



ECL Models Under Stress: Addressing Emerging Macroeconomic and Geopolitical Risks

29 April 2025

Ask a question



The screenshot shows a Q&A interface. At the top, it says 'Q&A'. Below that, there is a question: 'You asked: What happens when I raise my hand?' with a timestamp of '18:03'. Below the question, there is an answer: 'Molly Parker answered: I can take you off of mute.' with a timestamp of '18:04'. Below the answer, there is a large text input field with the placeholder text 'Please input your question'. At the bottom of the input field, there is a checkbox labeled 'Send Anonymously' and a blue 'Send' button.

To ask a question

Click on the **Q&A** button in the bottom toolbar to open the submit question prompt.

Type your question and click send

NOTE: If you wish to ask your question anonymously check the **send anonymously** box shown on the illustration.



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ICAEW's revised Continuing Professional Development (CPD) Regulations brought in new CPD requirements, including a minimum number of hours and an ethics requirement.

This webinar could contribute to up to 1 hour of verifiable CPD, so long as you can demonstrate that the content is relevant to your role.

Find out more about how these changes affect you at [icaew.com/cpdchanges](https://www.icaew.com/cpdchanges).



Introduction – who is here today



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Our quantitative risk capabilities

Grant Thornton is a global leader for Quantitative Risk activities with over 200 quantitative risk experts working across several geographies. We are embedded in some of Europe's largest banks providing model development and validation, complex analytics and valuations services. We are also a key supplier of services to the European Central Bank in On-site Inspections, Internal Model Investigations and Asset Quality Reviews. We have the scale, capability, credentials and the subject matter expertise to support you.

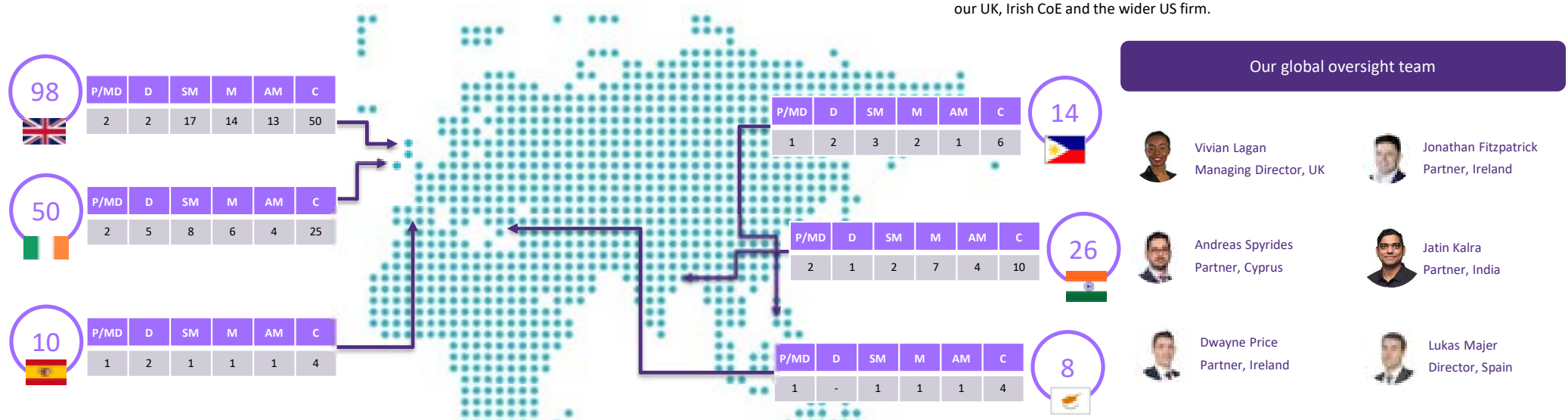
Global delivery resources (UK, Europe, India, and USA)

Grant Thornton have successful long-standing relationships and deep understanding of strategic objectives and businesses of many of our clients, having delivered numerous projects across the globe over the last 10 years. We also have considerable experience of tailoring our approaches to your needs and your ways of working.



Global Growth Strategy

- Grant Thornton has set ambitious targets for our **global quantitative risk capabilities growth** over the next three years.
- Our **Ireland based Centre of Excellence** is expected to grow to over 70 experts, to **serve the entire US market**.
- We are **expanding our European presence** across multiple network firms.
- An **off-shore delivery team is in India and is being developed in the Philippines** to support our UK, Irish CoE and the wider US firm.



Our global oversight team



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Supporting clients on ECL Projects

Grant Thornton has delivered ECL engagements for over 70+ clients.

THEMATIC: THE CHALLENGES FACING GLOBAL MARKETS

Rapid macroeconomic changes

Geopolitical instability

Inflation

Interest rate volatility

Supply chain disruptions

Recession risks

All of this impacts different banks and portfolios differently. What should be done with ECL models in such scenarios would also therefore require bank level evaluation to quantify these potential impacts on ECL.

Specific Considerations on impact of U.S. tariffs:

Sector Specific Risks: heightened risks for certain sectors which might require sector specific adjustments in ECL calculation

Volatile scenarios: There are different scenarios which can be considered possible. Analysis can be tricky and dynamic.

Default levels: geopolitical risk and volatility can increase the likelihood of defaults and require higher ECL

Agenda

1. Regulatory landscape including PRA & EBA expectations
2. Overview of ECL Risk Management Process and the significance of Model monitoring
3. Where and why traditional ECL modelling can go wrong
4. The Impact of Evolving Macroeconomic and Geopolitical Risks on ECL Models
5. The Role of Post Model Adjustments (PMAs) in Bridging Gaps Left by Statistical Models

1. Regulatory Landscape

Month	Region	Issuer	Topic
Apr 2011	US	OCC/ FRB	First supervisory guidance on MRM
Jun 2013	Europe	EU	CRD IV (Basel III) – defines model risk and requires assessment of MRM as part of operational risk
Mar 2014	Europe	EBA	Valuation adjustments on model risk quantification
Dec 2014	Europe	EBA	Integration of model risk as per Pillar II
Jul 2016	Europe	EBA	Structure of 3 lines of defence
Sep 2017	Canada	OSFI	Enterprise wide model risk management for deposit taking institutions
Apr 2018	England	PRA	Model risk management principles for stress testing models
Feb 2019	Europe	ECB	ECB instructions for reporting the validation results of internal models
Oct 2019	Europe	ECB	Implementation of a model risk management framework
Aug 2021	US	OCC	OCC comptroller's handbook: model risk management
Dec 2022	UAE	CBUAE	Model management standards and guidance for UAE banks
May 2023	England	BoE/ PRA	Model risk management principles for banks
Aug 2024	India	RBI	Regulatory Principles for Management of Model Risks in Credit

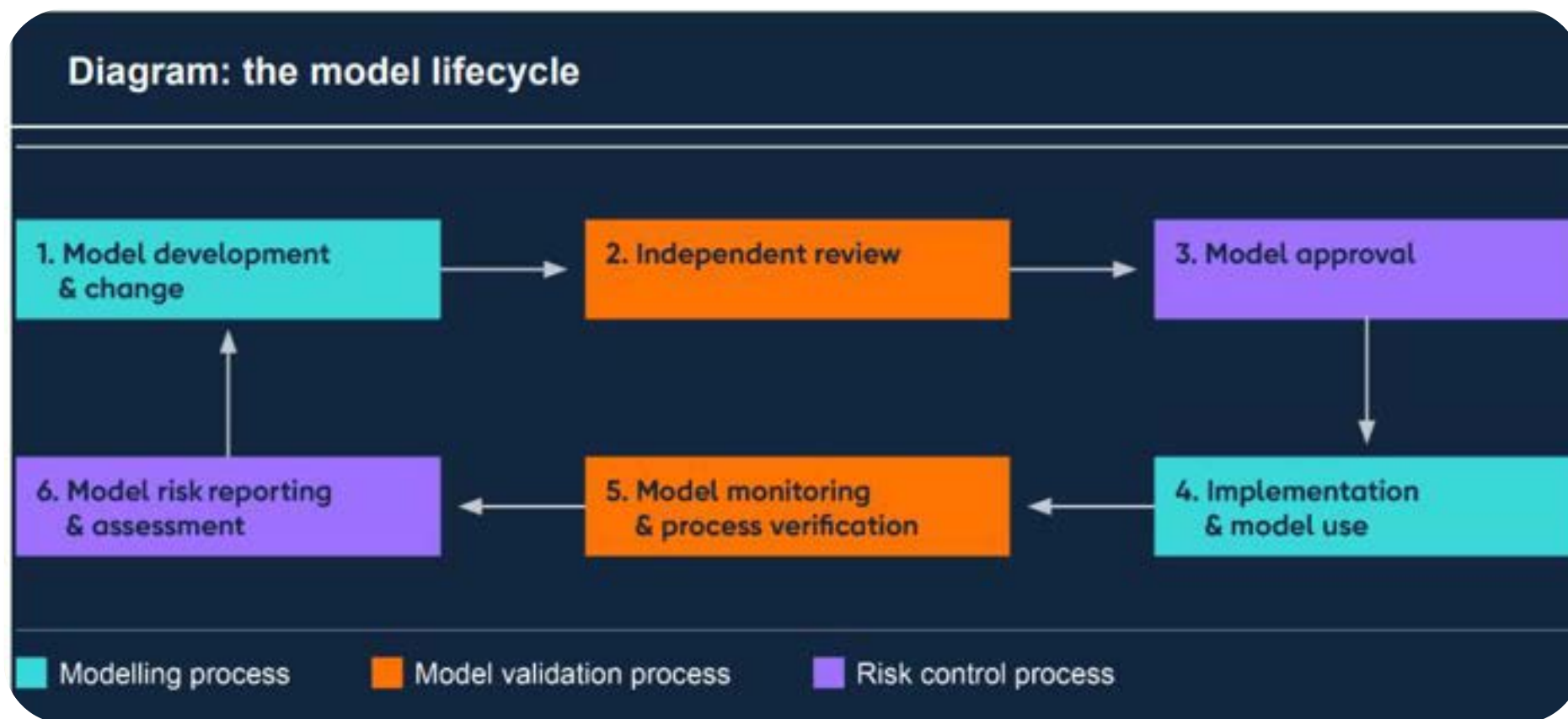
PRA & EU expectations

- IFRS 9 Implementation by EU institutions monitoring report (EBA/Rep/2023/36)
 - **Significant Increase in Credit Risk (SICR)**
 - **ECL models**
 - **Probability of default (PD) variability**
 - **Forward looking information**
- PRA Written Auditor Reporting
 - **2019-2022 'high quality practices'**
 - **Areas of focus for the medium term & near term**
 - Model risk and Post Model Adjustments (PMAs)
 - Model monitoring, back-testing and validation
 - Loss Given Default (LGD) and recovery strategies



Overview of Risk Management process

2. Overview of Risk Management process for ECL models



Significance of Model monitoring



Model may provide inaccurate results due to **changes in underwriting policies, portfolio characteristics and credit risk management practices**. Regular model monitoring ensures that the models remain precise and reliable in their predictions



To ensure that models continue **to reflect the current state of the economy**, making them more useful for decision-making



To assess the model performance through revalidating the model assumptions with **changing business conditions**



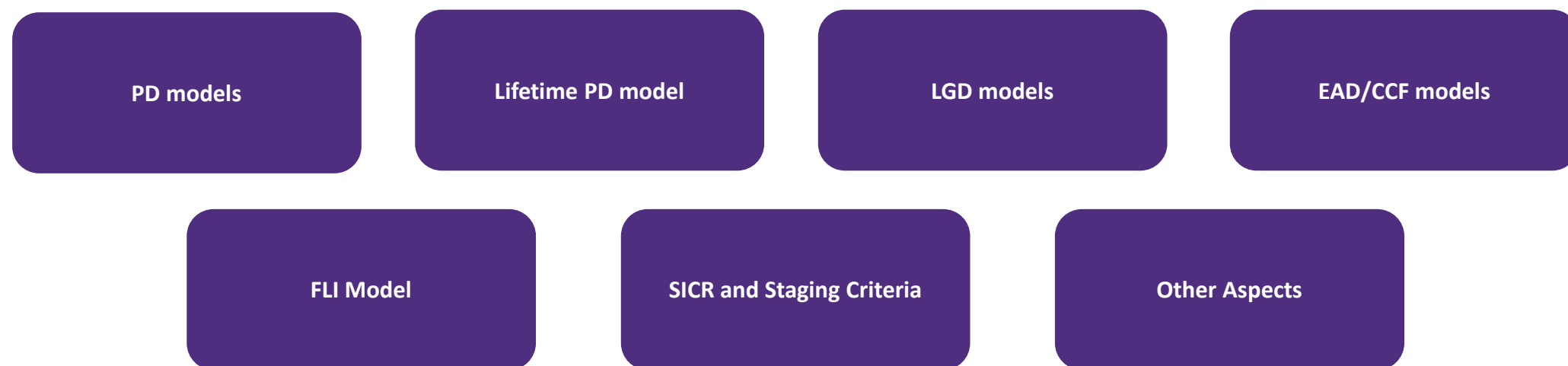
Governance and **stakeholder accountability**



Model drift and **recalibration needs**

Key components (models) of ECL frameworks

A thorough backtesting of the Expected Credit Loss (ECL) model involves evaluating the ECL itself and its various parameters. This evaluation is based on both qualitative and quantitative criteria, ensuring a comprehensive assessment of the model's performance and reliability.



Typical Monitoring Practices

Type of Model	Focus - Quantitative	Focus – Qualitative
Staging	Stability analysis, sensitivity analysis, curing period (redefault rates)	Forward looking, low credit risk, alignment with RM monitoring
PD models	Discriminatory power, calibration accuracy and population stability- AUROC, KS, IV, Binomial test, MAPE, PSI	Consistency of definition of default, reasonableness of external data/ benchmark, intuitive segmentation
LGD models	Discriminatory power, calibration accuracy and population stability – MAD, Spearman Rank, PSI, ECS	Technical default and restructures, treatment of credit enhancements, cured loans assumptions or intuitive segmentation
Macro models	Regression assumptions, model stability, correlation, sensitivity analysis	Business intuition, granularity of segments, benchmarking, scenario justification, lags/ transformations
EAD (CCF) models	Spearman rank, PSI, MAPE	Behavioural maturity, discounting assumptions, irrevocable commitments

Overall backtesting

Backtesting - ECL Provision

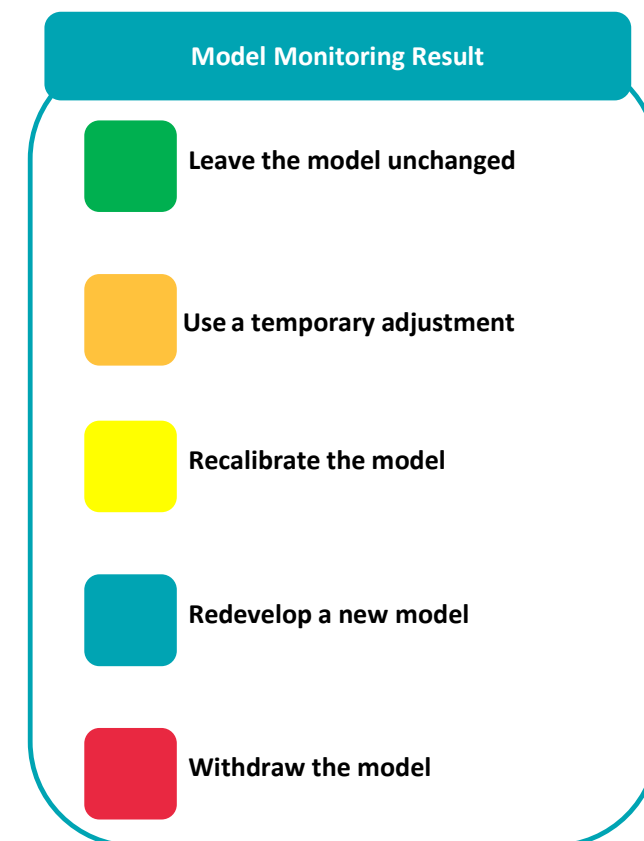
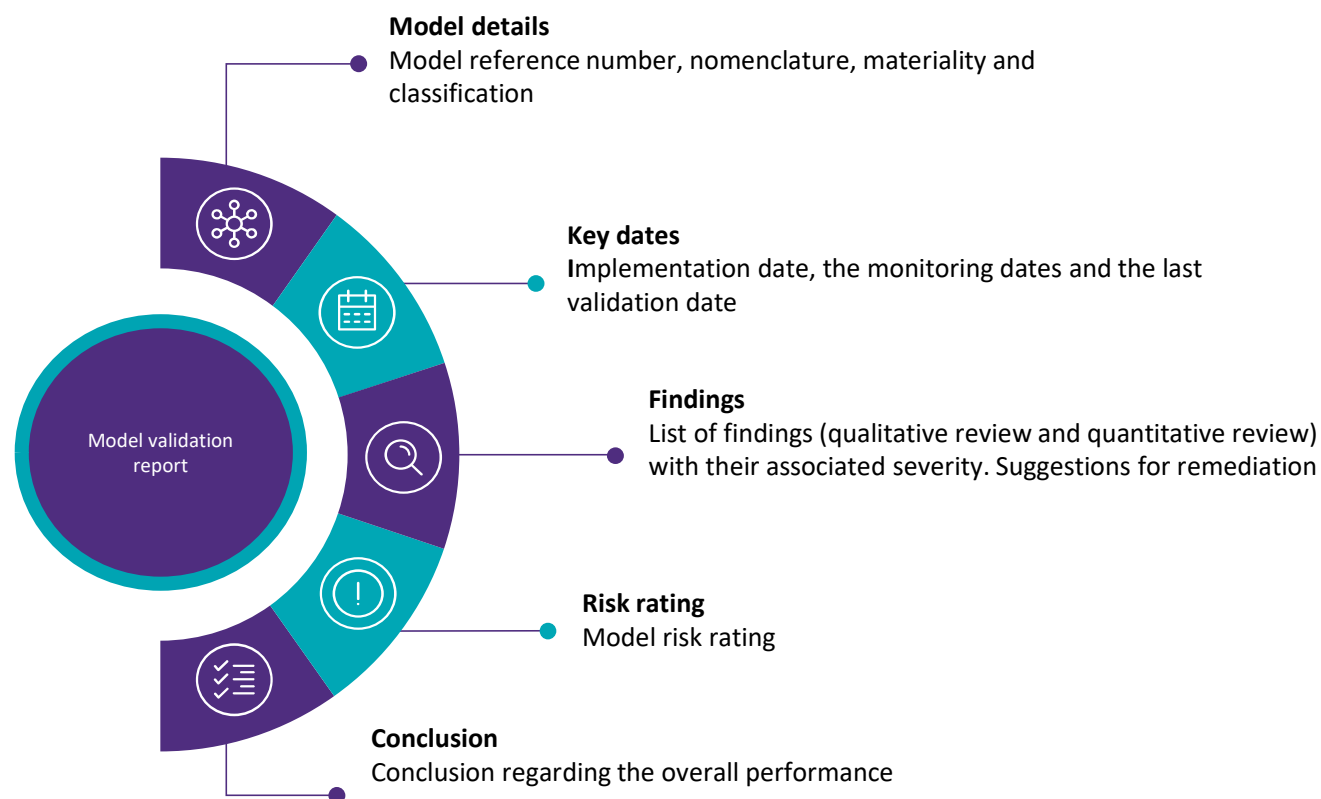
Particulars	Stage 1	Stage 2	Stage 3	Total
ECL as on 31 March 2023	6,750,000	1,340,000	5,350,000	13,440,000
Losses already incurred				
Loans written off which were active on 31 March 2023	3,200,000	1,457,000	2,600,000	7,257,000
Recoveries from loans written off above	(162,000)	(183,000)	(510,000)	(855,000)
Further recovery expected (for recent write offs)	(283,000)	(24,000)	-	(307,000)
Further losses expected (which were provided in March 23)				
Loans in Stage 1 on March 24		54,808	5,439	60,247
Loans in Stage 2 on March 24		414,400	66,718	481,118
Loans in Stage 3 on March 24	1,905,204	680,553	80,671	2,666,427
Total losses	4,660,204	2,399,761	2,242,828	9,302,793
Excess/(under) provision	2,089,796	(1,059,761)	3,107,172	4,137,207
% Excess/(under) provision	30.96%	-79.09%	58.08%	30.78%

Stage wise summary of March 24 balances of loans outstanding on March 23

Particulars	Stage 1	Stage 2	Stage 3
Stage 1	264,000,000	7,508,000	745,000
Stage 2	9,625,000	2,000,000	322,000
Stage 3	2,220,000	793,000	94,000

Stage	ECL rate March 24
Stage 1	0.73%
Stage 2	20.72%
Stage 3	85.82%

Model Monitoring Report



Typical Monitoring Practices – Model Selection and Overlays

Model selection

- **Partition the data** into different subsets
- **Evaluate the model performance** on various data subsets
- **Compare the results of candidate models** including statistical test and assumptions
- Assess the **management documentation** of preferred model selection
- Statistical performance should not only be decisive factor for model selection



Scenario analysis

- Validate the **assumptions** used for **scenario building**
- Assess the **reasonableness of statistically derived scenario weights** by reviewing the methodology
- For expert judgment-based scenario weights, conduct a **qualitative review based on technical insights** and expertise in the relevant portfolio.
- Evaluate the **intuitiveness of the forecasts** to ensure they align with expectations



Management overlay

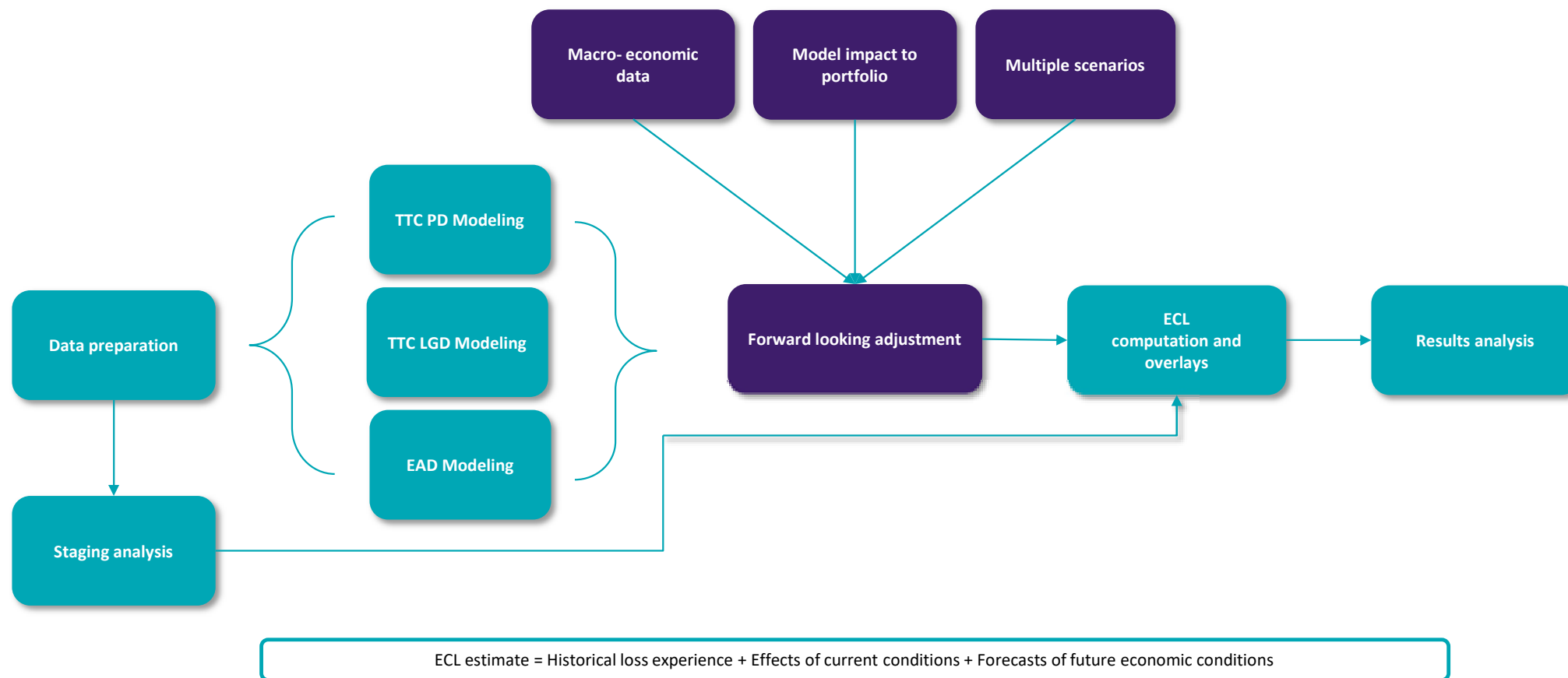
- **Understand the model limitations** and rationale and defined limits for post model adjustments
- Review the **documentation, policies, procedures and governance framework** governing the overlays and overrides
- **Quantify the impact of overrides** and compare it with original estimate to understand the magnitude of the adjustments
- Conduct **backtesting** to assess the accuracy and effectiveness of the ECL/ staging overrides or management overlays



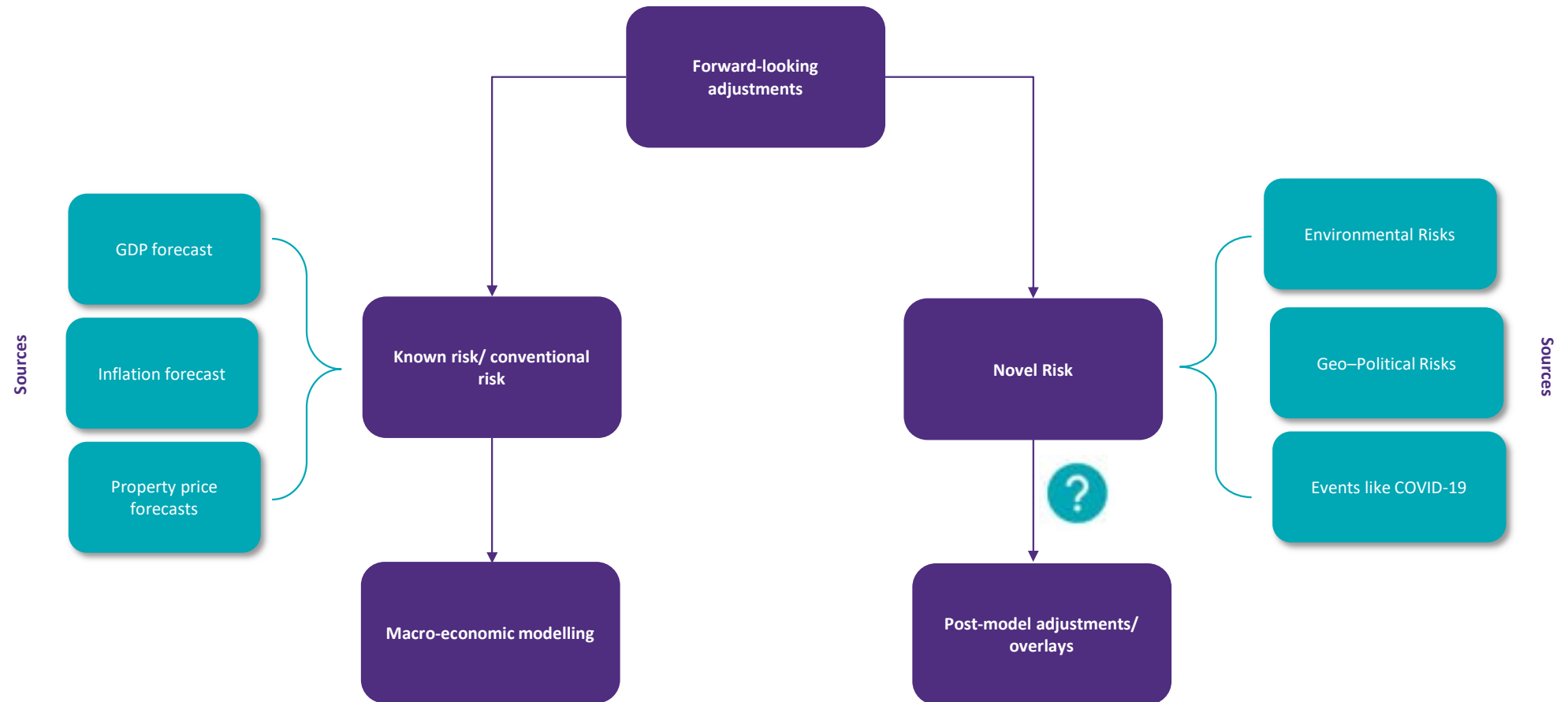


**Where do traditional models
generally fall short**

3. Overview of ECL modeling process



Forward looking information

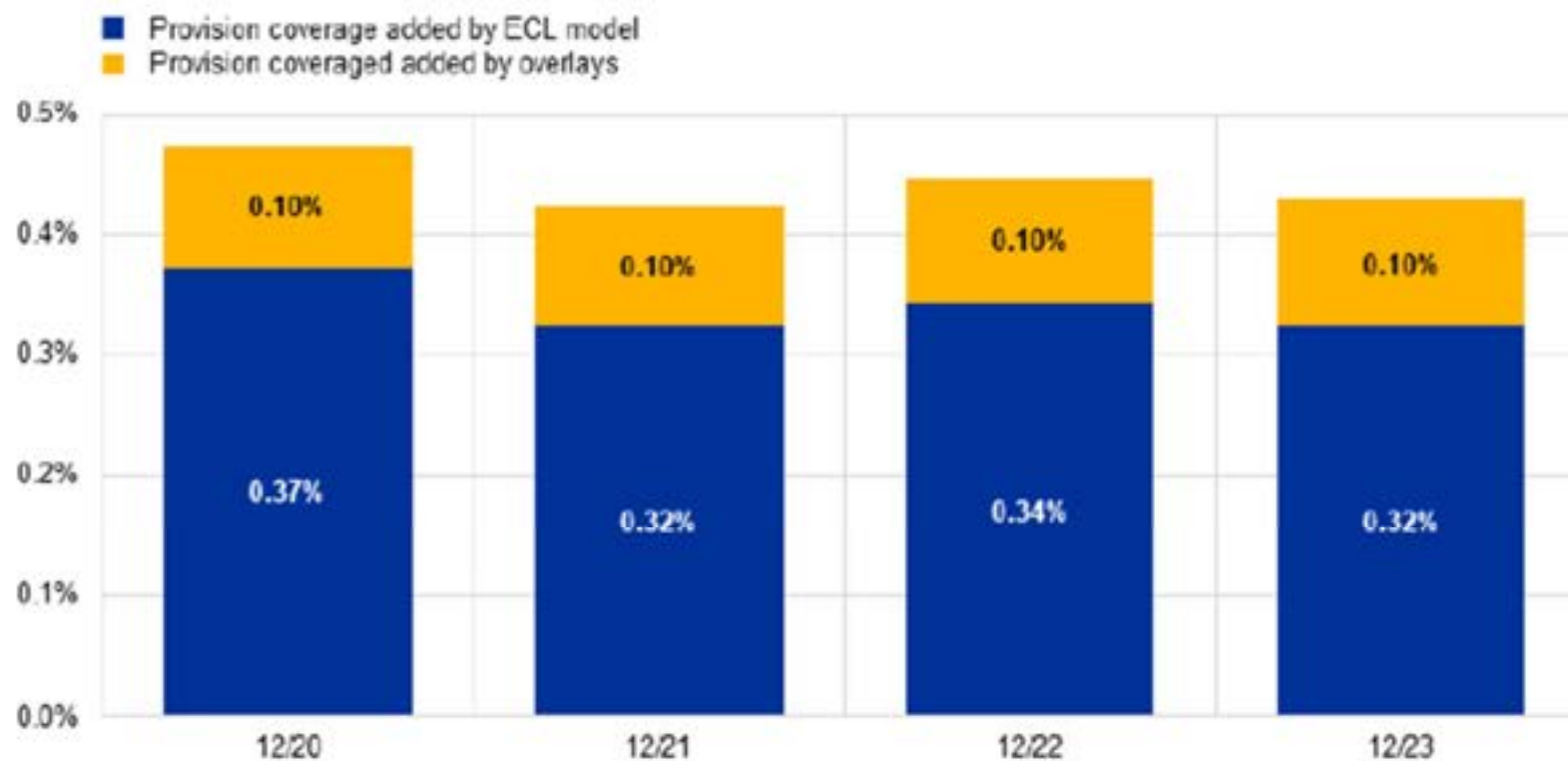


Key pitfalls

- Overreliance on historical data that no longer reflects current conditions
- Overreliance on quantitative tests
- Insufficient breakdown of FEG at industry/segment level
- MEVs used may be too broad. For example, trade war may not change GDP forecast drastically but can be disastrous for export reliant industry

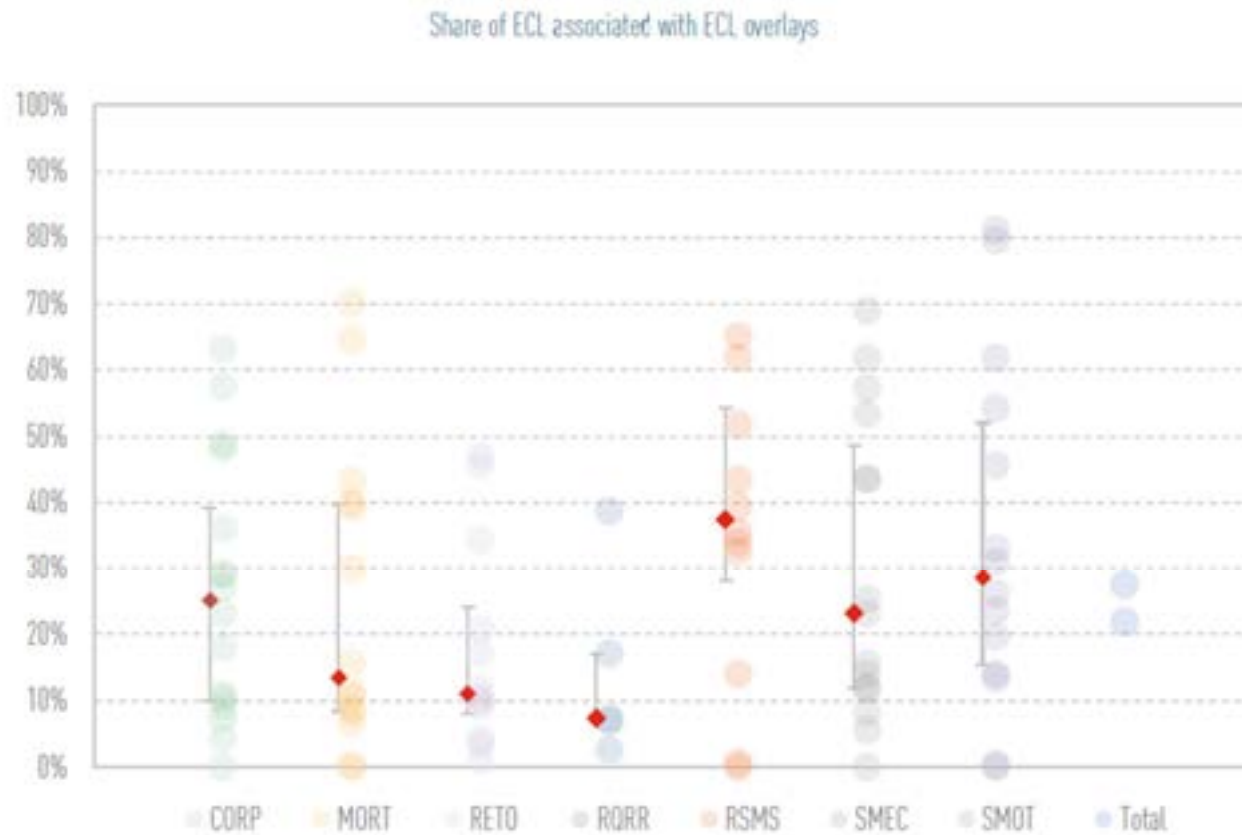
Industry practice: an overview

Aggregated coverage ratio of ECL provisioning of performing exposures



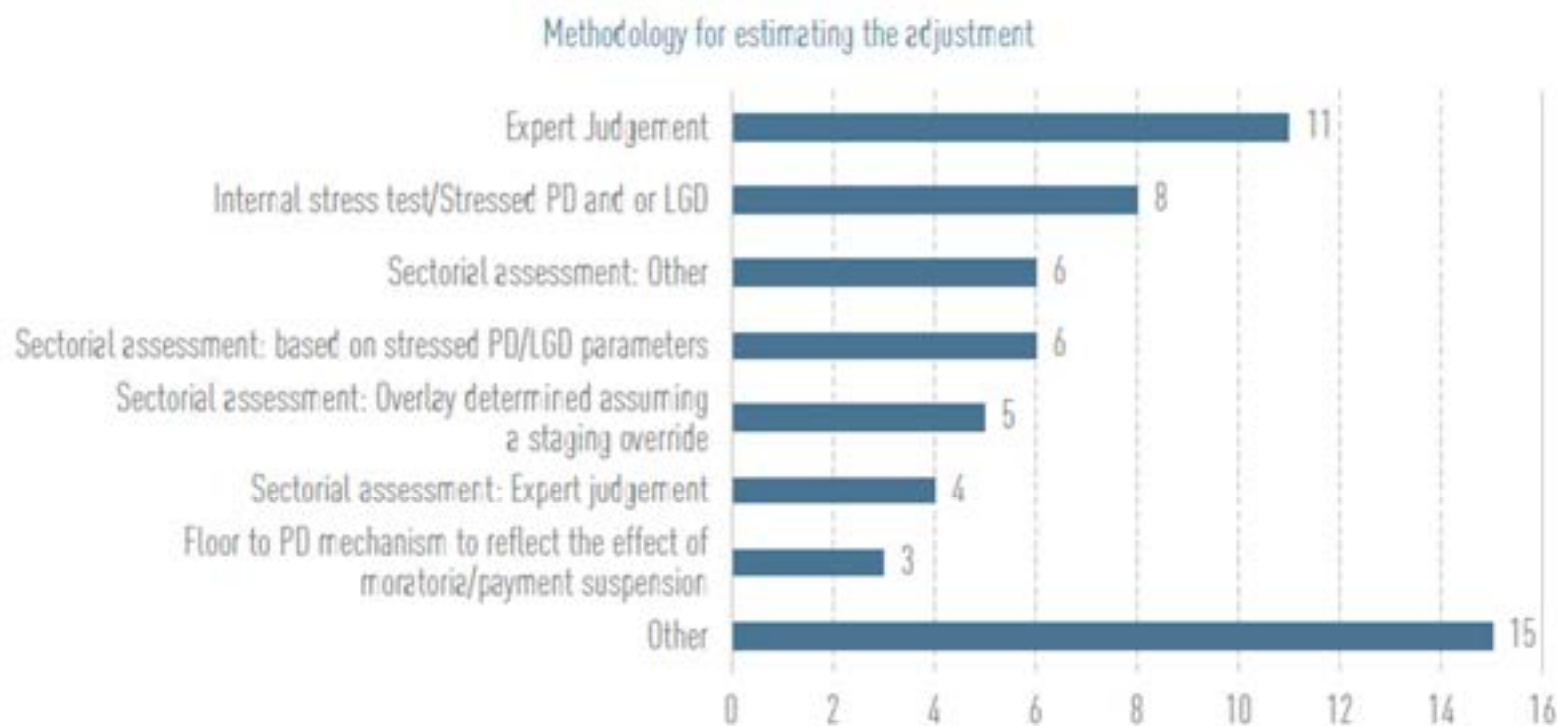
Sources: ECB calculations based on data collected in the two IFRS 9 questionnaires (November 2022 and November 2023) and supervisory reporting (FINREP).

Industry practice: Share of ECLs associated with the overlays



Sources: EBA 2023 Monitoring Report

Industry practice: Methodology followed for estimating overlays



Sources: EBA 2023 Monitoring Report

Regulatory expectations

- Structured approach
- Strict governance processes and internal controls
- Tailored to **specific** risk factors
- Expected to be at sector level



Impact of Evolving Macroeconomic and Geopolitical Risks

4. Dynamic macro economic situation



Evolving risk

- Trade wars
- Supply chain disruption
- Climate change
- US recession?
- Geo-political instability?

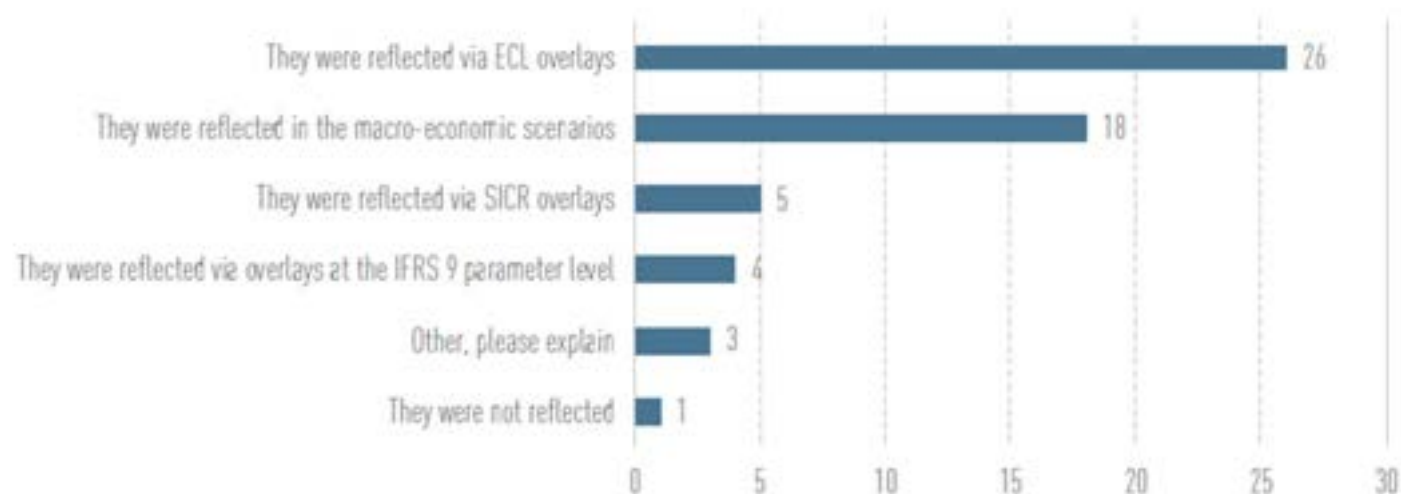


How to address?

- Application and risk parameters, SICR assessment, overlay?
- Internal stress testing
- Identification of vulnerable sectors
- Update of macro economic forecasts and scenario weights
- Incorporation of scoring system/ qualitative adjustments

Industry practice: Impact of Russian/ Ukraine conflict on ECL models

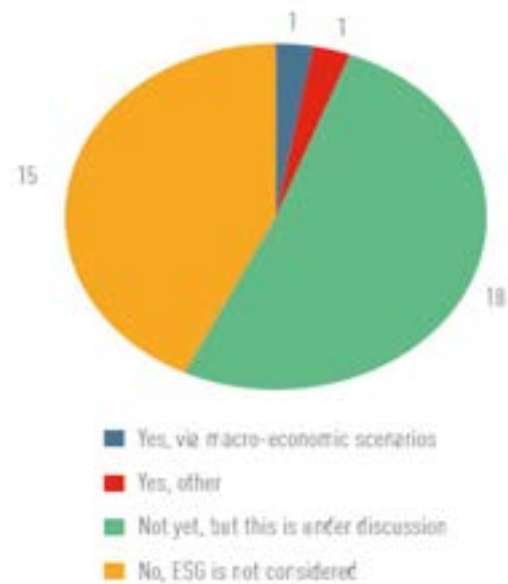
How institutions reflected the effects of the war in Ukraine in ECL models in the first half of 2022



Sources: EBA 2023 Monitoring Report

Industry practice: ESG including climate risk

ECL model revised to take into account ESG including climate risk



55% of the banks now incorporate climate and environmental risk in their ECL models as compared to 16% in 2023.

Sources: EBA 2023 Monitoring Report

The Role of Post Model Adjustments (PMAs) in Bridging Gaps Left by Statistical Models

5. Management overlays

Bad Practices

- Rely heavily on general references to expert judgment without further validation
- Use of overlays that do not distinguish PD and loss given default LGD.
- Application of overlays at the total ECL level without stage transfer
- Applying overlays to entire portfolio without a detailed assessment of the novel risks impacting the sectors/ borrowers

Good Practices

- Supplement expert opinions with quantitative data and robust analysis
- Integrate of all reasonable and supportable information such as internal experience, peer data, and public information.
- Develop multiple scenarios that capture a range of possible outcomes related to novel risks
- Robust governance frameworks to oversee the application of overlays



Q&A

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