Overcoming the challenges of maintaining models on a closed portfolio
Whistletree

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Agenda

Background

Monitoring

Calibration

Development

Forecasting

IRB Status

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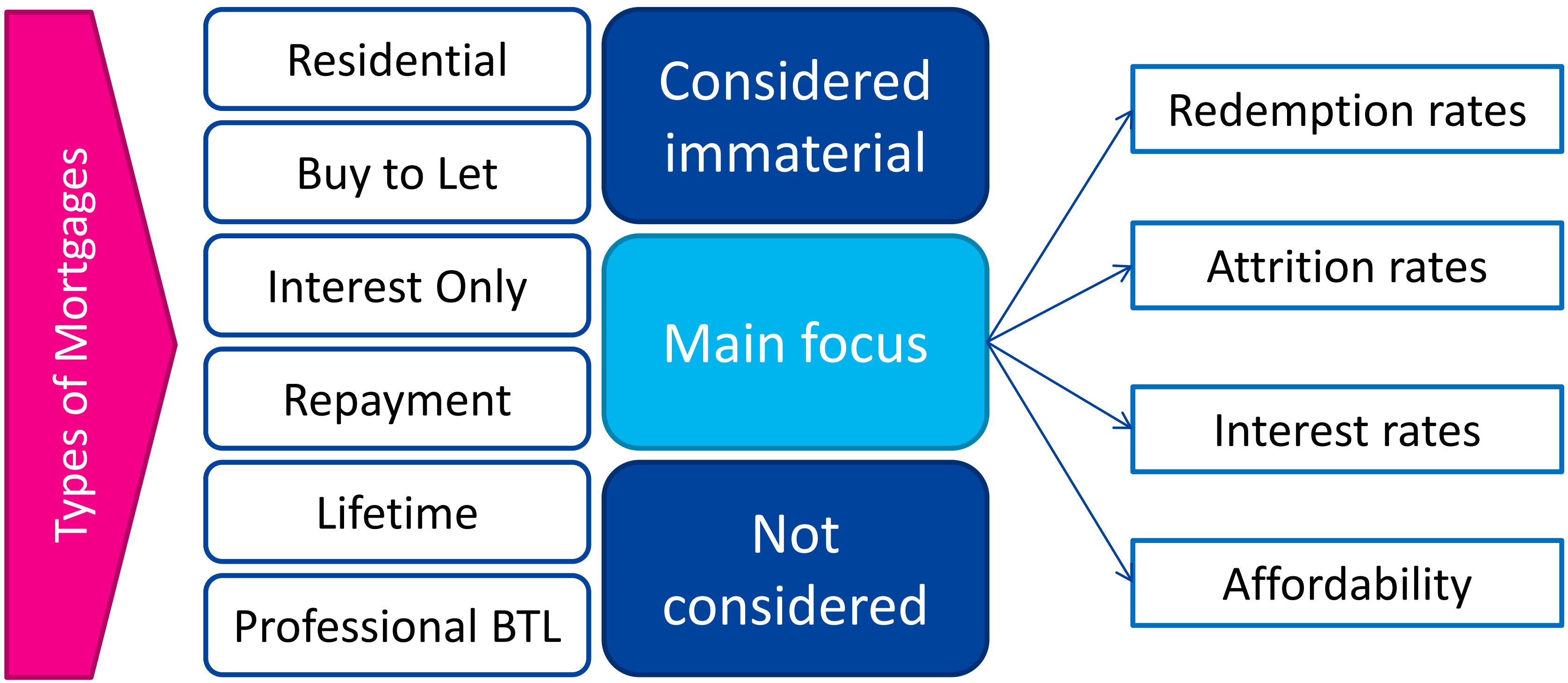
Currently working in the Whistletree book at TSB

Background

A closed book is considered to be a portfolio where assets cannot increase through further lending and that will keep decreasing until the portfolio ultimately disappears



Monitoring

Sample	Stability	Predictability
Small sample sizes due to shrinking book	Assess if model is still representative	Assess if model capability of predicting outcome
Increase observation window	Deterioration not in the same magnitude of open book but still possible	DTV might mask risk and shift predictability
OR	Variables like Repayment type and DTV an issue	Variables becoming overpredictive
Increase outcome window	Difficult to mitigate or solve issue without redevelopment	Self fulfilling prophecies present in some variables

Calibration

Updating parameters of the model is essential in any type of portfolio

Type of models	Regression Roll rates	Similar issues

Models will suffer from movement of accounts from segment to segment

Low volume in some segments will cause calibration to not be robust

Some of the problems, like the shift of risk within a segment might not be so noticeable within a regression model

Development

Model development alone can be a tricky process let alone in a closed portfolio

Sampling

- 80% / 20%
- Out of time

Not necessarily needed due to slow changes in the portfolio

Overfitting

Phenomenon that occurs when the model is really predictive of the specific sample but not representative of the portfolio. As long as the issues mentioned are under control, we ensure the model will be predictive for an increasing period of time

Forced Sale Discount models

HPI can be problematic as it is an approximation of current valuation which assumes a range of properties within a region, however a closed book is an aging book.

Forecasting

Forecasting relies on past economic performance to infer future outcomes

Probably not enough historic information to derive an accurate model. To forecast the book requires information from different parts of economic cycle.

Recession	Stagnation	Economic growth
Common to include HPI in models and as such the same issues as mentioned will occur.	Decrease HPI might not lead to increase in losses.	Important to rely on economic variables that show financial situation

IRB Status

Depending on the size of the portfolio, one might have to move from Standardised to IRB

Limiting history

Be conservative but potential that Capital will be higher than Standardized

No downturn cycle

Best solution is to result to benchmarking (internal or external)

Conclusion

HPI can be tricky to use

Be careful of attrition rates

Use benchmarking to confirm results

Careful monitoring is essential