

COVID-19: stress testing for Financial Institutions sector

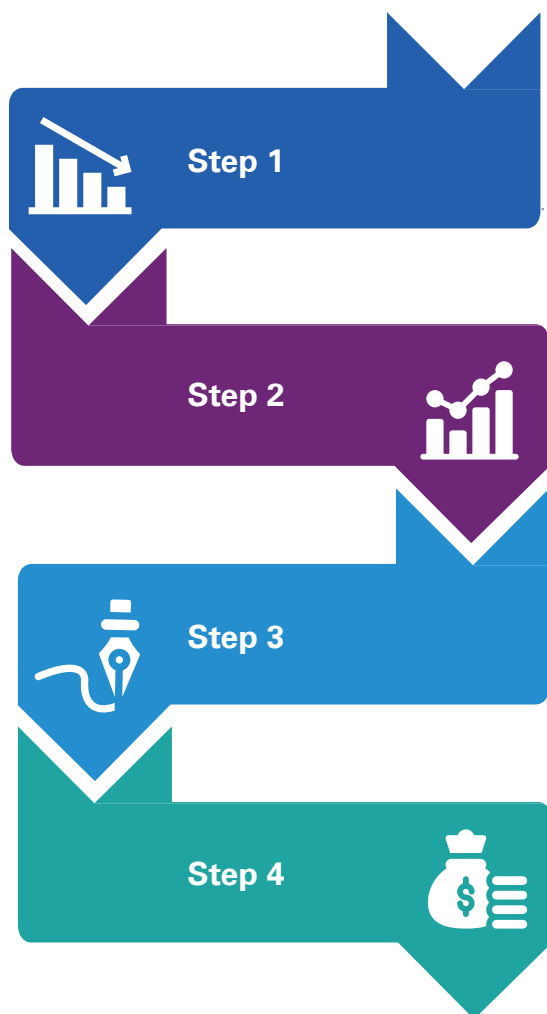


Background

For some time now, the financial services sector across the global has been under pressure with respect to deteriorating asset quality, liquidity squeeze, redemption pressures and event risks. To add to it, the current COVID-19 outbreak has the potential to significantly disrupt the operating environment for FIs. It is already estimated that the recent outbreak could cost the global economy up to USD1 trillion this year.¹ With major sectors like aviation, supply chain, tourism, oil and energy facing a slower than anticipated activity, the situation for the year ahead looks grim.

In scenarios such as this, stress testing becomes the ultimate tool to test the resilience of an FI. Not only does this help in understanding the vulnerabilities in the portfolio, but also helps manage further deterioration in credit. Further it also enables design of alternate plans to ensure funding stability and avoid a liquidity crunch scenario.

Stress testing methodology



Stress the loan portfolio

- Determine the stress scenarios (travel bans, supply chain shocks, oil price dips, stock market crash) and **forecasts of macroeconomic variables**
- Stress underlying **cash flows and debt service ratios** of the obligors

Simulate impact on loan provisions and capital ratios

- Test for the **statistical significance and stability** of the ECL components at varying confidence intervals post adjustment to COVID-19 related tail risk scenarios
- The plausible downside risk can be quantified using the **extreme value theory or tail risk modelling**
- Simulate for **stage transfers due to increase in credit risks**. Calculate ECL and RWA impact at loan level.

Simulate impact on loan provisions and capital ratios

- Based on aggregated impact on RWA and ECL, identify vulnerable credit sectors.
- Assess contagion impact for **large corporates that are highly integrated**. Identify the key buyer/suppliers (**2nd order**) and subsequent buyers/sellers (**3rd order**) dependent on the large corporate
- Assess the contagion risk through **joint distribution models/ stress propagation network models**. Identify exposure and loss estimates therein

Simulate impact on loan provisions and capital ratios

- Based on the stress test results, identify **weaker customers and sectors**.
- Define **relief measures** based on regulatory rules and risk appetite.

1. Coronavirus: Can policymakers avert a trillion-dollar crisis? United Nations conference on Trade and Development, 09 March 2020

How can we help?

- Develop stress test templates for credit, market and liquidity risks for COVID-19 stress;
- Quantify impact of COVID-19 on Expected Credit Loss(ECL), Risk Weighted Assets (RWA), Net Interest Income (NII), Earnings at Risk (EaR) using advanced statistical techniques.
- Deploy our easy-to-use and flexible tactical tool for conducting stress testing and evaluating its impact on Profit & Loss (P&L) and Regulatory capital
- Prescribe thresholds to determine management trigger points and provide solutions for resolution.



KPMG FRM in India's stress testing tactical tool

Tool

Credit Risk

Market Risk

Liquidity Risk

Scenario Definition

Baseline

Adverse

Severely Adverse

Bank Specific-1

Macro Forecasts

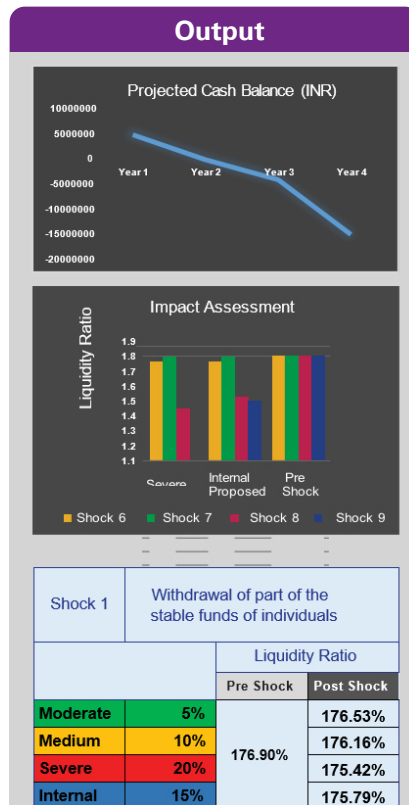
MacroVariable	Scenario	Q1	Q2	Q3	Q4	Q5	Q6
GDP Growth (%)	Baseline	(0.50)	(1.00)	(1.00)	0.50	0.75	1.00
	Severe	(1.00)	(1.50)	1.50	0.50	0.75	1.00
	Severe Adv	(1.50)	(1.00)	(1.00)	0.50	0.75	1.00
	Bank Specific	(0.50)	(1.00)	(1.00)	0.50	0.75	1.00
Unemployment Rate	Baseline	4.00%	4.50%	4.75%	4.75%	4.00%	3.00%
	Severe	5.00%	5.50%	5.75%	4.75%	4.00%	3.50%
	Severe Adv	5.25%	5.00%	4.75%	4.75%	4.50%	4.00%
	Bank Specific	4.00%	4.50%	4.75%	4.75%	4.00%	3.00%

Update

Run

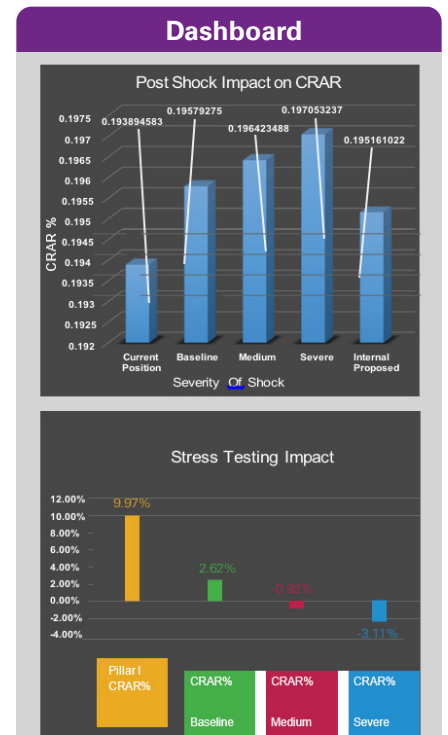
Key features include:

- Flexible interface to read the required shock factors as input.
- Adjustable format to input regulatory and hypothetical scenarios.
- Adaptability to portfolio
- specific risk characteristics.



Key features include:

- Capability to comprehend impact on cash flows and requirement of immediate liquidity buffer; impact on the entity's balance sheet under stress etc.



Key features include:

- Intelligent dashboard to gauge the impact of stressed conditions.
- Graphical comparison of the impact on liquidity, capital adequacy, solvency and profitability.

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