Risk-based Pricing Framework

and the impact of IND-AS 109/IFRS 9

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Agenda

Setting the context

- Risk-based pricing: current context
- An illustrative risk-based pricing framework
- IND-AS 109/IFRS 9 and its impact in pricing
- Practical challenges and roadmap for implementation

Are we pricing risk?

We say we do, but do we really?

Can I identify my obligor’s risk by examining the prices

Does my risk management department have a say in pricing

Do I have necessary tools to link risk to pricing

Does obligor know what drives his/her cost of credit besides MCLR

What various studies say

While we say we do it but do we really do it

Banks compute spreads as the difference between actual lending rates and MCLR	Internal spread inflators/deflators driven by strategy and competitive pressures	Risk tools used primarily to accept/reject an applications	Credit risk premium not customer-specific, but applied to portfolio	Backward-looking PD/LGD applied to benchmark risk premiums
Risk measurement missing		**Risk not priced**	**Inappropriate premiums**	

Various anomalies result in risk not being priced in the final lending rates

But why is pricing important now?

Multiple changes in the environment are making appropriate pricing quintessential

Digital business model	• Tradeoff between Speed vs quality of disbursements is paramount • Data enables more precise measurement of risk in current environment
Change in Provision Standards (IND-AS 109/IFRS 9)	• The risk in individual contracts will be reflected in the income statement right from origination • Computation guidelines direct the risk assessment to be forward looking
Scrutiny of lending business	• Credit quality crisis in Indian banking system has triggered focus on systems in place for lending • Regulators are increasingly pushing for more transparency in lending rates

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Risk-based pricing framework

All sources of cost, including cost of risk, crucial to designing a good risk-based pricing framework

Guiding principles

- Framework should adhere to sound banking and risk management principles
- Bank shall receive suitable compensation for risk
- Loan pricing framework shall take due account of the rate at which funds were obtained by the bank (i.e. a cost of funds-plus basis) and its risk appetite
- Loan product specific adjustments should be made to incorporate the nature and objective of the loan, borrower segment and profile

Pricing framework

RISK BASED PRICING

Cost of funds

- *Cost of debt*
- *Cost of equity*

+

Credit risk spread

- *Expected loss*
- *Unexpected loss*

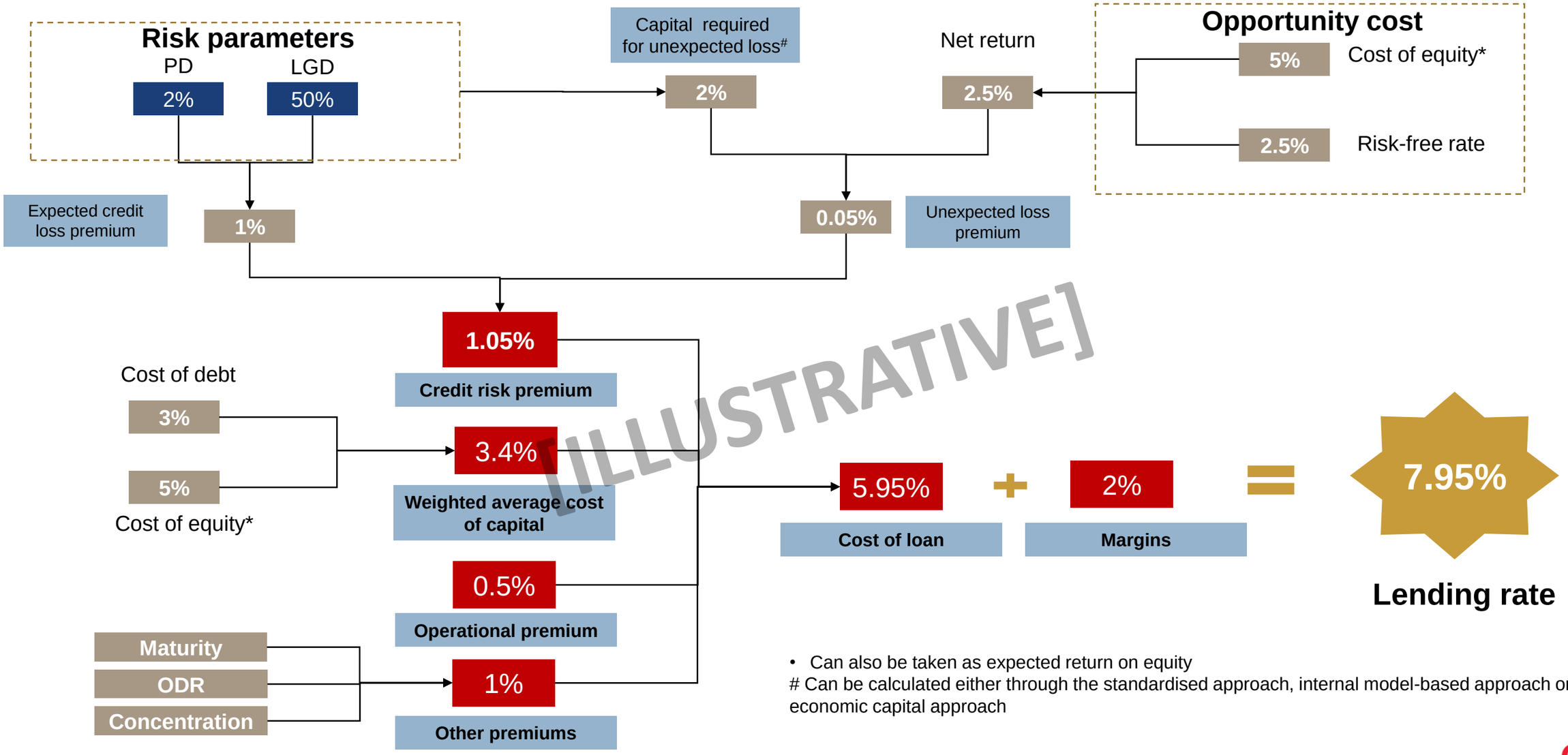
+

Additional spread

- *Operational premium*
- *Maturity premium*
- *Observed default rate Premium*
- *Concentration risk premium*
- *Other factors if any*

Risk-based pricing framework diagrammatic

Arriving at the lending rate



• Can also be taken as expected return on equity

Can be calculated either through the standardised approach, internal model-based approach or economic capital approach

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The building blocks of pricing framework

Example illustrates how a simplistic risk-based pricing framework would work

PD

Probability that the obligor would default on its credit obligation. The definition of default should be carefully chosen to incorporate curing behaviour

LGD

The actual financial loss that lender observes after an account is classified as default. All recoveries net of costs in present value terms would yield the LGD

Maturity premium

Premium to account to compensate for the uncertainty associated with future tenure of the loan, including uncertainty of credit quality maintenance

Observed default

Risk premium to be charged basis of higher observed default rates for a homogenous group which was not covered as part of PD framework

Concentration

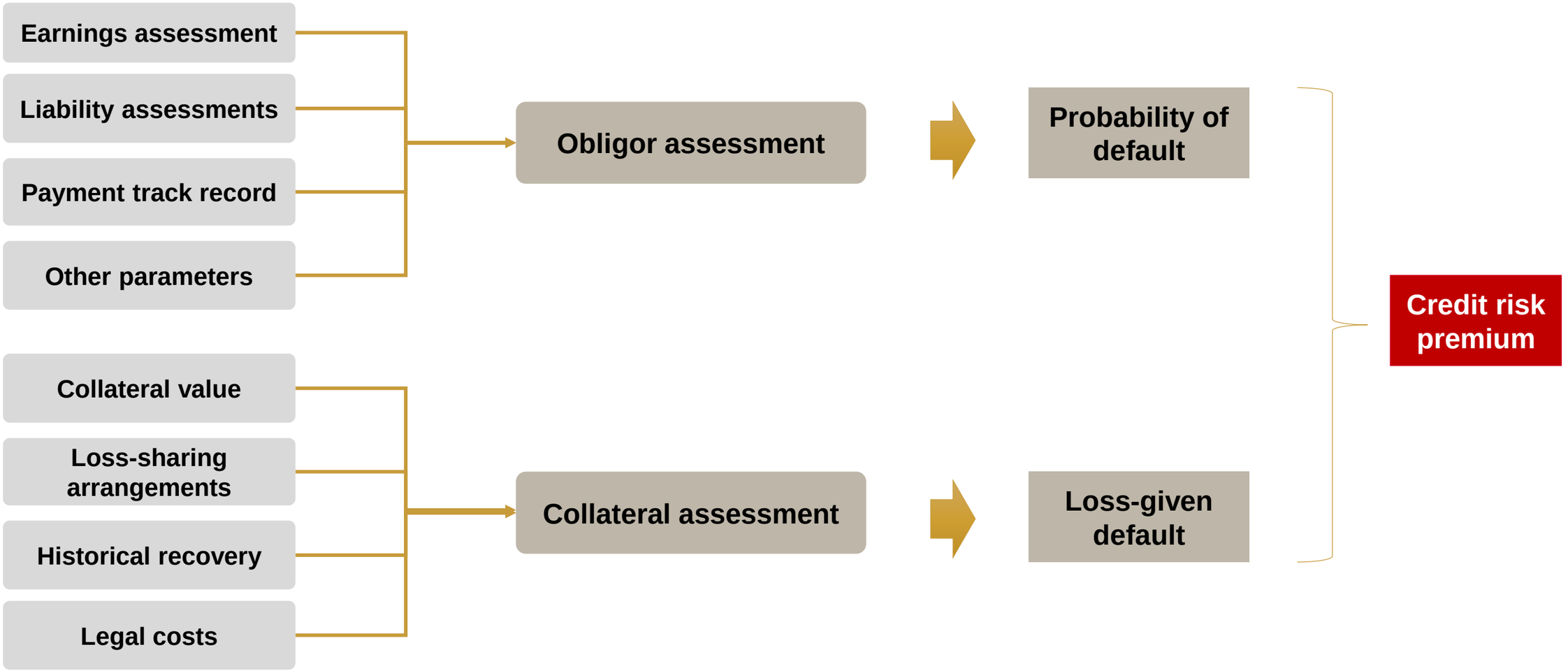
Negative premium for segments that add diversification to the portfolio, positive premium for segments that add concentration to the portfolio

Model Driven

Portfolio Driven

Credit risk premium

The core of pricing hinges on assessment of credit risk



An approach to maturity risk premium

Chances of obligor defaulting in subsequent years needs to be priced in through maturity premium

Approach 1: Calculate Credit Premium based on one year PD number

	Standardized Approach	Basel IRB Approach
AAA	0.13%	0.00%
AA	**0.13%**	**0.26%**
A	0.35%	0.56%
BBB	0.77%	1.14%

Approach 2: Calculate Credit Premium based on CDR for 10years

	Standardized Approach	Basel IRB Approach
AAA	0.17%	0.67%
AA	**0.17%**	**0.69%**
A	0.40%	0.92%
BBB	0.87%	1.45%

Difference in credit premium on account of one year PD and CDR to be factored in through Maturity Premium

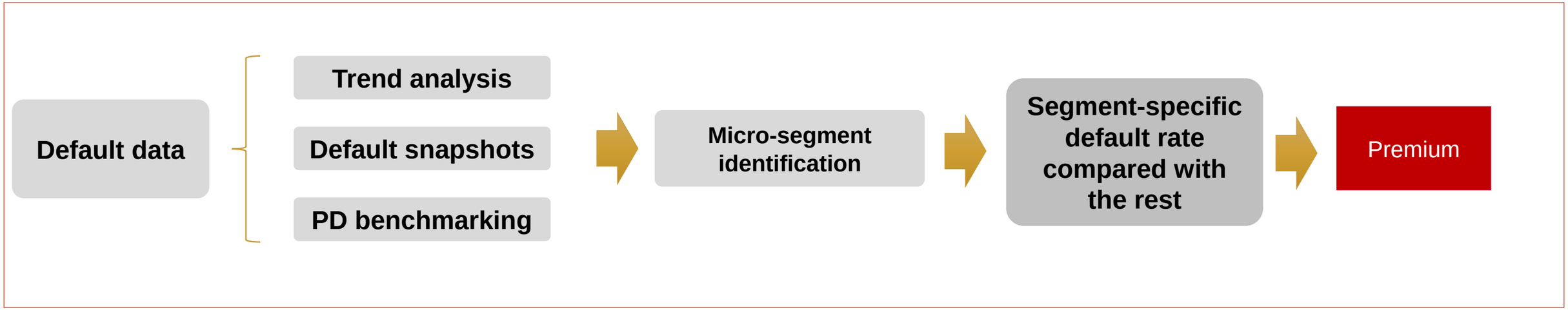
Maturity premium = Interest rate risk + Maturity premium due to credit risk

Observed default rate premium

Premium to capture idiosyncrasy that is not covered in PD framework

Approach highlight

- Identify segment that is currently not a parameter in PD framework yet is dominantly impacting defaults
- Example can be sub-region/portfolio micro-segment; quantify the additions/reductions in losses due to it



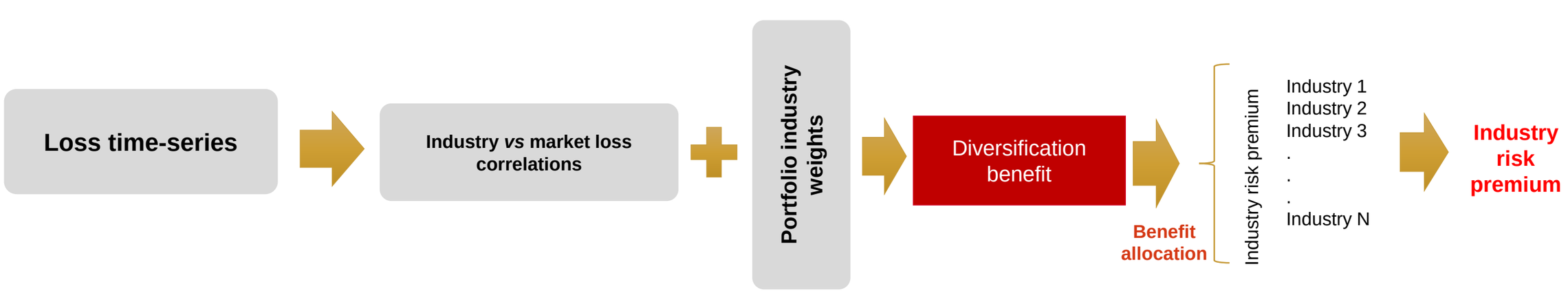
This premium is applicable only if a predictive segment identifier is missed in PD framework

An approach for concentration risk premium computation

Following is an illustrative approach for determining concentration risk premium

Approach highlight

- Compute risk premiums using the loss correlations and portfolio composition
- Method penalises industries that make portfolios concentrated from a credit loss perspective



Approach is highly useful for corporate portfolio and would enable a financial institution (FIs) to collect an appropriate fee to mitigate concentration risk

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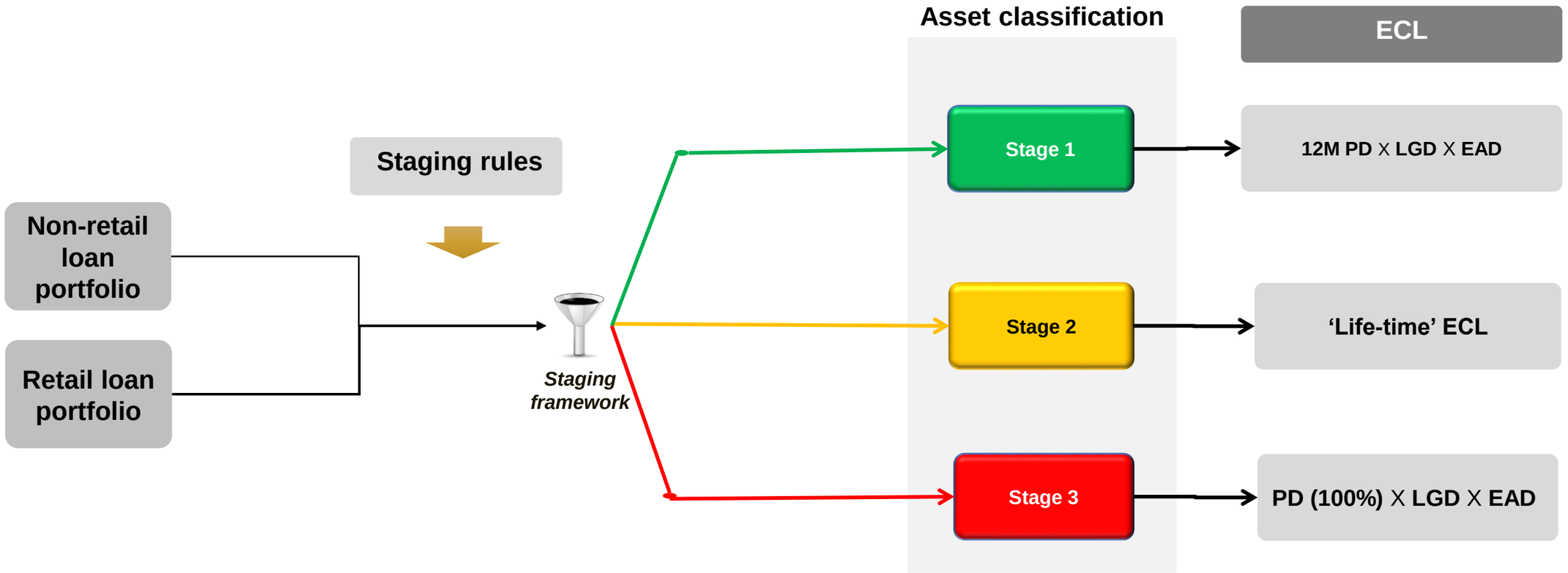
IND AS 109/IFRS 9 introduction

FIs are migrating to IND-AS 109/IFRS 9 for computation of provisions in a phased manner



IND-AS framework escalates the recognition of cost of risk through provision amounts

Impact of IND-AS 109/IFRS9 in the overall pricing framework

IND-AS 109/IFRS 9 requires fundamental modification to these risk measures

	Existing	IND-AS 109/IFRS 9	
PD	Risk grading models are calibrated on historical default study, smoothening economic cycle impacts on PD	PDs should be forward looking and should be sensitive to economic conditions	**Link macro-economic variables with PD**
LGD	Regulatory prescribed haircuts used to arrive at LGD numbers or crude estimates from value of collateral used	Should be actual representation of losses to be obtained in present terms from actual recovery information	**Quantify financial and asset recovery**
Maturity	Generally maturity premium is obtained to factor interest rate risk due to longer tenure	Maturity premium should also factor in the risk of credit deterioration during the tenure of loan	**Credit deterioration study**
Cost of credit	Cost of change in provisioning due to deterioration in credit risk not factored in current framework	Chances of increase in risk (Stage 2) also to be factored in while estimating the overall cost of credit	**Identify cost of increase in credit risk**

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Roadmap for an effective risk-based pricing framework

Improvement in the robustness of the models being used

Invest in PD models	Invest in development of PD models. Models should be specific to portfolio segments and risk metrics
LGD framework	Use internal recovery data to come up with the LGD framework, identify losses by collateral/vintage and portfolio segment types
Macro-economic overlays	Identify the macro-economic drivers for loss parameters and actively run macro-economic scenarios to get a sense of what scenario specific losses are
Pricing covenants	Create a transparent covenant mechanism that would become active should the account undergo increase in risk (Stage 2)
Data analytics	Collect and analyse data in automated manner to improve the parameters of pricing framework

Practical challenges in pricing framework

FIs need to re-orient their strategy and operations for doing business

Portfolio strategy

Portfolio strategy currently does not factor in granular pricing dynamics and corresponding elasticity which would come into play

No one is responsible for monitoring the results of pricing decisions or identifying leakages, and organizational structures do not support such oversight.

Process/policy change

Credit origination policy and process requires change as now the pricing should factor risk and would not be driven solely by market

Account planning, which projects a client's potential in the near future is either not conducted or followed-up

Product management

Performance reviews and KPIs do not encourage professional pricing practices. For example, discounts offered to secure business are not reviewed for effectiveness.

Lending institution requires to manage its product segment in terms of target maturity/price and features to maximize profits

Data capture

Organizations are not capturing data effectively or not structuring it in a way that information would be utilized

Legacy IT systems are not capable of monitoring pricing execution or alerting management of leakages, and multiple systems have not been integrated sufficiently.

Even in market-driven pricing, FIs needs to know what are the costs associated with pursuing the market-based pricing

Tracking key metrics to assess pricing effectiveness

Pricing Trends	• Price and product revenue variance trends over time – important input into pricing strategy and product profitability
Re-pricing Candidates	• Identify Re-pricing opportunity basis current volumes & -ve dispersion from relevant “mean price”. Review segmentation & evaluate pricing appropriateness.
Negative response to pricing stimuli	• Response by clients to a price drop - lower volumes and/or de-growth in overall revenues – contrary to expectation of growth in the overall business relationship.
Negative price elasticity	• Product price points with negative price elasticity, i.e. volume increases in spite of price rise. These represent opportunity to evaluate re-pricing upwards.
Positive price elasticity	• Product price points with positive elasticity i.e. volumes increse on lowering price. Analyse potential gain in revenues vs costs and effect re-pricing.
Analysis by client attributes	• Analyse the price-volume change correlation coefficients to detect high elasticity for specific industry sectors.

Thank you

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