Chapter 4

Credit risk

4

4.11 Income-producing real estate portfolios

Compliance with UK CRR

4.11.1 G The *FCA* considers that income-producing real estate (IPRE) is a particularly difficult asset class for which to build effective rating systems that are compliant with the requirements of the internal ratings based (IRB) approach.

4.11.2 G As with all asset classes, *firms* should assess whether their IPRE model is *UK CRR* compliant and not whether it is the nearest they can get to compliance given the constraints imposed on their model development (eg, lack of data or resource constraints).

4.11.3 G Where material non-compliance is identified and cannot be remediated in a timely fashion, *firms* should adopt a compliant approach for calculating *own funds requirements*. In most cases, this is likely to be the slotting approach (see article 144(1) of the *UK CRR*).

Drivers of risk

4.11.4 G *Firms* should be able to demonstrate that the model drivers selected offer sufficient discriminatory power and to justify why other potential data sources are not expected to materially improve the discriminatory power and accuracy of estimates.

4.11.5 G The *FCA* expects that an IPRE rating system will only be compliant if a *firm* is able to demonstrate the following in respect of its treatment of cash flows (except where the *firm* can demonstrate that this is not an appropriate risk driver):

(1) the difference in deal ratings when tenant ratings are altered is intuitive;

(2) the transformation of ratings into non-rent payment probability is intuitive. Even where tenants are rated by the *firm* the PD will not usually represent a direct read across to probability of non-payment due to, for example, model philosophy issues. Addressing this is likely to be a key area since many *firms* struggle with defining what divergence is expected between observed default rate and PD in different economic conditions in the mid corporate space;

(3) the selection of parameter values and/or distributions, and their impact on deal ratings, is well supported and intuitive;

(4) the impact on the deal rating is intuitive for such features as type of building, geographical location and building quality; and

(5) where data are missing or unavailable the treatment is conservative.

4

4.11.6 G The *FCA* expects that an IPRE rating system will only be compliant if a *firm* is able to demonstrate the following in respect of its treatment of interest-rate risk (IRR):

(1) IRR is included as a relevant risk driver (unless the portfolio is exclusively hedged);

(2) the way in which IRR is included in the deal rating is intuitive with respect to model philosophy. For example, a 'point in time' rating should consider the current interest rate and likely change over a one-year time horizon, whereas a 'through-the-cycle' model needs to consider the IRR averaged over an economic cycle; and

(3) the model rates deals where IRR is hedged by the *firm* differently from deals where IRR is unhedged and the magnitude of the difference in these ratings is intuitive.

4.11.7 G The *FCA* expects that an IPRE rating system will only be compliant if a *firm* is able to demonstrate the following in respect of its treatment of refinance risk:

(1) refinance risk is included as a relevant risk driver (unless the portfolio contains only amortising loans);

(2) the model rates interest only and amortising deals differently in the final year and that the magnitude of the difference in these ratings is intuitive;

(3) given the time horizon associated with IRB estimates (ie 12 months), the refinance risk could have a zero weight until the deal enters its final year for point-in-time models. In these cases, the risk should be captured in stress testing and Pillar 2; and

(4) the *firm* is able to report by borrowers that have previously had a distressed restructuring unlikeliness to pay indicator (even if they are now performing) by number, EAD and risk weighted exposure amounts.

Calibration

4.11.8 G The *FCA* expects that *firms* will not be compliant with the calibration requirements relating to use of a long-run default rate, unless it can demonstrate that:

(1) the internal data series is the longest relevant and accurate data series, on a *UK CRR* compliant definition of default, that is available;

4

(2) the determination of long-run default rate includes reference to an appropriate source of downturn data (this may require the use of external data);

(3) the relevance of any external data used is analysed, and the relationship between internal default data and the external data used is considered over a multi-year period; and

(4) where uncertainty is introduced due to, for example, the quality of internal data or shortcomings in the relevance of external data, a conservative adjustment to the estimates should be made.

4.11.9 G The *FCA* expects that a *firm* will only be compliant with the calibration requirements relating to model philosophy if it can demonstrate that:

(1) the model philosophy is clearly articulated and justified. Justification should include analysis of the performance of assets, and the corresponding ratings assigned, over a change in economic conditions (ie, as long as period as possible); and

(2) in addition to encapsulating this information in a coherent way in the calibration, the impact of capturing risks such as IRR and refinance risk is clearly documented.

Low default portfolios

4.11.10 G Where the rating system is classed as a low default portfolio in accordance with the *guidance* in this section, a *firm* should be able to demonstrate that the framework applied adequately considers:

(1) economic environment of data used;

(2) changes in portfolio composition over time;

(3) parameter choices; and

(4) model philosophy.

Constructed theoretically

4.11.11 G Under article 144(1) of the *UK CRR*, all models, including those constructed from a theoretical basis without reference to any empirical default data (such as Monte-Carlo cash-flow simulation models), must meet the IRB requirements that are set out in Title II Chapter 3 of Part Three of the *UK CRR* (IRB approach).

4.11.12 G The *FCA* considers that, to meet the requirements referred to in IFPRU 4.11.1 G, it will be necessary for *firms* to demonstrate that a *firm* has a good understanding of PD models that are constructed theoretically and that the parameter estimates reflect a one-year PD. In addition, even if empirical data were not used to determine the PD estimate it should, where available, be used to back-test the estimates.

4.11.13 G The *FCA* expects that, as most models of this type will be able to produce one-year estimates of PD that correspond closely to point-in-time estimates, *firms* should conduct robust back-testing of such estimates by comparing them with realised default rates. *Firms* would need to demonstrate that the results of such back-testing meet pre-defined and stringent standards in order for the *FCA* to be satisfied that the IRB requirements are met.

4.11.14 G Because assumptions in the model build process are likely to materially impact the resulting PDs, the *FCA* would expect these choices to be clearly justified in the model documentation and to have been independently reviewed. To be satisfied that a *firm* is complying with article 176(1)(d) of the *UK CRR*, the *FCA* expects a *firm* to support justification for all assumptions with analysis of the sensitivity of the model outputs to changes in the assumptions.

4.11.15 G Where the *firm* has fewerthan 20 defaults in their internal data set, the *FCA* expects it to be necessary for *firms* to perform a statistical low default portfolio calibration, as set out in the *guidance* in this section.

Validation

4.11.16 G The *FCA* expects that a *firm* will be compliant with the validation requirements only whereit can demonstrate, in respect of discriminatory power, that:

(1) appropriate minimum standards that the rating system is expected to reach are defined, together with reasoning behind the adoption of such standards and that the factors considered when determining the tests are clearly documented;

(2) an objective rank-ordering metric, measured using an appropriate time horizon (eg, using ratings one year prior to default) or cohort approach, such as Gini or Accuracy Ratio of 50% is achieved over time;

(3) where there are sufficient defaults from different time periods the discriminatory power is shown to have reached the appropriate minimum standard over an extended time period (ie, longest period possible, including most recent data); and

(4) any concentrations in ratings from the model are demonstrated to be appropriate.

4.11.17 G The *FCA* expects that a *firm* will be compliant with the validation requirements only whereit can demonstrate in respect of the calibration that:

(1) observed default rate versus PD is considered at grade level and across a range of economic environments (ie, as long as period as possible);

(2) where the PD does not relate to a pure point-in-time estimate, either the PD or the observed default rate is transformed such that comparison between the two is meaningful. This transformation

should be consistent with the model philosophy and calibration technique applied; and

(3) pre-defined tolerances for the degree of divergence, and the associated actions for what should happen when they are not met, are set.

4.11.18 G The *FCA* also expects that a *firm* will be compliant with the validation requirements only whereit can demonstrate that:

(1) appropriate stability metrics should be considered across a range of economic environments (ie, longest period possible including most recent data);

(2) the tolerances for the degree of divergence, and associated actions for what should happen when they are not met, is pre-defined; and

(3) subsections of portfolios by characteristics affecting risk profile, and therefore potentially model performance, are investigated. Such subsections could include:

(a) loan type (amortising/interest only);

(b) degree of hedging;

(c) building type; and

(d) other factors such as non-SPV (special purpose vehicle) lending in a predominately SPV lending book or vice versa (see article 188 of the *UK CRR*).

Other requirements

4.11.19 G The *FCA* expects that a *firm* will be able to comply with certain other *UK CRR* requirements only where it candemonstrate that:

(1) in relation to article 144(1)(e) of the *UK CRR*, where more than one model is used, the rationale, and the associated boundary issues, is clearly articulated and justified and the criteria for assigning an asset to a rating model are objective and clear;

(2) in relation to article 173(1)(c) of the *UK CRR*, the *firm* has a process in place to ensure valuations of the property are appropriate and up to date;

(3) in relation to article 171(2) of the *UK CRR*, the *firm* makes reference to information available from the Investment Property Databank where relevant. Where this data is utilised at a broad level when more granular data is available this is fully justified with appropriate analysis;

(4) in relation to article 173(1)(b) of the *UK CRR*, the rating histories demonstrate that deals are re-rated every time material information becomes available, for example where the deal enters its final year (and refinance risk becomes relevant) or a tenant defaults, is replaced or has their rating changed;

(5) in relation to article 189(3) of the *UK CRR*, management information covering all aspects required by the *UK CRR* is produced and reviewed regularly by *senior management* and the tolerances for the degree of divergence, and associated actions for what should happen when they are not met, are pre-defined; and

(6) in relation to article 177(2) of the *UK CRR*, the impact on PDs and risk-weighted exposure amounts in a *firm*'s credit risk stress test is consistent with model philosophy (although ratings should be affected by events such as tenant defaults even if they are TTC) and impairment projections are justified with reference to past internal data.