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Having confidence in the models across your business

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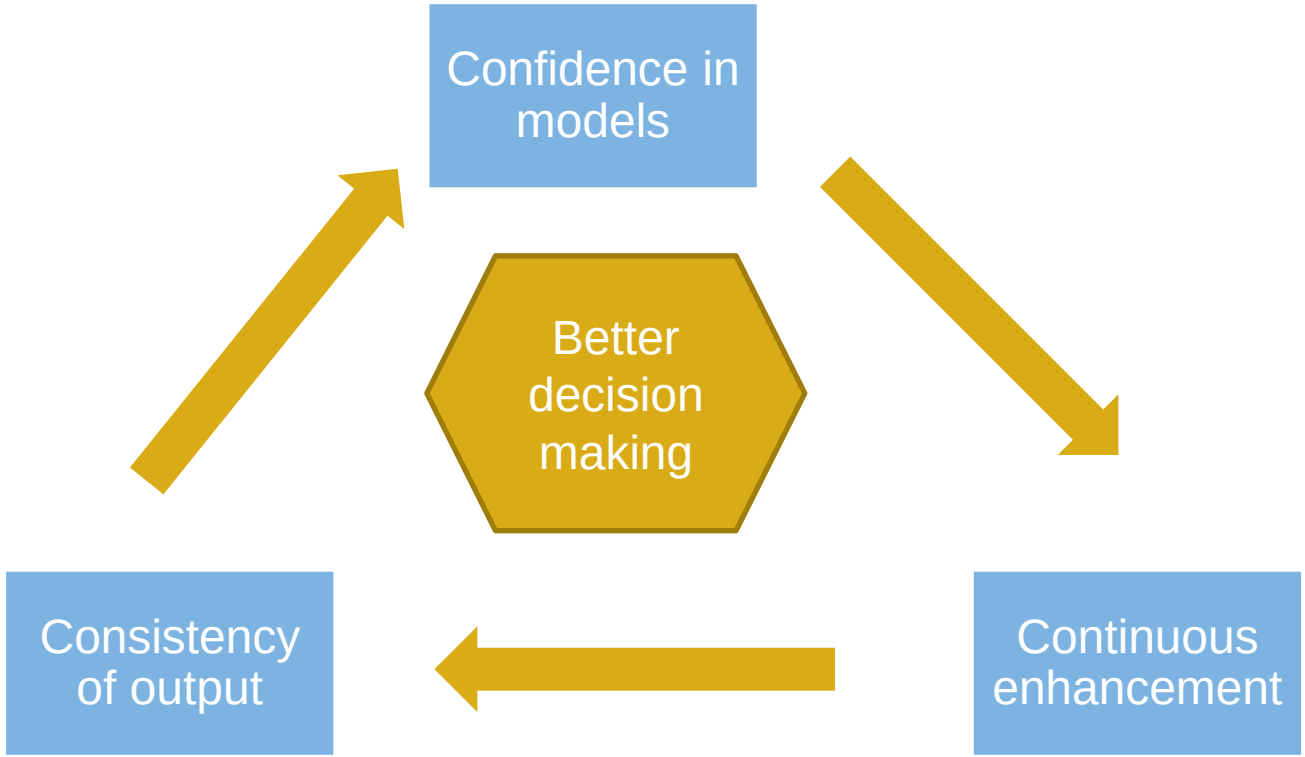
Building confidence in models



Why is this important?

Better allocation of resources for model validation.

Greater level of validation applied to more material models

More confidence in models leads to better use of models in decision making

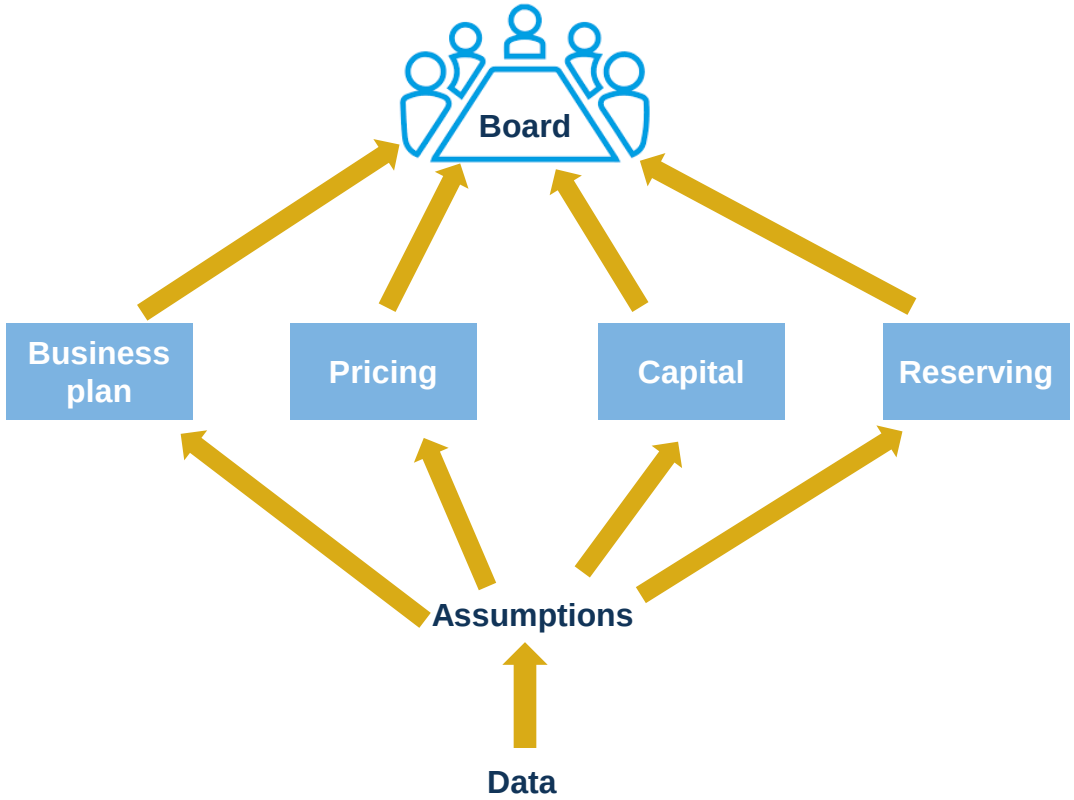
Consistency between assumptions and presentation of outputs for decision making

Better awareness of models and limitations leads to better application of models in decision making

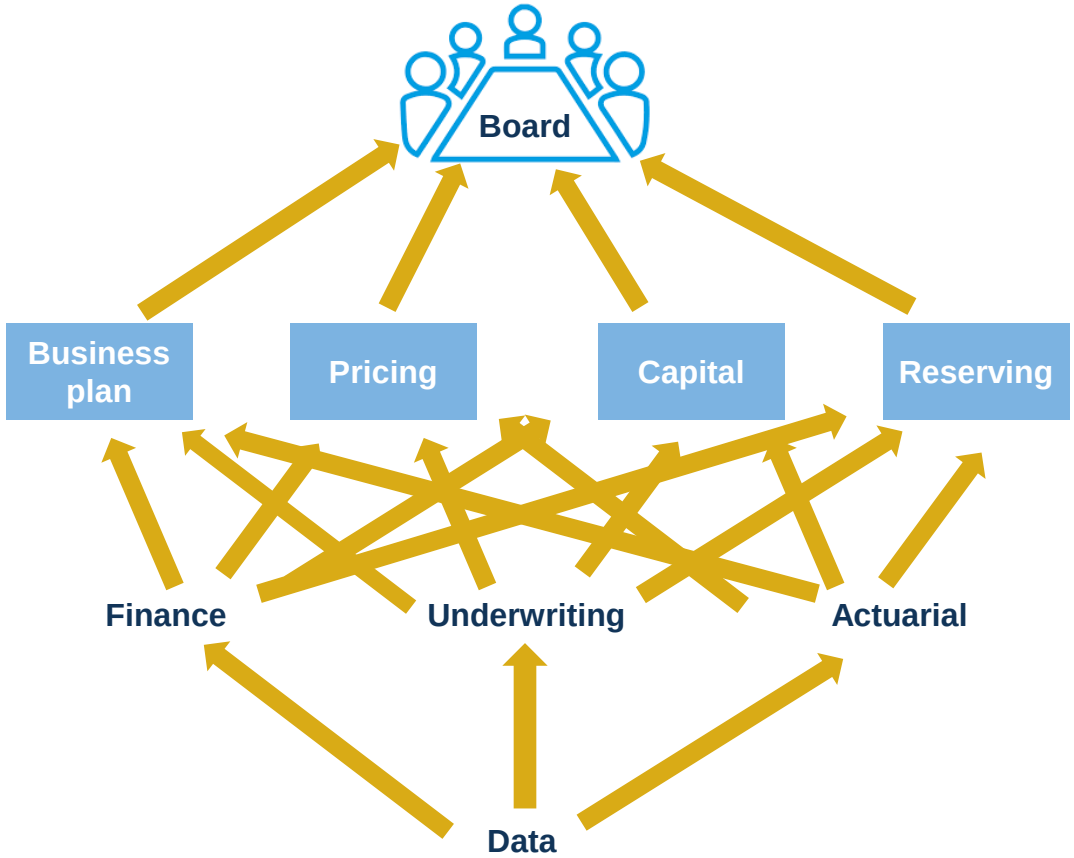
Applying cycle of validation to all models leads to enhanced cycle of identifying and addressing model weakness

No constraints of regulation so the best aspects of validation can be applied depending on the model

What the Board thinks it's getting



What the Board is actually getting



What is model risk?

> *"the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports"*

Source: US Federal Reserve SR11-7
Supervisory Guidance On Model Risk Management

Models are never perfect…and the effort that should be put into improving quality, depend[s] on the situation.

Even a fundamentally sound model producing accurate outputs consistent with the design objective of the model may exhibit high model risk if it is misapplied or misused.

Model risk should be managed like other types of risk.

A guiding principle for managing model risk is "effective challenge" of models, that is, critical analysis by objective, informed parties

What is the risk?

Incorrect / inappropriate data

Incorrect / inappropriate assumptions

Management don’t appreciate limitations

Inconsistent decision making

Non-optimal decisions

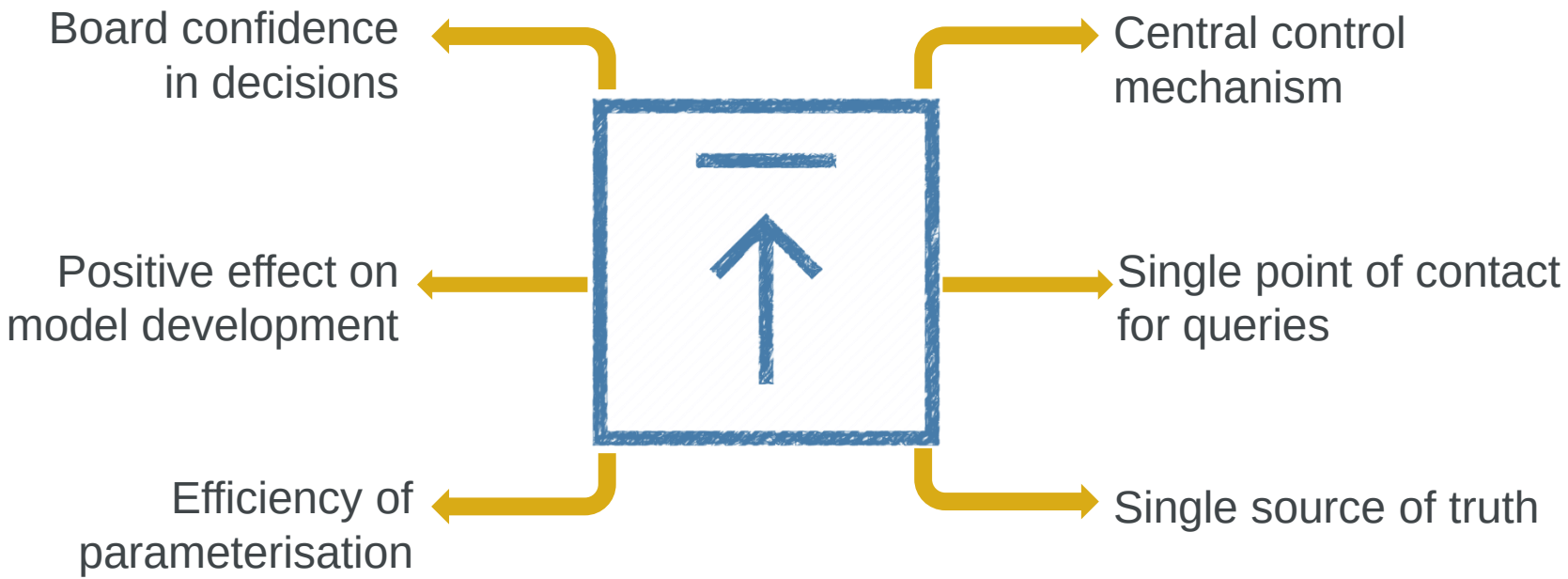
Financial loss

Example: Poor practice

ORSA Framework

- ORSA – multi-year planning models
  - Simplicity versus usefulness
  - Ownership of assumptions
- Board assumes validation is as rigorous as capital model
  - Simplicity versus usefulness
- Impact of poor practice
  - Internal credibility
  - External credibility
  - Negative feedback

What is the upside?



Good practice
Capital Allocation

- Reconcile results between capital modelling and pricing teams
- Assumptions not in line
  - UW year vs Calendar year
  - Different granularity
- Capital loadings to drive correct behaviour
  - Plannable
  - Fair
  - Stable
  - Explainable

Use test

Guideline 11 – Incentive to improve the quality of the internal model

"The insurance or reinsurance undertaking should ensure that the internal model is used in its risk-management system and decision-making processes in a way that creates incentives to improve the quality of the internal model itself"

Source: Guidelines on the use of internal models EIOPA-BoS-14/180 EN

Where do we start?

Consider business model and risk appetite

Identify most material decision making areas

Leverage from current model validation

Track progress from current position against future state

Example: Good practice

Pricing Framework

- Pricing model applications
  - Data, people, process and statistical methodology
  - Consistency with capital and reserving
  - Capital allocation
- Define benefits of enhanced confidence and consistency
  - Known limitations and weaknesses
  - Resource efficiency
- Extension of current validation
  - Implement and cycle

What do the PRA say?

- A firm should ensure that this activity adheres to its strategic objectives, risk strategy, and governance as set by its governing body.
- The PRA expects the governance framework to define lines of responsibility, including for: reviewing and approving algorithms; assigning ownership for the inventory of algorithms and risk controls; ensuring [they] are accurate
- The PRA expects the firm's management body to have, and to maintain, an understanding of the [model] and the risk controls viewed as most important to mitigate and contain the risks
- The PRA expects the approval process to be commensurate with the risks the firm could be exposed to

What do the PRA say? (2)

- Prior to approval, the PRA expects each algorithm to have assigned owners, who are accountable for the algorithm's use and performance.
- …ensuring that the algorithm is appropriately developed, implemented, used as intended and has undergone appropriate testing and deployment
- The PRA expects…
  - the risk controls to align with the firm's risk appetite.
  - all algorithms and risk controls to be tested prior to deployment. Testing should assess their design and implementation.
  - a firm periodically to re-validate algorithms and risk controls.
  - all relevant functions (including Front Office, Risk Management and Other Systems and Controls) to ensure that automated risk controls relevant to that function operate as intended.

Core principles to gaining confidence in models

Cycle of improvement

Appropriate allocation of model development resources

Consistency across models

Clarity of ownership

You will run a better business

Questions

Comments