IFRS 9 Challenges in View of COVID-19:

Impact on Provisions and Associated Regulatory Guidance

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Speakers

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Agenda

1. COVID-19 Impact Benchmark Study
2. Implications and Challenges of the Regulatory Guidance
3. Forecasting Future Period Provisions to Identify Vulnerabilities in Portfolio Segments

COVID-19 Impact on IFRS 9 Provisions*

- COVID-19 is having an unprecedented impact since the Great Depression on global public health, healthcare systems, and economy**
- Since the outbreak, the credit risk faced by lending institutions around the world has increased significantly, as evidenced in this and other Moody's studies** for various asset classes. Major banks have reported much higher loss allowances in 2020Q1 than 2019Q4
- Due to the extraordinary and uncertain nature of the current environment it is critical to have a timely and unbiased assessment of expected losses for credit portfolios
  - We provide COVID-19 impact results on IFRS 9 loss allowances for benchmark commercial and industrial (C&I) portfolios consisting of the European, Middle-Eastern, and North American exposures
  - We compare IFRS 9 loss allowances as of December 2019 (pre-COVID-19 crisis) with March 2020 levels under commonly used macroeconomic scenarios
  - In addition, we illustrate how current capital market information can be incorporated in impairment assessment, in addition to macroeconomic forecasts

*Joint work with Warren Xu, Denys Maslov, and Lisa Li of Moody's Analytics

** See http://www.moodys.com/coronavirus for a comprehensive credit risk research library related to the COVID-19 outbreak.

Baseline and Alternative Scenarios

Moody's Analytics March Forecasts (Released on 3 April, 2020)

Key Aspects	S1 (Upside*)	Baseline	S3 (Downside**)
Quarantine Measure End	Mid Q2 2020	End of Q2 2020	Mid Q3 2020
Global Recession	Mild	Moderate	Severe
Global GDP Growth in 2020 and 2021	-0.9% and 2.4%	-2.4% and 4.4%	-5.2% and -0.4%
Global Unemployment Rate in 2020 and 2021	5.66% and 5.33%	5.85% and 5.78%	6.64% and 7.62%
Brexit Process	Efficient	Moderate	Protracted
Oil Price in 2020 and 2021	$37 and $54	$34 and $49	$28 and $22

* 10% probability that the economy will perform better
** 10% probability that the economy will perform worse

Modeling Framework

Macroeconomic Scenario Forecasts

- » Forecasts of GDP growth, unemployment rate, equity price index, oil price, etc.
- » 3 scenarios: baseline, upside (S1), and downside (S3)

Scenario Probability Weights

- » 40% baseline, 30% upside (S1), 30% downside (S3)

GCorr™ Macro to Calculate Conditional, Point-in-Time PD & LGD + Staging Decisions

X Exposure at Default X Discount Factor = Expected Credit Loss

Moody's Analytics Through-the-Cycle (TTC) to Point-in-Time (PIT) PD Converter

- » Produce PIT PD term structures; the underlying PIT PDs are from Moody's Analytics CreditEdge™ Expected Default Frequency (EDF)

Default and Recovery Risk Measures

- » Through-the-Cycle PD, or external or internal rating
- » LGD (assumed=40%)

Benchmarking Methodology

- In this benchmarking study, we calculate Expected Credit Losses (ECLs) of the same portfolios on two reporting dates:
  - 31 Dec, 2019 ECLs based on Moody's Analytics December 2019 economic forecasts
  - 31 Mar, 2020 ECLs based on Moody's Analytics March 2020 economic forecasts
- Comparing the two sets of results enables an assessment of COVID-19's impact on the benchmark portfolios, and segments within
- Note, however, some information used in our models is from time periods before COVID-19 became the dominant concern in public health and future of the economy
- We caution that our analyses are based on diversified benchmark portfolios and Moody's Analytics economic scenario forecasts; individual organizations may observe very different results

C&I Benchmark Portfolios

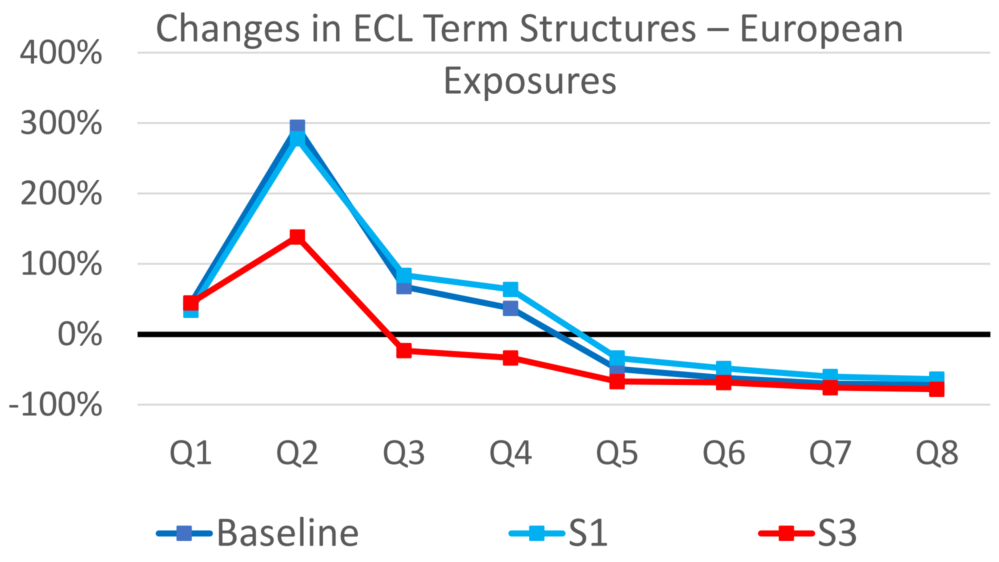
Portfolio	Outstanding Balance (% of balance)		Year to Maturity (years)	Main Industries (% of balance)
	Investment Grade	High Yield		
Europe	78%	22%	2.75	Bank and Savings & Loans (43%) Business Services (15%) Consumer Products Retail/Wholesale (5%) Agriculture (4%)
Middle East	52%	48%	2.50	Bank and Savings & Loans (18%) Construction (16%) Consumer Services (9%) Utilities NEC (9%)
North America	52%	48%	2.50	Bank and Savings & Loans (21%) Oil Refining (6%) Telephone (5%) Utilities, Gas (5%)

» Loss given default (LGD) is assumed to be 40%

» Due to the lack of information of credit quality at origination, a simple absolute threshold is used in stage allocation – probability weighted PDs are mapped to Moody's rating, and B1 or worse are assigned stage 2

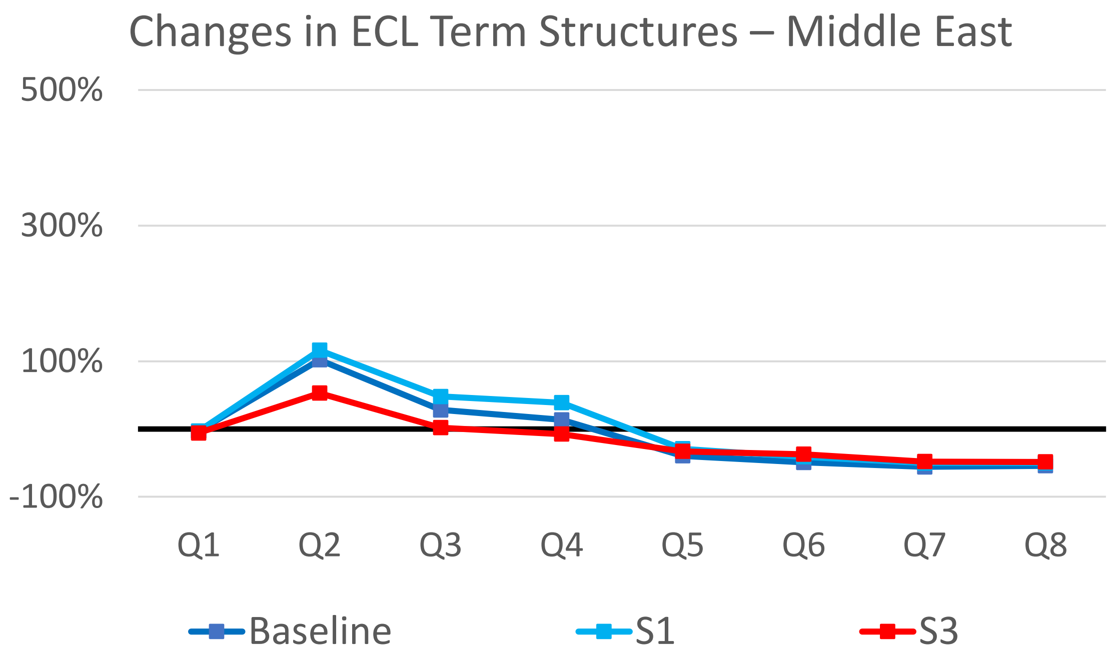
Expected Credit Losses from 2019Q4 to 2020Q1

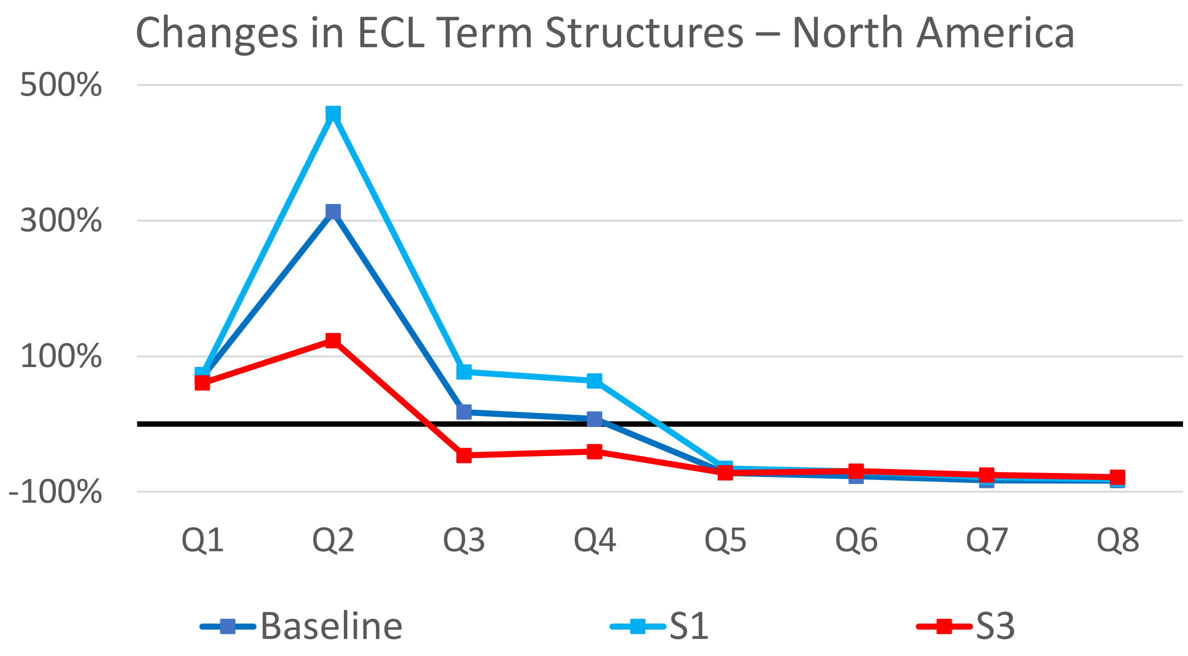
Portfolio	ECL % Change from 31 Dec, 2019 to 31 Mar, 2020			
	Baseline	S1	S3	Scenario Weighted
Europe	46%	56%	-7%	20%
Middle East	13%	25%	-1%	9%
North America	32%	80%	-8%	19%



- 31 Mar, 2020 results under Baseline and S1 are higher than those of 31 Dec, 2019, mainly driven by the significant near-term stress from COVID-19 in the relevant MEVs used in the model
- 31 Mar, 2020 results under S3 are slightly lower than those of 31 Dec, 2019, driven by the strong recovery under the March S3 scenario in later quarters. Also, S3 predicts more severe near-term stress in the economy than even the 2008-2009 financial crisis. The effect may not have been fully captured in our model
- ECLs under the March scenarios are higher in the first few quarters, reflecting the near-term stress. The recovery results in lower expected losses in later quarters

ECL Changes from 2019Q4 to 2020Q1





- ECL term structures for Middle East and North America as of 31 Mar, 2020 share the similar pattern with those for Europe
- Due to the timing of COVID-19 spread across the globe, Middle East has experienced lower impact in its portfolio ECL than other regions

COVID-19's Impact on Different Countries

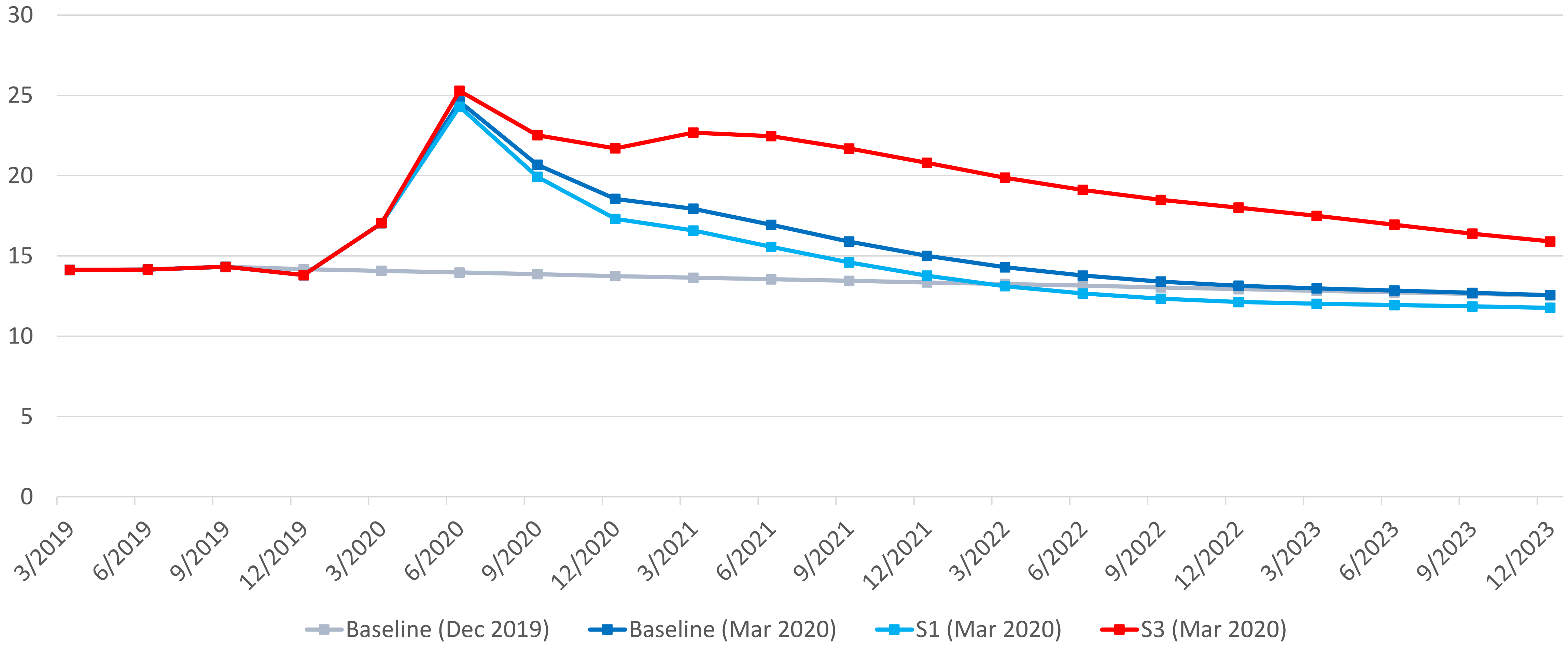
Europe	ECL % Change from 31 Dec, 2019 to 31 Mar, 2020			
	Baseline	S1	S3	Scenario Weighted
Spain	375%	482%	72%	194%
Italy	320%	382%	75%	174%
France	289%	289%	75%	159%
Germany	189%	209%	67%	123%
United Kingdom	114%	232%	34%	84%

Middle East	ECL % Change 31 Dec, 2019 to 31 Mar, 2020			
	Baseline	S1	S3	Scenario Weighted
Egypt	78%	97%	38%	64%
Kuwait	44%	77%	29%	43%
Turkey	4%	6%	-4%	1%

» Due to the timing of the COVID-19 spread across the globe, Middle Eastern countries have experienced lower impact in their ECL than other regions

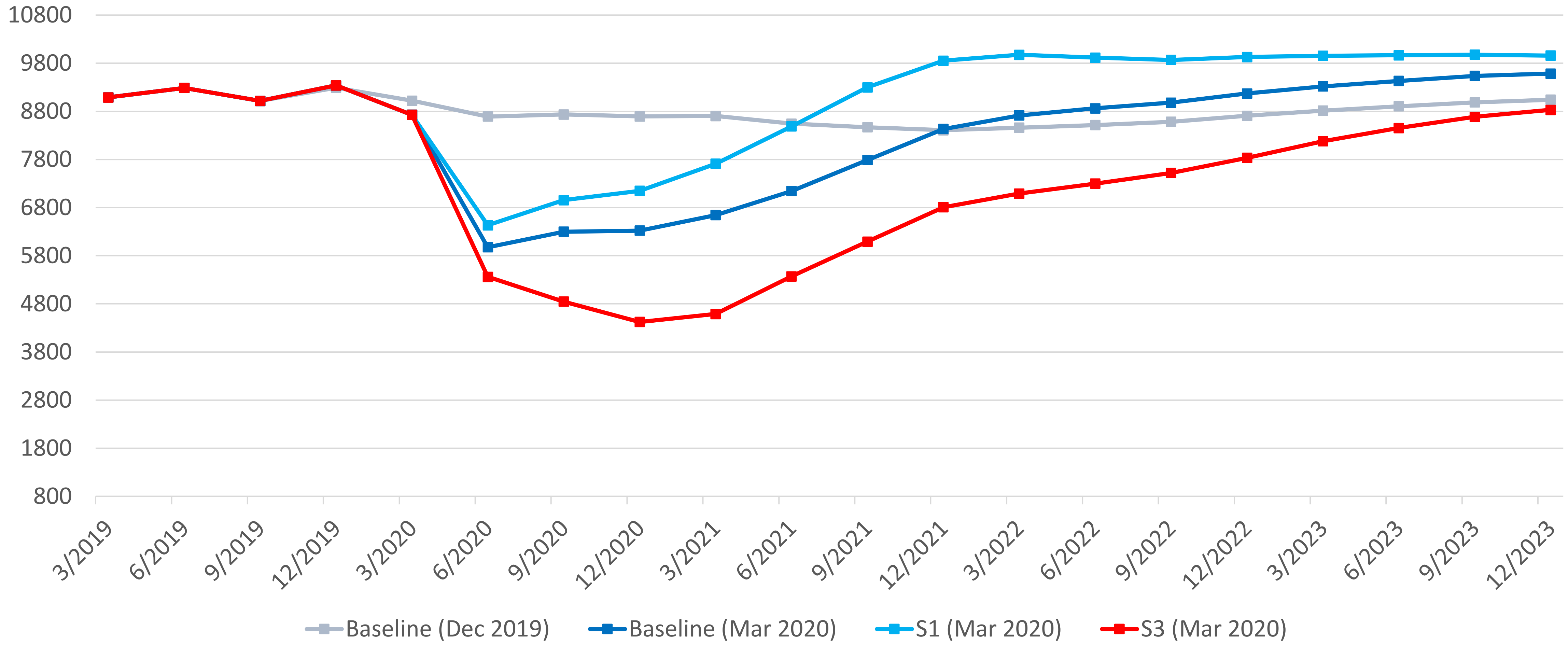
Most Affected Country – Spain

Moody’s Analytics Forecasts of Unemployment Rate



Most Affected Country – Spain

Moody's Analytics Forecasts of Equity Index



Incorporating More Current Market Condition

- One of the modeling components in generating the Mar 2020 results so far – the unconditional PDs from Moody's rating to PIT PD converter – uses market information up to Dec 2019
- To incorporate more current market information, we create a new version of the converter using EDFs up to early Mar 2020, and compare the 31 March ECLs with the previous results (i.e., same scenarios, different unconditional PDs)

Region	Europe	Middle East	North America
Scenario Weighted ECL Change	30%	23%	29%

Most Affected Industries	Scenario Weighted ECL Change
Air Transportation	79%
Oil, Gas & Coal Exploration/Production	75%
Transportation	63%
Oil Refining	61%
Apparel & Shoes	60%
Entertainment & Leisure	58%
Consumer Products Retail/Wholesale	57%
Broadcast Media	57%
Hotels & Restaurant	50%
Machinery & Equipment	48%

Least Affected Industries	Scenario Weighted ECL Change
Real Estate	-1%
Real Estate Investment Trusts	2%
Lessors	2%
Security Brokers & Dealers	5%
Insurance – Property/Casualty/Health	11%
Utilities, Electric	15%
Investment Management	16%
Bank and Savings & Loans	19%
Mining	20%
Medical Equipment	20%

Regulatory Guidance

Additional Regulatory Responses: IFRS 9

BoE/PRA	– ‘Our expectation is that eligibility for, and use of, the UK government’s policy on the extension of payment holidays should not automatically, other things being equal, result in the loans involved being moved into Stage 2 or Stage 3 for the purposes of calculating ECL or trigger a default under the EU Capital Requirements Regulation (CRR).’
ECB/EBA	– ‘The EBA calls for ***flexibility and pragmatism*** in the application of the prudential framework and clarifies that, in case of debt moratoria, there is no automatic classification in default, forborne, or IFRS 9 status.’
BCBS	– SICR assessment: relief measures, granted either by public authorities, or by banks on a voluntary basis, should not automatically result in exposures moving from a 12-month ECL to a lifetime ECL measurement. – Where banks are able to develop forecasts based on reasonable and supportable information, ECL estimates should reflect the mitigating effect of the significant economic support and payment relief measures. – While estimating ECL, banks should not apply the standard ***mechanistically*** and should use the ***flexibility*** inherent in IFRS 9, for example to give due weight to long-term economic trends.
CBUAE	– SICR assessment: Categorization of exposures into groups based on impact of COVID-19 crisis to determine if “BAU” staging criteria should be applied. – Due to the high degree of uncertainty surrounding the economic consequences of the COVID-19 crisis, institutions are not expected to incorporate the updated forecasts into ECL until September 1, 2020. – Institutions are not required to update model parameters to account for this crisis, instead they are required to adjust inputs, critically assess model outputs and apply judgmental overlay if needed. – Institutions have the option to employ add-ons at portfolio or product level to holistically reflect changes in the economic environment.

Common Questions

Incorporating Regulatory Guidance in IFRS 9 models

Scenarios

Existing and anticipated fiscal and monetary policy actions are embedded in the forecast assumptions

PD

- Incorporating / updating market data for PiT PD conversion
- Flexibility of models and incorporating management overlays
- Increased borrower, industry analysis – individual assessment
- Expectations around short-term and long-term impact of scenarios

LGD

- Application of scalars to reflect changed economic environment
- Development data (e.g. including last crisis)
- Incorporation of internal / external views

EAD

- Payment holidays, payment moratoria
- Model as missed payments or create custom cashflows

Staging

- If payment moratoria are applied, staging rules are not automatically applied
- Manual overrides, management overlays

GOVERNANCE

Managing Financial Resources in a Crisis

Challenges for Financial Resource Management in times of emerging and evolving stress

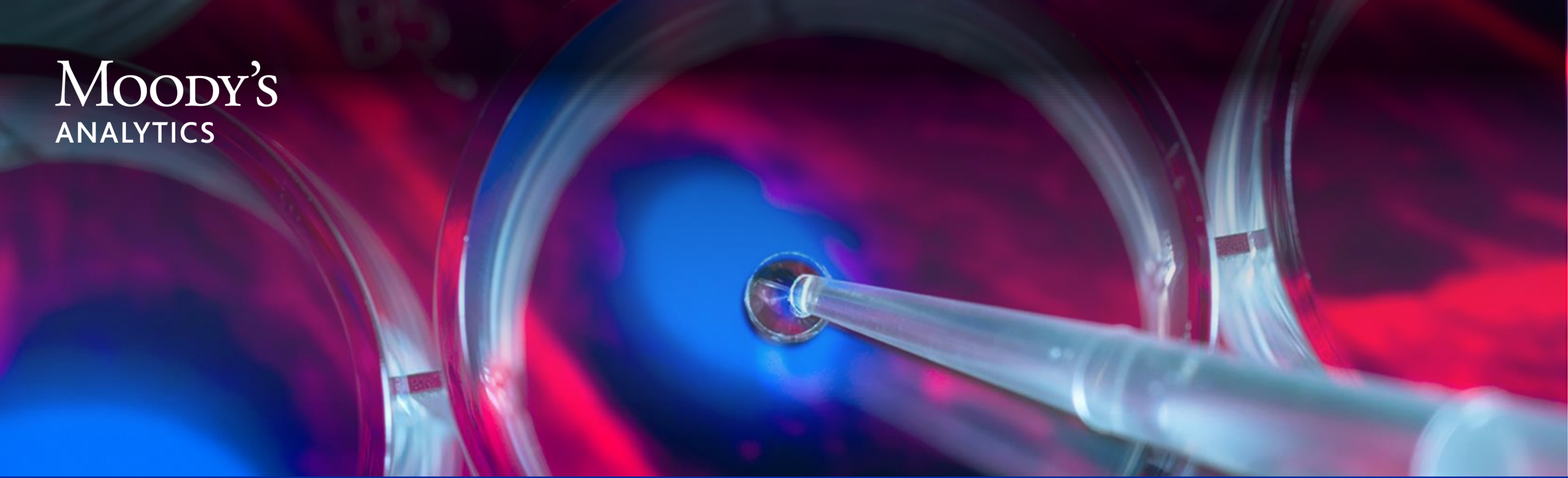
Challenges

- COVID-19 resulted in heightened and more frequent analysis and reporting
- Constantly scanning evolution of risks and effects of multiple assumptions
- Uncertainty due to evolving nature of crisis, responses from governments and regulators
- Regular, timely, comprehensive forecasting information on evolving assumptions
- Significant responsibility on analytical and reporting groups, (e.g. risk and finance) to produce forecasts and analyses

Needs

Robust forecasting capabilities in business as usual conditions to meet demands during crisis:

- Forecasting analytics for core financial performance metrics (e.g. IFRS 9 ECL)
- Assessment at granular level to identifying vulnerabilities
- Structured and controlled forecasting process, minimized manual hand-offs
- Timely analysis, speed-to-market and flexibility to analyze evolving situations



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