Proposed Principles for Modeling Incremental Default Risk in the Trading Book
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I. Objectives

- There is not broad agreement in the banking industry on how to model incremental default risk in the trading book. Therefore, it is premature to agree on a modeling approach to accomplish this. A modeling approach should only be incorporated into Basel capital rules when there is an industry consensus - for example, VaR.

- Banks should develop models for incremental default risk in the trading book on an accelerated basis. These models should be based on a clearly agreed scope and modeling principles. A clear set of principles ensures a large degree of consistency among the default risk models. It provides regulators with criteria to judge the models that individual banks create.

- Models of incremental default risk should be based on economic principles and the mathematics of risk management. Models on this foundation will be useful to the industry and will provide a fair amount of capital in relation to the risk. Therefore, models should include the impact of liquidity, concentrations, diversification, hedging, and optionality.

II. Links to other Basel capital charges

If a bank has an approved VaR model for specific risk, it will not be subject to a specific risk surcharge. An approved VaR model includes price changes at the 99% confidence interval over a 10-day horizon. These price changes include both systematic and idiosyncratic events. Other criteria for VaR models are noted in Paragraph 307(2) of the July 2005 Basel II capital rules.

If a firm has an approved VaR model for specific risk, the incremental impact of default risk must be explicitly incorporated, either in the firm's VaR model or an incremental add-on. The principles for measuring default risk in the trading book are summarized below.

III. Principles

Incremental default risk models ("models") should be consistent with the following principles:

A. Scope

1. Portfolio view

The model should measure the aggregate default loss from credit-risky positions in the trading portfolio. The confidence interval should be comparable to the internal-ratings based approach for credit risk. This requires a portfolio model, not an aggregation of capital requirements for each individual position.

2. Covered instruments

Default risk models should include all instruments/contracts in the trading book that are subject to default risk.

3. Default risk versus event risk

Incremental default risk models should include default risk only, and not event risk (defined as systematic and idiosyncratic price changes short of default).

4. Calibration to Basel II banking book capital

If a credit-risky position were to have a liquidity horizon of one year, and if the trading portfolio were infinitely large, the model should, in concept, generate a capital charge that approximates a banking book charge using the ASRF model. The calibration of model parameters such as PD, LGD and correlation need not be directly linked to banking book calibration. See the section on parameter calibration below.

5. Risk factors

Where there are multiple default risks in the same instrument or contract, the model should be based on risk factors. The liquidity horizon should be determined separately for each risk factor, based on the time to materially hedge that risk factor. If the security can be sold, the liquidity horizon for each factor is the shorter of the time to materially hedge that risk factor or the time to sell the security.

6. Constant level of risk

If a bank's model of incremental default risk includes the impact of rollover, the calculation should be based on a constant level of risk, not a fixed holding of a particular instrument or position. The risk rebalancing to maintain a constant level of risk is subject to the constraint that it cannot occur faster than the liquidity horizon for each risk factor.

Where the firm has policies that enforce reduced risk (VaR) levels in reaction to trading losses, these risk reductions should be incorporated in the rollover assumptions.

7. Measurement of losses

Losses should be measured on a market basis. If a default event occurs, P&L should be calculated by subtracting the recovery value (at then-current market prices) from the instrument's current market value, not its notional value. P&L should be computed net of valuation adjustments for liquidity or default losses that may be associated with particular positions.

B. Liquidity

1. Liquidity horizon - definition

Models should measure default risk over the time to sell or hedge the credit-risky positions. The time to sell or hedge the default risk is the liquidity horizon.

There are two alternatives for the incorporation of default risk during the initial 10-day horizon:

- The firm can incorporate default risk directly in its VaR model. In this case, the default risk add-on model should only consider the default risk of positions beyond the 10-day horizon.
- The firm can include default risk at all time horizons in the default risk add-on model. In this case, the firm's VaR model calibration does not need to include default risk.

2. Determining the liquidity horizon

The liquidity horizon should be determined by categories of risk positions on a regular basis and validated by the bank's regulator. For risk positions whose exceptional size/risk have a material impact on the default risk computation, the liquidity horizon should reflect the position's attributes. The industry should establish a forum to propose standards for determining the liquidity horizon. As markets develop and liquidity increases, these standards will evolve over time.

C. Hedging

1. Hedges

Full benefit should be allowed for the reduction of default risk resulting from credit hedges. The benefit of hedges should not be reduced by artificial haircuts. For example, CDS protection with a one-year maturity provides full default protection for a 5-year corporate bond (excluding issues related to basis risk).

2. Systematic hedges

The systematic risk component of short positions (whether single-name or index) should be allowed as an offset to the bank's exposure to systematic default losses arising from long positions with respect to other obligors. Short positions in idiosyncratic risk factors should not be allowed to offset long positions in idiosyncratic risk factors related to other obligors.

D. Systematic risk, idiosyncratic risk, concentrations

1. Systematic versus idiosyncratic risk

Models should include default risk due to both systematic and idiosyncratic factors. The particular modeling technique used to represent systematic and idiosyncratic default risk is not prescribed.

2. Correlations/diversification
Models should include the impact of correlations. As noted above, models should include defaults driven by both systematic and idiosyncratic factors. The correlation between idiosyncratic defaults is zero. The correlation between systematic and idiosyncratic defaults is also zero. No particular model of credit correlation is prescribed, except that systematic risk should include appropriate correlations.

E. Optionality
1. Optionality
Models should include any material nonlinear impact of default losses and default gains that are created by structured derivative instruments.

F. Parameters
1. Default probability
Default probability should be determined for each credit-risky position. Default probability can be determined based on credit ratings or market spreads. If spreads are used, an adjustment may be included to translate risk neutral default probability to natural default probability.

2. Default probability as a function of time
Models may need to make assumptions regarding default probability through time. These assumptions should be based on relevant data as much as possible. Given the potential for corporate events, default risk should not be assumed to decline to zero as the time horizon declines to the liquidity horizon.

3. Loss given default
The default risk add-on should measure default losses using reasonable estimates of LGD. These estimates can be constructed using historical data, or may be determined on a risk-neutral basis from market prices.

4. Exposure at default
A few instruments in the trading book (e.g., unfunded loan commitments) will require an estimate of EAD. Those estimates should reflect likely utilization given the liquidity horizon.

G. Administrative issues
1. Double counting with VaR
If a bank can make the case that a portion of the incremental default risk is covered by VaR, that portion of the risk may be excluded from the additional capital.

2. Use test
Idiosyncratic default risk models are subject to the "use test". Regulators should expect firms to use the same conceptual model for internal risk management as for regulatory capital computations. As a practical matter, internal risk management models may produce different results than regulatory capital models due to the calibration of liquidity horizon, default probability, etc. and the details of hedge recognition.

3. Counterparty exposure
There is a capital charge for counterparty exposure on credit derivatives. Therefore, the benefit of credit hedges should not be reduced for the risk of failure of hedges due to counterparty default.

4. Materiality
Models should include the systematic and idiosyncratic risks arising from all positions. The precision of the parameters should reflect materiality of the impact on the model's results. In particular, less precision is appropriate for items with immaterial impact, and more precision is appropriate for items with a more material impact, particularly for concentrated risk positions.

Positions may be excluded from the default risk computation if the bank can demonstrate to its regulator that the aggregate impact of the excluded positions would produce an immaterial impact on the default risk calculation.