Moody's Analytics

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RISK MANAGEMENT ASSOCIATION OF NIGERIA

Better Faster Decisions

Capital Adequacy Challenges for Banks in Nigeria Post COVID-19

June, 2020

Agenda

1. Welcome Remarks
2. Capital Related Challenges and Questions Facing Executives of Banks
3. Managing Risk in a Rapidly Changing World
   – Adjusting internal ratings be adjusted to incorporate the impact of the current situation and future pathways
   – Forecasting expected credit losses under various economic scenarios taking in to account the downside risks on oil price
4. Panel Discussion and Q&A
   – How can data and analytics be leveraged for better decision making at all levels.

Speakers

Magnus Nnoka - President of **RIMAN** and Chief Risk Officer, **Coronation Merchant Bank, Nigeria**

Dr. Gregory Jobome – Executive Director and Chief Risk Officer

Access Bank Plc

Joseph Ingwat – Relationship Manager, **Moody's Analytics**

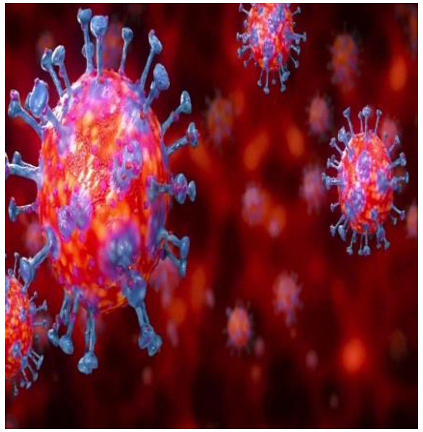
Matteo Baraldi – Risk and Finance, **Moody's Analytics**

Metin Epozdemir, CFA – Risk and Finance, **Moody's Analytics**

Capital Adequacy Challenges for Nigerian Banks Post COVID-19

COVID-19: The recovery falters, must take steps now…

COVID-19 Pandemic

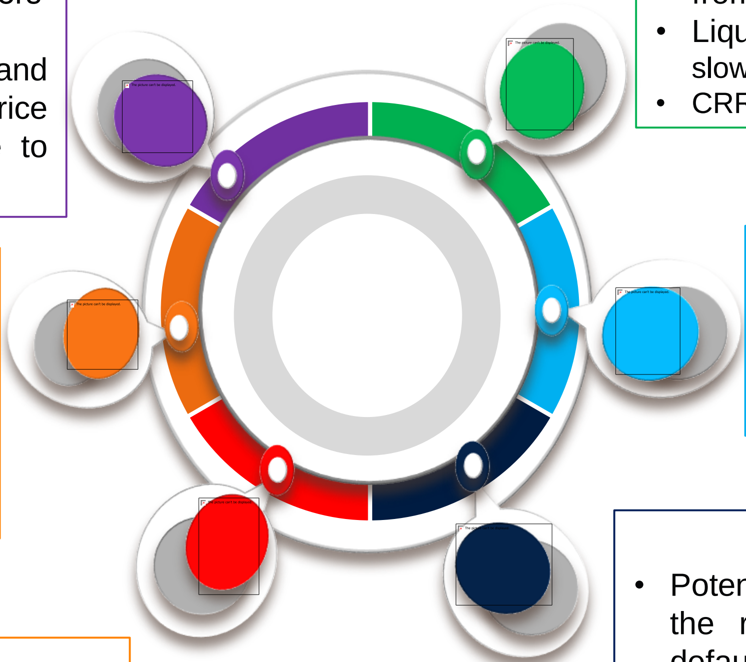


- In the last two years, the banking industry has had its fair share of these macro-economic headwinds, which resulted in declining margins and significant write offs of impaired credits.
- The banking industry is now faced with the COVID-19 pandemic, greater uncertainty and unpredictability of events.
- Timely response from government and regulators; as the situation lingers, more interventions may be required to mitigate the impact of COVID 19 on the nation's **banks**, **customers** and **economy**.
- Banks must take steps to navigate through these uncertain times, achieve corporate goals, and future-proof themselves.

Banking Sector Implications

Asset Quality Concerns
- Slow down in global/national economic activities which weakens borrowers' repayment ability
- Elevated credit risk from the oil and gas sector stemming from oil price slump. Banking industry exposure to oil and gas as at Q4 2019 was 32%

Capital & Liquidity Concerns
- Weakened capital buffers stemming from NPL pressure
- Liquidity concerns due to collections slowdown
- CRR management



Profitability Erosion
- Decline in revenue with no corresponding decline in expenditure
- Increase in impairment charge due to possible rising loan impairment

Diminution of Collaterals
- Share-backed collaterals face significant decline due to sell-off as investors' confidence dwindle

IT Related Issues
- Cybersecurity breaches, from WFH
- Worsening of IT and other IT support services due to internal or vendor problems

FCY related issues
- Potential devaluation of the Naira poses the risk of translation exposure and default risk for foreign dominated loans for banks – around 40%

COVID-19: An Asset Quality and Capital Concern

- COVID-19 will negatively impact many firms, through disruptions in manufacturing supply chains, domestic consumption, tourism and exports, posting downside risks to their earnings prospects. *This is likely to impact the capacity of such firms to meet contractual loan obligations, leading to an increase in NPLs*.

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- This possible increase in loan provisioning from higher default rates from the pandemic would *impact earnings and retentions* and therefore *reduce capital adequacy* ratio.

Capital Adequacy Ratio (CAR)

- At the same time, there is a potential for increase in Risk-weighted Assets (RWA), through likelihood of *exchange rate alignments and devaluation*. Many banks have FCY loan share above 40%. Devaluation puts pressure on capital adequacy.

The full impact of the COVID-19 pandemic will be difficult to measure in the near term. These are indeed difficult times for an industry that just barely recovered from the recession

- Increased operational cost (inflation and devaluation impact) could result in reduced earnings and capital depletion.
- Currently, it is ***difficult to accurately predict*** how long the outbreak will last, as such <u>timely measures by banks are necessary to mitigate the impact of COVID-19 on capital</u>.

Expected credit losses (ECL) harder to predict accurately, and the models can impact the economy adversely if not adapted

We believe the COVID-19 pandemic will weaken the banking industry's asset quality in view of the expected impact on the finances of state governments, the performance of businesses and the purchasing power of households

- The ECL guidance expects recognition of credit losses at each reporting date that considers **reasonable** and **supportable** information about past events, current conditions and **forward-looking economic conditions** under a range of possible **scenarios**.

- To assess Significant Increase in Credit Risk (SICR) IFRS 9 requires that entities assess changes in the risk of a default occurring over the expected life of a financial instrument.

- ***However, since COVID-19 is an unprecedented event, forward-looking projections can no longer be exclusively informed with time-series analysis, because historical based models are likely to break down.***

- ***Accordingly, many governments and standard-setting bodies have taken steps to address this gap: Governments - through support steps for industry and banks; and standard setters – through providing temporary restatement of impairment processes.***

COVID-19: Credit-Related/Lending Supports

N100 billion intervention fund in healthcare loans to pharmaceutical companies and healthcare practitioners intending to expand/build capacity.

The creation of N50 billion loan targeted to households and SMEs that have been particularly hit by the pandemic.

Interest rate reduction from 9% to 5% on all CBN intervention funds.

CBN grants all DMBs leave to consider a temporary and time limited restructuring of tenor and loan terms for households and businesses worst hit by COVID-19 pandemic

Financial institutions have been directed to engage international development partners and negotiate concessions to reduce the pains of borrowers of on-lending facilities.

3-month repayment moratorium for Trade-, Market-, and Farmer-moni loans. Similarly moratorium to be extended to all FG funded loans issued by BOI, BOA and NEXIM

1 year moratorium on all principal repayments for all CBN intervention funds, including all existing loans that are currently on moratorium

Strengthen of the LDR policy to continually increase lending to the private sector so as to ramp up economic growth.

Loans worth N1 trillion to be extended to critical sectors to boost local production.

Covid-19: Transitional Support Mechanisms

Support from standard setters buttresses the forbearances advanced by various governments, including Nigeria – these will create short-term reprieve for borrowers from an ECL perspective, and for banks' CAR

Support from Standard Setters

- Recognise that high levels of volatility/uncertainty means economic forecasting is difficult; the past is less effective as a guide to the future
- Recovery role: Banks expected to transmit govt support and relief to individuals and businesses
- Regulatory forbearance for *temporary* and *time limited* restructuring of tenor and loan terms for impacted households and businesses
- Recognise difficulty in obtaining FLI that are reasonable and supportable for ECL models
- Expect banks to *embed positive impact* of intervention measures on default likelihood/ ECL to support real sector and avert a credit-cruch; ie DPD override – to be based on reschedule
- Provide that assessing palliative support must not automatically translate into SICR – as these are temporary liquidity hitches/shocks on the borrower and not necessarily lifetime default risk

Responsibility

- Banks to carry out Impact Analysis of covid-19, and report same to CBN quarterly.
- Banks may apply overlays where models inadequate due to covid-19, or combined
- There are complexities: if a borrower has multiple facilities, how to treat if some enjoy support
- What if there was an existing facility in stage 2/3; support will not 'upgrade' it
- Planning for and predicting *when* support will stop – forbearance is not forgiveness!
- Banks should plan to disclose the significant judgements and overlays applied, especially as it relates to impairments and capital

Covid-19: Scenario Planning Process & Stress Testing to better anticipate ECLs

Macroeconomic & Socio-Political Shocks
(Global & Domestic)

Industry Impact
(Focus on Nigeria)

Obligors Rating
(Access Bank obligors)

Management Action Steps

- Assess current global and local macroeconomic, social and political events. Develop different scenarios for possible future events/shocks
- **Establish industry outlook scenarios and demonstrate how these would impact the obligors**
- Rate each obligor based on the expected impact of these scenarios on their ability to meet their obligations as at when due – Green, Yellow, Amber, Red
- Establish corrective management actions to protect the Bank from any negative impact but position it to take full advantage of opportunities arising therefrom.

Inherent potential sectoral impacts – look at current and anticipated

- Sample sectors' respective potential impact, combined effect of: **covid-19**, **FCY exposure**, and **support**:

Positive Impact	Low Negative Impact	Negative Impact
Telecommunications Manufacturing(pharmaceuticals, personal care) Agriculture Trading(locally produced essentials) Food and beverages(non-alcoholic)	Oil & Gas(upstream) IOCs Oil and Gas downstream Trade(imported essentials) Retail	Oil & Gas upstream (indigenous) Oil and Gas services Trade(imported Luxuries) Real Estate and construction Transportation (Aviation) Manufacturing (non-essential) Public sector

Illustrating: stage-managing impact of Covid-19

SECTOR / CUSTOMER	BIG	MODERATE	LITTLE
HIGH	3	3	ONE NOTCH DOWNGRADE
ABOVE AVE	3	ONE NOTCH DOWNGRADE	ONE NOTCH DOWNGRADE
MODERATE	MAINTAIN CURRENT STAGE	MAINTAIN CURRENT STAGE	MAINTAIN CURRENT STAGE
LOW	MAINTAIN CURRENT STAGE	MAINTAIN CURRENT STAGE	MAINTAIN CURRENT STAGE

Impairment Assessment	**Comments**
Impairment charging basis	(PD * LGD * EAD), incorporating Forward Looking Indicators in line with the standard: *recognizing that predicting FLIs is problematic in this period*
Effectiveness of Management Actions/*Government Support*?	Low – Current Stage is maintained
	Medium - Current Stage is maintained
	High – This could lead to a notch upgrade in stage status

Some Recommendations to sustain and/or enhance CAR

Steps to enhance asset quality eg scenario analysis, robust risk analytics around default likelihood prediction and FLIs – and actions

Encourage pay down on FCY loan exposure

Drive revenue from digital banking platforms; diversify based on sector outlook

Sourcing Tier II Capital in Foreign currency to cushion Tier I depletion caused by devaluation

Moderate Dividend Payout

Reduction in RWA by driving loans with high cash collateral, increasing Credit Risk Mitigation

Balance sheet management through sale of idle assets. Will reduce RWA. Proceeds could also help capital – profit on sale, reduce depreciation cost

ROBUST BUSINESS CONTINUTY PLANS!

Capital Ratios Expected to Fall

Significant Downside Risks

Capital ratios will fall but remain adequate in base-case scenario

Tangible common equity (TCE) for Moody's rated Nigerian banks will decline under base-case scenario to about 12.7% of risk-weighted assets by the end of 2021 from 14.3% at year-end 2019.

Likely devaluation of the naira as a key additional risk to capital

A devaluation of naira will further increase risk-weighted assets given that over 40% of banks' loans are in foreign-currency.

High Exposure to Government Securities

Banks also have high exposure to Nigerian government securities, at about 208% of shareholders' equity, according to Moody's estimates, presenting an additional vulnerability, although a low probability one.

Some banks' capital will be susceptible to erosion from losses.

Moody's generally expect banks to deliver pre-provision income that will be sufficient to absorb a large portion of their loan-loss provisioning needs and prevent material capital erosion from loan losses.

More than a quarter of bank loans are to the volatile oil and gas sector

Nigerian banks also face credit risk from high exposure to the cyclical oil and gas sector. Lending to the sector represents about 27% of total loans and generates the largest volumes of problem loans.

Nigerian banks show very severe capital erosion in Moody's stress test

The result of stress on the Nigerian banking system shows that the impact would be very severe, leaving the system with capital equivalent to about -2.5% of its risk-weighted assets at the end of 2021.

Source: Moody's Investors Service Banking System Outlook – Nigeria, 21st May 2020

Bank Executives Face Many Questions

Regulatory and External Pressures

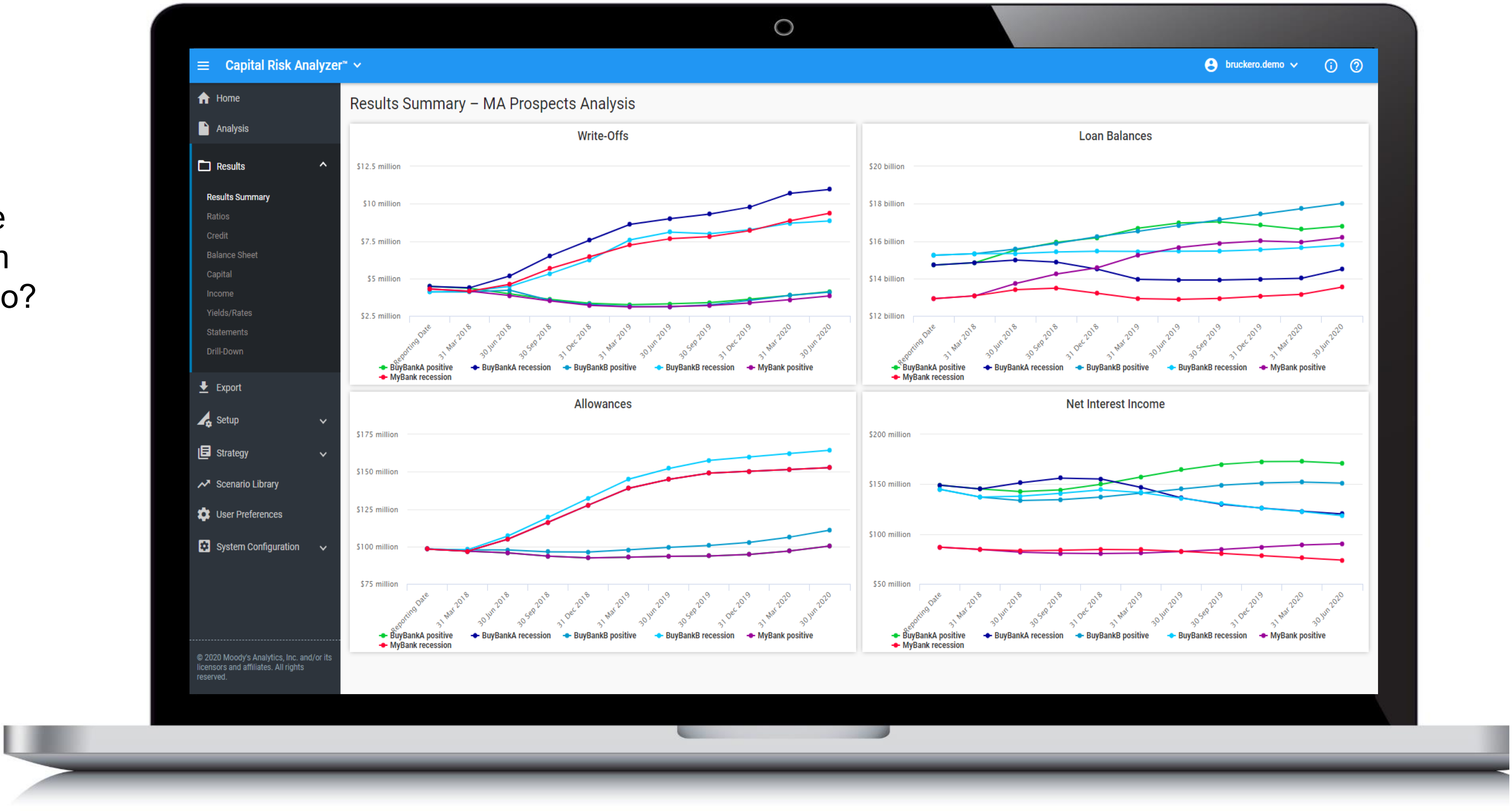
How can we forecast my bank's ECL and NPL in future quarters and years?

What will be the impact of a more pessimistic economic scenario on my bank's Capital Adequacy Ratio?

How do we forecast and protect profitability of the bank when we expect increased losses?

How can we simulate impact of various dividend policies in combination with alternative economic scenarios?

How do we incorporate COVID-19 Pandemic pathways in to our forecasting process?



How to Manage Risk in a Rapidly Changing World

COVID – 19 Fluid with Many Unknowns

DRIVERS

- Epidemiological – progression of the epidemic
- Sociological - response of people, businesses, and governments

ECONOMIC IMPACT

- Depends on extent, timing, and interaction of drivers
- Is uncertain, unpredictable, and changing fast
- Varies across industries + regions

MEASURING & MANAGING RISK

- Measurement requires timely assessment of current environment
- Management requires timely assessment of environment under multiple epidemiological and sociological scenarios

Understanding the Challenges

Credit measures don’t lend themselves to COVID 19

Traditional Internal Ratings

- Rely on fundamental name-level analysis
- Cannot be updated as frequent as virus evolution
- How do you incorporate past events into your forward looking view

Loss Forecasting & Accounting Models

- Leverage broad-brush scenarios
- Can’t differentiate across virus impacted industries
- How do you stress social & health impact

Who needs help?

- Credit Analysts
- Portfolio Managers
- Lenders
- Enterprise Risk Managers
- Regulators
- Credit Strategies Desk

Navigating Current Environment

Requires Timely and Dynamic Analytics and Data

1. Granular current state assessment of credit

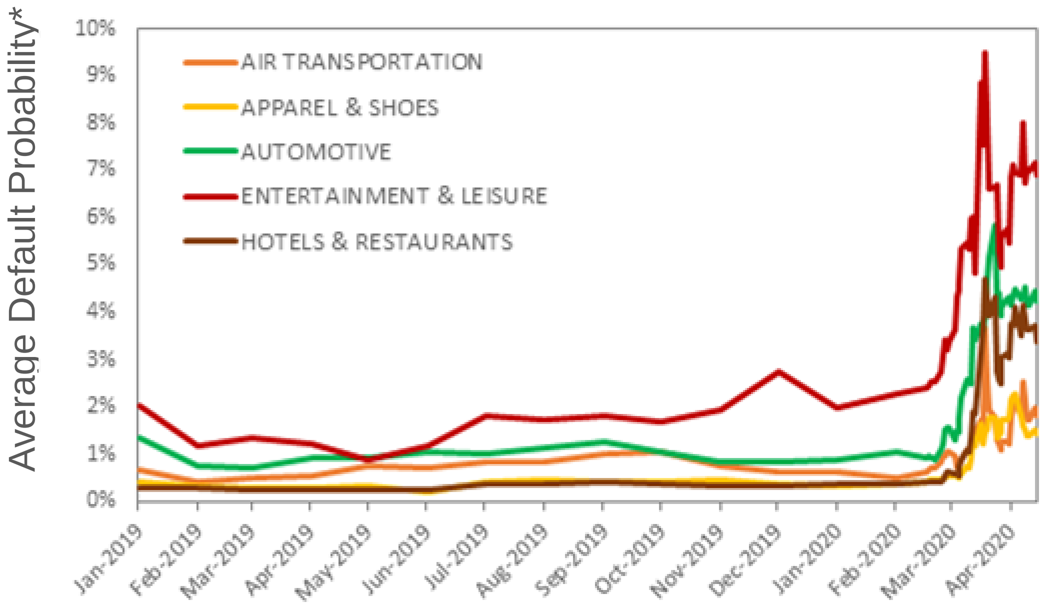
2. Assessment of trajectories that consider**:**
   - Epidemiological paths – severity, length of economic shutdown accounting for government reaction (e.g., draconian social distancing)
   - Cross-Sectional sensitivity of COVID-19
   - Targeted fiscal/monetary policies (e.g., airline bailout)

3. With applications toward**:**
   - An overlay to internal rating
   - An overlay to stress testing/IFRS 9 models
   - Early warning indicators
   - A complement to other credit portfolio and capital planning processes

How has COVID-19 impacted industries so far?

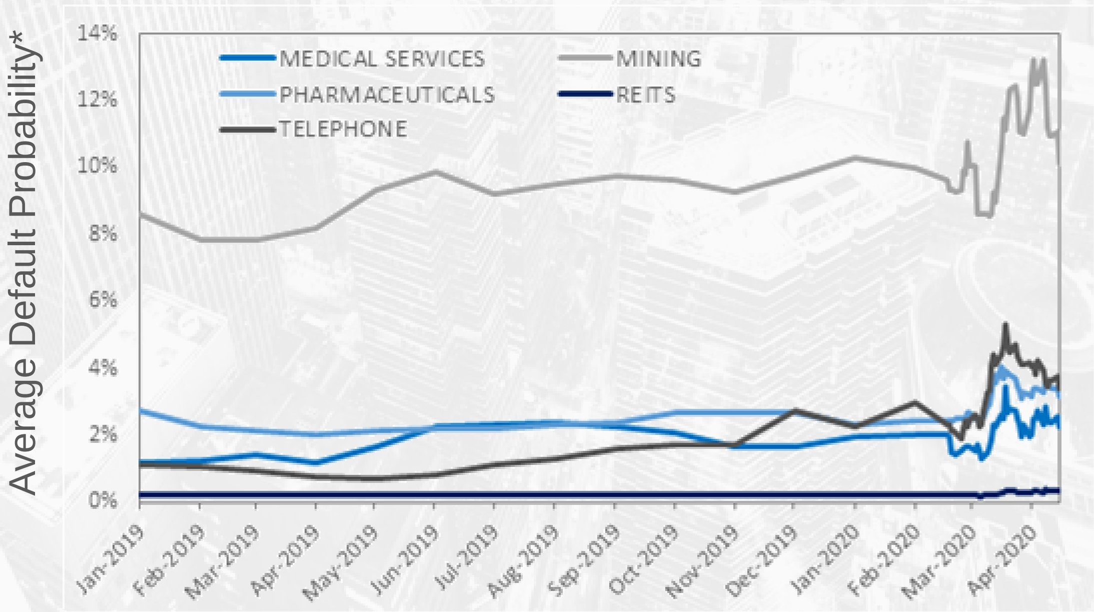
Moody's EDF credit measure's role in assessing empirical patterns

Industries Most Impacted by COVID-19



*Measured using Moody's EDF

Industries with Mild Impact to COVID-19



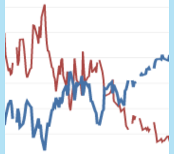
*Measured using Moody's EDF

Pandemic Credit Data and Analytics

Cross-Sectional, Fiscal and Monetary Overlay Models

ASSESSING WHAT HAS HAPPENED SO FAR

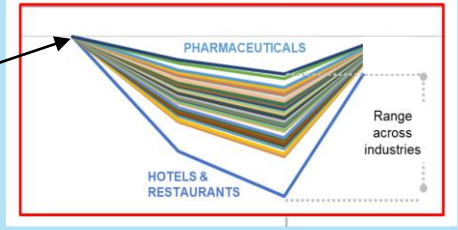
Elevated:
- default probabilities
- expected loss



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

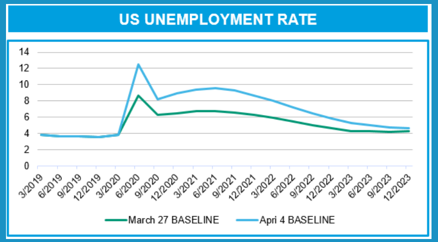
Current-State Internal Rating Assessment

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

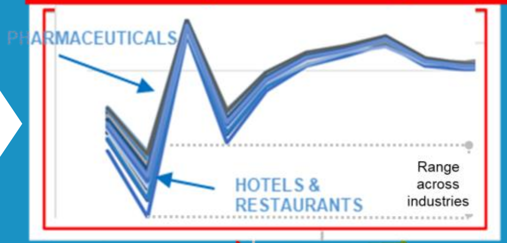
Granular and Name-Level

PROJECTING WHAT MIGHT HAPPEN NEXT?

Traditional macro scenarios



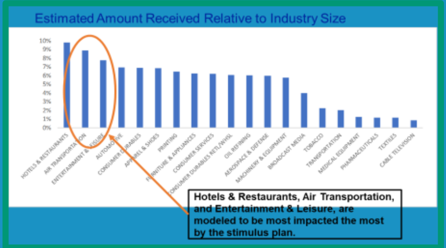
Cross-Sectional COVID-19 Overlay Model



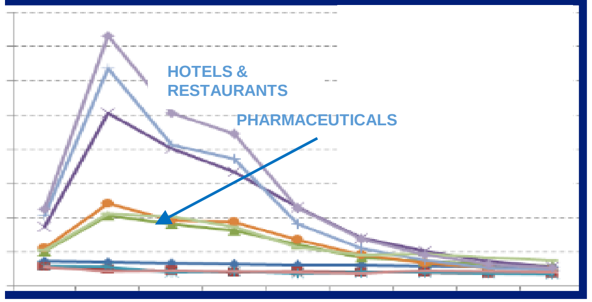
Economic scenario unfolding

Recovery begins

Fiscal & Monetary Overlay Model



PROJECTED RATINGS, AND LOSS MEASURES



IFRS 9/ECL, regulatory and internal scenario analysis/stress testing, credit portfolio management and capital planning

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.

Rating Projections Applications to Stress Testing

Applications: Stress Testing, Projected Expected Losses and Capital

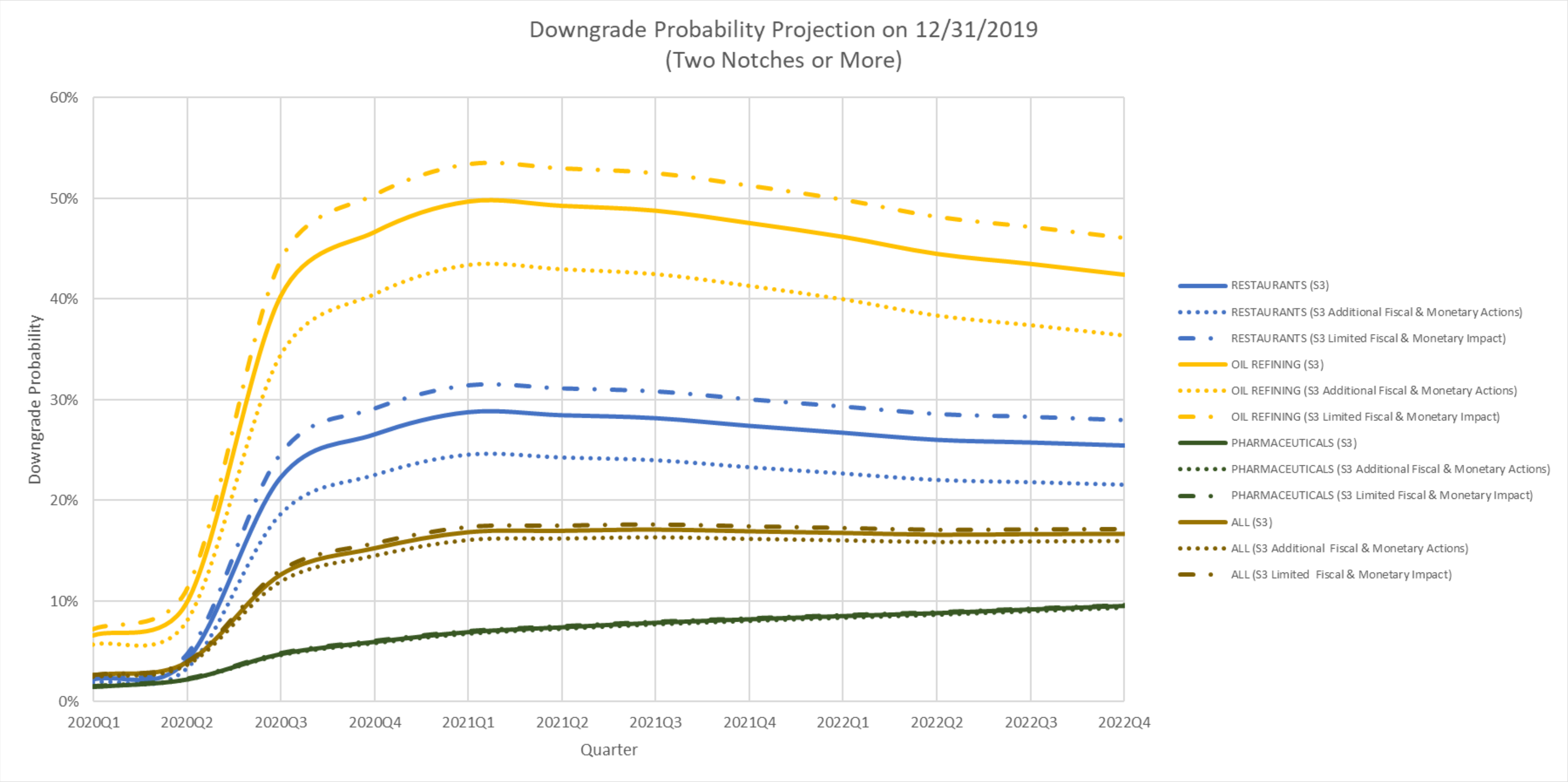
NOTES

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 Across Industries

One-year default probabilities along scenarios

Industry	PD (Q4/2019)	PD (Q1/2020)	PD (Q2/2020 BASELINE)	PD (Q2/2020 DOWNSIDE)
UTILITIES, GAS	0.026	0.080	0.097	0.099
AIR TRANSPORTATION	0.032	0.088	0.096	0.097
OIL, GAS & COAL EXPL/PROD	0.027	0.080	0.116	0.123
TRANSPORTATION	0.026	0.081	0.103	0.107
PHARMACEUTICALS	0.033	0.065	0.080	0.083
UTILITIES, ELECTRIC	0.020	0.041	0.051	0.053
FOOD & BEVERAGE	0.031	0.062	0.075	0.078
AGRICULTURE	0.033	0.065	0.084	0.087

Moody's Analytics Scenario Narratives include expected impact of a unique combination of domestic and external factors.

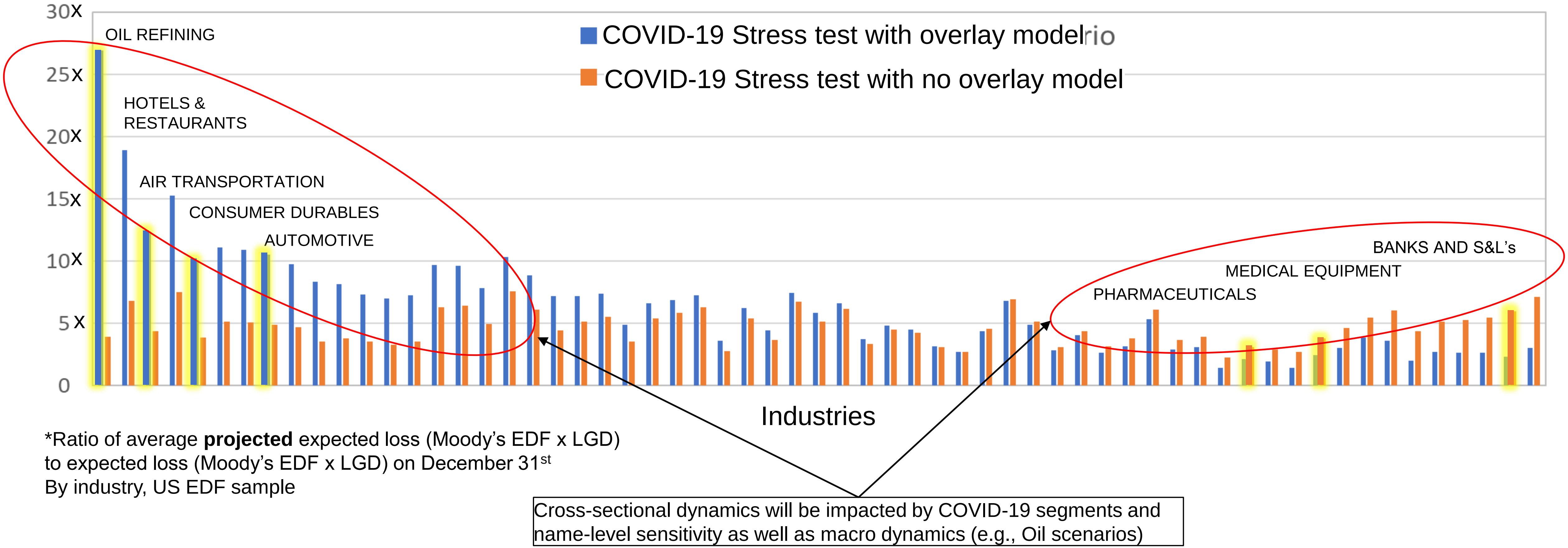
Baseline: A sudden, sharp recession is now the baseline forecast for Nigeria. The catalysts are the COVID-19 crisis and the plunge in global oil prices. Nigeria will be hard hit by the fallout from the virus, but the effects will be at their worst in the second quarter of 2020. Real GDP will contract by 10.7% at an annual rate in the second quarter, and despite the recovery in the third quarter, by
0.3% for all of 2020..

90th% Downside " the coronavirus crisis persists longer than expected and deepens with more cases and deaths than anticipated. Restrictions on travel and business closures around the world wind down more slowly during the second quarter of 2020 than in the baseline and do not end until July. Oil prices fall to a trough of $21 per barrel, sharply reducing investment in exploration.

New Analytics and Data to Navigate COVID-19

Naïve models calibrated to historic dynamics will be misleading

Increase in Expected Loss Under COVID-19 Scenario*



*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

Managing credit risk in the current environment is a challenge we’ve never experienced.

This requires data and analytics which can be updated frequently as the situation evolves.

Risk managers need to consider a range of economic paths, inclusive of fiscal stimulus actions.

The outputs can be used with multiple applications to help manage risk, forecast credit losses and capital requirements.