



STRESS AND SCENARIO TESTING - PROSPECTUS

The FSA 9th October 2008 letter to Chief Executives, "Stress Testing Thematic Review", states that "Stress testing and scenario analysis are essential tools for firms' planning and risk management processes"...and has the potential to reduce risks to the UK financial system".

Given a general lack of relevant historic data upon which to calibrate models, scenario analysis represents a considerable challenge for mortgage lenders. The proven Acadametrics Stress and Scenario Testing service, built upon unique historic possessions data emanating from the 1989-1991 recession, is now regularly providing major lenders with risk results, to their specification, under their chosen scenarios.

Acadametrics, together with Dr Stephen Satchell, The Reader in Financial Econometrics at the University of Cambridge, has been predicting mortgage portfolio losses under alternative macroeconomic scenarios since the late 1980s and are a leading source of expertise in forecasting UK mortgage loan performance, whether required to:

**establish mortgage portfolio performance benchmarks
measure capital requirements
enhance in-house models**

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www.acadametrics.co.uk

Acadametrics Limited
226 Sheen Lane
London SW14 8LD
United Kingdom
telephone +44 20 8392 9082
fax +44 20 8876 1694
email info@acadametrics.co.uk

Stress and Scenario Testing - Prospectus

STRESS AND SCENARIO TESTING

PROSPECTUS

The Acadametrics Stress and Scenario Testing service provides mortgage lenders with the ability to measure the impact of different macroeconomic scenarios upon their mortgage books. The results are used for credit risk management, for FSA reporting or for the assessment of capital requirements.

Our core model uses unique historic possessions data from the housing crisis that followed the 1989-1991 recession and provides loss assessments under different macroeconomic scenarios¹. The modelling can be adjusted and bespoke to a mortgage lender's specific requirement.

The modelling includes a series of sense and integrity checks to the data; provides a current value for each loan; and then runs the entire mortgage portfolio, to calculate loan by loan exposure at default (EAD), probability of Possession (PP), and loss in the event of possession (LIEP) forecasts, under four different macroeconomic scenarios. The individual loan results are totalled to provide a portfolio result.

The scenarios represent varying levels of stress that are calibrated against our historic possessions data. One such scenario, for example, may be a "worst case", reflecting the 1989-1991 housing crisis. Some scenarios may be chosen by the client to match those used in their own internal modelling or reporting.

The model output for each individual account comprises:

- exposure at default (EAD)
- probability of possession (PP)²
- loss in the event of possession (LIEP)³

Results can be presented in a variety of ways, to suit client requirements e.g. both at individual account level⁴ and summarised by defined risk pools as supplied by the lender and/or at total pool level; we calculate:

- Net Present Value of $EAD * LGD * PD$ for each of the next three years under each alternative scenario
- Net Present Value of Weighted $EAD * LGD * PD$
- Net Present Value of Weighted LGD

Once any customisation is completed, regular output is promptly provided, subject to any necessary data cleansing, following delivery of client data to our secure server.

Our charges depend upon the degree of data processing and cleansing needed, the size of the portfolio and the number of runs required. A one off beta test run enables clients to understand the process fully and to refine their requirements. Discounts are available for a three year rolling agreement.

For more information and illustrations, please contact us on 020 8392 9082 or by e-mail at information@acadametrics.co.uk

¹ see our paper [Stress and Scenario Testing - Methodology](#) available on our website.

² our hazard rate approach calculates probability of possession (PP) as the likelihood of loss in the event of write-off.

³ loss in the event of possession (LIEP) may be shown with/without insurance reclaim (provided that any insurance indemnity amount is provided on the file).

⁴ where further advances, re-mortgages etc result in multiple records for a single account, the results are generated against the most recent/latest account for which date of advance, valuation, the accumulated balance at drawdown and the current balance at the extract date are shown. Examples and detail of output are provided in [Stress and Scenario Testing - Examples](#) on our website.

ABOUT ACADAMETRICS

Acadametrics is a consultancy focussed upon mortgage risk. We: assess capital requirements; conduct research (led by Dr Stephen Satchell, Economics Fellow Trinity College Cambridge); develop products at our own expense designed to assist lenders; are expert in the measurement of house prices, preparing our own house price index launched in 2003 by the Financial Times as FTHPI. Branding rights to the index have been acquired by LSL Property Services and, from June 2010, the index will be known as the LSL Acad HPI. As FTHPI, the index was chosen by the Chicago Mercantile Exchange for a possible future residential house price derivative.

Our past work has included the analysis of pre-payment risk, the pricing of mortgage books and the assessment of the performance of credit score models for mortgages, credit cards and unsecured loans under changing macroeconomic scenarios. Much of our early work involved forecasting the mortgage and MIG losses arising from the 1989-1991 housing crisis. As a result, we hold what we believe to be the largest available downturn default database which enables our hazard rate stress testing methodologies, developed by Dr Satchell.

During 2009, we have worked closely with MIAC Analytics from New York in a joint [MIAC ACADAMETRICS](#) venture, enabling lenders to download our data and models from the MIAC platform, placed on our UK server, for desktop work. Using MIAC expertise, our models will additionally assist those involved in securitisations and the sale and purchase of loan portfolios. We offer:

- **Collateral Valuation** comprising our Acadametrics Prices and Transactions (APAT) data and Confidence Interval tables for use by clients or as in our Property Portfolio Revaluation service.
- **Loan Level Stress and Scenario Testing** comprising our:
 - UK Arrears and Possessions Forecasting (UKAPF) which employs Bayesian techniques to model the UK mortgage book and is under an update to account for forbearance
 - Stress and Scenario Testing (SST) with optional APAT or AVM revaluation to provide forecasts of loan by loan mortgage possessions and losses under alternative scenarios
 - Predictive Mortgage Analytics (PMA) which forecasts arrears and cash flow at LTV or risk bucket level with limited past data and can be provided within an interactive desktop model
- **Custom Data and Model Development** which includes the provision of loss data from our downturn default database for client LGD benchmarking, model validation and model development, by Dr Satchell, bespoke to customers' needs. We have considerable expertise in index construction, available for clients.

Our website includes our House Price Calculator, which uses our APAT data to update a property value, providing a full explanation of the procedures and the standard deviations of the results from those of our benchmark data.

Acadametrics services have an academic foundation in econometrics, statistics and decision theory and are developed from our own resources under our "research first" policy. Further detail is provided on our website www.acadametrics.co.uk.

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