which would result in a meaningless pricing.

### 4.4 Clarification points

- Clarification would be helpful on what is meant by the statement that ‘*the baseline approach for the purposes of the QIS should be long horizon shocks.*’ (first paragraph of page 15).
- Will the same liquidity buckets be used for the CVA VaR calculation?

## 5. Choice of Market Risk Metric and Calibration to Stress Conditions

### 5.1 Expected Shortfall

When compared to the VaR at the 99% confidence level the 97.5% confidence level for ES is more conservative if the P&L distribution is fat tailed.

Expected Shortfall has many appealing characteristics. Notably it is a coherent risk measure, i.e. satisfies all four conditions that a risk measure should have (Arztner et al. (1999)), which are: monotonicity, translation invariance, homogeneity and sub-additivity. VaR satisfies the first three conditions but it does not always satisfy the fourth.

However we have concerns with respect to the use of expected shortfall in its proposed form as a metric for capital. Academic literature has highlighted that the measure can lack robustness with respect to small changes in the data set (Cont et al. (2010)). This will result in volatile capital requirements making it more difficult to manage the risk on the trading book.

ES gives equal weight to all quantiles greater than the 95th quantile (in this example) and zero weight to all quantiles below the 95th quantile, i.e. ES is a spectral risk measure. It depends excessively on the extreme tail of the return distribution and in case of high variability portfolio returns or data containing outliers the lack of robustness becomes more severe

A disadvantage has been highlighted in the research literature. See Scaillet (2004) for a kernel approach that provides smooth estimates of ES and Jadhav et al. (2013) for a modified robust ES. Similarly different weights could be assigned across the tail depending on the magnitude of the extreme events/observations in order to improve the robustness of the estimation.

#### 5.1.1 Clarification points

- Historical data is required to go back at least to 2005 for the purpose of calibration of the ES model to stressed conditions (section 1.4 (ii), page 18). Apart from data collection issues, some of the risk factors were created in the recent past, so lack a comprehensive history that would go back to 2005. Examples are CNH and CNY time series, for spot, forwards and FX implied volatilities. Can the Committee provide some guidance regarding the ES treatment of such dominant risk factors where a proper data history, and where a proxy is not permitted?
- The set of reduced risk factors must explain at least 75% of the (variation of the) full ES model (paragraph 1, page 19): We would appreciate clarity on what the word 'explain' means in this context. 75% of variation at what level (e.g. overall or per asset class)? Is it correct to interpret it to mean that the ES of the residual portfolio must be less than 25% of the full factor ES figure? If this is the case is the residual portfolio is obtained by:
  - a. aggregating to the full factor portfolio a fictitious portfolio made up of positions only in the reduced set of risk factors, or
  - b. calculating a replicating portfolio consisting only of positions in the reduced set of risk factors?

#### 5.1.2 References

1. Nolan, John P. (2009). *"Stable Distributions: Models for Heavy Tailed Data"* . <http://academic2.american.edu/~jpnolan/stable/chap1.pdf>.
2. Voit, Johannes (2003). *The Statistical Mechanics of Financial Markets (Texts and Monographs in Physics)*. Springer-Verlag.

3. Cont, R., Deguets, R. and Scandolo, G. (2010). *Robustness and sensitivity analysis of risk measurement procedures*. Quantitative Finance, Vol.10, No. 6, June-July 2010, 593 – 606.
4. Scaillet, O (2004). *Nonparametric estimation and sensitivity analysis of Expected Shortfall*. Mathematical Finance, Vol.14, 115-129.
5. Jadhav, D., Ramanathan, T.V. and Naik-Nimbalkar, U.V. (2013). *Modified expected shortfall: a new robust coherent risk measure*. Journal of Risk, Vol.16, No.1, 69-83.

## 5.2 Incremental Default Risk Charge (IDRC)

### 5.2.1 Clarification points

- It is understood that the IDRC aims to capture the incremental loss from defaults in excess of the mark-to-market (MTM) loss from changes in credit spreads and migrations. Can the Committee clarify whether the IDRC should be calculated as:
  - a. the difference between an IDRC like loss figure (capturing, as the current IRC charge, potential losses due to credit spread moves, migrations, and defaults) and the capital charge for MTM loss, or
  - b. the potential loss arising only from default events i.e. the old IDRC charge, pre-Basel 2.5?
- The proposal states that the IDRC model must use a two-factor model (last paragraph, page 11): Does the Committee intend to specify which model to use? Also, will there be a requirement to prove that the two-factor model is risk sensitive enough?
- Since default correlations must be based on listed equity prices (paragraph 186(b), page 93), what is the treatment prescribed for sovereigns, for which (listed) equities do not exist? More generally, what is the degree of proxies that will be allowable due to the lack of a suitable listed equity population? Will liquidity criteria apply to determine whether a listed equity is fit for use in correlation calculation? Will the correlations be range bound so as to avoid levels that are too favourable and tend to increase diversification? How often will correlations be updated?
- Is the EUR a national currency for the purpose of sovereign risk since Eurozone member countries do not control the supply of EUR required to repay their debt denominated in this currency?
- When incorporating equity positions into the model, does an event of default for a bond issuer translate necessarily into a drop to zero in the price of the stock of the issuing company?
- Equities into IDRC: what is the scope? Just cash equity products? Any instructions/assumptions regarding the EAD calculation? Will there be a requirement for the equity correlation products?



## 6. Standardised Approach

Using cashflows as the basis of the new standardised approach would lead to a capital estimation that is not driven by the actual risk. Moreover such a development requires huge implementation effort given that such information is neither used nor readily available in our risk systems.

The main concern is the requirement of new processes to be implemented, for example:

- Decomposition of individual instruments into ‘notional positions’ i.e. need trade level information. In particular, single cash flow of each instrument will have to be checked to determine the longest fixed payment.
- Spot-volatility grids for each individual underlying in each asset class on which options are traded. Proxy spot-volatility grids could be mechanically constructed based on local risk sensitivities for option positions under a certain materiality threshold

For foreign exchange risk the proposed method has only a single risk weight specified which does not distinguish between different types of currencies. As a result the approach will overestimate the capital requirements for pegged currencies where typically the volatility is small. These effects could be factored in by using a more granular set of risk weights.

### 6.1 Examples of Risk Misrepresentation

#### a) IR Bermudan options

Long dated Bermudan options may be hedged using European swaptions, whose maturity could be as low as 1 year. Under the proposed framework this would result in an extreme mismatch in terms of contractual dates and result in a large standard rules calculation.

#### b) FX Target Redemption Forwards (TARFs)

TARFs can have variable notionals dependent on the previous payments to the client. In addition the contractual maturities are high; however the trades may knock out prior to the contractual maturity and so may be hedged at different tenors. This causes both a maturity mismatch and notional mismatch with the hedges.

#### c) Digitals

Digitals are frequently hedged using spreads of vanillas. The 'notional' of the digital is the payout itself, whereas the notional of the hedges are extremely large in comparison. In this instance a flat risk position would generate a significant capital requirement under the standardised method.

#### d) Bonds with Embedded Options

The essential problem with the cash flow method is that when a security has an embedded option, the exact timing of the principal payment is uncertain. A yield curve option model with a key rate duration analysis readily handles this issue but exactly how to handle this issue from a cash flow perspective is problematic.

Why use a yield curve option approach to estimate the cash flows when the yield curve method can be used as it is? It is an additional step that leads to less accuracy.

#### e) Grouping of trades with exact dates

Structurers of derivative products tailor solutions for clients' needs. One of the most basic requirements surrounds matching the dates of cash flows from any hedge with the clients own exposures. Once the transaction hits a trader's portfolio, the position will be hedged using liquid market instruments including

the futures contracts, and interbank transactions. The book will be hedged to neutralise the risks on a tenor basis but not on a date by date basis.

Allowing only exact offset for transactions hedged at an exact date will severely penalise market makers, whose run date mismatches that bear little economic risk.

## **6.2 Clarification points**

- Inflation products (paragraph 60,77,78, pages 58,60)  
For markets where inflation is treated as a pseudo-currency, such as Mexico, can we assume that as long as we treat an inflation swap in the same way we would treat any other interest rate swap but in a synthetic currency this would be acceptable?
- Regarding Interest Rates Options, namely the aggregation of results for them: can we aggregate trades of all maturities for one single Interest Rate Index Curve, or is aggregation only allowed for a single maturity?