Developments in Unsecured Capital and Impairment Forecasting

Lloyds Banking Group

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Capital and Impairment Forecasting

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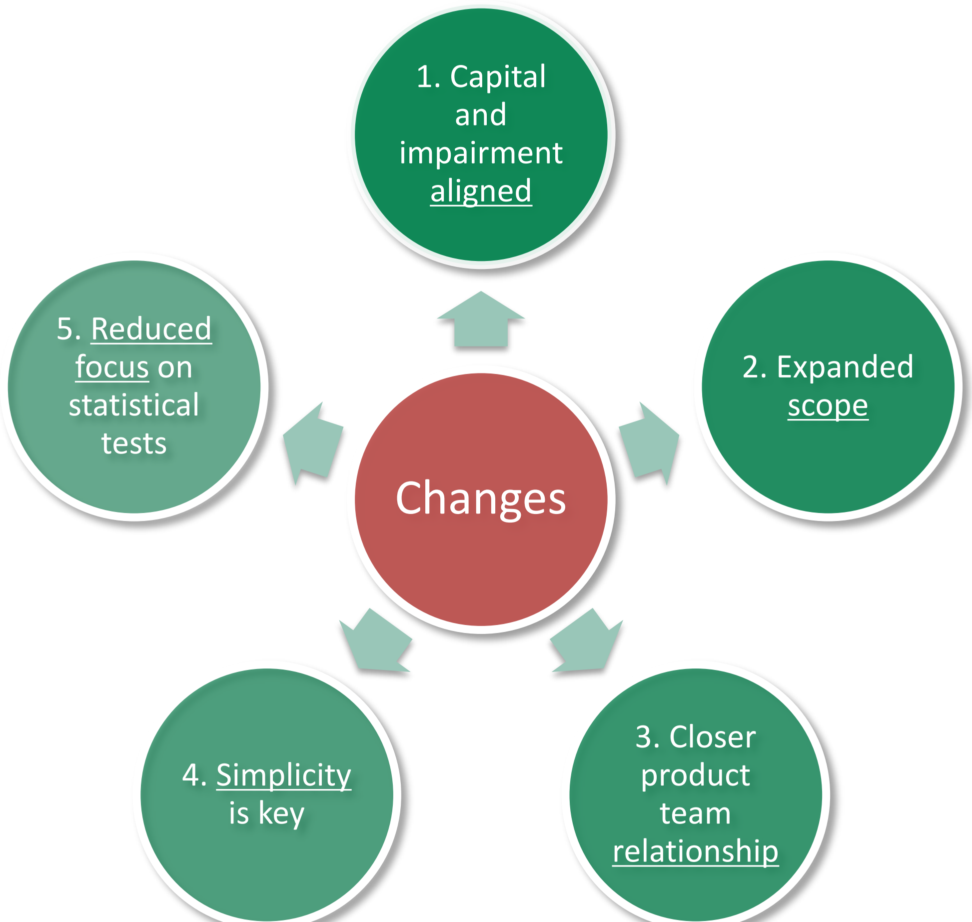
Team Purpose

- Our team is part of Lloyds Banking Group's Risk Division
- Our team builds forecasting models and tools for capital and impairment – *service provider*
- Transform model inputs, and send to product-specific teams, so they can run the tools

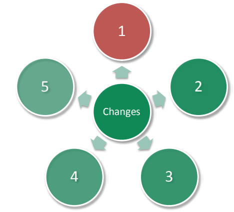
1. Economic Scenarios released
2. Risk models run
3. Results challenged and attested at product level
4. Combined with market and operation risks
5. Divisional P&L produced
6. Group-wide strategy devised.

How has capital and impairment forecasting changed and improved?

- Capital and Impairment forecasting has changed in several key ways over the last five years.



1. Capital and Impairment Aligned



- Separate capital and impairment models
- These had different assumptions for the economy and seasonality

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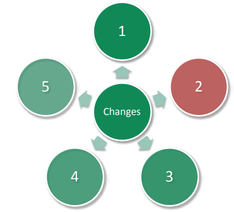
- Now we use impairment model outputs as capital model inputs
  - Balances
  - Volumes
  - Flow rates (flow to bad / flow to cure)
- This ensures consistency between model outputs
- Simplifies capital model
  - Impairment model contains the econometric models
  - The outputs then feed into the capital model

2. Expanded Scope



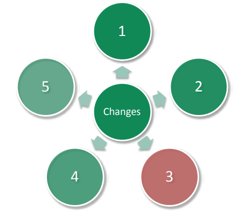
Inputs
- Economics
- Seasonality
- Historic data (starting point)

Impairment
- Flow to bad / cure (by arrears grade)
- Transition matrices
- Volumes and balances (by arrears grade)

Capital
- Flow to bad / cure (by PD segment)
- Volumes, balances, and limits
- EAD, EL, RWA (by PD segment)

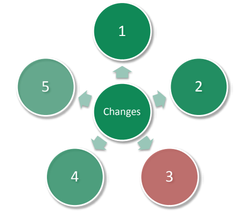
- These tools allow for the inclusion of additional assumptions on:
  - Future lending quality
  - Seasonality
  - LGD / EAD model calibrations

3a. Closer Product Team Relationship



- We deliver our tools to the product risk teams to run.
- They use them in budget forecasting, and regulatory stress-tests.
- In supporting these teams, and providing additional information, our relationship with these teams has become much closer.
- We've gained an understanding of why expert judgement in forecasts is critical – and built this into our models. (e.g. to reflect future policy changes).
- Our stakeholders give new insights into what we should consider when building models – such as seasonality impacts.

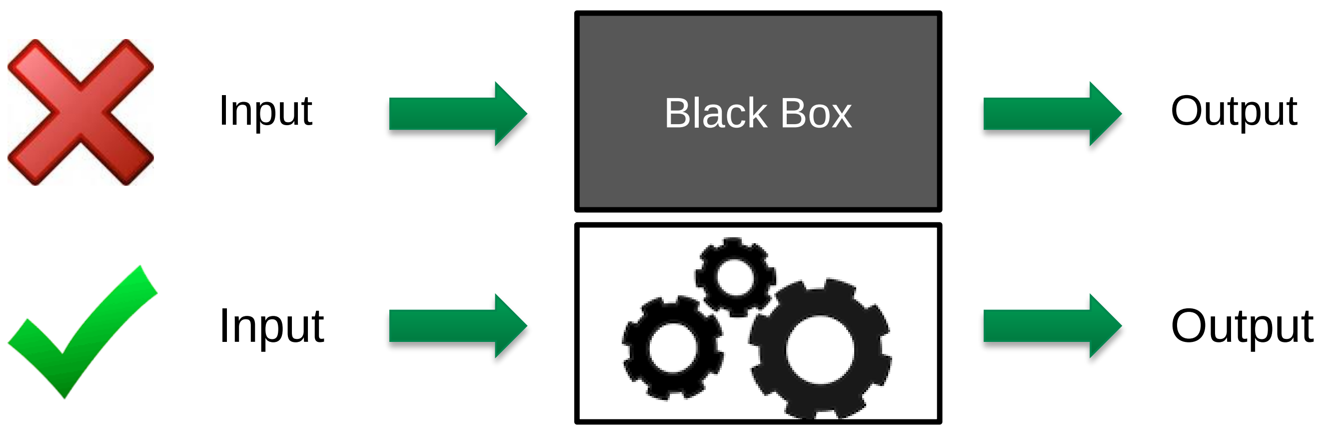
3b. Closer Product Team Relationship



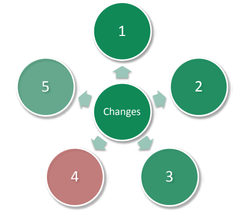
- Our stakeholders need to understand the drivers of the forecast:
  - E.g. some models have multiple drivers (economic, maturity, and vintage)
  - We provide a view on the relative strength of these drivers

- Directors are keen to see detailed analysis, especially as focus has increased on stress-testing

- Simplicity and transparency are the keys to providing an accessible explanation along side the model-driven forecast



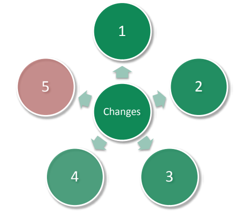
4. Simplicity is Key



- Stakeholders do not always have a technical background
- They want to have outputs they can explain to their directors
- Previously econometric models were relatively complex (e.g. two-step error-correction model).

- We try to simplify our models by;
  - Applying ordinary least squares when appropriate
  - Keeping drivers consistent between brands and products (e.g. Lloyds, HBOS)
  - Only building econometric models for components that are truly driven by the economy
- However, a level of complexity is still necessary. We need to:
  - Consider both internal and external effects (economic, maturity, and vintage)
  - Provide both a portfolio-level and a segment-level forecast

5. Reduced Focus on Statistical Tests



- With this in mind, the criteria in choosing a model has very much changed
  - From:
    1. Statistically robust
    2. Business sense
    3. Simple and transparent
    4. Deployable
  - To:
    1. Deployable
    2. Simple and transparent
    3. Business sense
    4. Statistically robust

- All criteria must be met, but if it came to it:

Model A

- OLS
- Easy to implement
- Passes at 5%

would be chosen over

Model B

- ECM
- Hard to implement
- Passes at 3%

Final Comparison

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5 Years Ago	Today
Separate Impairment and Capital Models	Fully aligned process for both capital and impairment
Stand-alone models feeding into separate process	Purpose built, end-to-end, forecasting solutions
Product teams more reliant on bought-in modelling solutions	Two-way working relationship with product teams using internal models.
Complexity – “black boxes”	Simple and easy to implement solutions
Model use based predominantly on statistics	Model use based predominantly on business sense

Questions?

For further enquiries or to discuss recruitment opportunities, please contact Rachel Bailey on:

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