Managing COVID-19 Credit Risk

A sectoral and data-driven approach for greater insight into an uncertain future

June 2020

Introduction

The current COVID-19 pandemic presents an era-defining challenge to not just the public health sector but to the resilience of the entire global economy. The pandemic has profoundly altered the rhythms of every country's economy, leading to pervasive uncertainty as governments ponder their response strategies. This is truly a global crisis with no market or business immune to the harsh economic impact of the pandemic. While policymakers have acted with speed and resolve, not seen since the last financial crisis, to infuse unprecedented levels of liquidity to contain the short-term shocks reverberating through financial markets and the real economy, uncertainty over the future remains.

- It has been widely accepted that **the coronavirus is here to stay** and given the widespread contagion, may become yet another endemic virus in our communities. Despite the unprecedented global mobilization for a clinical solution, there is yet no effective therapy while a COVID-19 vaccine is months, if not years away. Nor is there clarity over the likelihood or severity of a second wave of infections.
- While government leaders lean on medical experts to help deal with the outbreak, the truly difficult decisions are not medical, but political. Nations face the **dilemma of balancing the medical and economic emergencies** and poignantly, these decisions must be made in a fog of uncertainty.
- Continuous liquidity infusion is unsustainable and despite the inconclusive debate on what the "right timing" is, we are **seeing economies reopening**. The most prudent pace and extent of this restart is currently unknown with the acceptability varying according to local, national and regional considerations.

While these uncertainties persist, businesses continue to deal with the twin issues of (a) **business contraction due to ongoing lockdowns** and social distancing measures, and their lingering affects; and (b) **significant ambiguity crippling their decision-making ability**. It is a sobering reality that not all businesses will survive this crisis with varied degrees of vulnerability i.e. some will survive the immediate crisis but may still become unviable later due to the market and financial challenges in the short or medium term.

Lenders have a central role to play in supporting the economy during this crisis, and in facilitating a rapid and sustained recovery afterwards. Given these new realities, **banks and other lending institutions have the burden of knowing which businesses they need to support** (either through government programs or additional lending off their own balance sheet) and where to responsibly cut their losses to protect themselves and their stakeholders. It is undoubtedly **a fine balancing act** and making the right decisions will not be easy. Regulators in turn need to guide lenders through these uncertain times where their role in capital intermediation has been more important than ever particularly because the COVID-19 demand / supply shock was exogenous and not itself the consequence of inherent economic or sectoral weaknesses.

OakNorth is helping lenders navigate this crisis through its **portfolio diagnostics**, **credit analysis**, and **monitoring** modules. Given the break in historic correlations that this crisis has precipitated, OakNorth has developed a data-backed quantitative framework where we apply **sector-specific COVID-19 scenarios** on a lender's loan book, borrower by borrower, to get a granular view into their portfolio, providing actionable insights at the individual borrower level.

OakNorth's Approach to COVID-19 Scenarios

OakNorth COVID-19 scenarios are based on three key stages in the lifecycle – "**shock**", "**re-boot**" and **"the new normal"**. While there is a lot of focus currently on the near-term liquidity challenges from the sudden demand and supply shocks due to the lockdowns and social distancing measures (covered under Stage 1), there has been limited discourse on how the recovery will unfold (Stage 2) and what the "new normal" will look like (Stage 3).

Stage 1	**Stage 2**	**Stage 3**
Shock	**Re-boot**	**The New Normal**
▪ Accounts for the immediate shock to the business ecosystem i.e. national lockdowns, restrictive regulations to conduct business, paranoid customer behaviour. ▪ Business impact is evaluated in terms of managing cash burn vs. available capital to survive the crisis.	▪ Incorporates business recovery scenarios once lockdown restrictions start easing and customer behaviour begins to turn rational again. ▪ Path of recovery evaluated both in terms speed and extent. Different business groups will follow differing paths and not all businesses will have the required working capital and staff to follow the recovery resulting in curtailment or bankruptcy.	▪ This stage builds on the "new normal" post recovery and what it means for different sectors and businesses in terms of their structure and growth runway given the new realities in the post-COVID-19 world. ▪ For example, trend acceleration towards e-commerce (2-3x faster), combined with retailer bankruptcies, may result in large redundancies in the number of stores, creating oversupply, which in turn will impact both rentals and valuations.
3-6 months	**6-18 months**	**Thereafter**

The gradation of the recovery path in terms of duration (when will it start, how protracted/rapid will it be) plays a critical role in establishing the business's ability to remain viable and **estimating the funding requirements beyond the near term**, **potential deleveraging path**, **and the sustainability in terms of equity cushion** and **asset coverage, amongst others**. while analysing liquidity in a silo may very well provide a view on short term survival, it unfortunately does not provide any visibility on what borrower-level actions a lender should take, even if they know what part of the portfolio will have liquidity challenges. This is exactly what prompted OakNorth to take a holistic view on the current situation and build scenarios that incorporate all three stages, allowing lenders to act based on insights, eliminating inaction or potentially detrimental action. For example:

- <u>False positive</u>: Despite having a liquidity buffer (through revolving line or cash reserves), the business under evaluation may be fundamentally compromised and unable to support the leverage profile (e.g. protracted recovery, permanent contraction, or lower future profitability). An example: Companies in the Oil & Gas E&P sector are likely to have enough liquidity buffer in the short term (i.e. high cash conversion business; ability to switch off discretionary capex). However, the sector will invariably witness a prolonged period of subdued production growth as operators look to counter a severely oversupplied market given uncertain demand (subdued economic activity, historic fall in transportation sector demand etc.).
- <u>False negative</u>: Despite having a low liquidity buffer (e.g. under-levered), fundamentals of the business under study may remain intact and the outlook could support additional leverage (e.g. V shaped recovery forecast, new business opportunities created from structural changes). An example: Telecom companies may face short term challenges (e.g. corporate usage reduction due to office/travel shutdown, retail store closures) leaving limited wiggle room currently to change the fixed nature of their operating costs. However, in the mid- to long-term, the industry may benefit from COVID-19-driven changes in market behaviour (work-from-home, remote education, home entertainment, change in mobility patterns, video, cord cutting etc.) that could support the uptake of higher value data packages, improving ARPUs of telecom service providers resulting in a much improved operational profile vs. the pre-Covid period.

While building these sector-specific scenarios, OakNorth takes a data-driven approach to maintain objectivity in findings. In addition to studying data behaviour and inter-relationships of company financial and business metrics, we draw significant insights from both traditional and alternative market data sources. The details of how we accomplish this is explained in the next section.

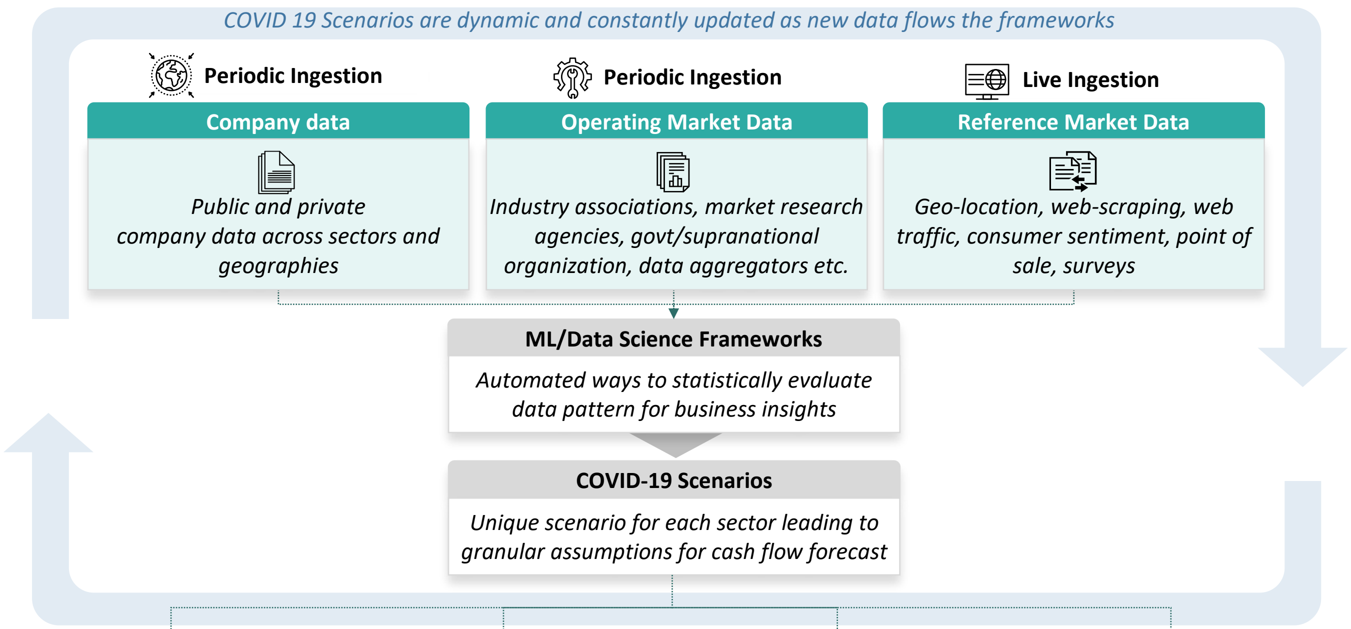
Deep Dive on OakNorth COVID-19 Scenarios

While the coronavirus pandemic has introduced extreme uncertainty into nearly every aspect of a lender's risk assessment, OakNorth COVID-19 scenarios infuse clarity into critical decision-making. This is accomplished by:

- Using **wide and relevant datasets**, OakNorth COVID-19 scenarios are based on data patterns captured from millions of diverse data points around company financials, business KPIs, operating market indicators and alternate reference data sets.
- Using **machine-assisted analytical frameworks** that can process large volume of data (both stock and flow) to identify patterns, that otherwise are outside the realms of what the human mind can manually interpret. Data patterns are recognised by OakNorth platform machine learning (ML) algorithms and analysed through hundreds of data science frameworks (as applicable to different sectors) to make the output formulaic.
- Developing (and constantly evolving) analytical frameworks in a manner that they **produce granular modelling assumptions** for key financial metrics – revenue, operating costs, working capital and capex – that can be applied seamlessly on borrower financials.

Provided below is a depiction of how this flow functions to provide actionable, forward-looking view on borrowers.

How are scenarios built?



Revenue

- Sector cyclicality and stage business was in while entering the crisis
- Revenue protection – contracted, discretionary vs. non-discretionary, counterparties, end market idiosyncrasies
- Ecosystem response (customers, competitor, suppliers) – degree of consolidation, differentiated vs. commoditised, price elasticity
- Impact of macro factors – commodity prices, interest rates, FX
- Change in consumer behaviour / preferences

Fixed/Variable Cost

- Impact of operating leverage
- Levers for management to cut costs - split between short term (temporary reduction in work force) and structural (e.g. dropping expansion initiatives)
- Impact of social distancing e.g. higher rental, lower footfall, fewer shifts etc.
- Supply chain disruptions and sectoral idiosyncrasies
- Efficacy of promotional activities in changing consumer behaviour
- Shift in business model e.g. alternative distribution channels like e-commerce
- Costs supported by federal initiatives

Working Capital

- Inventory patterns split between raw materials and intermediates (wherever applicable) and finished goods
- Potential slippages in receivables and anticipated changes in credit terms based on end market behaviour and accepted terms of trade
- Levers available to managements to conserve cash through payables management

Capex

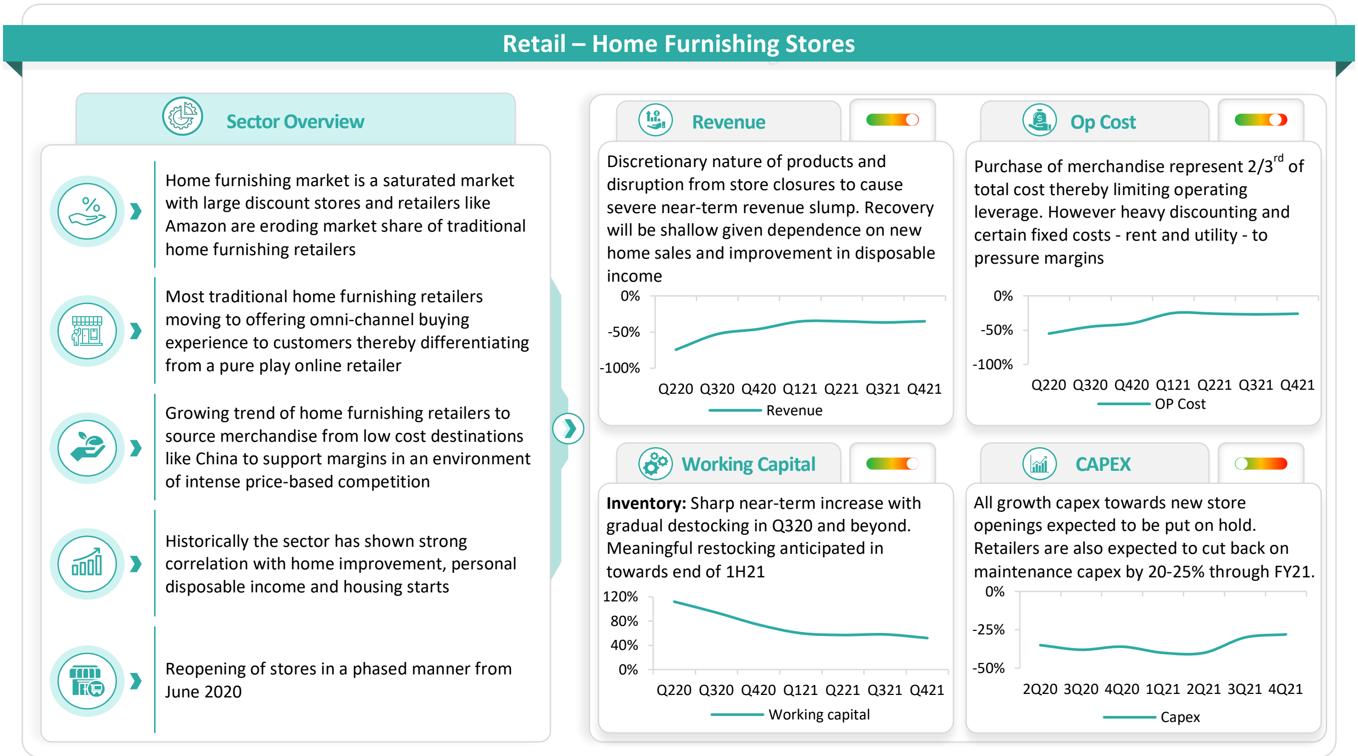
- Estimate on maintenance capex to sustain long term productivity
- Typical asset life cycle within the sector and lead time for new capacity
- History of recent investments across the sector

Illustrative factors evaluated to build assumptions

Given the **dynamic nature of input data sets** (periodic updates, live ingestion of web feeds), formulaic output ensures that sector-specific COVID-19 scenarios are constantly updated to reflect market realities. This is particularly relevant in the current times where the **situation is rapidly evolving** with the multidimensional impact of management actions, government initiatives, evolution of new business models, and acceleration of trends.

OakNorth has built **126 domain models and associated scenarios that permits granularity** to differentiate - at the business model-level – the impact of the disruption and consequent recovery path within a broader sector. For example, within Retail, the Apparels and Furniture & Furnishings, the retail segment will be significantly more impacted by a shallow recovery path vs. the relatively more resilient F&B retail segment. Within the restaurant industry, similar differentiation is considered between QSRs (that will benefit from lower price points and greater dependence on take-aways and home delivery) vs. full-service restaurants. **Inter-sector linkages are also established to drive certain, more nuanced sectoral projections**. For example, the revenues of auto leasing companies are impacted by the under-performance of fleet operators while at the same time, liquidity will be further impacted by the inability of auto OEMs to backstop prior purchases.

Illustrated below is an example of our COVID-19 scenarios:



The COVID-19 scenarios are generated in an automated manner to keep objectivity and process consistency, overcoming the limitations and inconsistencies of the human mind to identify patterns through large and varied data sets with multiple points of linkages, while at the same time, enabling us to build in **provisions to be able to manually adjust scenarios for borrower-specific nuances/actions**. For example, while the revenue path for the truck transportation sector would be based on industry-wide data around distance covered, cargo and fleet mix, these can be further refined via an analyst's inputs to factor in the exact cargo and fleet mix for a specific borrower.

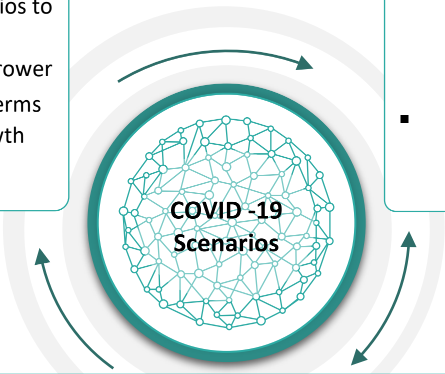
These **scenarios have been further calibrated against the evolving nature of the pandemic by running US$200bn+ worth of loans** through the platform since January 2020. This experience of the platform in running various models since the pandemic began is captured with **ML algorithms constantly calibrating different scenarios**. For example, almost 100% drop in monthly revenue for tourism dependent businesses (directly/indirectly linked), has limited precedence in historical data but is very pertinent during the current crisis.

How Lenders Can Effectively Use OakNorth COVID-19 Scenarios

We enable lenders to conduct a full diagnostic assessment of their loan book to (1) understand where current vulnerabilities lie to focus their containment efforts, and (2) continue leveraging the constantly evolving COVID-19 scenarios to re-underwrite and monitor their book in what are essentially "new" market realities.

Portfolio Diagnostics

- Leveraging OakNorth COVID-19 scenarios to run stress tests on their loan books to assign vulnerability scores to each borrower
- This will help lenders set priorities in terms of risk management and business growth



Re-Underwriting

- Re-underwrite borrowers in focus portfolio as situation has evolved so dramatically that past relationships do not remain meaningful anymore
- This will help lenders pursue a granular "borrower level strategy" through its RMs and credit officers

Monitoring

- Continuous monitoring of borrowers in the loan book and overall portfolio to identify changes in vulnerability and opportunity
- Monitoring also enables lenders to constantly evaluate the adequacy of covenants by running simulations across industries at a loan book and/or borrower-level

Running the OakNorth COVID-19 scenarios on their loan books enables lenders to rapidly identify borrowers which are high priority to effectively re-underwrite given that historic correlations are broken. This re-analysis can be performed specifically from the perspective of determining additional funding requirements that enable the borrower to survive the crisis and re-boot its business when the recovery begins. The fact that the COVID-19 shock was exogenous and not itself the consequence of inherent systemic or sectoral weaknesses further necessitates an in-depth assessment of each borrower to identify the coincidental presence of any additional idiosyncratic vulnerabilities and how these would affect the viability of the business in the "new normal".

Conclusion

The world as we know it has changed since the onset of the COVID-19 pandemic in early January 2020. What the subsequent months have revealed is that **historic data and trends are of little relevance to determine which businesses (or indeed entire industry segments) will perform through the crisis**. It has been challenging for institutions to plan for the impact of coronavirus on their portfolios because of the lack of historical comparisons for outbreaks of this magnitude and severity. While there is no debate that COVID-19 is an exogenous shock to the economy, the more pertinent question is whether there are latent weaknesses in a lender's borrower base for it to prey on.

While we hope that extraordinary policy responses may bring about a likely bounce back in economic activity, such a felicitous scenario however is not assured with significant risks to long-term prosperity continuing to occlude lenders' decision-making and strategic visibility. Recovery, when it comes, will vary greatly in both speed and intensity across industries, geographies and business models with some effects lasting for many years. This is precisely where our COVID**-19 scenarios can help bring insights necessary for managing risks tightly while at the same time helping lenders in identifying and seizing the next wave of opportunities**. OakNorth COVID-19 scenarios do not just enable a lender to assess current borrower vulnerabilities but also simulate how businesses will perform in a re-boot scenario and, moreover, whether they will perish, survive or thrive in what will be the "new normal" after the economy opens up again.

OakNorth is a true believer in the power of technology and how it can transform lending especially in these challenging times. Our COVID-19 scenarios are one example of how we are using technology to bring speed and agility to the risk mitigation and credit assessment process that has a tangible impact in today's new lending realities.

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