

Using HMLR Data to Estimate Forced Sale Discount in Residential Mortgages

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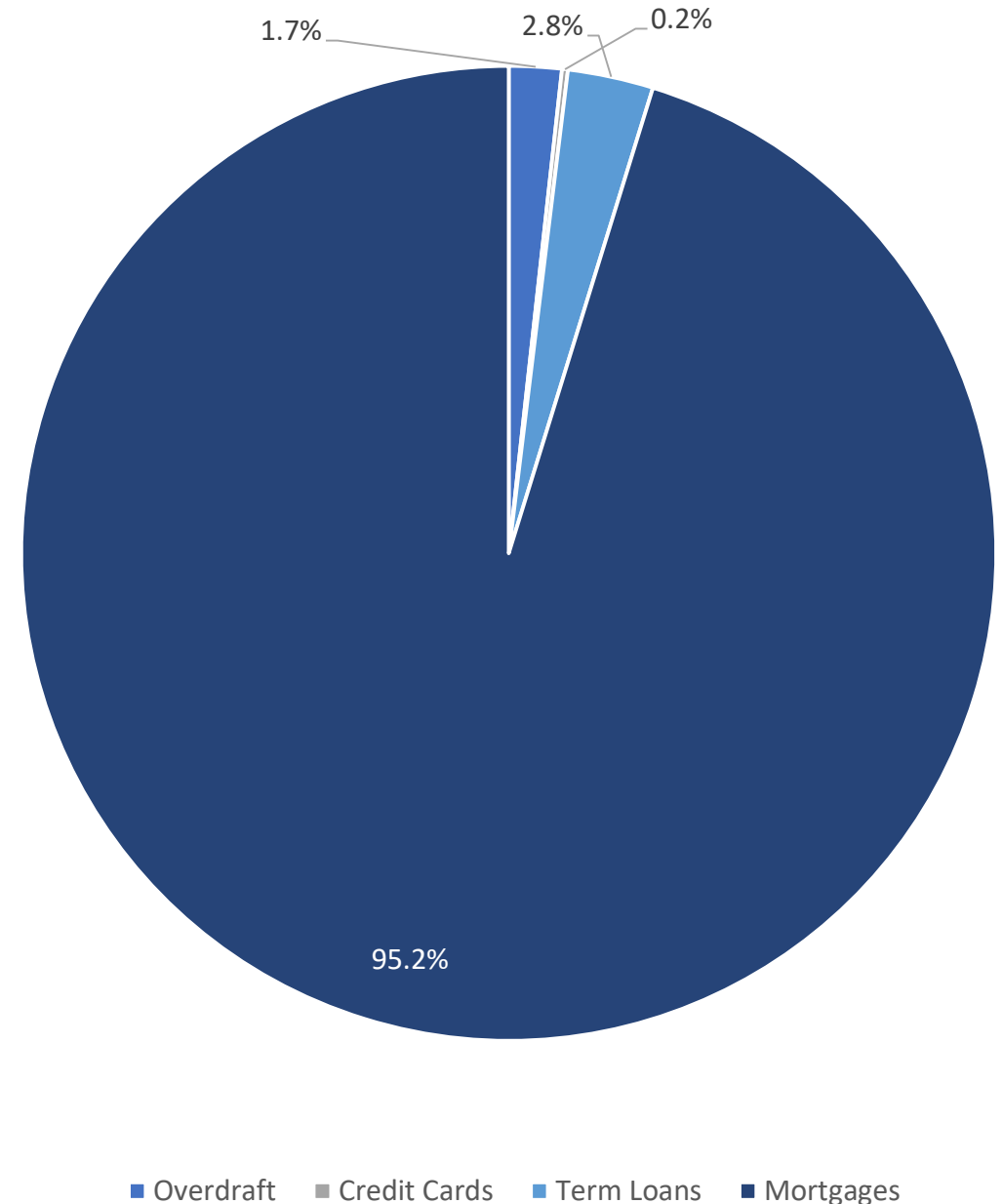
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Problem Statement

- Challenger bank with strong balance sheet and ~25,000 residential mortgages with mean LTV ~60%
- First challenger bank seeking IRB approval
- How to build FSD, given no accounts with ≥ 90 days in arrears and no residential mortgage ever been in possession?



Data Sources for FSD

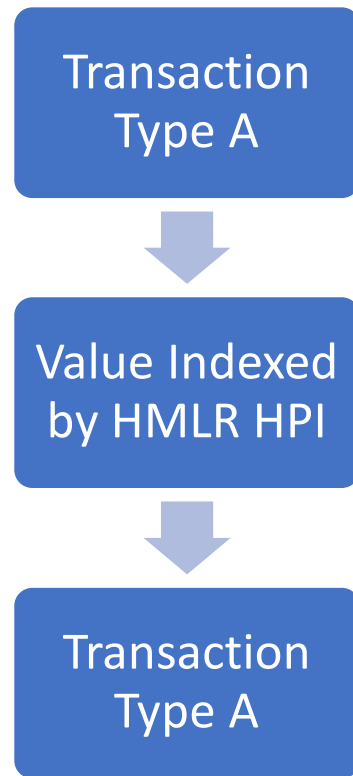
- Data from Moody's European Data Warehouse of MBS assets not representative of lender
- Paragraphs 13.8 and 13.9 of SS11/13 from PRA reference peak-to-trough reductions
- No academic studies of residential mortgage FSD models for anywhere in Europe at time
- At 31st July 2019, HMLR has 24,501,655 records (since 1st January 1995)
- HMLR covers all property types
- HPI from HMLR taken as measure of house price inflation; could use Acadata HPI
- From 14th October 2013, HMLR are able to identify post-possession sales by transaction category B

Example of Variables Available in Data

Variable	Values	Transformed?
Region	South West, South East, London, West Midlands, Wales, East Anglia, East Midlands, North West, North East,	Transformed from postcode of address into postcode area (e.g. SE183NT = SE = London)
Tenure	F (Freehold) L (Leasehold)	None
New Build	Y (Yes) N (No)	None
Property Type	F (Flat) D (Detached) S (Semi-Detached) T (Terraced) O (Other – typically commercial property)	Property Type O dropped
Transaction Date	From 01/01/1995 to 31/07/2019	None
Transaction Category	A (normal residential transaction) B (post-possession sales, buy-to-let and commercial sales)	Type A only retained as first transaction

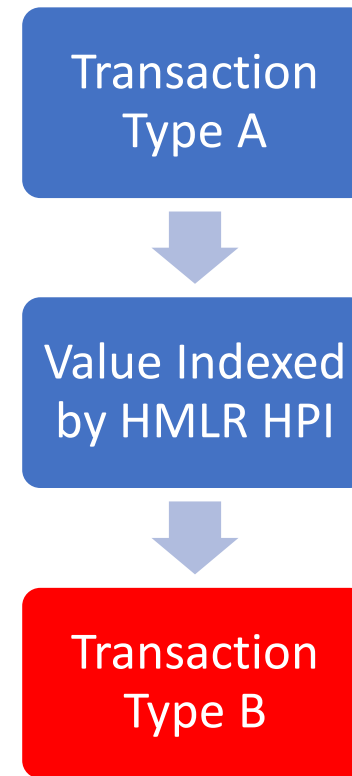
Simplified View of Process

Normal Residential Transaction



Difference between indexed valuation from month after transaction type A and price paid for transaction type B (subject to exclusions) represent FSD £; $\text{FSD } \text{£} / \text{index valuation } \text{£} = \text{FSD}\%$

Post-Repoession Transaction



Methodology Applied

EXCLUSIONS

- Any address not sold more than once between 1995 and 2019
- Property type “O”
- Sale price < £10,000
- Postcodes missing or in DG or TD
- Transaction type B < October 2013
- Time between transactions < 12 months

METHODOLOGY

1. Identify multiple transactions for same address where second transaction = B
2. Apply HMLR HPI by region (transform from postcode) and property type based on price paid
3. First transaction (type A) indexed to point of second transaction (type B) as nominal price payable
4. *Basic* FSD = difference between the price payable subject to indexation and true price paid post-repossession
5. *True* FSD = difference between price payable subject to indexation less difference between index and price paid

Worked Example – Yorkshire and Humberside



Date	Type	New Build	Value
23SEP2009	Purchase	Y	106,780
HPI Effect	Indexation %		4.7%
	New Value £		111,799
24APR2014	Purchase	N	35,000
<i>Basic FSD</i>			68.7%
Expected Haircut	5% of New Value		5,590
	Adjusted Value £		106,209
<i>True FSD</i>			67.0%

Benefits and Limitations

BENEFITS

- Relatively simple approach to FSD
- Enables FSD calculation for residential mortgage portfolios
- Provides a validation data set for larger lenders to test own experience
- Data available from:
<https://www.gov.uk/government/statistical-data-sets/price-paid-data-downloads>

LIMITATIONS

- Only works for England and Wales – no similar work done for Scotland or Northern Ireland
- Very large datasets (PPD ~4GB)
- HMLR detailed HPI by council area, not regional. Thus, requires transformation into county and thence region
- Makes assumption that HMLR HPI stable for majority of housing stock

Conclusions

- Useful for forced sale discount (FSD) estimation
- Presented to PRA during discussion of LGD approach where insufficient experience
- Alternate uses in portfolio management and economic forecasting

Q&A