



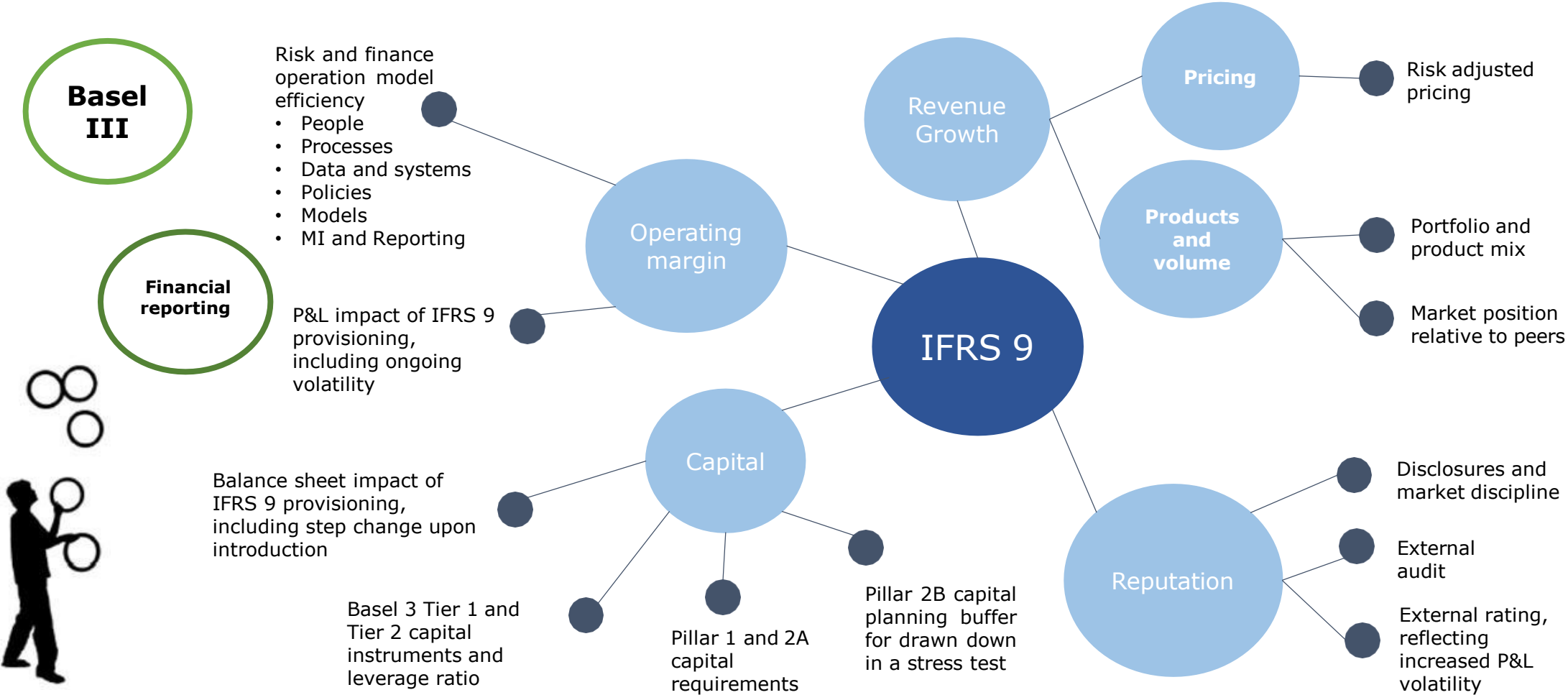
The Post-IFRS 9 Assessment
New Challenges New Insights
27 June, 2019

Introduction

IFRS 9 – A change beyond impairment modelling

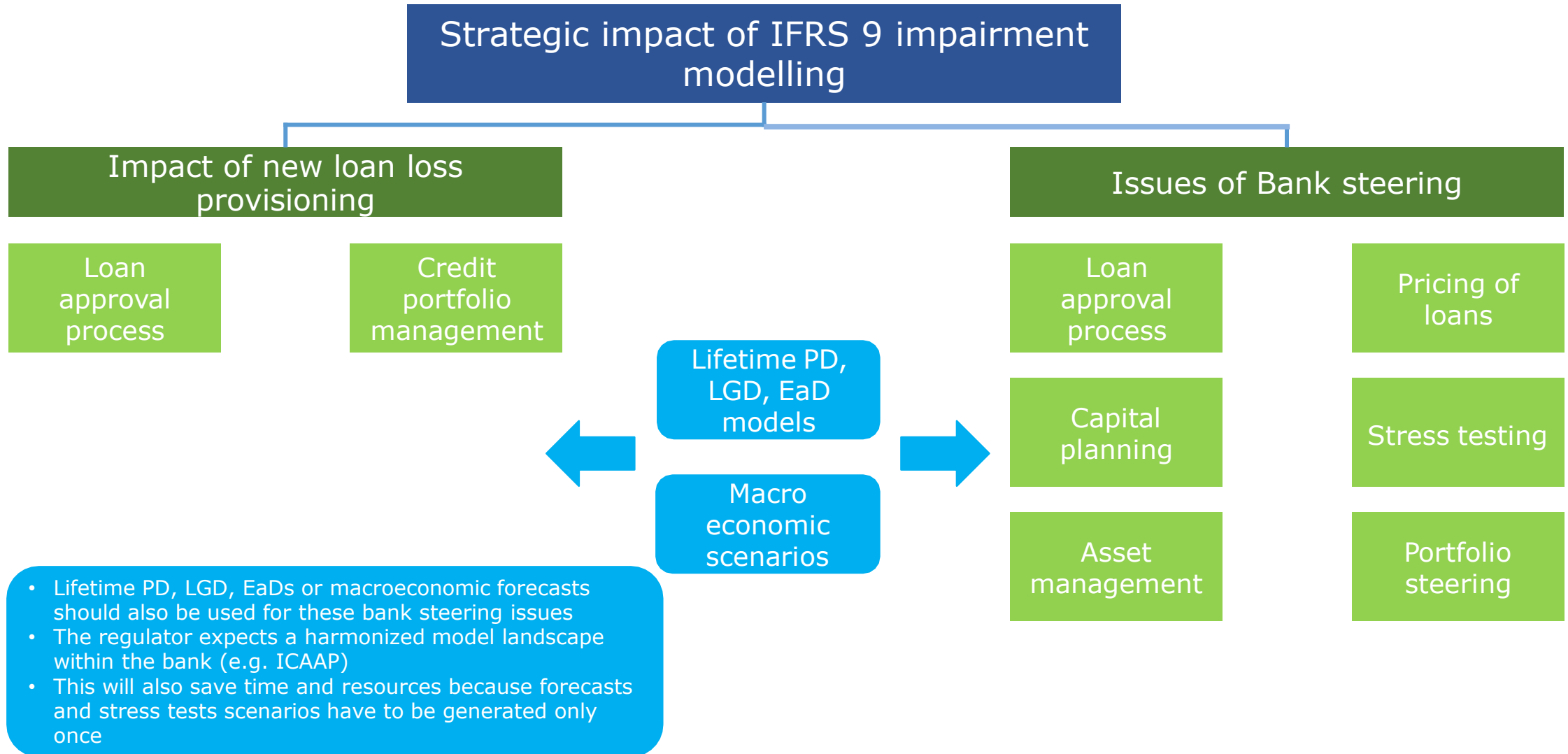
IFRS 9 creates business-wide challenges for organizations. IFRS 9 has a direct, quantifiable impact on provisions feeding into the P&L but it also has a perhaps indirect but material impact on a wide range of factors contributing to shareholder value.

IFRS 9 Business-wide impact



Internal decision and alignment is required

IFRS 9 needs to be integrated within bank's operating model



Highlight of IFRS 9 Initial Impact

The ECL impairment model requires and expects forecast changes in the credit quality indicators for next period so as to support the credit loss forecast of the future should cease form prior period or remain , based on current conditions.

IFRS helped to resolve the “too little, too late” issue in the recognition of credit losses & improving the timely recognition of loan loss provision by incorporating a broader range of credit information.

Table on Day 1 adjustment

SN	Names of Banks	GROSS LOAN N'000	GROSS LOAN N'000	IMPAIRMENT N'000	IMPAIRMENT N'000	DAY 1 ECL N'000	ECLs under IFRS 9 at 1 January 2018 N'000
		<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>1/1/2019</u>	<u>1/1/2019</u>
1	Access bank	1,860,111,134	1,929,042,648	(77,356,156)	(56,330,908)	(72,343,958)	(128,674,866)
2	Ecobank	4,197,095,837	3,549,166,704	(232,543,497)	(169,803,684)	(104,296,192)	(274,099,876)
3	GTBank	1,159,029,541	1,326,295,505	(90,984,448)	(60,280,337)	(85,863,846)	(146,144,183)
4	UBA	1,289,971,000	1,224,457,000	(60,654,000)	(31,269,000)	(48,644,000)	(79,913,000)
5	Zenith	1,921,064,000	2,117,069,000	(184,998,000)	(136,605,000)	(103,550,000)	(240,155,000)
6	Fidelity Bank	1,019,062,000	847,602,000	(57,549,000)	(26,578,000)	(28,393,000)	(54,971,000)

Highlight of IFRS 9 Initial Impact



Highlight of IFRS 9 Post Implementation Challenges

1

Availability of macroeconomic scenarios and variables

2

Governance (State of the IFRS 9 project, Internal Processes and documentation, including validation and back testing)

3

Staging assessment (assessment of the SICR, triggers/indicators considered, transfers to stage 3 and definition of default)

4

Incorporation of forward looking information, including macroeconomic factors.

5

Classification and measurements (business models assessment, SPPI test, benchmark test)

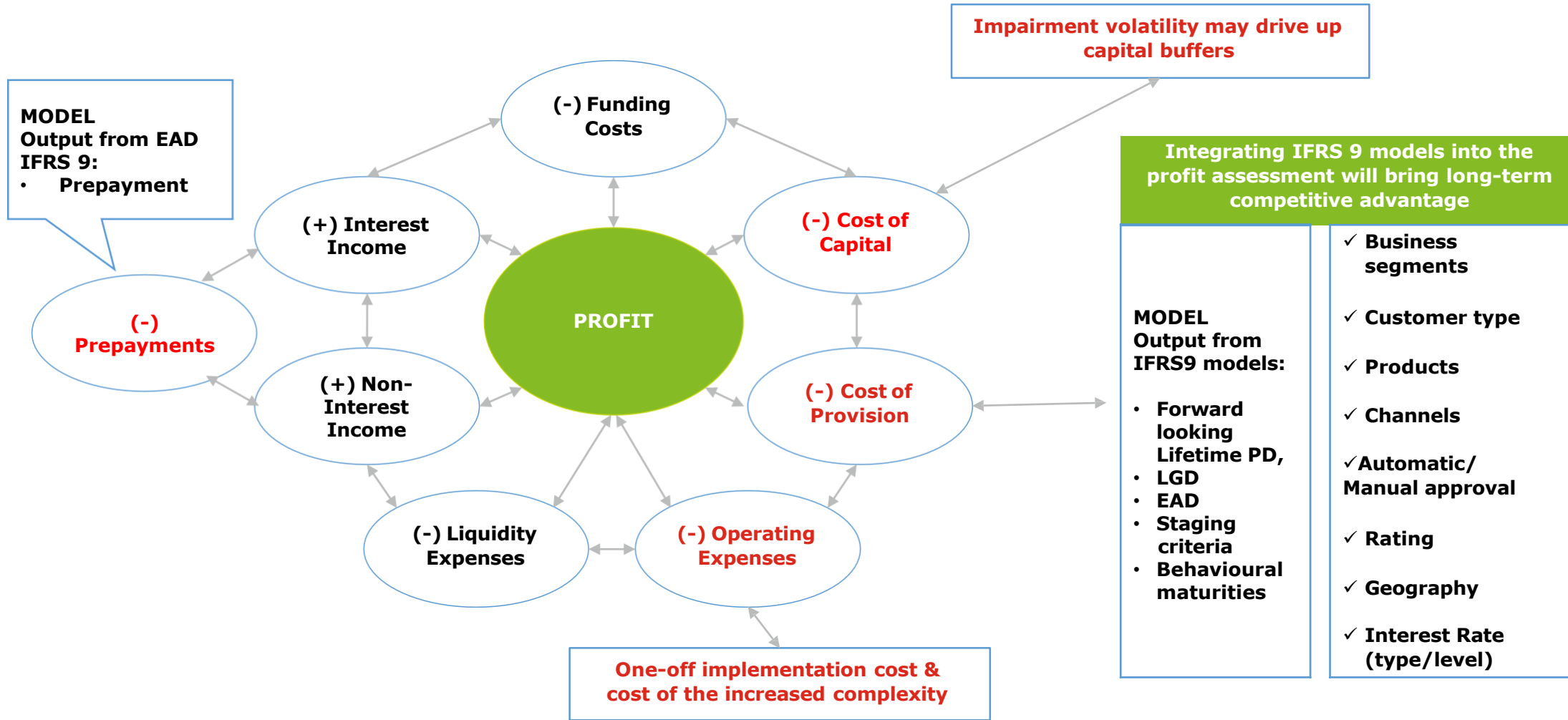
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Models lockdown – Banks are unable to understand model parameters & metrics developed by consultants

Credit pricing in the light of IFRS 9 requirements

A regulatory cost or a business opportunity?

Adjusting pricing is needed as IFRS 9 brings changes and new elements



Maximize profit by considering changes in the business model and in the commercial strategy

IFRS 9 model and methodology validation

All models have model risk...

- 1 Models were introduced because real world too complex for rules / standard formula
- 2 Models acted as a control for risks
- 3 Modelling hubris:
„Everything can be modelled“ - model risks not acknowledged
- 4 Severe crisis of trust in internal models
(although most IRB models went life only after 2008)
- 5 More rules and restrictions for internal models?

At the same time: Models became more and more pervasive (Pillar II, IFRS 9 etc)

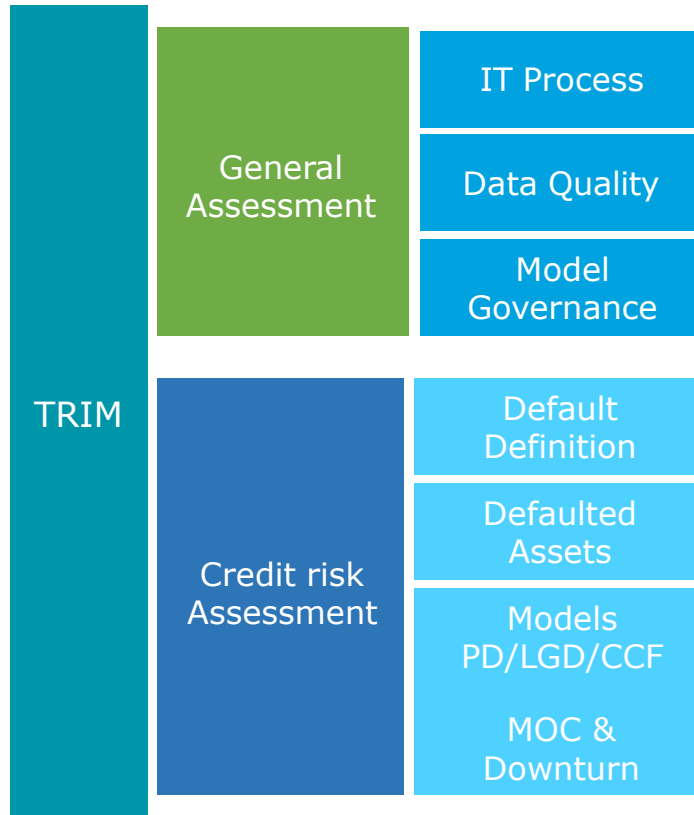
Why is model validation important?

The IFRS 9 accounting standard goes beyond impairment calculation and reporting

- Impairment calculation has **direct impact in P&L**.
- Volatility of ECL generates **higher costs and stops** good strategic decision.
- The **profitability** of credit portfolios relies on accurate prediction at origination;
- **Model risk** takes a more central role and has a **great impact** on the financial sector.
- Business strategies have to adapt to select **better clients** from the market. Given the new stage 2 transitory state, not only defaults will generate high provisions (ECL), but also deteriorated contracts;
- **Restructuring** decision will be more difficult to take. This action could mean a potential increase in credit risk and classification to stage 2, followed by higher ECLs, thus a **lower profitability**.
- **Performance of branches** will be assessed in terms of ECL generated rather than solely on revenue.
- A pessimistic opinion of investors regarding macroeconomic evolution will have to be **translated** by research departments in actual stressed forecasts of GDP, Interest Rates, Inflation etc. This will have a **direct impact** in ECL.
- When launching a new product offering a financial institutions must be more **agile** in responding to the adequacy of that certain product to market conditions. Otherwise, the cost of opportunity can be too great.
- The strictness of stage 2 allocation will be directly dependent on the risk appetite of the bank. This appetite must follow an **objective thinking**, rather than a subjective one based on revenue exponential increase.
- PD, LGD, EAD/CCF, cure rates, prepayment rates, macroeconomic models are integrated within risk management **frameworks**: A-IRB, stress testing, IFRS 9 ECL, pricing, capital management.

Target Review of Internal Models (TRIM)

A useful standard to generate the elements of a strong IFRS 9 validation process



Institutions are expected to establish a complete framework which assesses the quality of the data considered for use in the modelling and risk quantification process including:

- Its completeness and appropriateness;
- The soundness of the process for vetting data inputs (especially with regard to missing data, outliers and categorical data);
- The representativeness of modelling data.

Key elements of TRIM are focused on the following areas:

- Extent of IRB audit procedure
- IRB rating processes
- Independence of validation function
- Quality of rating systems and data maintenance
- Comprehensive examination of rating systems
- High documentation standards
- Harmonization and concretization of parameter estimation
- Stress testing of banks capital adequacy

A roadmap for a proper IFRS 9 validation

- A credit institution should have policies and procedures in place to appropriately **validate models** used to measure ECL.
- Models used in the ECL calculation must consider **changes in PDs, LGDs, exposure amounts, collateral values, migration of default probabilities** and internal borrower credit risk grades based on historical, current, and reasonable and supportable forward-looking information, including macroeconomic factors.
- **Credit institutions should have robust policies and procedures in place to appropriately validate** the accuracy and consistency of the models used to assess the credit risk and measure ECL.
- Model validation should be conducted when ECL models are initially developed, when significant changes are made to the models, and should ensure that the models are suitable for their proposed usage on an ongoing basis.
- A sound model validation framework must include the following elements:
 - Clear roles and responsibilities;
 - Evaluation of model robustness, consistency and accuracy:
 - *Model inputs;*
 - *Model design;*
 - *Model output/performance;*
 - Comprehensive documentation of the model validation framework and process;
 - A review of the model validation process by independent parties.

Validation Stages

Multiple faces of the validation process

Initial validation

Performed after or simultaneous with model development. Separate process from development. Essential for approving the use of the model.

Monitoring

Monitoring of model performance, usually done on a quarterly basis. Serves as early warning for model deterioration. The evolution of the model is closely watched and decisions are taken with regard to refinement or redevelopment.

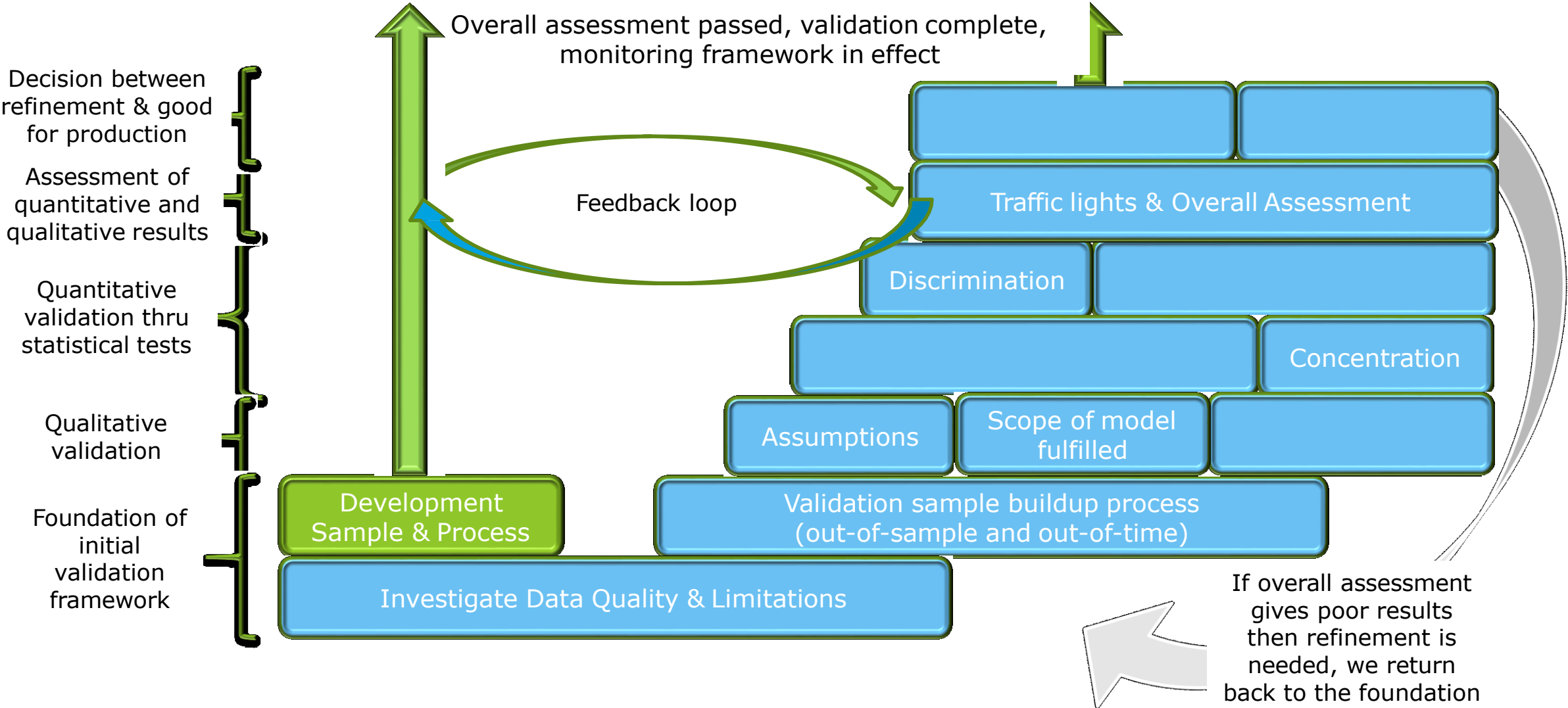
Periodic validation

Mandatory periodic or ad hoc exercise performed annually or event triggered (on internal, regulators or managements demand). Thorough exercise which re-performs all test from initial validation. Can have a specific scope. The outcome can be:

- model is of good quality;
- a refinement is needed in order to improve model performance;
- a complete development exercise must be performed;

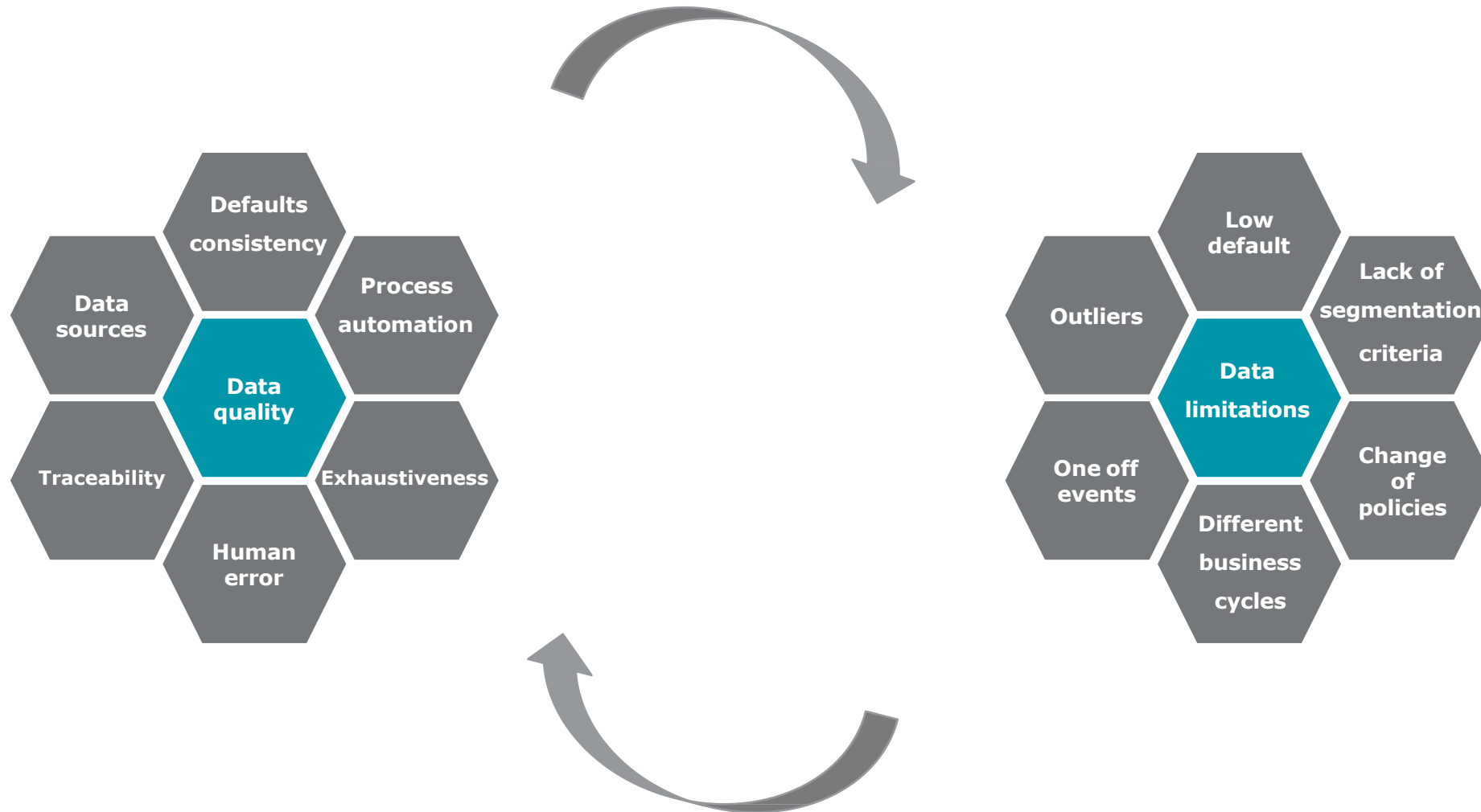
Validation process

Building blocks of the validation framework



Data Quality and Limitations

Understanding your data builds up sound modelling practice



Independent validation

What are the requirements



Validation Process

- Validation process should be covered by staff with the necessary **experience** and a to ensure that the model validation process is robust
- The validation team should be **independent** of the model development team
- If validation function is outsourced, the bank has policies in place to ensure that qualified staff, who are **independent** of the development process, **assess the quality of the work done by the external party in validating the models**. In such a situation, the bank is still ultimately responsible for all model validation work and for ensuring that model validation work is endorsed by the appropriate level of bank management;



Independent review of the validation process

- Should be covered by an independent party (e.g. the internal auditor or an external auditor)
- This party should have the necessary experience and expertise and be independent of the model development and validation processes.

Validation Process

Key elements

Validation Process

The scope for validation should include a review of:



Model inputs

Model inputs consist of information and data that are used to develop and subsequently to operate the model. The quality of the data used has a decisive influence on the predictive ability of a developed model. Validation should ensure that the data used for model development meet internally established quality and reliability standards. Furthermore, the data should be representative of the portfolio from both a current and a forward-looking perspective.



Model design

For model design, there is a need to ensure that the underlying assumptions of the models are relevant. This entails close monitoring of key model assumptions against actual portfolio behaviour to ensure that the model serves its intended purpose, and that key model changes over time are documented with comprehensive explanations and justification. Validation should demonstrate that the underlying theory of the model is conceptually sound, recognized and generally accepted. From a forward-looking perspective, validation should also assess the extent to which the model, at the overall model and individual risk factor level, can accept plausible stresses in the economic environment and/or possible changes to portfolio business profile or strategy without significantly reducing model robustness.



Model output/ performance

The model should be validated in accordance with internally established standards for acceptable performance. This includes the level of acceptable discriminatory power, stress-testing thresholds, backtesting thresholds and any other relevant validation standards. All means to assess model performance, such as stress testing, backtesting and benchmarking, should be evaluated with the most appropriate measures selected. Where performance thresholds are significantly breached, remedial actions to the extent of model re-development or re-calibration should be considered.

Independent review of the validation process

Key elements



Independent review of the validation process

Banks should appoint independent parties (e.g. internal or external auditors) to conduct regular reviews of the model validation process.

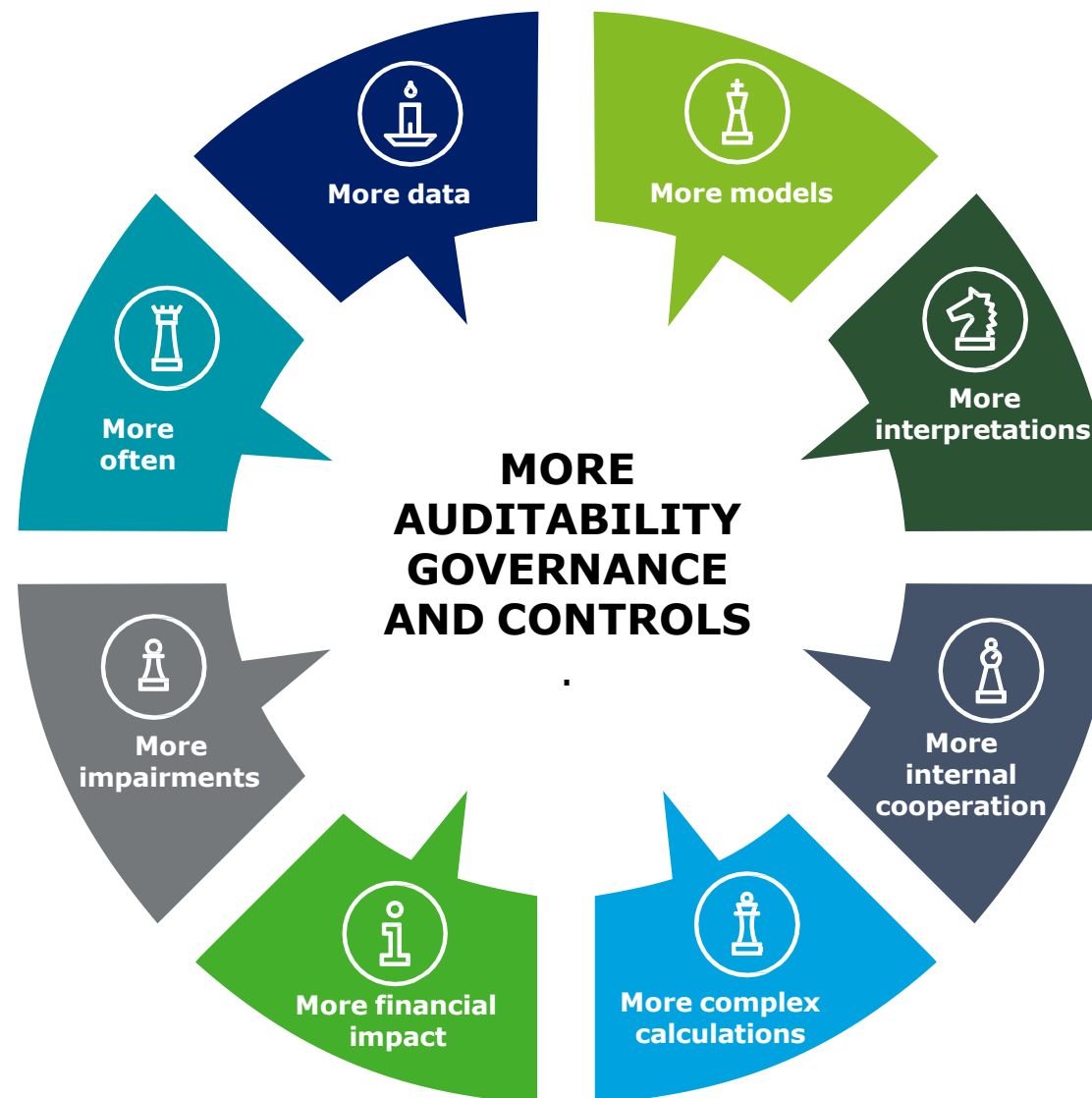
The reviews should include:

- (i) conducting checks to attest to the depth, scope and quality of the validation of the models to ensure that the validation processes are implemented as designed and are effective;
- (ii) checking that the validation of the models is independent of the model development process;
- (iii) reporting the findings of the review process in a prompt and timely manner to the appropriate level of authority (e.g. senior management, audit committee).

The elements of a sound model governance framework

How does IFRS9 impact Bank's model governance and controls?

The introduction of IFRS 9 impairment standard is demanding that **banks use a new set of credit risk models**; these models must be developed, deployed and maintained, which will literally double the number of Risk parameters models to manage



Elements of an effective IFRS9 governance and control framework

Given the size of the potential impact combined with the complexity and subjectivity of the requirements, there is a risk of material bias associated with financial statements lines affected by IFRS 9 which will have a knock on impact on key financial and regulatory metrics which means that ECL must be determined in a well governed environment.

An effective governance and control framework before, during and after transition in these three areas are key for IFRS 9 implementation:

Data quality and availability

- Management will need additional credit risk information that may not be available or was not previously required to be used for financial reporting purposes.
- Appropriate governance and controls will be required for these sizeable additional data sets used for the estimation of ECL.

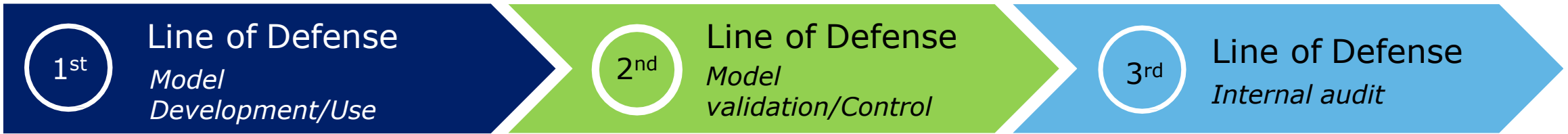
Methodologies and modelling

- Management must develop methodologies and models which require significant expertise and judgement in order to deliver probability weighted and unbiased estimates of ECL on an ongoing basis.
- Ensuring that models are not a 'black box' and that ECL outcomes can be understood and articulated is a significant challenge and requires robust governance and control at each level of the organization.

Systems and processes

- Banks need to produce their IFRS 9 numbers and related disclosures within a short timeframe, thus systems and processes that banks build will need to be sufficiently automated and streamlined to deliver reliable results.
- Strong governance and controls will be key and the cost associated with achieving all of these objectives are likely to be significant both in terms of direct spend as well as management time before, during and after transition.

The application of three lines of defense model



- More robust and automated controls around model development and use
- Performing more vigorous model testing during the implementation phase
- Ongoing monitoring of models performance
- Post implementation and testing
- Introducing an IT infrastructure allowing for model user feedback

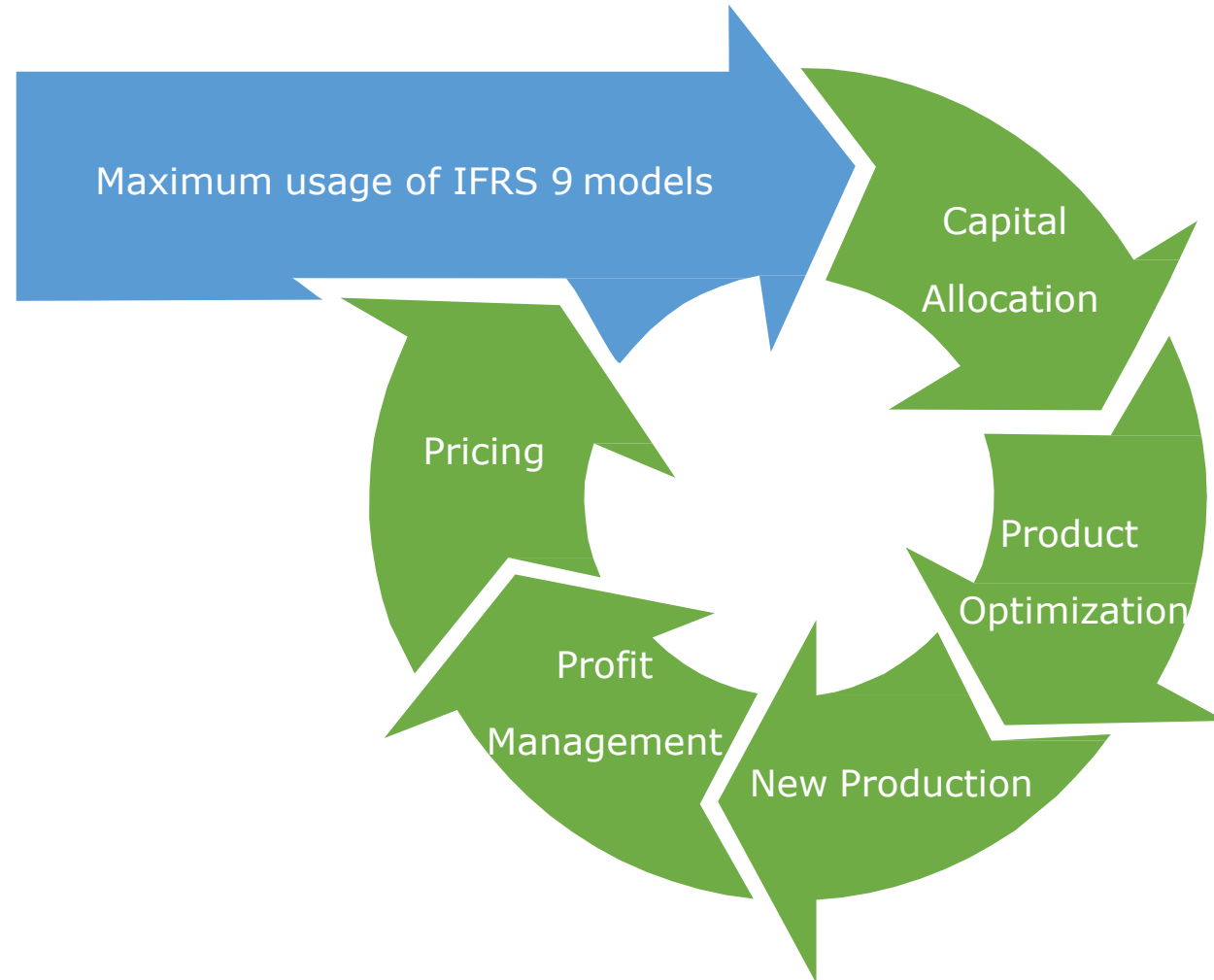
- Expanding the Coverage of Models
- More focused on model validation rather than development (i.e. no co-development)
- Enhanced focus on efficiency (core teams supplemented by seasonal pools, and/or offshore resources)
- Efficiency through the use of technology platforms
- Introducing stricter controls and documentation standards

- More focused on processes and controls
- Less focus on model-level content (e.g. mathematics, theory)
- More focus on the first line – development, documentation implementation & use of models
- Continuous reassessment instead of event-based
- Internal Audit Findings should be clearly documented and reported to Senior Management and the Board
- Assessment of the process for establishing and monitoring limits on model use

Define model usage and alignment to market best practice

Model results should be further used to serve different objectives

- Integrate impairment model within risk based pricing calculation and further use the results for products, segments and channels optimization
- Profit analysis and sensitivities for term loans (short vs. long) and revolving and finding the most profitable approach
- IFRS 9 model estimations and findings can be used for new products design
- IFRS 9 model estimations and findings can be used for balance sheet optimization
- IFRS 9 model estimations and findings can be used for optimum capital allocation



IFRS 9 strategic and business challenges to come

Portfolio Strategy

- How to resist during downturn?
- Shortening maturities can be a solution?
- How to limit stage 2 transfer?

- Reduce exposure sensitive to the economic cycle
- Avoid unnecessary long-term maturities
- Use accurate lifetime PD projections

Credit Management

- How to improve credit behavior?
- Can we limit 30+?
- Can we release capital?

- Implement Early Warning Sign systems
- Redesign Early Collection
- Restructuring and Debt Sale tools

Product Development

- What is the business model?
- It passes the SPPI test?

- New procedures and controls
- Automate the evaluation process

Pricing

- How to price stage 2?
- Pricing can contribute to limit stage 2?
- How to counterbalance IFRS 9 costs?

- Quantify the cost of trapped capital
- Incentivize clients based on good payment behavior
- Models can add value to the business, beyond compliance

Origination

- How to prevent increased risk since initial recognition?

- Reliable Lifetime PD model
- Anticipate business cycle turning points
- Reconsider your risk appetite

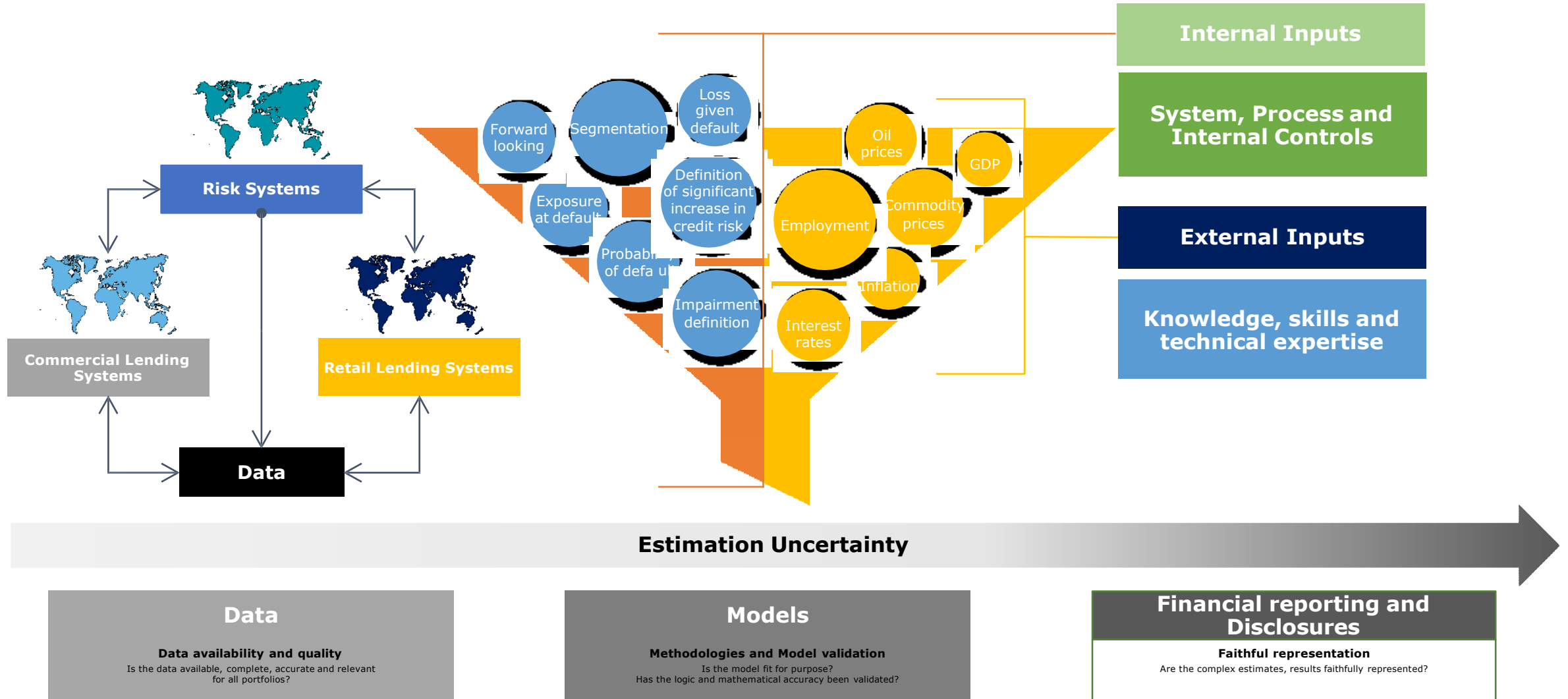
People

- How can you increase involvement?

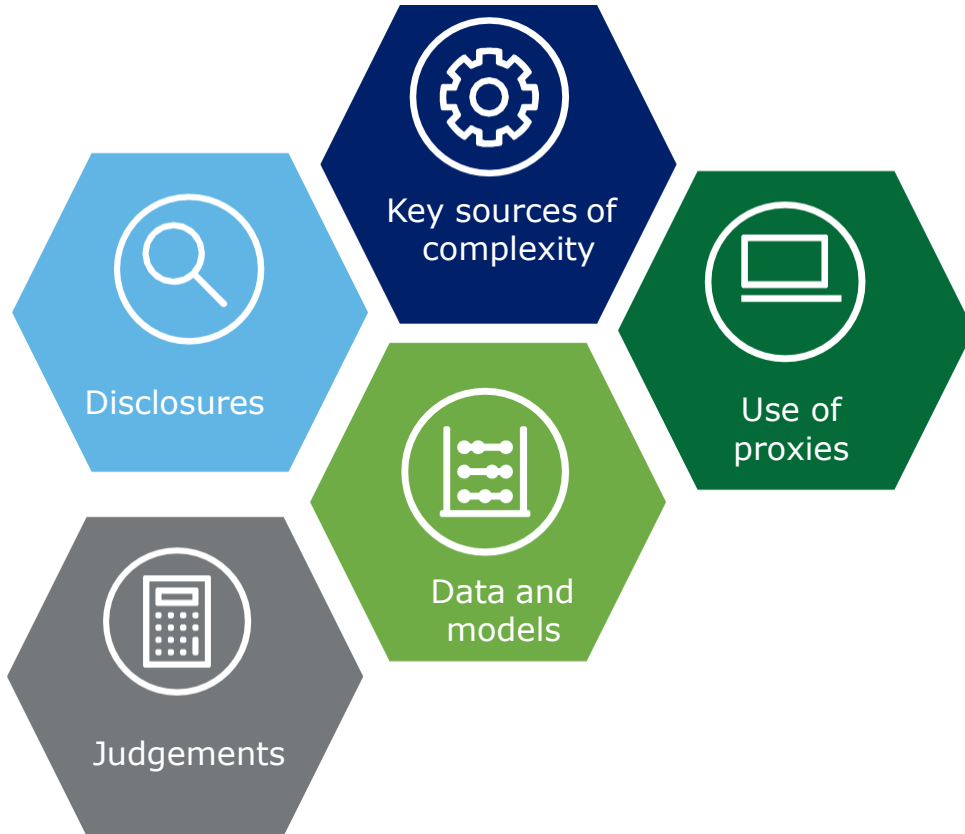
- Compensation based on stage/fair value
- Relationship Managers involved in their portfolio collection

Key focus areas for the supervisor and auditors

Key areas of focus- Audit Committees and Those Charged with Governance



Key focus areas for the Supervisor and Auditors



- ✓ **Key sources of complexity**
 - Identification of key sources of complexity, judgement and uncertainty in the bank's estimate of ECLs under IFRS 9
 - Bank's controls over the key sources of complexity and how has the assessment been documented
- ✓ **Use of proxies**
 - Appropriateness of these proxies and the bank's plan to eliminate their use
- ✓ **Data and models**
 - Relevance and reliability of data sourced from different functions of the bank and external sources?
- ✓ **Judgements**
 - Professional skepticism in testing bank's key judgements and assumptions
 - The potential for bias in the bank's estimate of, and disclosures regarding, ECLs
- ✓ **Disclosures**
 - Neutrality, clarity, and comprehensibility of the disclosures regarding bank's estimate of ECL

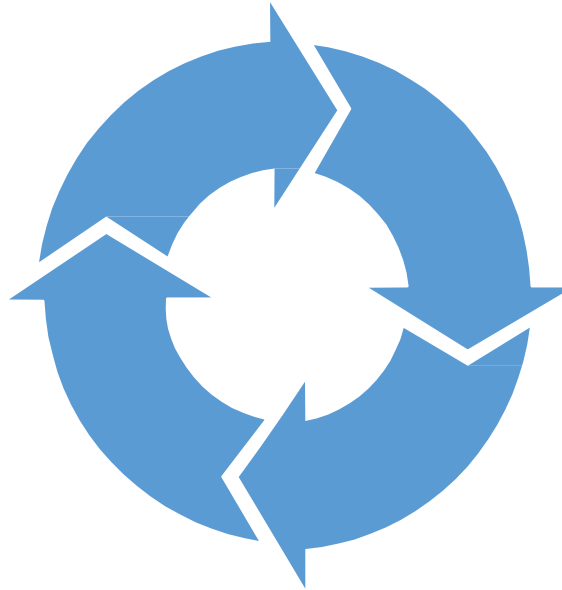
IFRS 9 impact on Governance & Financial Reporting

Governance and risk management

- The major focus of IFRS 9 – related supervision
- Overall governance and management, policy documentation, model governance, internal audit and credit risk management

Risks to capital

- Volatility in capital ratios
- Transitional arrangements



Risks to liquidity

- Timing and uncertainty of bank's future cash-flows
- Liquidity planning

Business model

- SPPI test
- Higher impairment
- Pricing

How Banks can respond

1

Establishing and maintaining an effective IT environment in which the expected credit loss estimation process operates; this should extend to all functional areas throughout the bank that provide data or other inputs to the estimation process

2

Establishing controls to ensure the completeness and accuracy of data, and assess the relevance of these data to the estimate of ECLs

3

Ensuring models are developed, maintained and validated to a high standard

4

Documenting the basis for significant judgements and assumptions in the ECL estimation process, and ensuring that such judgements are consistent with IFRS 9

5

Assessing whether disclosures regarding ECL are complete, clear and decision-useful

Smoother and more efficient interaction with the supervisor and auditor



To sum up...

IFRS 9 would imply impacts in respect of:

- More volatile provisions
- More volatile P&L
- Higher probabilities of recapitalization needs
- Higher cost in pricing and generally more competition on pricing

IFRS 9 would imply a strong Governance around:

- Method, Model and Risk Parameters consistent with Stress Test analytics/ processes
- Validation / Benchmarking against market best practices / peers
- Process Automation
- New Paradigm designed behind a strong reinforcement on stress testing

Strategic decision to be taken (1/2)

Tasks to be done and decisions to be made to include macro-economic forecasts and life time parameters into bank steering



LOAN APPROVAL PROCESS

- Shall the size of impairments have an **influence on the loan approval process?**
- What are the additional **decision criterion** to be considered?
- Risk provisioning can be done via **standard risk costs** and **using life time expected losses?**
- Should the first-year expected loss or life expected loss be taken for the approval process? **PIT** (point in time) **or TTC** (through the cycle) calibration should be used?
- What is the **relevant** level of the **Granularity** required?
- Probably, an **adjustment of impairment engine in terms of a front end** is necessary to calculate life time expected losses for new business depending on the kind of impairment engine



CREDIT PORTFOLIO MANAGEMENT

- Changes of the life time expected loss of existing loans might lead to **adjustments in credit portfolio management** because some loans might receive very high risk provisions
- More emphasis on the following aspect: Find a better **mix between business segments** / industries with higher volatility of impairments / more business cycle dependence (corporates, specialized lending) but higher profitability and business segments with lower volatility / less business cycle dependence (retail, SME, municipalities, sovereigns and public utility housing enterprises) but lower profitability.

Impact of
new loan
loss
provisioning

Strategic decision to be taken (2/2)

Tasks to be done and decisions to be made to include macro-economic forecasts and life time parameters into bank steering

Pricing of loans

- How to incorporate the life time information into the pricing tool
- Application of the life time expected loss model also for pricing apart from several using another discount rate?
- Shall scenarios be used?

Capital Planning

- How to incorporate macroeconomic forecasts into new business planning?
- Shall the capital planning be more point in time or more through-the cycle?
- Shall a lifetime credit risk portfolio model over time be developed?
- Banks with the standard approach might need more capital

Stress tests

- Usage of models for stage migration, lifetime PD, LGD and EAD for stress tests
- Stress test will reveal portfolio weaknesses

Portfolio steering

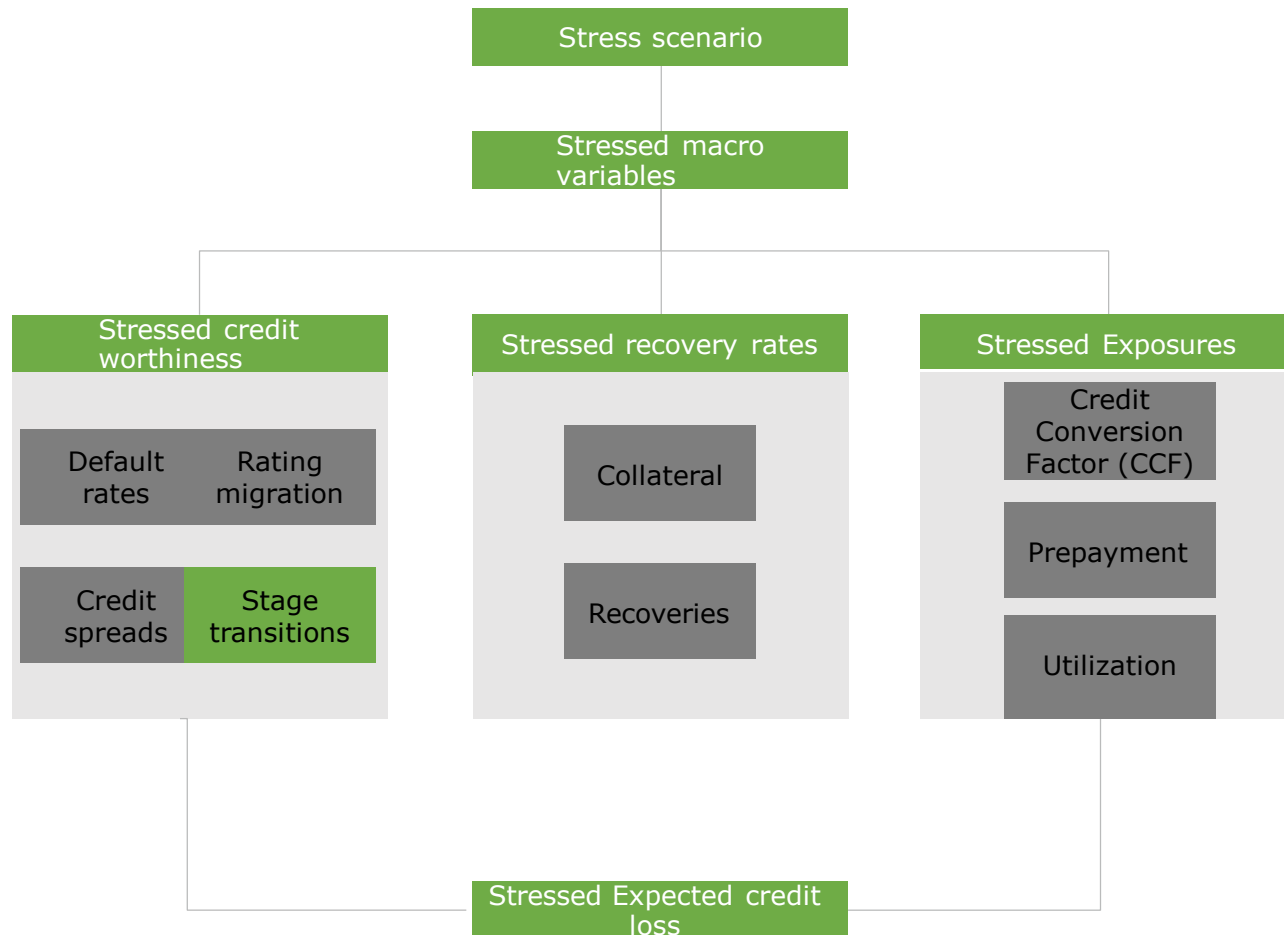
- The life time parameters and the macroeconomic forecasts could be used for the determination of the risk strategy and portfolio steering (In which countries, business segments and products should the bank expand in the future? What are the losses in the pessimistic scenario?)

IFRS 9 stress testing exercise

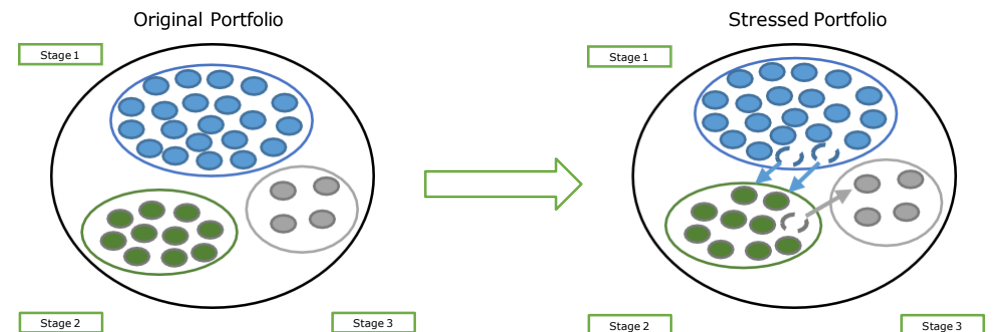
IFRS 9 & stress testing

Moving from a historically-based to a forward-looking approach

Banks are required to assess their credit risk impact on both the capital available (via impairments and thus the P&L) and the Risk Exposure Amount (REA) or the Risk Weighted Assets. Banks commencing to report under IFRS 9 shall forecast their impairments on the basis of this standard.

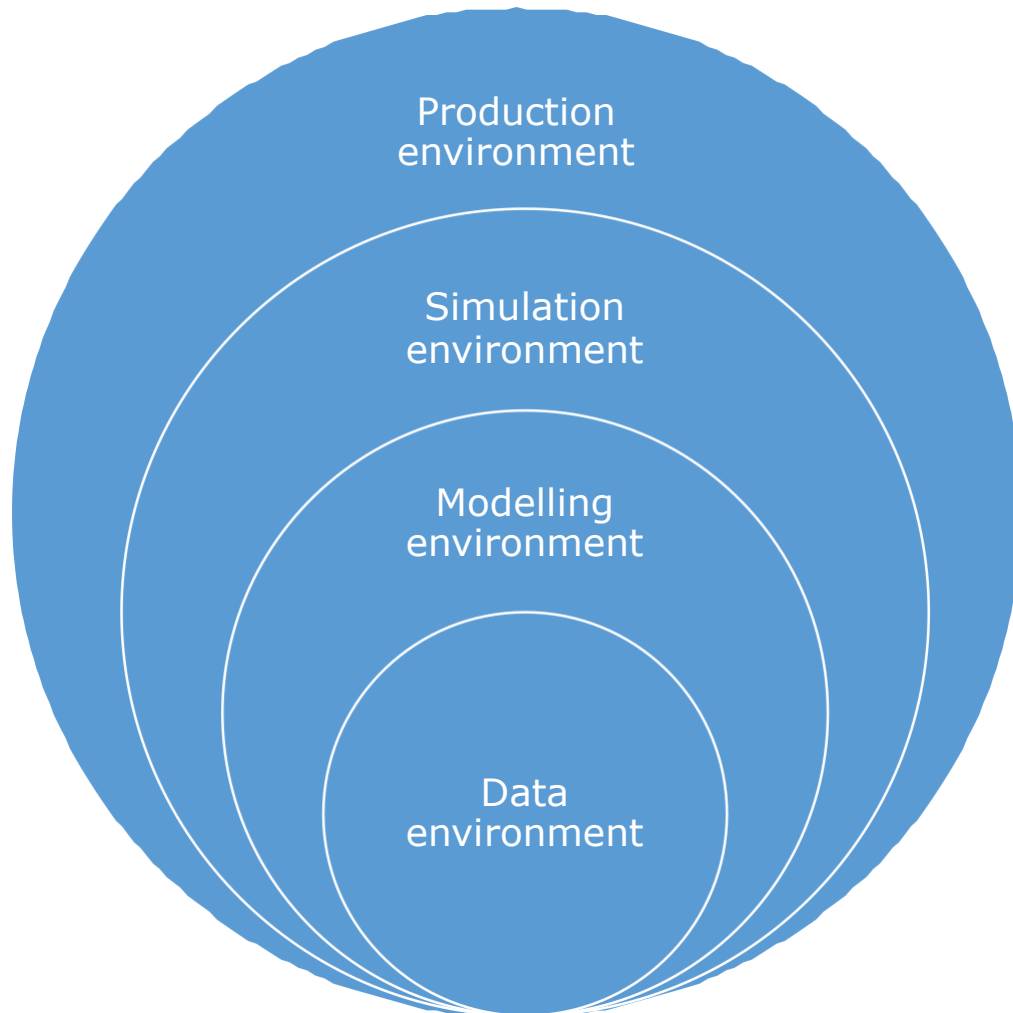


- ✓ Embed stress testing into existing planning and forecasting activities
- ✓ Alignment of internal and external stress testing



IFRS 9 & stress testing

Moving from a historically-based to a forward-looking approach



- 1. A transparent production environment:** delivery of transparent, auditable, and repeatable information. Therefore, the environment should support a **controlled orchestration** of all processes involved in the delivery of the calculated results and the provision of information, both internally and externally.
- 2. Simulating the potential impact:** Ability to run different scenarios and analyze the impact in a testing environment.
- 3. Good model management:** The forecast of the potential credit losses or risks for an organization is based on predicting models calculating different (macroeconomic) scenarios. To facilitate effective model governance, all models should be developed, validated and managed in a single environment that offers all the tools and features necessary for modelling
- 4. A well-managed data environment:** To make analytical models work, data management is key. Hence, in the most optimal situation, all the data should also be stored in a single environment.



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