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Potential Effects of the Slotting Capital Regime on UK Commercial Property Lending

Radley & Associates is an independent firm dedicated to the development of advanced simulation based analytics for the Commercial Real Estate industry. Our clients include leading banks, fund managers and REITS. We have deep expertise in property, simulation modelling, econometric analysis and risk.

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Potential Effects of the Slotting Capital Regime on Banks and UK Commercial Property Lending

Are banks safer or riskier under the slotting regime?

Executive Summary

In this article we argue that the current slotting approach being implemented by the FSA for determining risk capital for Income Producing Real Estate (IPRE) loans, does not reflect many of the major risks inherent in IPRE lending and that it may have the perverse incentive of discouraging safe lending and encourage risky lending.

Slotting approach

The current slotting approach being implemented by the FSA requires lenders to 'score' or rate each IPRE loan using a range of risk factors and to allocate risk capital on the basis of four risk categories: Strong, Good, Satisfactory and Weak.

We argue the approach suffers on a number of fronts:

1. Many of the suggested criteria are already reflected in the valuation of collateral property and do not affect lending risk
2. Some of the criteria can have perverse effects
3. Loan structures themselves may have significant impact on risk but are not reflected in the criteria
4. The slotting approach estimates *credit* risk whilst the main class of risk affecting CRE lending is *market risk,* in particular, refinance risk.

1. Many of the criteria suggested in the FSA guidance are already reflected in the collateral property valuation.

For example, FSA guidance suggests for a strong loan: ***'Property is located in [a] desirable location that is convenient to services that tenants desire'***. Desirable buildings attract higher valuations and thus larger loans. As such, a higher valuation for a desirable property does not lower risk - unless it can be shown that high value buildings are less prone to falls in value in a market correction. Excepting the recent rise in value of central London property (much of it 'desirable' due to overseas investment interest evidence suggests that prime building values are no less volatile than secondary ones [(1)*]. It is not clear from recent experience that prime or expensive property has been less susceptible to loan losses than loans secured by secondary property.

* (1) See appendix 1

Below are some further examples drawn from the slotting criteria that increase the valuation of the property at the outset of the loan and so do not, of themselves, reduce risk:

- ***"The number of competitive properties coming to market is equal or lower than forecasted demand"***
- ***"The property is entirely pre-leased through the tenor of the loan"***
- ***"Property is favoured due to its design, configuration, and maintenance"***
- ***"Its vacancy rate is low"***
- ***"The property's leases are long-term with creditworthy tenants"***

A property that meets any of these criteria will be more highly valued – and attract a higher level of debt. Collateral value risk partly lies in the *discrepancy* between the valuer's estimate of these advantages and the actual impact of the advantages – not in how much a property meets or fails to meet these criteria.

2. Some of the criteria can have perverse effects

For example the criterion: ***[Property] vacancy rate is low***. All other factors being equal, a property with a zero vacancy rate can only increase its vacancy rate: a property with a higher vacancy rate may reduce vacancy rates in the future, thereby increasing its debt service coverage and thus reduce risk (valuers also discount property values for vacancies – so fully occupied collateral is already more lent against than under-occupied buildings).

The property's debt service coverage ratio (DSCR) is considered strong [i.e.is a positive risk factor]. All other things being equal, a higher amortisation rate (which is intuitively safer), results in a *lower* DSCR. So loans with slower amortisation (or none at all) will score more highly than rapidly amortising loans. This particularly affects refinance risk.

The property is entirely pre-leased through the tenor of the loan. This criterion may reduce risk during the term of the loans, but a lease event soon after term may prevent borrower's finding refinance, significantly increasing refinance risk.

3. Loan structures effect risk but are not reflected in the criteria

Loan repayment and interest rate structures significantly affect risk but neither is reflected in the criteria. For example, no differentiation is made in the criteria between fixed and floating rate lending, yet floating rate loans typically carry increased short and medium term risk relative to fixed rate loans.

Flexible repayment structures such as surplus dependent principal repayment arrangements reduce exposure during strong markets but support borrowers through periods of low cash-flow – they can be shown to significantly reduce expected loss. But since these arrangements are not recognised in the slotting criteria, lenders may not be encouraged to adopt them.

4. **The slotting approach is designed to estimate *credit* risk whilst the main class of risk affecting CRE lending is *market* risk, in particular, refinance risk.**

Perhaps more important than any of these points however, is that this list (or any similar list) of criteria only attempt, at best, to assess *credit* risk – they do not address *market* risk. For the majority of short to medium term IPRE lending, market risk might be viewed primarily as refinance risk or the risk that market changes will prevent the borrower from refinancing their loan elsewhere at term.

Analysis of the IPRE lending market in the UK from 1974-2012 [(2)†] suggests that most of the loss and almost all of the uncertainty or volatility in losses in IPRE loan portfolios, arises from market-wide changes in interest rates, rental growth rates, inflation and capital value indices rather than property specific credit factors. IPRE lending is asset backed lending where lenders are exposed to the market risks of changes in commercial property yields and capital values. Thus, however high the ***'quality of management'*** (a risk factor listed in the slotting criteria), in the case of a 3-year, 85% LTV loan, originated in 2007, the loan would have almost certainly been unable to refinance in 2010 – and thus would have defaulted – almost certainly with loss.

In 2007, the main risk facing CRE lenders was that property values, some 40% higher than the long term trend, might correct downwards, whilst today's lenders face an asymmetrical risk that interest rates are more likely to rise than to fall, causing interest cover breaches at some point in the future. These market starting conditions are of overwhelming importance to IPRE lending but have no effect on the FSA slotting model.

A more broad criticism of the slotting criteria being implemented by the FSA is that they very closely reflect the criteria used (formally or informally) by lenders in the lead up to the 2008 correction. Their proposed use of similar criteria in today's market represents no noticeable improvement over the risk techniques used before the most severe period CRE loan losses in recent history.

The effect of slotting on risk capital and loan markets

To examine the effects of the slotting regime on lending in the UK, we compared the regulatory capital required for a template IPRE loan with different LTV ratios, firstly using the FSA slotting criteria and then with the Economic Capital (or risk capital) indicated for the same loan, calculated using a cash-flow simulation model [(3‡)].

The template loan is a 10 year, fixed rate loan, originated today, at 3% margin over 2.5% swap. The collateral property is of investment quality, yielding 7.5% net with a single AA rated tenant on an upward-only, 15 year lease with a single tenant break in year 5.

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† (2) See Appendix 2 and 'Calibrating IPRE risk models using 1990s Loss Histories

‡ (3) See 'Making the Case for Cash-flow simulation for measuring Commercial Property Lending Risk

Table of risk statistics using cash-flow simulation

LTV	PD (a)	LGD (a)	EL	MPL standalone (c)	MPL adj for portfolio effects (d)
10%	3.8%	0.0%	0.00%	0.0%	0.0%
20%	4.1%	0.0%	0.00%	0.0%	0.0%
30%	4.2%	0.1%	0.00%	3.0%	1.8%
40%	5.2%	0.3%	0.02%	12.5%	7.5%
50%	7.7%	0.9%	0.07%	25.5%	15.3%
60%	10.4%	2.0%	0.20%	38.7%	23.2%
70%	13.5%	3.7%	0.50%	47.1%	28.3%
80%	18.2%	4.8%	0.86%	55.4%	33.2%
90%	57.5%	2.2%	1.27%	60.3%	36.2%
100%	100.0%	2.1%	2.14%	65.2%	39.1%

Note that the Probability of Default (PD(a)) is an annualised equivalent – as though the same PD was applied to the loan in every year to achieve the same cumulative survival rate. In reality, many of the simulated defaults are refinance defaults (defined as the inability of the loan to refinance at lower than 80% LTV or above 125% ICR at term). The same annualisation is applied to the Loss Given Default (LGD(a)) and thus Expected Loss. So the expected loss over 10 years for an 80% LTV loan, for example, is 8.6% or 0.86% a year – even though, in reality, most of the expected loss may occur at term.

The Maximum Probably Loss (MPL) is the loss occurring at the 99.9 percentile confidence interval (equivalent to an AA rated bank). The first column indicates the MPL for a standalone loan. In a large portfolio however, there is some diversification of loss at this confidence interval. By comparing the MPL of the portfolio with the MPL of the same portfolio after the addition of the loan, we can calculate the *marginal* MPL of the loan. In a typical UK portfolio this reduces the portfolio adjusted MPL(d) to about 60% of the standalone MPL (c). Again the MPL is an annualised rate and may be higher in some years than others.

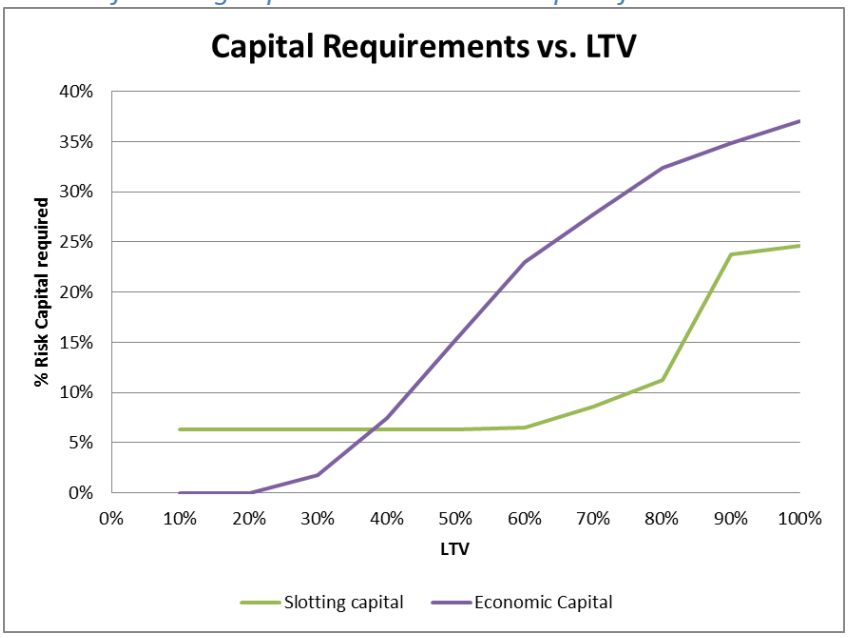
In summary, a rational lender, would allocate risk capital equivalent to the adjusted MPL in the far right column to be 99.9% sure of maintaining solvency after the losses on the loan.

Table of slotting capital requirements:

LTV	Slot	Risk weights	EL - annualised (a)	Regulatory capital slotting
10%	Strong	70%	0.00%	6.3%
20%	Strong	70%	0.00%	6.3%
30%	Strong	70%	0.00%	6.3%
40%	Strong	70%	0.02%	6.3%
50%	Strong	70%	0.07%	6.4%
60%	Strong	70%	0.20%	6.5%
70%	Good	90%	0.50%	8.6%
80%	Satisfactory	115%	0.86%	11.2%
90%	Weak	250%	1.27%	23.8%
100%	Weak	250%	2.14%	24.6%

Using the recommended FSA slotting criteria we assumed the template loan to be a strong credit up to 60% LTV, Good at 70% LTV, Satisfactory at 80% LTV and Weak above 80%. The Expected Loss calculations were taken from the cash-flow simulation (again annualised), and the regulatory capital calculated using a 9% multiplier.

Comparison of Slotting capital and Economic Capital from simulation model



Slotting capital remains almost unchanged for all loans up to 60% LTV, whereas Economic Capital calculated using simulation rises from negligible levels at less than 30% LTV to much higher levels over 50% LTV. The effect of a bank using the slotting approach (all other things being equal) would be to encourage higher LTV loans and to discourage lower LTV loans. This is likely to create regulatory capital arbitrage opportunities.

In current market many banks are reducing their exposure to CRE loans where they can. Banks encourage their low LTV borrowers who can refinance to look elsewhere

whilst being more or less forced to refinance high LTV loans that cannot refinance with other lenders. Over time, we may see banks increasing rather than decreasing their portfolio level LTV ratios.

Insurance companies are meeting some of the demand for larger ticket, higher LTV loans, especially as the economics of their regulations under Solvency II appears to encourage lending over equity exposure to commercial property.

Low LTV loans, penalised by high slotting capital rates relative to the actual risk, are less attractive to lenders. However, low LTV loans that usually score poorly in the proposed slotting regime are typically associated with smaller CRE assets; more often the property shells of active SMEs who use their property assets as collateral for business investment activity. On the other hand, pure investment property SPVs whose properties score more highly are strongly motivated to seek maximum leverage to amplify their returns.

In conclusion, the authors are concerned that the slotting criteria being implemented by the FSA do not encourage a proper understanding of risks, either credit risk or market risk, in IPRE lending. The effect of the resulting misallocation of capital will be to bias lenders away from safer, low LTV loans and towards riskier, higher LTV loans.

There are alternatives to the slotting approach which would encourage safer lending including the use of cash-flow simulation techniques. Cash-flow simulation models provide a more accurate, practical and intuitive approach to risk calculation for complex IPRE loans. More accurate risk measurement and risk capital estimation will prevent regulatory biases in lending behaviour and lead to a more constructive and less risky lending market. This approach is outlined in the accompanying article ‘Making the Case for Cash-flow Simulation Risk Models in IPRE Lending.

Appendices

Appendix 1

Table of Capital Value Volatility of IPD Prime, Secondary and Tertiary Property.

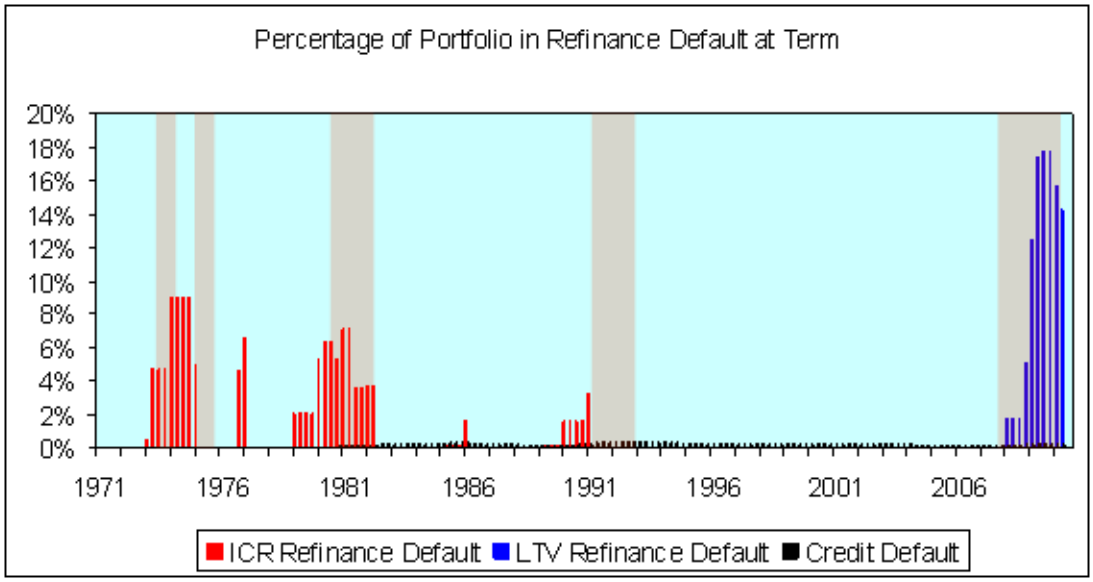
Standard deviation of quarterly capital value changes 1999-2010	*Standard Retail*	*Shopping centres*	*Retail warehouses*	*Central and inner London Office*	*Rest of South East & Eastern Offices*	*Rest of UK Offices*	*All Industrials*
Low Yield (prime)	3.92%	4.17%	5.26%	4.93%	3.88%	4.04%	4.02%
Mid Yield (secondary)	3.82%	4.98%	5.43%	4.81%	3.77%	3.76%	3.77%
High Yield (tertiary)	3.89%	4.90%	5.12%	5.46%	3.81%	4.10%	3.82%

The analysis shows that only for shopping centres are prime properties less volatile in terms of capital value changes. For 6 of the 7 sectors for which there is data, the least volatile segments are either secondary or tertiary property. At best, we can say the data is not sufficient to support the view that prime building collateral values are less volatile and therefore less risky.

Appendix 2

Using a simulation of the CRE lending market in the UK since from1970 to 2010, based on IPD, ONS and DeMontfort University data, Radley and Associates estimated the level of default and loss in IPRE portfolios during the 40 year period. In particular the effect of different on loan losses of recessions was considered. Summary results are shown below. A full version of the article can be obtained from www.promsinvestor.com.

Percentage of Portfolio in Default During Loan and at Term



Average IPRE Default Rates and Default Rate Volatility 1972 - 2010

	Average	Volatility (Standard deviation)
Refinance default (LTV)	0.69%	3.1%
Refinance default (ICR)	0.91%	2.1%
Loan specific default	0.27%	0.07%
Total default rate	1.8%	3.6%
LGD	4.7%	9.6%
Loss rate	0.19%	0.96%

These findings illustrate that most defaults of IPRE loans are refinance defaults or market risk (the inability of borrowers to repay loans at term due to changes in collateral values, interest rates or prevailing rental rates), More importantly, almost *all* of the uncertainty or volatility results from risk that arises from changes in market conditions not the credit quality of the borrower. The FSA however remains almost exclusively focussed on credit quality.