

Stress and Scenario Testing

In developing our Stress and Scenario Testing service our aim was to address a series of common challenges in relation to regulatory and risk management requirements, namely

- cost - by developing a standard and robust model with a known cost
- variety of possible methods - clear, transparent and consistent processes
- value shifts between historic and future behaviour - standard set of variables based on historic data which can be adjusted
- choice of scenario or shock - standard model provides opportunity to develop a standard set of scenarios
- limitation in relevant time series data - uses relevant historic data and a hazard rate approach to default
- simplicity - uses commonly available data downloaded by the lender for maximum use across the mortgage lending industry

Stress and Scenario Testing

our model calculates mortgage losses under a variety of economic scenarios

- is based upon the UK mortgage book stress test model which was developed in 2004 for our Drivers and Consequences of Credit Default market study
- shows the impact of different macroeconomic scenarios on a mortgage lending book
- uses our own historic data to provide a standardised independent assessment
- includes a facility allowing mortgage lenders to substitute their own experience (if available)
- calculates loss at the level of the individual loan
- is a secure off-site solution - using data downloaded by the mortgage lender

Stress and Scenario Testing

the model calculates for each loan

- exposure at default (EAD) by taking current balance and applying
 - forecast interest rates
 - repayment assumptions from Acadametrics historic possessions data to produce
 - arrears
- loss in the event of possession (LIEP) by taking original value and applying
 - Acadametrics Prices and Transactions for an estimate of current value
 - house price forecasts to establish value at default and deducting
 - EAD
 - forecast depreciation due to forced sale derived from Acadametrics data
 - costs of sale (fixed and variable) also from Acadametrics historic data giving
- expected loss (EL) (at portfolio level = $PP * LIEP$) with allowance for redemptions

Stress and Scenario Testing

we generate a probability of possession for each account

- the model applies probability assumptions employing hazard rates of possession and redemption which vary by macroeconomic scenario
- the hazard rates are calibrated from actual historic data
- the key drivers of hazard are original LTV and development year
- a probability of arrears can also be provided derived from the rate of possession
- and results can be shown to vary with the economic cycle for ten years into the future

Stress and Scenario Testing

PP hazard rate matrix

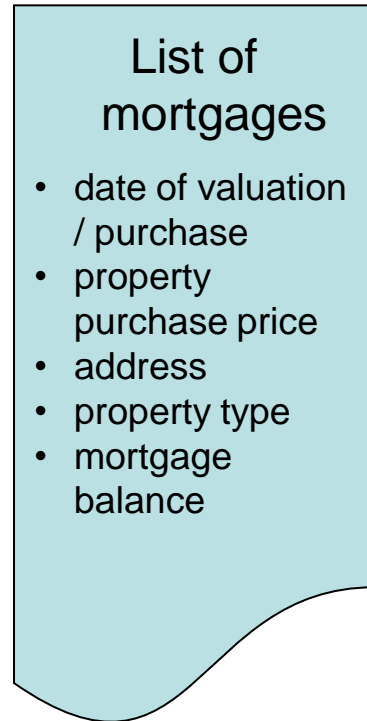
Development Year

Unconditional Probability

LTV	0	1	2	3	4	5	6 +	
<75%	x	x	x	x	x	x	x	x
75-85%	x	x	x	x	x	x	x	x
85-90%	x	x	x	x	x	x	x	x
90-95%	x	x	x	x	x	x	x	x
95-100%	x	x	x	x	x	x	x	x
100-120%	x	x	x	x	x	x	x	x
120% +	x	x	x	x	x	x	x	x

Stress and Scenario Testing

property revaluation process



provides period over which property "value" needs to be indexed

identifies whether Acadametrics Prices and Transactions Regional or House Type Within County/London Borough should be used

current & historic loan to value ratio are calculated by application of the House Prices

July 1998
£98,500

+

terraced house
"index movement"



current price:
£183,750

=

loan to value:

- *historic* – 91.4%
- *current* – **48.9%**

Stress and Scenario Testing

a six stage process involving:

- data download
- data verification
- data input
- modelling with agreed economic scenarios
- model output
- presentation of results

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example benefits

- the hazard rate approach overcomes limitations of time series data
- transparency is provided through the link from individual loans/portfolio distribution to a national picture
- the approach is tested, and is currently in ongoing use by lenders
- the process is cost effective and time-efficient
- the challenge of accurate valuation is addressed by using the purpose built Acadametrics Prices and Transactions series
- the approach provides the ability to develop core scenarios and apply them in a consistent way
- the approach offers lenders the ability to use their own historic data based assumptions and the opportunity to compare with an Acadametrics UK Arrears and Possessions Forecasting model benchmark