COVID-19 e sfide in ambito IFRS9: Impatti sulle perdite attese e contesto economico

Better Faster Decisions

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Agenda

1. A new way of thinking about macro-economic scenarios
2. Benchmarking study using market-based forward-looking information
3. Navigating credit beyond COVID-19

COVID-19 Impact on IFRS 9 Provisions

- COVID-19 is having an unprecedented impact 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. To this end:
  - We illustrate key methodological innovations to our macroeconomic forecasts to address the changing economic and policy landscape
  - 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
  - In addition, we illustrate the limitations of IFRS9 models in the context of COVID-19 and concrete solutions that address these challenges

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

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

Epidemiological Assumptions

COVID-19: Upside
S1 Scenario*

- 5-10 mil confirmed global infections
- New infections peak in April
- 1.0% case fatality rate
- 8% hospitalization rate
- Infections abate by June

COVID-19
Baseline Forecast

- 10-15 mil confirmed global infections
- New infections peak in May
- 1.5% case fatality rate
- 10% hospitalization rate
- Infections abate by July
- **Italy**: ~ 240,000 confirmed cases, infections abate in mid-June

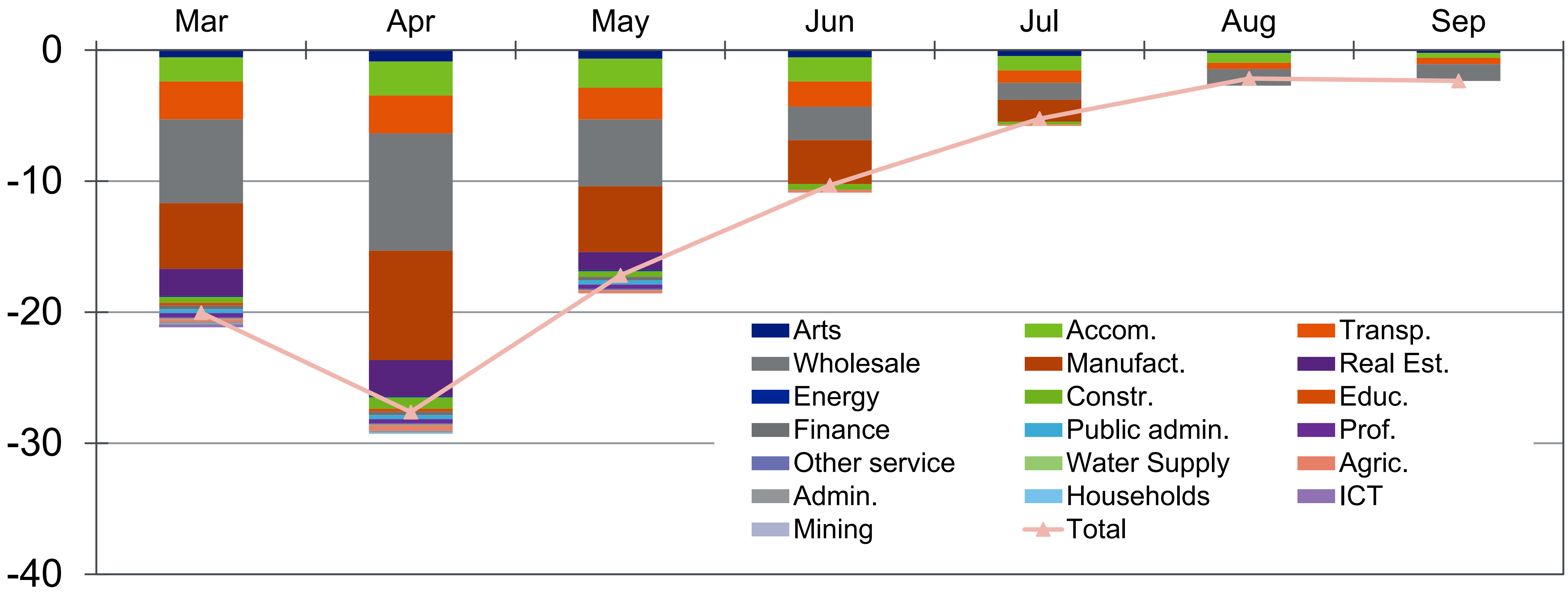
COVID-19: Downside
S3 Scenario**

- 15-20 mil confirmed global infections
- New infections peak in June
- 4.5% case fatality rate
- 20% hospitalization rate
- Infections abate by September

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

Italy – Estimated impact on economic activity

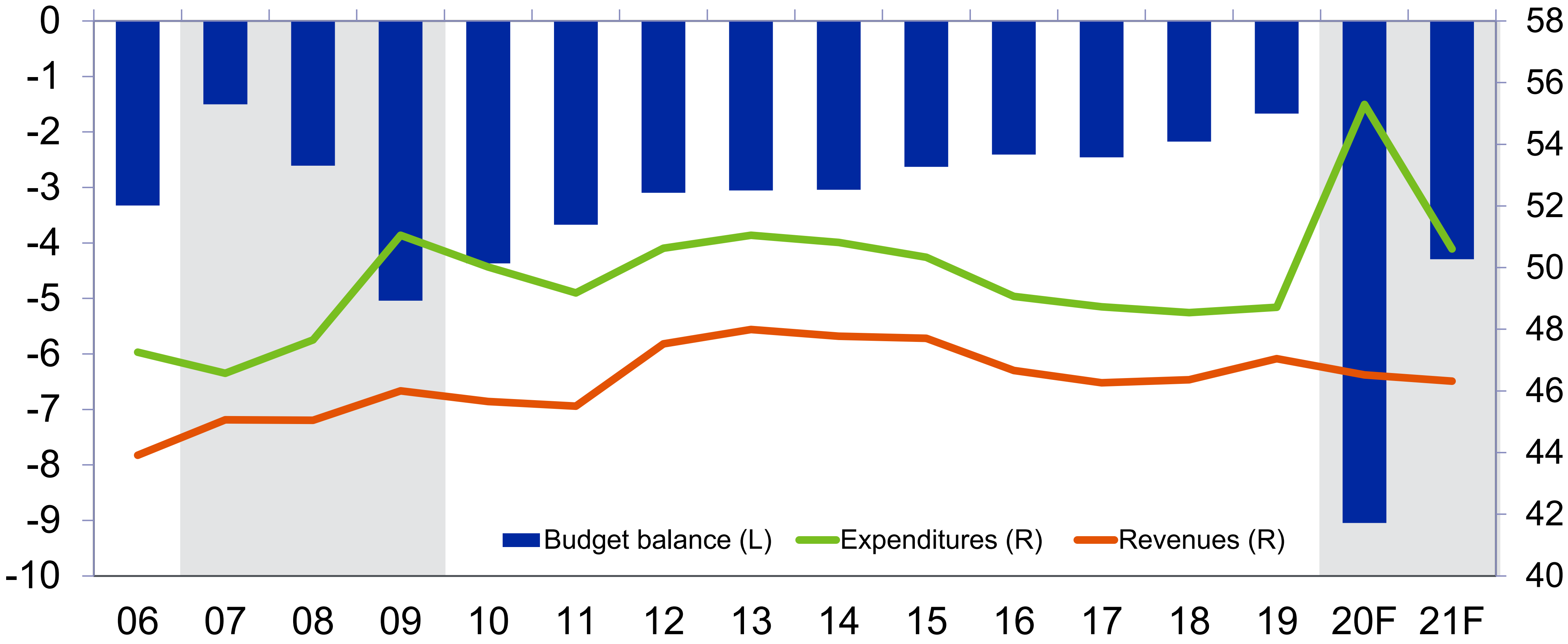
Deviation from normal level of activity, ppts, by industry 2020



Sources: Moody's Analytics

Fiscal Stimulus Like Never Before

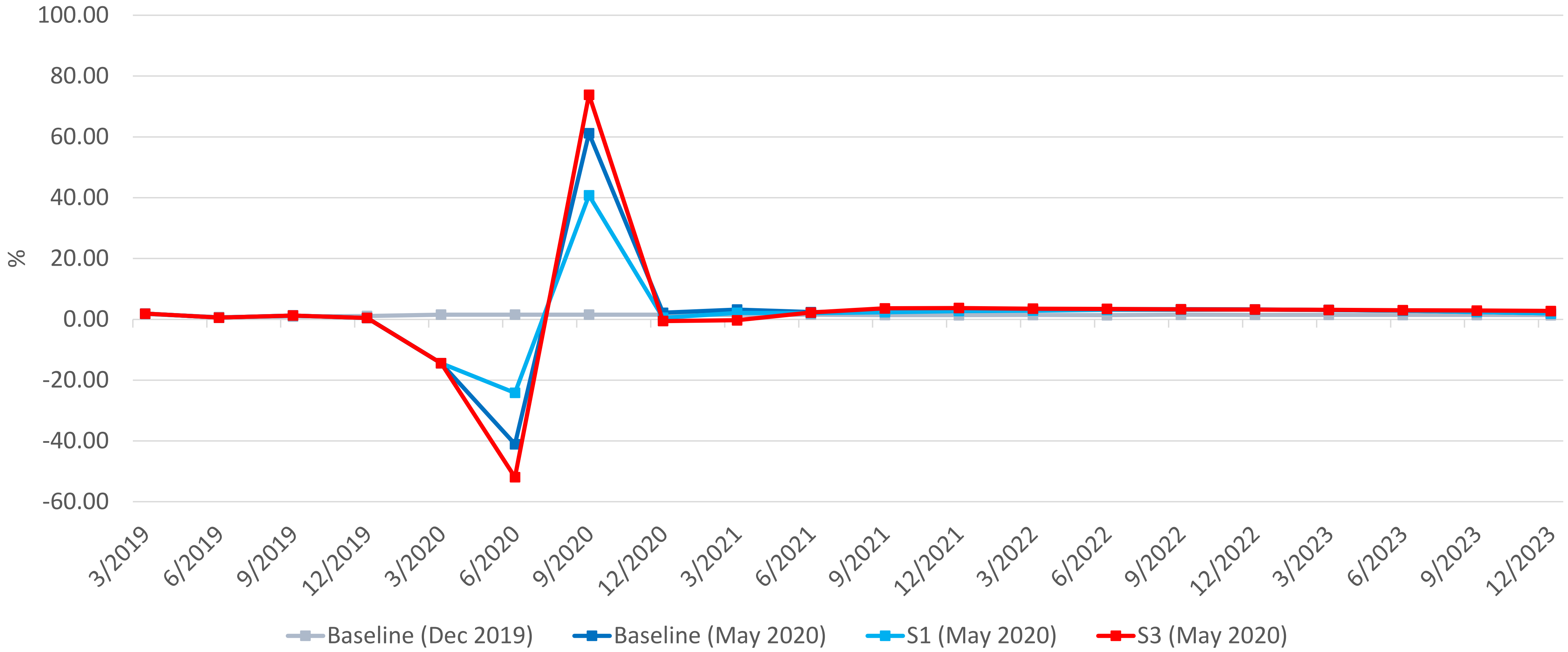
General government balance, % of nominal GDP



Sources: ISTAT, Moody's Analytics

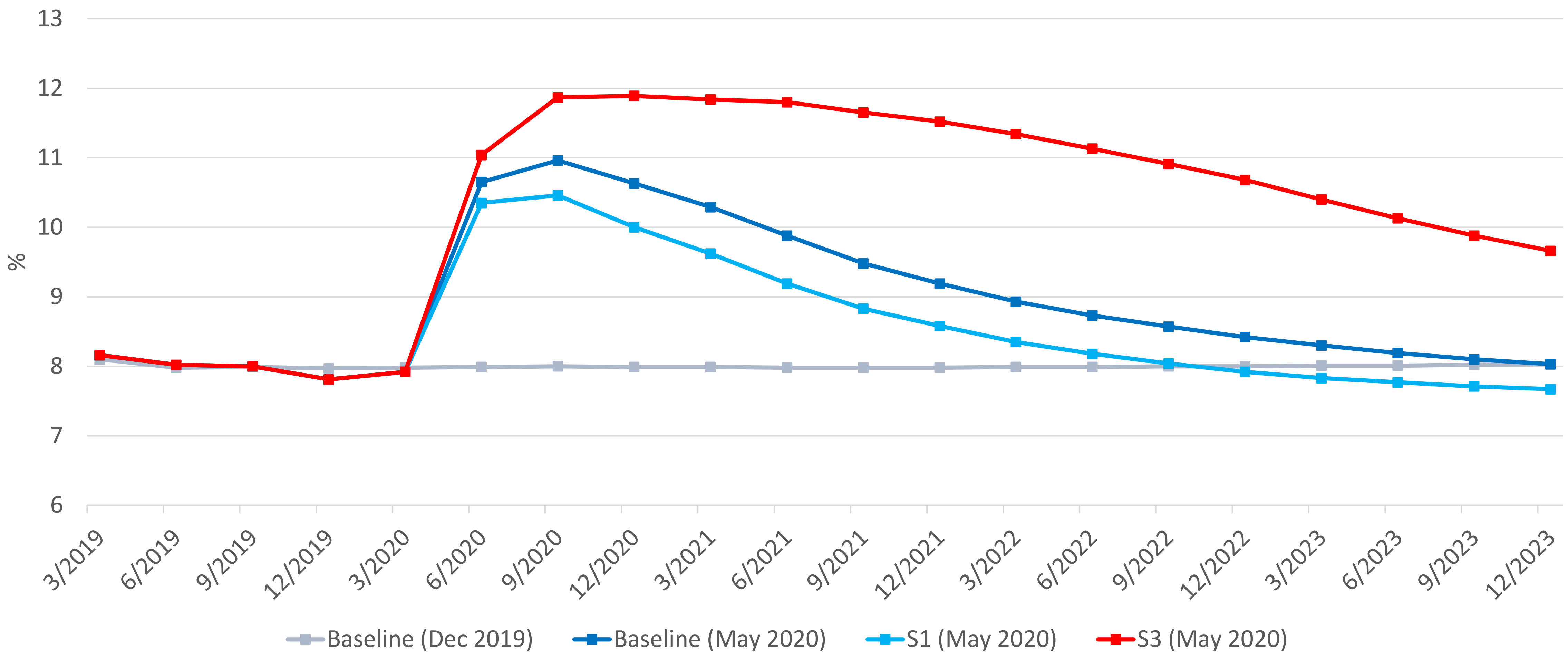
Euro zone, Macroeconomic Variable Projections

Moody's Analytics Forecasts of GDP Annualized Growth



Euro zone, Macroeconomic Variable Projections

Moody's Analytics Forecasts of Unemployment Rate



Baseline and Alternative Scenarios

Moody's Analytics May Forecasts (Released on 18 May, 2020)

Key Aspects	S1 (Upside*)	Baseline	S3 (Downside**)
Quarantine Measure End	Mid Q2 2020	End of Q2 2020	Mid Q3 2020
Euro Zone Recession	Mild	Moderate	Severe
Euro Zone GDP Growth in 2020 and 2021	-4.35% and 4.02%	-7.04% and 4.77%	-9.74% and 3.06%
Economic Policy	Accommodative	Accommodative	Accommodative
Brexit Process	Efficient	Moderate	Protracted
Oil Price in 2020 and 2021	$33 and $49	$31 and $43	$25 and $17

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

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 May 2020 economic forecasts
- Comparing the two sets of results enables an assessment of COVID-19's impact on the benchmark portfolios, and segments within
- The modeling framework relies on the Expected Default Frequency (EDF), a credit measure that use equity market along with financial statement information to provide name level forward-looking assessment of default risk
- In order to assess the impact on ECL due by changes in economic forecasts only, the unconditional PDs uses market information up to December 31, 2019
- 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

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^{TM} 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^{TM} Expected Default Frequency (EDF)

Default and Recovery Risk Measures

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

C&I Benchmark Portfolios

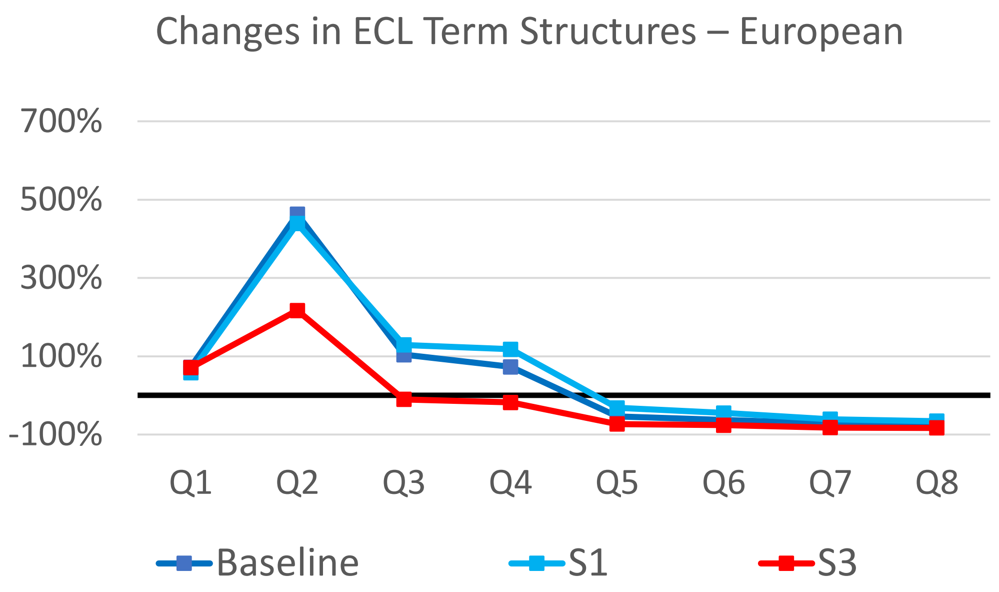
Portfolio	Outstanding Balance (% of balance)		Year to Maturity (years)	Main Industries (% of balance)
	Investment Grade	High Yield		
Europe	78%	22%	2.75	Bank and Savings & Loans (43%) Business Services (15%) Consumer Products Retail/Wholesale (5%) Agriculture (4%)
Middle East	52%	48%	2.50	Bank and Savings & 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

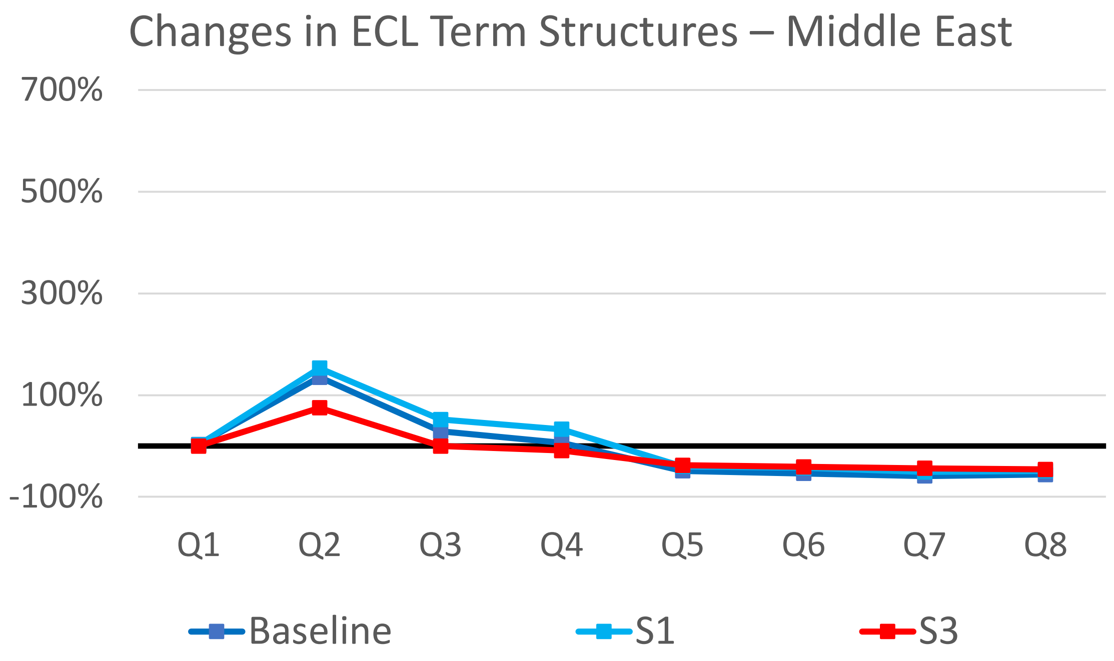
Expected Credit Losses from 2019Q4 to 2020Q1

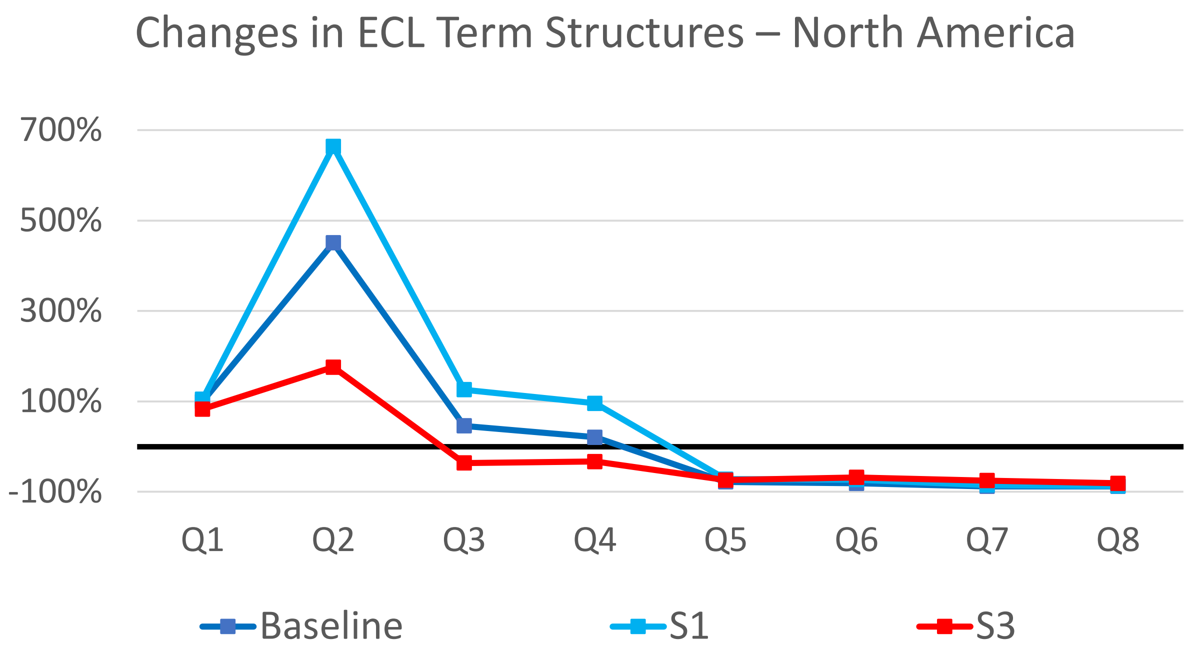
Portfolio	ECL % Change from 2019 December Scenarios to 2020 May Scenarios			
	Baseline	S1	S3	Scenario Weighted
Europe	87%	101%	14%	51%
Middle East	19%	33%	3%	15%
North America	63%	130%	8%	45%



- Results under May scenarios are higher than those under December scenarios, mainly driven by the significant near-term stress from COVID-19 in the relevant MEVs used in the model
- Results of the S3 scenario increased not as much as other scenarios, driven by the strong recovery under the May S3 scenario in later quarters.
- ECLs under the May 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 under May scenarios share the similar pattern with those for Europe

» Middle East has experienced lower impact in its portfolio ECL than other regions

COVID-19's Impact on Different Countries

Europe	ECL % Change from 2019 December Scenarios to 2020 May Scenarios			
	Baseline	S1	S3	Scenario Weighted
Spain	559%	665%	152%	311%
Italy	383%	444%	133%	234%
France	345%	320%	134%	214%
Germany	220%	242%	103%	157%
United Kingdom	157%	323%	56%	121%

Middle East	ECL % Change from 2019 December Scenarios to 2020 May Scenarios			
	Baseline	S1	S3	Scenario Weighted
Kuwait	60%	94%	47%	60%
Egypt	58%	85%	25%	49%
Turkey	23%	24%	3%	15%

- Spain and Italy are the most affected countries in Europe
- Other EU countries are less affected because of industry composition and economic forecasts

Incorporating More Current Market Condition

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

Region	Europe	Middle East	North America
Scenario Weighted ECL Change	211%	127%	207%

Most Affected Industries	Scenario Weighted ECL Change
Air Transportation	311%
Hotels & Restaurant	233%
Entertainment & Leisure	195%
Oil, Gas & Coal Exploration/Production	195%
Aerospace & Defense	183%
Transportation	181%
Apparel & Shoes	176%
Utilities, Gas	175%
Broadcast Media	174%
Oil Refining	172%

Least Affected Industries	Scenario Weighted ECL Change
Finance, NEC	31%
Security Brokers & Dealers	37%
Real Estate	38%
Insurance – Property/Casualty/Health	47%
Lessors	55%
Investment Management	64%
Insurance - Life	69%
Real Estate Investments Trust	69%
Utilities, Electric	72%
Mining	77%

Challenges of IFRS9 models in the COVID-19 context

Economic scenarios

- Economic shocks resulting from the coronavirus pandemic are **large-scale supply shocks** (as opposed to demand shocks or localized supply nature) thus a **different approach to calibrating GDP growth is required**
- **New epidemiological assumptions** regarding the spread, duration and severity of the COVID-19 pandemic are paramount to develop a caseload forecast

Fiscal and Monetary response

- The COVID-19 stressed context is unique because of the **remarkable fiscal and monetary response** designed to bolster various sectors
- **Government actions differ in the way they are activated** from those deployed in the past financial crisis, industries have a different sensitivities to those actions and there is uncertainty around (i) future actions and (ii) impact of those actions

Current State Internal Rating

- **Internal Rating Based** models typically rely on fundamental, name-level analysis which cannot be updated at frequencies required to react and plan for the quickly changing developments
- Although historical geo-industry information might be used, those **data don't properly capture the risk differentiation** by industry that the current COVID-19 pandemic exhibits

Projected rating and loss measures

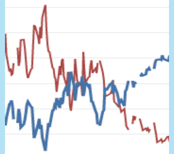
- **IFRS9** impairment calculation typically rely on scenarios defined by broad-brushed variables such as unemployment and GDP
- These **scenarios are not sufficiently differentiated across industries** whose performances exhibit a wide variation in sensitivity to COVID-19 itself

Pandemic Credit Data and Analytics

Cross-Sectional, Fiscal and Monetary Overlay Models

ASSESSING WHAT HAS HAPPENED SO FAR

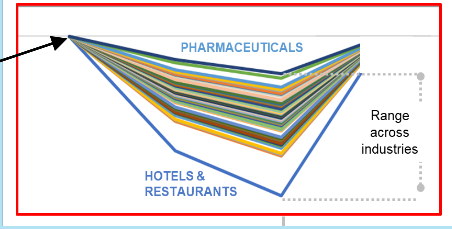
Elevated:
- default probabilities
- expected loss



Varying performance of segments, industries & names

MOST RECENT, REASONABLE, AND WELL-UNDERSTOOD CREDIT ASSESSMENT OF PORTFOLIO

Cross-Sectional COVID-19 Overlay Model



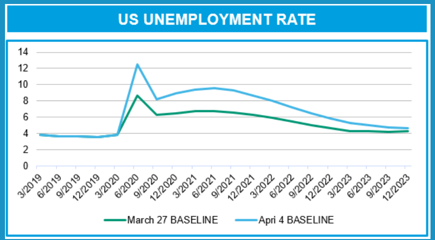
CURRENT INTERNAL RATING ASSESSMENT

Current-State Internal Rating Assessment

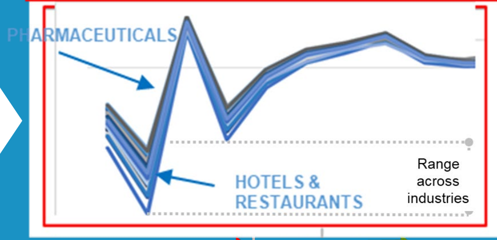
Industry	Investment Grade: Rating Dec 31, 2019	Investment Grade: Rating Assessment April 29, 2020	High-Yield: Rating Dec 31, 2019	High-Yield: Ra Asse April 2
	Baa2	Baa3	B2	I
INING	Baa2	Ba2	B2	C
NSPORTATION	Baa2	Ba2	B1	I
CAST MEDIA	A2	Baa1	B3	C
MER DURABLES	Baa2	Ba1	B2	C

PROJECTING WHAT MIGHT HAPPEN NEXT?

Traditional macro scenarios



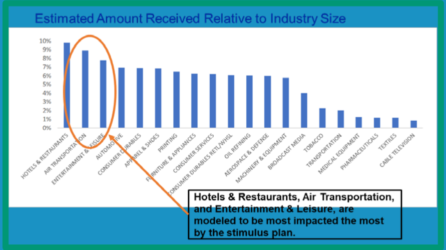
Cross-Sectional COVID-19 Overlay Model



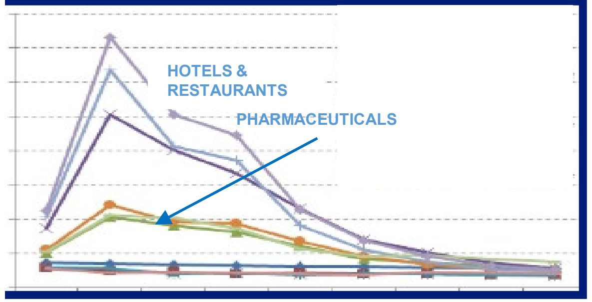
Economic scenario unfolding

Recovery begins

Fiscal & Monetary Overlay Model



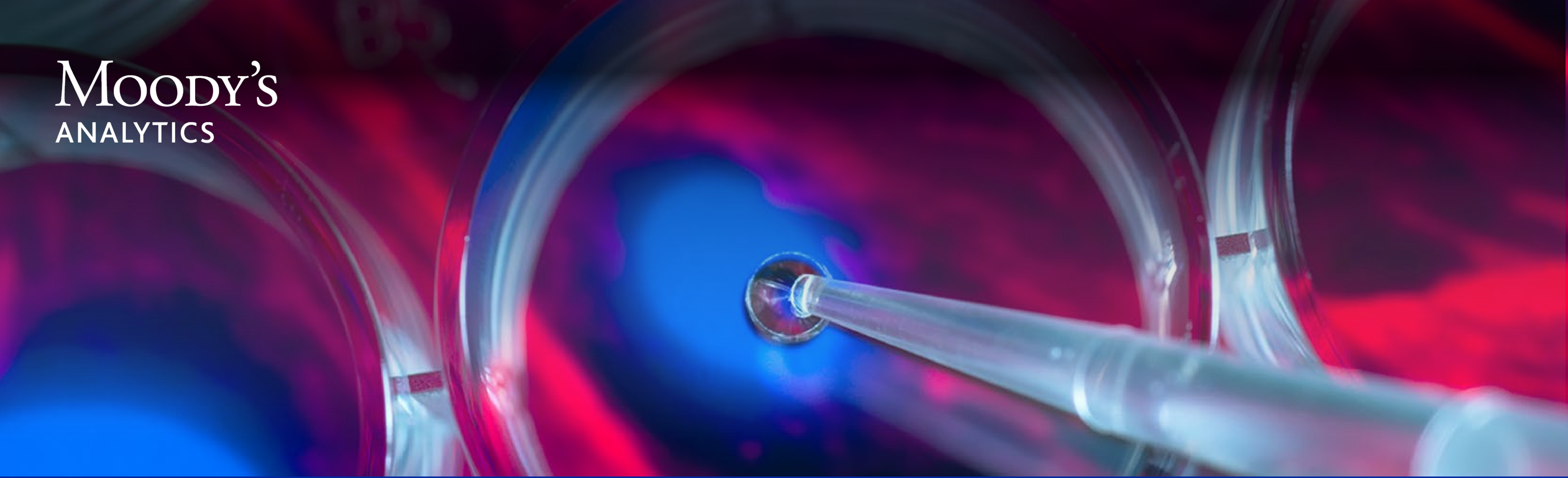
PROJECTED RATINGS, AND LOSS MEASURES



IFRS 9, EBA, ECB scenario analysis/stress testing, credit portfolio management and capital planning

Granular and Name-Level

Q&A



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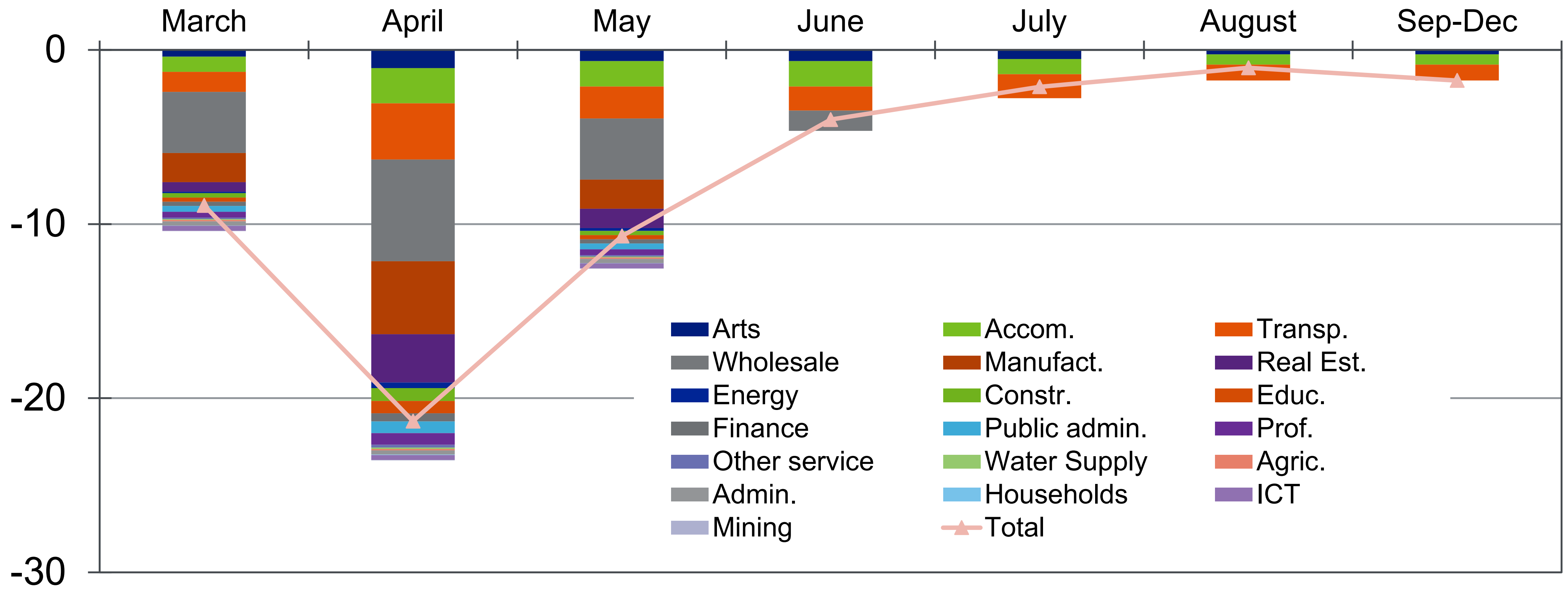
Annex

Euro zone – Estimated impact on economic activity

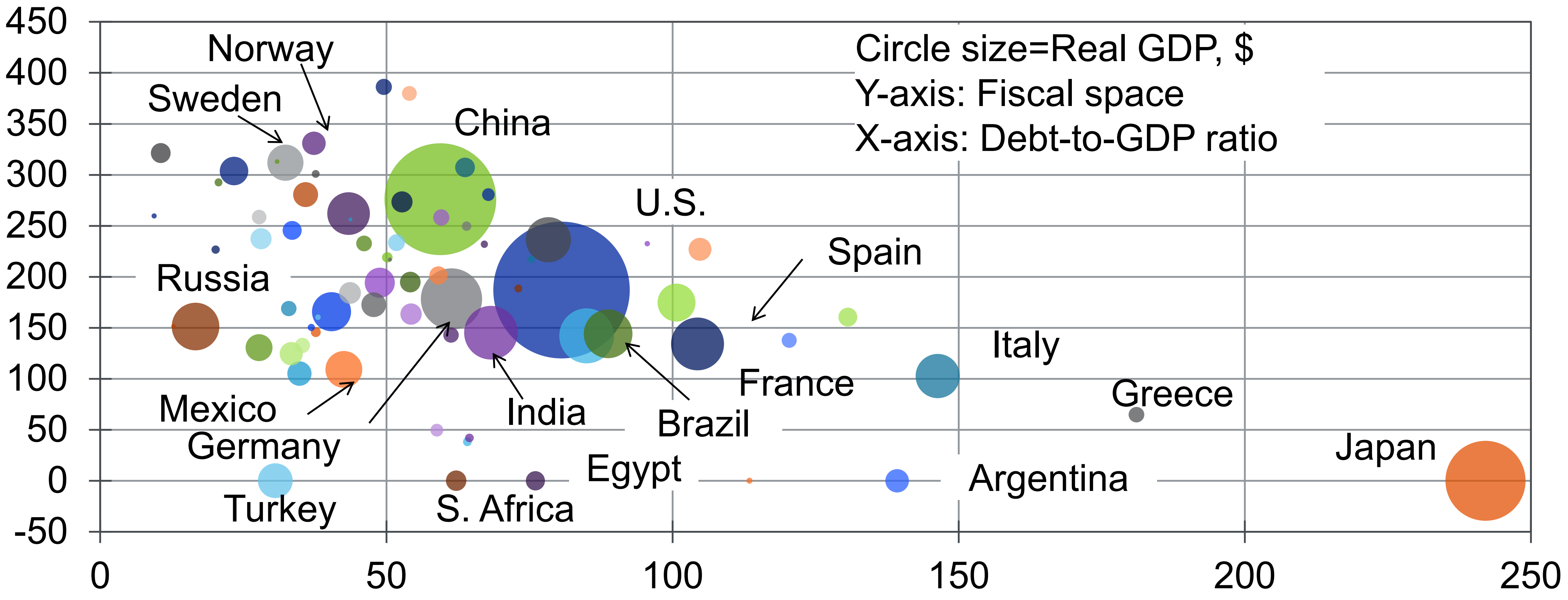
Deviation from normal level of activity, ppts, by industry 2020



Sources: Moody's Analytics

Running Out of Fiscal Space

Sovereign borrowing capacity given current yields



Source: Moody's Analytics

Current Internal Rating Assessment

Average ratings anchored off of Dec 31, 2019 using Cross-Sectional COVID-19 Overlay

	Investment Grade Portfolio		High-Yield	
Industry	Internal Rating Dec. 31, 2019	Estimated Internal Rating Assessment Mar. 31, 2020	Internal Rating Dec. 31, 2019	Estimated Internal Rating Assessment Mar. 31, 2020
Oil Refining	Baa2	Ba2	B2	Caa1
Air Transportation	Baa2	Ba2	B1	B3
Consumer Durables	Baa2	Ba1	B2	Caa1
Restaurants	A3	Baa1	B2	Caa1
Pharmaceuticals	Baa2	Baa2	B3	Caa1
Food & Beverage	Baa2	Baa2	B2	B2
Utilities, Electric	Baa2	Baa3	Ba2	Ba2

Rating assessments on March 31, 2020 for hypothetical investment grade and high-yield portfolios based on a December 31, 2019 rating anchoring date; a date representing a reasonable, well-understood state of the portfolio. For exposition, we highlight industries with varying impact to COVID-19.

Impact of COVID-19 Across Industries

Italy one-year default probabilities along Cross-Sectional COVID-19 Overlay scenarios

NOTES

Economic Scenario Model as of May 04, 2020

Overlay Model as of May 04, 2020.

Industry	EDF Dec 31, 2019	EDF May 07, 2020 (Baseline)	Italy Equity, Italy Unemployment, Italy GDP, Oil Price from Moody's 90th% Downside Scenario (S3) along with Cross-Sectional COVID-19 Overlay Model	Italy Equity, Italy Unemployment, Italy GDP, Oil Price from Moody's 96th% Downside Scenario (S4) along with Cross-Sectional COVID-19 Overlay Model
All	**0.22%**	**0.45%**	**0.83%**	**1.06%**
TRANSPORTATION	0.03%	0.27%	0.62%	0.93%
APPAREL & SHOES	0.06%	0.29%	0.60%	0.85%
BUSINESS SERVICES	0.35%	1.33%	2.63%	3.56%
AUTOMOTIVE	0.37%	1.26%	2.70%	3.84%
MACHINERY & EQUIPMENT	0.54%	1.82%	3.13%	4.09%
UTILITIES, ELECTRIC	0.02%	0.03%	0.08%	0.12%
REAL ESTATE	0.48%	0.59%	0.93%	1.21%
BANKS AND S&LS	0.27%	0.28%	0.54%	0.76%

Scenario Narratives include expected impact of a unique combination of domestic and external factors.

Baseline: real GDP contracts 23.7% at an annualized rate in the 1st quarter and 44.9% annualized in the 2nd. GDP growth bounces back in the 2nd half of the year, aided by fiscal and monetary stimulus. For 2020, real GDP is forecast to slump by 9.7%.

90th% Downside: the recession that begins in the first quarter of 2020 results in a 22.6% plunge in real GDP from the fourth quarter of 2019 to the second quarter of 2020, but that is only the first wave of decline.

96th% Downside: the recession starting in the first quarter of 2020 causes a 27.3% plummet in real GDP from the fourth quarter of 2019 to the second quarter of 2020, but that is only the first wave of decline.

Rating Projections Applications to Stress Testing

Applications: Stress Testing, Projected Expected Losses and Capital

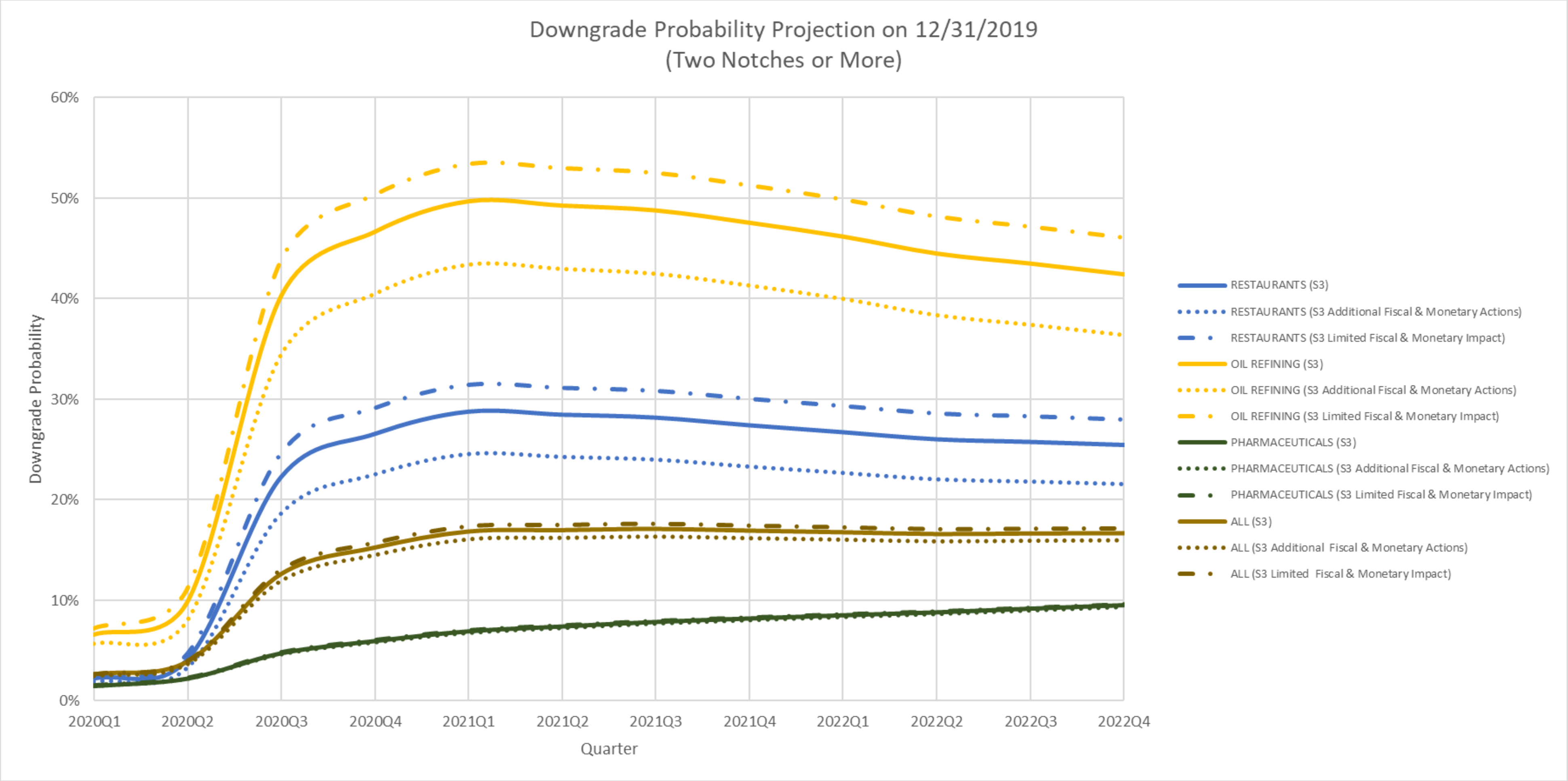
NOTES

Rated firms as of Dec 31, 2019

EDF data as of Dec 31 2019

Economic Scenario Model as of April 21, 2020

Fiscal Scenario Model as of May 1, 2020



Impact of COVID-19 on Annualized PDs Varies Across Industries

Applications: Stress Testing and Current Expected Credit Losses

Segment: Industry	Segment: Rating	EDF Dec 31, 2019	EDF May 8, 2020 (Baseline)	90th% Downside Scenario (S3)	90th% Downside Scenario (S3), Additional Fiscal & Monetary Action	90th% Downside Scenario (S3) Limited Fiscal & Monetary Impact	96th% Downside Scenario (S4)	96th% Downside Scenario (S4) Additional Fiscal & Monetary Action	96th% Downside Scenario (S4) Limited Fiscal & /Monetary Impact
All	**IG**	**0.05%**	**0.14%**	**0.33%**	**0.26%**	**0.35%**	**0.49%**	**0.46%**	**0.50%**
All	**HY**	**0.18%**	**0.82%**	**1.60%**	**1.31%**	**1.77%**	**2.30%**	**2.13%**	**2.39%**
RESTAURANTS	HY	0.21%	2.19%	4.20%	3.44%	4.65%	5.80%	5.29%	6.06%
OIL, GAS & COAL EXPL/PROD	HY	2.57%	8.63%	16.55%	13.74%	18.07%	21.56%	20.51%	22.03%
APPAREL & SHOES	IG	0.07%	1.15%	2.50%	1.99%	2.80%	3.58%	3.27%	3.72%
CHEMICALS	IG	0.03%	0.12%	0.38%	0.28%	0.43%	0.68%	0.62%	0.70%
COMPUTER SOFTWARE	IG	0.02%	0.03%	0.08%	0.06%	0.09%	0.13%	0.12%	0.14%
PHARMACEUTICALS	IG	0.03%	0.03%	0.07%	0.05%	0.07%	0.10%	0.10%	0.11%
UTILITIES, ELECTRIC	IG	0.01%	0.02%	0.03%	0.03%	0.03%	0.04%	0.04%	0.04%

Higher Severity

COVID-19 Industry Impact

Lower Severity

NOTES

US Moody's IG and HY rated firms as of Dec 31st, 2019 with one-year EDFs<10%

Economic Scenario Model as of April 14, 2020

Fiscal & Monetary Scenario date as of May 1, 2020

Baseline: sudden sharp recession, projecting real GDP to fall almost 6% in 2020. Activity forecasted to exhibit a W recovery, bouncing in 2020 Q3 but falling again in 2020 Q4. Sustained recovery from 2021 Q1.
EDFs: are market based and include expected impact of existing Fiscal and Monetary plans (e.g., CARES Act).

90th% Downside: longer recession, with 50% industries lockdown in April, 40% in May and 40% in June. Activity weakly recovers in 2020 Q3 but falls again in 2020 Q4 (double dip recession). Sustained recovery from 2021 Q2.

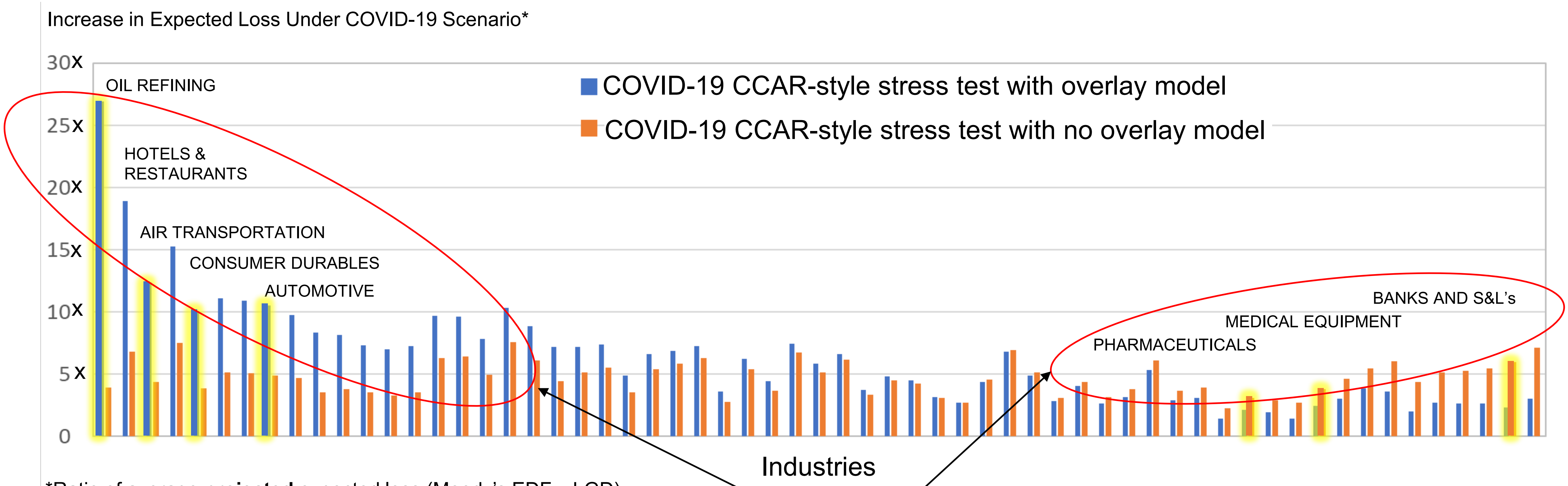
Additional Fiscal/ Monetary Action: additional stimulus in 2020 Q2/3, similar in size and scope of what has been released so far.

96th% Downside: longer recession relative to 90th downside scenario, with 85% industries lockdown in April, 75% in May and 50% in June. More pronounced double deep recession. Sustained recovery from 2021 Q4.

Limited Fiscal/Monetary Impact: implementation challenges result in existing stimulus packages not being impactful as expected. The scenario assumes 40% impact based on studies including CBO assessment of 2009 ARRA Act.

New Analytics and Data to Navigate COVID-19

Naïve models calibrated to historic dynamics will be misleading



*Ratio of average **projected** expected loss (Moody's EDF x LGD) to expected loss (Moody's EDF x LGD) on December 31st
By industry, US EDF sample

Cross-sectional dynamics will be impacted by COVID-19 segments and name-level sensitivity as well as macro dynamics (e.g., Oil scenarios)

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