

PD Calibrate Macro

Chief Analyst Keld Asnæs & Senior Specialist Jesper Michelsen

Group Risk Management, Nykredit A/S

ABSTRACT

The Model team at Nykredit Group Risk Management has standardized the calibration process of the credit-score models developed.

This ePoster and paper gives a brief summary of some central elements and the use of the macro.

INTRODUCTION

PD_Calibrate is a macro that standardizes the calibration of the predictive credit-scoring models at Nykredit. The macro is activated with an input data set, variables, anchor point, specification of method, number of buckets, kink-value, and so on.

The output consists of graphs, HTML, and three data sets containing key values for the model being calibrated and values for the use of graphics.

PARAMETERS FOR THE MACRO

Parameter	Parameter explained
Id	Your unique id of the Calibration for the specific model
Ds	Input dataset containing default indicator and predicted value
Var	Name of the variable containing the predicted value
Defind	Name of the variable containing the default indicator (0/1)
Ap	Anchor Point Target in pct., eg 1.04 for 4 percent.
Method	Method for dividing into buckets; F – fractiles, R – rounded, D – default weight For method F or D, please specify n
Min	Minimum score according to method
Max	Maximum score according to method
Rnd	Round-off value (only for method R)
N	Number of Buckets (method F, D)
Kink	Kink-value, where should the logistic curve make a 'kink'
Out_path	Path to location of the HTML output
Graph_path	Optional. Path to location of graphics. Default is "out_path\grafik"
Weight=	Optional. Default is "Default", alternative is "equal"
Out_beta=	Output dataset for beta-values. Default is "betas_all"
Outpd=	Output dataset containing detailed data for graph use. Default is "logistic_out_plot_all"
Outplot=	Output dataset for calibrated PD's Default is "output_pd_all"

All resulting datasets contains the ID column enabling you to analyze the calibrations together.

SOME CENTRAL ELEMENTS OF THE MACRO

This is a short summary description of the main steps in the PD_calibrate macro (you can get the code by contacting one of the authors).

1. Sort, count and find the buckets
 - a. Sort the input dataset by the predicted value
 - b. Count the number of records and the number of defaults
 - c. Calculate the min and max values for the predicted value
 - d. Group the observations into buckets according to the chosen method.
2. Default rate pr bucket and adjust to AP if wanted
 - a. Calculate the Default Rate and the mean predicted value
 - b. Calculate the Sample Default Rate
 - c. Calculate a Bayes adjusted default rate - according to AP level if wanted.
 - d. Find the Bucket weighted default rate.
3. Reporting
 - a. plotting log odds default rate to mean of predicted value and percent to predicted value
 - b. testing the default rate to the mean of the predicted value and the kink adjusted mean of the predicted value
 - c. plotting the distribution of the resulting ratings
4. Collecting data
 - a. appending data into the three default output datasets

CONTACT INFORMATION

For further information or complete code - please contact

Senior Specialist Jesper Michelsen
Nykredit A/S
Kalvebod Brygge 47
1560 Copenhagen V
Denmark
Email: jmic@nykredit.dk
Business phone +45 4455 1362
Cell phone: +45 2671 2135

Any suggestions for improvements or comments on method will be much appreciated.

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.

Other brand and product names are trademarks of their respective companies.