EBA Consultation Paper

on the

Draft Guidelines

on the

Incremental Default and Migration Risk Charge (IRC)

(CP 49)

London, 30 November 2011

Contents

I. Responding to this Consultation

The EBA invites comments on all matters in this paper.

Comments are most helpful if they:

- indicate the specific paragraph in the guideline to which the comment relates;
- contain a clear rationale;
- provide evidence to support the views expressed/rationale proposed; and
- describe any alternative regulatory choices EBA should consider.

Please send your comments to the EBA by email to CP49@eba.europa.eu by 15.01.2012, indicating the reference 'EBA CP 49'. Please note that comments submitted after the deadline, or sent to another e-mail address will not be processed.

Publication of responses

All contributions received will be published following the close of the consultation, unless you request otherwise. Please indicate clearly and prominently in your submission any part you do not wish to be publicly disclosed. A standard confidentiality statement in an e-mail message will not be treated as a request for non-disclosure. A confidential response may be requested from us in accordance with the EBA's rules on access to documents. We may consult you if we receive such a request. Any decision we make not to disclose the response is reviewable by the EBA's Board of Appeal and the European Ombudsman.

Data protection

Information on data protection can be found at www.eba.europa.eu under the heading 'Disclaimer'.

II. Executive Summary

The amendments to the Capital Requirements Directive[1] by Directive 2010/76/EU (CRD III)[2] relate to the approach for capturing Incremental Default and Migration risks in the trading book, commonly referred to as the incremental risk capital charge (IRC). According to these amendments, the predecessor of the EBA, the Committee of European Banking Supervisors (CEBS)[3] is tasked with monitoring the range of practices in this area and drawing up guidelines in order to secure a level playing field.

The amendments to the Capital Requirements Directive by Directive 2010/76/EU (CRD III) will enter into force on 31 December 2011.

Providing guidance on the IRC modelling approaches employed by credit institutions using the Internal Model Approach ("IMA") for the calculation of the required capital for specific interest risk in the trading book, is seen as an important means of addressing weaknesses in the regulatory capital framework and in the risk management of financial institutions that contributed to the turmoil in global financial markets. The incremental risk charge is intended to complement additional standards being applied to the value-at-risk modelling framework in the trading book and is expected to contribute to a more robust financial system.

Among other things, the first chapter, "Scope of Application" elaborates on the positions that are subject to IRC modelling and the permanent partial use of IRC models. The second chapter, on "Individual Modelling" provides guidance on the use and sources of individual parameters and ratings in IRC modelling. The third chapter, on "Interdependence" discusses i) the correlation between default and migration events, ii) copula assumptions, iii) systemic risk factors and iv) portfolio concentrations. Chapter four on "Migration matrices" elaborates on the use of transition matrices. Chapter five on the „Constant level of risk assumption over the one-year capital horizon" provides guidance on among other issues the use of liquidity horizons and the rebalancing of positions. Chapter six on "Hedging" goes into more detail on the modelling of diversification effects. The seventh chapter, on "P&L valuation" elaborates on how ratings changes are turned into impact on market prices and on the computation of P&L. Chapter eight on "Liquidity horizons" provides guidance on defining a liquidity horizon as well as on the key factors for determining the relevant liquidity horizon as well as on the monitoring of liquidity horizons. Chapter nine on "Validation" elaborates

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[1] Capital Requirements Directive (CRD) is a technical expression which comprises Directive 2006/48/EC and Directive 2006/49/EC. Please note that, in general, references to "Directive 2006/48/EC" and "Directive 2006/49/EC" or the "CRD" refer to the amended versions of the Directives and references in these Guidelines to a particular Article of the CRD refer to the amended Directives.

[2] The amending Directive (Directive 2010/76/EU) was published on 24 November 2010 and can be found under: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:329:0003:0035:EN:PDF

[3] The European Banking Authority was established by Regulation (EC) No. 1093/2010 of the European Parliament and of the Council of 24 November 2010. The EBA has officially come into being as of 1 January 2011 and has taken over all existing and ongoing tasks and responsibilities from the Committee of European Banking Supervisors (CEBS).

on the validation process for IRC models. Chapter ten on "Use tests" and chapter eleven, "Documentation" describe the minimum requirements for the use of IRC models and their related documentation. Chapter twelve on "IRC approaches based on different parameters" provides guidance on how to deal with IRC models that are "not fully compliant with the IRC approach". Chapter thirteen on the "Frequency of calculation" elaborates on the minimum calculation requirements of the IRC.

The Guidelines on the IRC are expected to contribute to a level playing field among credit institutions and to enhance convergence of supervisory practices among the competent authorities across the EU. It is expected that national competent authorities around the EU will implement the Guidelines by incorporating them within their supervisory procedures within six months after publication of the final guidelines. After that date, the competent authorities must ensure that institutions comply with the Guidelines effectively.

III. Background and Rationale

The Basel Committee for Banking Supervision (BCBS)/IOSCO Agreement reached in July 2005[4], contained several improvements to the capital regime for trading book positions. Among these revisions was a new requirement for banks that model interest rate risk, to measure and hold capital against default risk that is incremental to any default risk captured in the bank's value-at-risk (VaR) model. The incremental default risk charge was incorporated into the trading book capital regime in response to the increasing amount of exposure in banks' trading books to credit risk, often related to illiquid products, whose risk is not reflected in the VaR.

In October 2007, the BCBS released guidelines for computing capital for incremental default risk for public comment. At its meeting in March 2008, the Basel Committee reviewed comments received and decided to expand the scope of the capital charge. The decision was taken in the light of the recent credit market turmoil where a number of major banking institutions had experienced large losses, most of which were sustained in the banks' trading books. Most of those losses were not captured in the 99%/10-day VaR. Since observed losses had not arisen from actual defaults, but rather from credit migrations combined with a widening of credit spreads and the loss of liquidity, applying an incremental risk charge covering default risk only, did not appear to be sufficient.

In January 2009, the BCBS proposed supplementing the current value-at-risk-based trading book framework with, among other measures, an incremental risk capital charge (IRC), which covers default risk as well as migration risk for unsecuritised credit products and a stressed value-at-risk (Stressed VaR) requirement[5].

In the process of refining capital requirements for market risk, the BCBS conducted a quantitative impact study[6]. In summer 2009, the Trading Book Group of the BCBS (TBG) investigated the impact of the provisions of the "Revisions to the Basel II market risk framework" and "Guidelines for computing capital for incremental risk in the trading book" consultation papers published in January 2009, focusing (generally) on big internationally active banks with extensive trading activities.

The amendments to the Capital Requirements Directive by Directive 2010/76/EU (CRD III) relating to the IRC in the trading book are a direct translation of the proposals from the Basel Committee.

The European Banking Authority is requested to monitor the range of practices in this area and to provide guidelines on the compliance of IRC modelling approaches.

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[4] Basel Committee on Banking Supervision, The application of Basel II to trading activities and the treatment of double default effects, July 2005.

[5] Revisions to the Basel II market risk framework - final version (July 2009), Guidelines for computing capital for incremental risk in the trading book - final version (July 2009), Enhancements to the Basel II framework (July 2009).

[6] Analysis of the trading book quantitative impact study (October 2009).

The objectives of the guidelines on the IRC are to:

I. achieve a common understanding among the competent authorities across the EU on IRC modelling in order to enhance convergence of supervisory practices;
II. provide guidance on the compliance of IRC modelling approaches with the CRD;
III. create more transparency for credit institutions when implementing IRC into the calculation of the required capital for market risk in the trading book and into their risk management practices; and to
IV. create a level playing field between credit institutions in this area.

The guidelines presented in this paper do not aim to be a comprehensive set of rules, but rather to complement the new CRD provisions relating to the IRC where additional guidance was deemed necessary or appropriate by the EBA.

IV. Draft EBA Guidelines on the IRC

Contents

In between the text of the draft Guidelines that follows, further explanations on specific aspects of the proposed text are occasionally provided, which either offer examples or provide the rationale behind a provision. Where this is the case, this explanatory text appears in a framed text box.

Title I - Subject matter, Scope and Definitions

1. Subject matter

These guidelines aim at achieving a common understanding among the competent authorities across the EU on IRC modelling in order to contribute to a level playing field in line with Annex V of Directive 2006/49/EC, as amended by Directive 2010/76/EU.

2. Scope and level of application

1. Competent authorities shall require the institutions mentioned in paragraph 2 below to comply with the provisions laid down in these Guidelines on IRC.

2. These guidelines shall apply to institutions using an Internal Model Approach (IMA) for the purpose of calculating the capital requirements for specific interest risk in the trading book.

3. The guidelines apply to institutions at the level (solo and/or consolidated) on which the model is authorised to be used by the relevant competent authority, unless stated otherwise in these Guidelines.

3. Definitions

In these guidelines the term *institutions* shall have the following meaning: credit institutions and investment firms as set out in Directives 2006/48/EC and 2006/49/EC.

Title II - Requirements regarding institutions' IRC modelling

A. Scope of Application

4. Positions subject to calculation of the IRC

1. Calculation of the IRC shall include all long and short positions subject to a charge for specific interest rate risk, with the exception of securitisations, n-th-to-default credit derivatives and other elements referred to at point 5 below.

2. In particular, the following positions shall be included:
    i. sovereign bonds, even in cases where the application of the standardised approach would result in a 0 % risk charge for specific interest rate risk;

ii. structured bonds, credit linked notes or similar debt instruments if they do not embed exposures to securitisations or n-th-to-default credit derivatives;

iii. money market loans;

iv. positions resulting from the application of the look-through approach to the shares of collective undertakings (CIUs), when such positions, if they directly belonged to the trading book, would be included in the calculation of the IRC;

3. Positions in defaulted debt held in the trading book shall in principle be included. However, they may be excluded from the migration element of the capital calculation if, given the specific model framework of the institution, defaulted positions bear no migration risk (for example if default is modelled as an absorbing state). The risk of price changes of defaulted debt, as driven by uncertain recovery marks or an expectation about ultimate recovery shall be capitalised in all cases, ideally using the IRC model.

4. The definition of default in the case of paragraph 3, above, should be consistent with the definition of default in ratings used for modelling purposes.

5. Positions not subject to calculation of IRC

1. Securitisation positions and n-th-to-default credit derivatives shall be excluded from the scope of the IRC model.

2. The following positions are not considered securitisations and shall therefore be included in the calculation of IRC:

   a. covered bonds (e.g. "Pfandbriefe") since such bonds are simply collateralised and not asset-backed;

   b. asset-backed securities where cash flows from the underlying pool are allocated to securities holders on a pro-rata basis and therefore have no tranching (e.g. pass-through MBS). Inclusion of these latter positions shall only be allowed where the IRC model is capable of accurately capturing the risks of these positions.

Explanatory text
See the definition of "securitisation position" in Article 3(1)(f) of Directive 2006/49/EC, which refers to Article 4(36)of Directive 2006/48/EC.

3. Positions subject to the specific interest rate risk charge and different from securitisations or n-th-to-default credit derivatives can be excluded from the calculation of IRC if they are positions of the correlation trading portfolio

(CTP) and if they are included in the internal approach for calculating the additional capital charge for the CTP.

Explanatory text See point 5(l) of Annex V of Directive 2006/49/EC.

6. Positions in equity and equity derivatives

1. The inclusion in the IRC of listed equity positions and derivatives positions based on listed equity may be allowed by the competent authority subject to the following conditions:

i. the related positions in equity and credit instruments are jointly managed by an identified trading unit (e.g. arbitrage between convertible bonds and equity);

ii. procedures for the measurement and management of joint credit and equity risk are in place for the relevant trading unit; and

iii. all equity positions of the relevant trading unit are included, in order to avoid cherry-picking.

2. If a listed equity or a derivative instrument based on listed equity is included in the computation of the IRC measure, the default of any of these instruments is deemed to occur if the related debt defaults.

Explanatory text See Basel Committee on Banking Supervision ”Guidelines for computing capital for incremental risk in the trading book”, July 2009, Part II, point A. 9.

3. Notwithstanding the inclusion in the IRC of positions in listed equity or in derivative instruments based on listed equity, a specific risk capital charge for these positions – capturing event risk in the case of the use of an internal model – must still be calculated.

7. Positions in the institution’s own debt

Explanatory Text These Guidelines do not discuss the rationale for the inclusion of such positions in the trading book.

1. Where IRC is calculated on a stand-alone basis (single entity basis), exposures to legal entities in the same group, where the group is not subject to supervision

on a consolidated basis, or where the group is subject to supervision on a consolidated basis but the relevant entities are not included in the scope of consolidated supervision, should not be treated as own positions. This means that positions in debt issued by subsidiaries, parent or other associate companies that are not consolidated by the group must be considered as defaultable and subject to migration risk.

2. Where IRC is calculated at sub-consolidated or consolidated level, only positions that remain after the consolidation process shall be considered.

3. Long positions in the institution's own debt may arise from trading or market-making activity in its own bonds. These positions have to be included within the scope of the IRC model but only migration risk shall be taken into account.

4. Short positions in the institution's own debt may arise from the inclusion in the trading book of own debt issues (e.g. structured bonds or money market trades) or from buying protection on the institution's own name (e.g. via an index). These positions have to be included within the scope of the IRC model but only migration risk shall be taken into account. The default risk of short positions in own debt shall not be modelled in the IRC approach.

8. Permanent partial use

1. Where use is made of the provisions of the CRD on the permanent partial use, the rationale for this shall be carefully documented and analysed to show it is not intended to deliver a charge that is less conservative than if all positions were within the IRC model.

Explanatory text

Permanent partial use is a situation where certain positions are excluded from the application of the IRC. Based on Directive 2006/49/EC, these positions are excluded from specific risk VaR and are subject to the standardised approach for specific interest rate risk. See Annex V, point 6 of Directive 2006/49

2. Permanent partial use with reference to sovereign bonds is not allowed.

Explanatory text

Permanent partial use can only be granted to a predefined set of positions which cannot easily be modelled or are not material. Therefore, permanent partial use with reference to sovereign bonds cannot be not allowed since – from a modelling point of view - the inclusion of these positions in the IRC framework is not considered to be particularly challenging.

B. Individual Modelling

9. Soundness standard comparable to IRB

Unless otherwise specified in these guidelines, the soundness standard comparable to IRB applicable to IRC is: a capital horizon of 1 year and a confidence interval of 99.9 %.

10. Qualitative criteria

All aspects of the IRC approach applied have to be thoroughly documented. This includes documentation of any analysis undertaken to motivate assumptions, estimation techniques, proxies, or simplifications. Any such decisions have to be justified at the request of the competent authority.

11. Source of ratings

1. Institutions' IRC approaches may rely on either internal or external ratings. Internal ratings used for IRC purposes shall be consistent with how they are derived in the IRB approach.

2. Institutions shall have procedures in place for inferring a rating for non-rated positions. When credit spreads are available, their use for inferring a rating shall be clearly documented. Likewise, the use of a default rating (i.e. a "fall-back" rating for positions where no observable data can be used to infer a rating) shall be documented. Any rating system applied shall, as far as possible, differentiate between relevant groups of positions.

3. An institution shall have in place a documented hierarchy of sources of ratings for determining the rating of an individual position. If an institution uses different sources of ratings (e.g. internal and external ratings or different external rating agency's estimates), it shall consistently map the ratings into a common Masterscale. For different external ratings, the IRB credit quality steps could apply.

12. Source of PDs and LGDs

1. Where an institution has approved F-IRB PDs or A-IRB PDs and LGDs, this data may be used as a source for obtaining PD and LGD estimates for IRC. The estimates used in IRC shall be consistent with the IRB estimates such that the downturn LGD applies in scenarios with downturn conditions (i.e. characterised by a high number of defaults or downgrades). Conversely, upswing LGD estimates may be applied in scenarios with upswing conditions to take account of risks in short positions.

2. Where an institution does not have approved IRB PDs and/or LGDs or where IRB PDs and/or LGDs do not exist for an issuer or a security in the trading book, these shall be computed using a methodology consistent with the IRB methodology, which would then require a separate approval by the competent authority for use in the IRC. PDs implied from market prices (i.e. risk-neutral PDs) shall not be acceptable for the modelling of the rating migration or default.

3. Alternatively, the use of PDs and LGDs provided by external sources (e.g. rating agencies) is also generally considered appropriate.

4. Institutions need to establish a hierarchy ranking their preferred sources for their PDs and LGDs, in order to avoid the cherry-picking of parameters.

C. Interdependence

13. Correlations between default and migration events

1. Institutions' IRC models must include the impact of correlations between default or migration events in a way that is consistent with their purpose, which is to capture credit risk correlations between different issuers. The assumptions on which their estimation is based shall be consistent with the assumptions used in the simulation. The methodology shall be documented and duly justified. The approach should be adequate and conservative enough to capture the interdependence between the risk drivers of credit risk events such as defaults and migrations.

Explanatory text

This relates to the point above that 'the assumptions on which their estimation is based shall be consistent with the assumptions used in the simulation'.

For example, if institutions choose to estimate their correlation parameters from the prices of traded securities, the estimates must be updated frequently.

2. In particular, institutions are required to use a time horizon for correlations between default and migration events of different obligors that is consistent with the chosen liquidity horizon (or capital horizon where an institution assumes a "one-year constant position") of their positions within IRC.

14. Copula assumptions

The assumptions on the interdependence between risk factors are – from a mathematical point of view – described by copula assumptions. Copula assumptions should not be made without validation even where corroborating data is scarce. An institution may select possible copula candidates according to its ability to explain default or migration clusters for historical tail events. The

choice of a particular copula shall be justified and documented. In particular, the impact of different copula assumptions shall be analysed, for example by testing the impact of different distributional assumptions.

15. Systemic risk factors

Explanatory text

Interdependence between issuers is frequently modelled in a similar way to the regulatory IRB framework: the single issuers' "ability-to-pay process" (for example, asset values) is assumed to be driven by a combination of an idiosyncratic (i.e. individual) and one or more systemic (i.e. common) risk factors (typically referring to industrial sectors).

1. No modelling approach is prescribed by these guidelines, provided that an institution meets all the relevant qualitative and validation requirements to ensure that its approach is suitably conservative.

2. If the model assumes different liquidity horizons, the evolution of systemic risk factors should preferably be continued over the capital horizon in the sense that the final value of the systemic risk factors at the end of a liquidity horizon should be the initial value of the same factor at the beginning of the following liquidity horizon (i.e. "no refreshment of systemic factors").

3. The correlation between systemic risk factor(s) and individual "ability-to-pay process" may be difficult to estimate because they are not directly observable. Any estimation technique based directly or indirectly on observable market data (as in the case of listed equity) must be duly justified and documented.

4. When an institution decides to choose a parametric formula assuming a unique systemic risk factor, industry or regional concentration is unlikely to be captured appropriately. In the case of multiple systemic risk factors, the choice of the parametric formula should be analysed and validated, for example by comparing the results of the current model with the outcome of a modified version of the same model that uses the IRB formula and where all systemic risk factors are perfectly correlated.

16. Portfolio concentration

1. Institutions' IRC models must reflect issuer concentrations, which, for example, may arise from a lack of regional or industry diversification or from large exposures to individual or connected issuers. Institutions shall evidence the overall appropriate capture of issuer concentration risks within IRC. To this purpose, institutions must validate and document notably, but not only, that the IRC model result increases with the level of concentration of their portfolio.

2. An institution has to prove specifically that its approach captures portfolio concentrations appropriately.

17. Migration matrices

1. Transition matrices for modelling the rating migration process shall be based on historical migration data using either external sources (e.g. rating agencies) or internal sources. Matrices from external sources shall be preferred in cases where internal historical data is sparse. Institutions shall ensure that the amount of historical data is sufficient to derive robust, accurate and statistically consistent estimates. Institutions shall validate the robustness of transition matrices particularly in relation to higher rating categories, where a few severe downgrades or defaults can affect the migration frequency significantly. In accordance with the requirement for a "standard of soundness comparable to IRB", a minimum historical observation period of 5 years is required.

Explanatory text

The rating migration process is modelled through transition matrices. Transition matrices are commonly based on historical migration data, where matrices from external sources (e.g. rating agencies) or matrices from internal sources can be applied.

2. Separate transition matrices can be applied for specific groups of issuers and specific geographical areas. Depending on (i) the composition of the institutions' portfolio, (ii) the availability of accurate transition matrices and (iii) possible differences in migration characteristics across products, issuers and/or geographical areas, a balanced decision should be made on the set of transition matrices used. Such a decision shall consider (i) the choice of the (internal or external) source in combination with an analysis of the overlap and/or possible mismatch between the institutions portfolio and the assets underlying the transition matrix, (ii) the motivation for any weighting scheme (also for the use of equal weights) and (iii) the size of the historical window. It is expected that institutions shall develop one (or more when relevant data is available) transition matrix that is specific to sovereign obligors.

3. When default is modelled as an absorbing state, transition matrices shall be adjusted to ensure that this absorbing state does not conflict with internal PD estimates. Any such adjustments shall be documented, and the impact of the specified adjustment shall be included as part of the documentation.4. Similarly, transition matrices where "NR" or another column is an absorbing state for withdrawn ratings or non-rated exposures can be adjusted. The conditions for such an adjustment are identical to the ones highlighted in paragraph 3 above.

4. Transition matrices, in general, relate to a one-year horizon. Where shorter horizon matrices are required, which is the case when liquidity horizons shorter than one year are used, the corresponding transition matrices cannot always be

computed directly and approximations are required. Both the approximations and the motivation for specific assumptions applied in this process shall be documented (e.g. when generator matrices are used). These assumptions shall also be back-tested in order to verify that they remain valid over time.

Explanatory text

As part of the validation process a matrix based on a generator could be calculated for a horizon identical to the originating matrix's horizon in order to assess the difference resulting from the process of developing the generator matrix.

18. Constant level of risk assumption over the one-year capital horizon

1. Modelling a constant level of risk over the one-year capital horizon requires that institutions shall rebalance or roll-over positions at the end of each liquidity horizon to new positions such as to ensure the same initial level of risk as at the start of the liquidity horizon.

2. Alternatively to what is described in paragraph 1 above, institutions are allowed to choose to consistently use a one-year constant position assumption, which implies not adopting liquidity horizons, but applying to all IRC positions an instantaneous shock over the one-year capital horizon (referred to as "one-year constant position assumption").

3. From a modelling perspective, the constant level of risk may be reflected as the replacement of positions, if a migration or a default has occurred over the liquidity horizon, with positions that have risk characteristics equivalent to those of the original positions at the start of the liquidity horizon.

4. Over the one-year capital horizon or when replacing original positions with risk-equivalent positions from one liquidity horizon to another, institutions only need to model unexpected loss within the IRC model.

Explanatory text

Computing losses or unexpected losses is very different: as risk computations are made on historical probability and not on risk-neutral probability, a portfolio may have a positive or a negative trend. Generally, a long portfolio would have a significant positive trend. This would also occur for negative basis trades. Under the current IRC implementation by banks, these trend effects are generally not included. Indeed, computing these trends would be difficult for institutions (the necessity of taking into account the funding cost for the IRC perimeter etc.). For the sake of simplicity of the IRC computation and because it will generally be conservative, we consider that the IRC should be based on unexpected losses only.

5. Modelling a constant level of risk over the one-year capital horizon may be achieved, for example, on the basis of the approach outlined hereafter. With respect to calculating losses over liquidity horizons, an institution may choose to assume that instantaneous shocks are applied to ratings (or spreads). This implies that, in this case, the institution does not have to integrate the time effect: positions keep their original residual maturities at the end of each liquidity horizon; in other words, there is no ageing of positions. Furthermore, there is no need to consider potential changes in market conditions when revaluating the portfolio at the time of rebalancing (in particular, credit spreads by rating can be kept constant). As a result, measurement of losses within IRC does not take into account the timing of each migration or default event, and the P&L is computed as of today.

19. Hedging

1. For the purpose of calculating the IRC, institutions may net long and short positions only when they refer to strictly identical financial instruments.

2. Diversification effects associated with long and short positions may only be recognised by explicitly modelling gross long and short positions in the different instruments. In any case, institutions shall demonstrate that diversification or hedging effects are not overestimated, in particular maturity mismatches should be reflected in models.

3. In order to reflect basis risk appropriately, valuation for the purposes of the IRC for related positions (like, for example, bonds and CDSs on the same obligor) must be differentiated. Thus, net long and net short positions that reference similar - but not identical - underlying assets should not result in an IRC measure equal to zero.

4. Institutions shall reflect the impact within the liquidity horizon of maturity mismatches between long and short positions (for example if a CDS matures before the underlying bond and the default happens after the CDS maturity), if the resulting risks are material. Therefore, an institution should be able to compute the P&L taking into account the impact of potential maturity mismatches between long and short positions. An institution shall at a minimum be able to prove that the above mentioned risk is not a material risk or will have to model the risk accordingly.

Explanatory text

By comparing the P&L computed over the liquidity horizon taking into account all diversification effects with the P&L computed over the liquidity horizon not taking into account diversification effects provided by long or short positions whose maturity is shorter than the liquidity horizon

D. P&L valuation (including non-linearity)

20. Impact of rating change on market prices

1. Institutions may choose any of the approaches available to convert simulated rating variations into spread variations, including using either absolute or relative differences between average spreads by rating class. The methodology used shall be consistently applied and documented.2. In all cases, the relevant spread data has to be as differentiated as possible according to the different categories of positions. The approach shall be shown to differentiate sufficiently between positions with different pricing characteristics to the satisfaction of the competent authorities. For example, a CDS and the underlying bond would have to be modelled separately.

2. With regard to point 18 of these Guidelines, an institution may consistently assume an instantaneous rating change, implying that market conditions at the time determine prices after migration, taking into account any idiosyncratic valuation impact that would be expected when a migration event occurs (see point 20.5 below), ignoring all time effects on the price of an instrument whose rating changed.

3. If a simulation, e.g. the asset value process, has not resulted in a changed rating, no change in value shall be assumed given that only unexpected loss is modelled according to point 18.4 above.

4. In case of a rating migration, the variation of market prices has to be recalculated. Full revaluation shall be required unless a bank can prove that its pricing approach sufficiently reflects even the large price changes that are to be expected from a change in rating. This may be done as a pre-calculation in the sense that a vector of prices for each rating state might be an input in an IRC calculation. The impact of a rating migration on market prices may be estimated using either currently observed market data (e.g. spreads); or an average of historical market data observed, appropriately adjusted to take account of the fact that when a migration occurs for a specific position, the impact may be larger than that implied by the difference between average market prices or spreads for the pre and post-migration rating levels.

5. Positions migrating into the default state shall be valued on the basis of the recovery rate or the loss given default rate. The recovery rate shall be applied to the notional value of the position unless the estimates are derived relative to the market value of the position. It has to be shown to the satisfaction of the competent authorities that the estimate is appropriately differentiated for different categories of obligors and instruments. Calculations shall be coherent between instruments. Any other approach must be duly justified and documented, in particular if generic market LGDs are used, and the institution has to have a documented process in place describing on which criteria LGD for

individual positions are to be adjusted. Institutions should be aware that compliance with A-IRB standards requires that LGD estimates reflect the economic cycle. When applying IRB-LGDs to trading portfolios, which contain both long and short positions, the use of downturn estimates would not in all cases be a conservative choice, and therefore, upswing estimates could be incorporated as well. The model should capture divergences arising from differences in credit event definition, seniority in the capital structure or exposure to different entities within a group. This could, for example, be implemented through the use of stochastic recovery rates. Defaulted bonds are in principle included in the IRC portfolio if they are in the trading book (cf. Paragraph 3). Therefore, the model must capture the risk that post-default LGD marks or realisations may diverge from their pre-default estimates. The initial loss given default or recovery rate applied to individual defaulted positions would have to be updated with the same frequency for the IRC as for the P&L calculation and the LGDs must be in line with the numbers used for the P&L calculation.

21. Computation of P&L

The valuation parameters for all rating categories have to be estimated in a methodologically consistent way. Since the IRC is a capital requirement for market risks, the valuation of positions under the IRC has to be based on currently observable market data. Market data used to evaluate the positions to which the shocks generated by the rating migration are applied shall be the latest available market data at the time of computation of the IRC. Given the weekly frequency of IRC computation, market data should be updated at least on a weekly basis.

E. Liquidity horizon

Explanatory text

Paragraph 5(d) of Directive 2006/49/EC as amended by Directive 2010/76/EU requires that liquidity horizons be set based on the time required to sell a position or hedge all material price risks in a stressed market. This is intended to reflect an institution's experience and historical data on the liquidity of markets during periods of stress. Importantly, the liquidity horizon should be long enough so that in a stressed period it is expected a position or set of positions could be sold without materially impacting their sale price.

22. The level at which to define liquidity horizons

1. Ideally, institutions should define liquidity horizons at a product level rather than on an issuer level.

Explanatory text

For an individual position the relevant liquidity horizon will vary according to the type of product (including its complexity), and the issuer.

2. There are clear practical issues, however, with an entirely granular assessment of liquidity horizon at a product level given the significant range of products held in trading portfolios. Given this practical difficulty, it is acceptable for liquidity horizons to be initially defined on an aggregated basis, for example at the issuer level.

3. Institutions should, however, monitor and document the range of products linked to each issuer and ensure that the liquidity horizon defined at an aggregate level is adequate for even the most illiquid product.

23. Key factors for determining the relevant liquidity horizon

1. Institutions shall document the factors used in the determination of the relevant liquidity horizon for a position or set of positions. The methodology to convert those factors into a defined liquidity horizon shall also be documented and applied consistently for all positions.

2. A wide range of factors can indicate the liquidity of a position, based on past experience, market structure, and the quality or complexity of the product. Institutions should identify a range of factors that they believe materially define the liquidity horizon of their portfolios. Some examples of factors are:

iv. Market activity, as reflected in number and volume of trades in an instrument or name, or in the size of historical bid-offer spreads;

v. Market structure, such as the number and distribution of market makers and quotes;

vi. Size of position (relative to average trading volumes/overall market size);

vii. Investment quality (e.g. credit rating);

viii. Geographical location of issuer;

ix. Maturity.

3. At least one of the factors considered in the determination of a liquidity horizon shall be directly linked to the concentrated nature of positions (for example, through the size of position relative to the market size or average trading volumes).

Explanatory text
The liquidity horizon is expected to be greater for positions that are concentrated, reflecting the longer period needed to liquidate such positions.

4. Positions should be systematically assessed against the factors chosen and allocated to liquidity horizons accordingly (with a floor of 3 months). Where limited data is available on a position or set of positions, institutions should be conservative in determining the relevant liquidity horizon.

5. The approach applied to link a factor to a longer or shorter liquidity horizon shall be documented and supported by historical evidence including evidence based on experience of liquidating similar positions during stressed periods. For example, in the case of the use of historical bid-offer spreads institutions may set thresholds which determine which liquidity horizon a position is allocated to – the choice of these thresholds should be justified.

Explanatory text

The requirement for historical evidence ensures that assumptions which appear theoretically logical but are not true in practice are not mistakenly used in the analysis – for example it may not be true in all cases that a lower credit rating implies a longer liquidity horizon if there is an active market in certain types of positions with low credit ratings.

24. Monitoring liquidity horizons - key indicators of the need for review

1. Liquidity horizons should be reviewed on a regular basis to ensure they remain appropriate, particularly in relation to events or any significant indicators that liquidity conditions have changed in a market.

Explanatory text

The liquidity of markets can change rapidly as market participants enter and exit asset classes.

2. Institutions shall consider significant changes in the factors used to determine the liquidity horizon as a minimum set of triggers for a review of the relevant liquidity horizon. Any experience of selling a position that indicates a liquidity horizon is not sufficiently conservative should also immediately be taken into account in determining the liquidity horizon for similar products and the procedures for allocating positions to liquidity factors should then be updated accordingly.

3. Over time it is expected that institutions will monitor and enhance the range of factors used to identify liquidity horizons based on their market experience.

F. General matters

25. Validation

1. An institution shall apply the validation principles in designing, testing and maintaining IRC models. Validation shall include evaluation of conceptual soundness, on-going monitoring that covers process verification and benchmarking, and outcomes analysis.

2. The validation process of IRC models shall include at least the following principles:

i. Liquidity horizons shall reflect actual practice and experience during periods of both systematic and idiosyncratic stresses;

ii. The IRC model for measuring default and migration risk over liquidity horizon shall take into account objective data over the relevant horizon and include a comparison of risk estimates for a rebalanced portfolio with that of a portfolio with fixed positions;

iii. The correlation assumptions in the IRC model, including the structure of stochastic dependencies and correlations/copulas, as well as the number of systematic risk factors, must be supported by analysis of objective data in a conceptually sound framework. If an institution uses a multi-period model to compute incremental risk, it shall evaluate the implied annual correlations to ensure they are reasonable and in line with observed annual correlations. The institution shall validate that its modelling approach of distribution assumptions is appropriate to its portfolio, including the choice of stochastic dependencies and correlations/copulas structure, and the choice and weights of its systematic risk factors. In particular, the default and migration behaviour predicted by the model shall be validated against actual default and migration experience of traded debt portfolios.

iv. The validation of an IRC model should rely on a variety of stress tests and sensitivity and scenario analyses, to assess its qualitative and quantitative reasonableness, particularly with regard to the model's treatment of concentration. Such a test shall cover both historical and hypothetical events;

v. The validation shall also cover the assessment of calibration of PD and LGD risk parameters;

vi. An institution shall strive to develop relevant internal modelling benchmarks to assess the overall accuracy of its IRC models;

vii. The validation shall assess the transparency and adequacy of documentation of the IRC modelling approach.

26. Use Test

1. An institution must document how the IRC process is reported internally, its resulting risk-measurement judgements and the role these judgements play in the (risk) management of the institution.

2. The procedures that, given the judgement of the IRC, lead to potential appropriate corrective action shall be in place and well embedded within risk management.

3. A comparison of the ways internal market risk models outputs are reported, judged, audited and used internally by specific departments within the institution is considered a helpful way to clarify the use test.

27. Documentation

1. An institution shall document its approach to capturing incremental default and migration risks so that its correlation and other modelling assumptions are transparent to the competent authorities.

2. Therefore, the calculation of the risk measures generated by the model and the according data flows must be documented to a level of detail that would allow a third party to recreate these risk measures. Furthermore, the institution must document the process for initial and ongoing validation of the IRC-model to a level of detail that would enable a third party to recreate the analysis. This documentation must also contain a description of the ongoing model maintenance processes as employed in the course of the initial assignment and update of model input parameters.

28. IRC approaches based on different parameters

1. An institution can use an approach to capturing incremental default and migration risks that does not comply with all the provisions of Annex II Paragraph 3 of Directive 2010/76/EU (referred to as a "not fully compliant IRC approach" in the remainder of this section)

i. when this not fully compliant IRC approach is consistent with the institution's internal methodologies for identifying, measuring and managing risks

ii. and when the institution is able to demonstrate that its approach results in a capital requirement that is at least as high as if it was based on an approach in full compliance with all IRC requirements.

2. The institution shall provide all necessary information concerning elements of the institution's IRC approach that are considered, either by the institution or by its supervisor, as not fully compliant.

3. On the basis of the information provided, the competent national supervisor shall decide whether the IRC approach used – or planned to be used – by the institution should be considered as a non-compliant IRC approach or could be considered as a not fully compliant IRC approach without prejudice to point 28.4 below. In particular, if an IRC approach is recognised as a non-compliant IRC approach, this would in principle entail the application of the standardised approach for specific risk to the positions covered by the non-compliant IRC approach.

4. In order to have its approach recognised as a non-fully compliant IRC approach, an institution should demonstrate, to the satisfaction of its supervisor, that the institution's IRC approach results in a capital requirement that is at least as high as if it were based on a fully compliant IRC approach.

5. The decision to recognise an institution's approach as a non-fully compliant approach is made by national supervisors.

29. Frequency of calculation

1. Calculation of the IRC shall be at least weekly. However, institutions can choose to compute the measure more frequently. If, for example, an institution decides on a weekly IRC computation, for the daily calculation of capital requirements based on internal models the following shall apply:

i. The same IRC number shall be used for 5 subsequent business days following the running of the IRC model;

ii. With respect to the calculation of the average IRC numbers on the preceding 12 weeks, institutions shall use the previous 12 IRC weekly numbers to compute that average.

2. The institution shall be able to prove that, on the day of the week chosen for IRC calculation, its portfolio is representative of the portfolio held during the week and that the chosen portfolio does not lead to a systematic underestimation of the IRC numbers when computed weekly.

Title III - Final Provisions and Implementation

30. Date of application

Competent authorities shall implement these Guidelines by incorporating them within their supervisory procedures within six months after publication of the final guidelines. Thereafter, competent authorities should ensure that institutions comply with it effectively.