



**ON INDUSTRIES: INDUSTRIAL &
MANUFACTURING**

**Industry insight
with impact**

ON Industries is a five-part series analyzing key industries through the lens of ON Credit Intelligence, providing commercial bankers with a detailed and powerful forward-looking view of the industry's drivers and performance.

RELIANCE OFF SHORE

SUPPLY CHAIN ISSUES

The
manufacturing
industry is
being disrupted

CHANGING MARKET DEMAND

NEW TECHNOLOGIES

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Borrowers are facing unprecedented risks

Soaring energy costs, rising interest rates, increasing inflation, supply chains at the breaking point, political instability across the globe, and the looming threat of climate change with wildfires and floods making headlines on a weekly basis. It's not a matter of *if* bank's borrowers will be impacted, it's knowing *when* and *how*.

That's why it's vital that banks are able to model various scenarios across their loan book to identify their greatest risks, as well as potential opportunities for growth. However, the traditional approach is too backward-looking, too used to benign market conditions (2009-2021 was the longest bull market in history), and no longer fit for purpose.

Commercial banks need to leverage scenarios that are granular, detailed, and forward-looking. This will enable them to look deep into each borrower's unique industry, assess every loan from the bottom up, select relevant macroeconomic factors that are fundamental to most banks and recommended by the regulators, and adjust them to conduct varying analyses to provide a forward-looking view of their entire loan book.

In this report, OakNorth dives deeper into the industrial and manufacturing sector and, for illustrative purposes, focuses on the performance of the **paint and coatings manufacturing industry**. Insights for the industry and individual borrowers are generated using the ON Credit Intelligence Suite, a data-driven software that provides a granular, 360-degree view of every commercial borrower, using continuous monitoring and a forward-look view of risk.

Drivers and supply chain constraints considered for the projection of industry performance

Paint and coatings manufacturing businesses manufacture a myriad of products including paints, varnishes, and related products which are used for protective, decorative, industrial, and specialty purposes. This industry in the US consists of nearly a thousand firms, with a market size of ~\$41 billion.



The ON Credit Intelligence Suite delineates the industry's operating and financial performance into two segments:

- **ARCHITECTURAL COATINGS:** Contributes a major portion of industry revenues and is dependent on the construction and renovation/remodeling activities, with residential construction being the largest end-market
- **INDUSTRIAL COATINGS:** Largely depends on manufacturing activities in the US, with automotive and aerospace being the two largest end-markets

OakNorth has closely monitored multiple drivers and supply chain constraints for major end user industries to determine the impact on paint and coatings manufacturing, these are:

END MARKET	DRIVERS
CONSTRUCTION	<ul style="list-style-type: none"> • Construction spending in residential construction, industrial and commercial sectors • Housing starts • Mortgage rates
AUTOMOTIVE	<ul style="list-style-type: none"> • Index of industrial production • Shipments and impact of material shortage (most notably semiconductors)
AEROSPACE	<ul style="list-style-type: none"> • Aerospace products and parts shipments • Scheduled and nonscheduled air transportation industry performance • US defense budget
OTHER MANUFACTURING SECTORS	<ul style="list-style-type: none"> • Index of industrial production

It also factors in supply chain issues faced by this industry, such as logistical bottlenecks and supply shortages arising from extreme weather events that can impact production levels.

On the costs side, raw materials such as resins and binders represent the largest expense for paint and coatings industry, and accounts for the majority of the overall 'Cost of Goods Sold'. There are two primary raw material cost components:

- **RESINS AND BINDERS:** These are made from oil derivatives such as Propylene, and represent the largest component of raw material costs
- **PIGMENTS:** TiO₂ (Titanium Dioxide) is most widely used in pigments because of its brightness and high refractive index

Historical performance of the paint and coatings industry

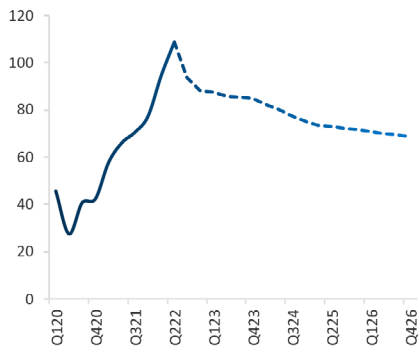
Demand for paint and coatings contracted throughout FY20, owing to a slump in manufacturing activities on the back of COVID restrictions and supply chain disruptions, which had an adverse effect on the industrial coatings segment. However, this downside was countered by buoyant demand for architectural coatings on the back of robust housing demand. Additionally, the home improvements segment also exhibited healthy growth, driven by a rise in overall disposable income levels (aided by fiscal stimulus), and changes to working habits, with more people working from home or adopting hybrid working.

Demand for paint and coatings rebounded in FY21, supported by continued resilience in construction activities stemming from low mortgage rates, and an uptick in other manufacturing sectors (such as furniture, household appliances, ship and boat manufacturing, etc.). However, demand from the automotive and aerospace sectors remained subdued on the back of input shortages (most notably semiconductors) and weak business sentiment, respectively.

On the costs side, the following trends were observed for the key raw materials:

- **PROPYLENE:** Prices declined by ~9% in FY20, followed by a ~26% increase in FY21 - tracking the movement in crude oil prices. The trend continued in 1H22 as prices grew sequentially by ~15% over average FY21 levels.
- **TiO₂:** Prices rose by ~7% over FY21 supported by improved demand conditions, coupled with a general inflationary environment.

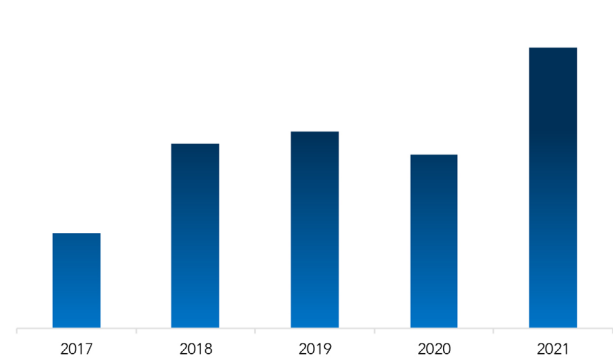
Crude Oil Prices (\$/bbl)



WAR

Prices surged further during 1H22 to a multi-year high mainly off the back of the ongoing Russia-Ukraine War.

TiO₂ Prices (\$/mt)



MARKET

TiO₂ manufacturing in the US is a highly concentrated market, with companies such as Chemours, Tronox, and Kronos being the major players.

Efficacy of ON Forecasts

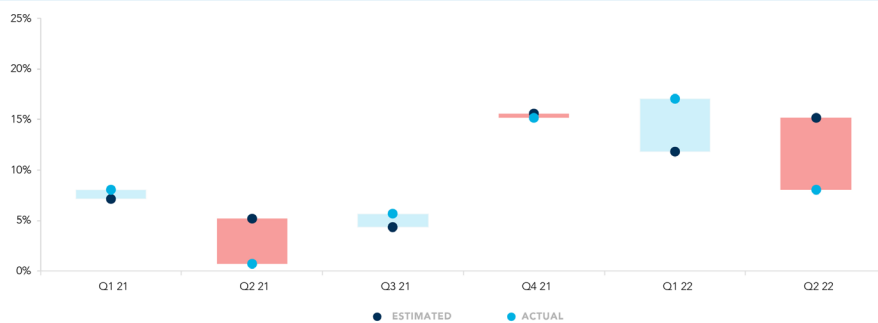
The forward-looking scenarios from the ON Credit Intelligence Suite have been put to the test over a series of industries with predictions assessed against actual outcomes. The accuracy of these forecasts is very high (90% accuracy achieved over the last 24 months for overall portfolio), giving banks confidence that the insights they receive offer a true indication of the future impact on their loan book.

OakNorth conducts quarterly reviews to assess the efficacy of its industry forecasts by comparing reported revenues with projected revenues using the most recent quarterly

data available. During each update cycle, OakNorth also identifies critical emerging trends across industry groups and then makes the necessary revisions to its ON Industry Forecasts to minimize divergence.

The paint and coatings industry exhibits statistical linkages with various quantitative parameters such as residential housing starts, vehicle sales, and mortgage rates. Unpredictable events such as supply chain disruptions, geopolitical events, and extreme weather events can also have a significant impact on input costs, prices, production volumes, and demand.

ON Industry Forecasts exhibit strong accuracy for the paint and coatings industry



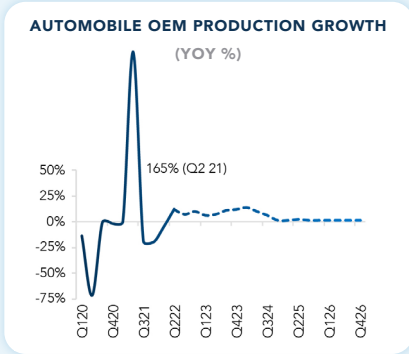
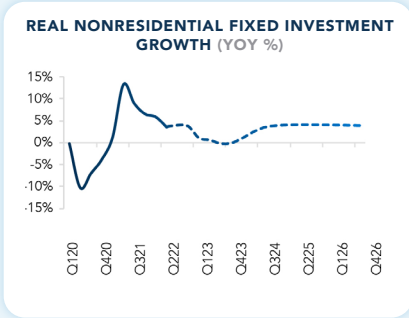
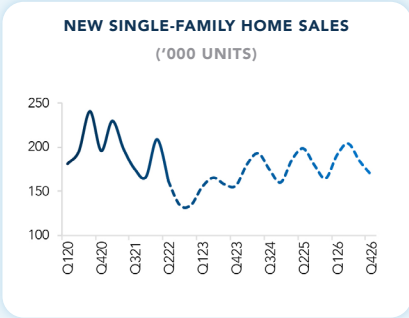
¹ Low Divergence is defined as <=800bps differential between actual and estimated growth rates in a given quarter

ACTUALS VS ESTIMATES

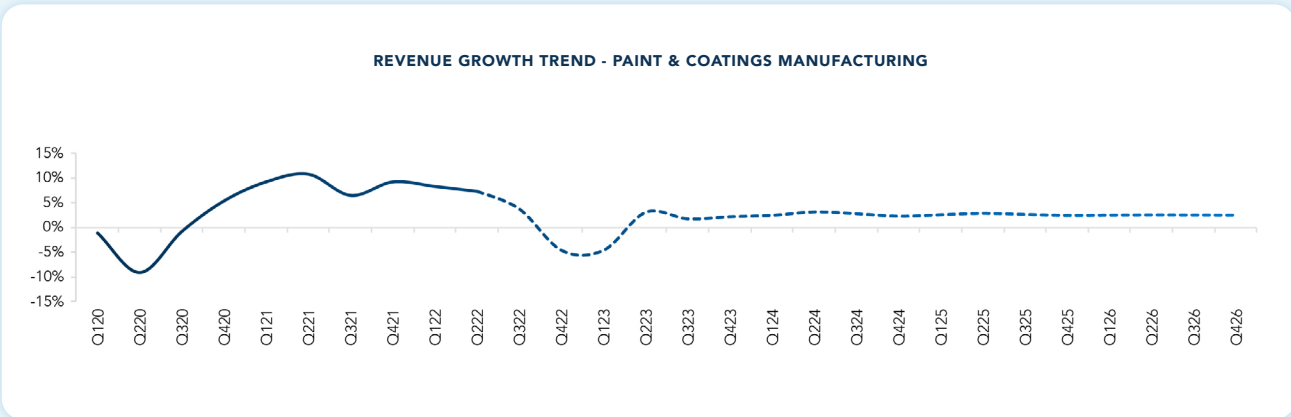
The accuracy of the ON Industry Forecasts is measured by analyzing the magnitude of divergence between actual performance of the industry and OakNorth estimates. As illustrated in the chart, OakNorth has achieved low divergence for the past six quarters, at sub 7%.

Looking ahead | OakNorth's view on future performance of the paint & coatings industry

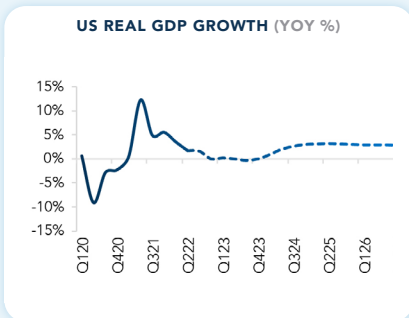
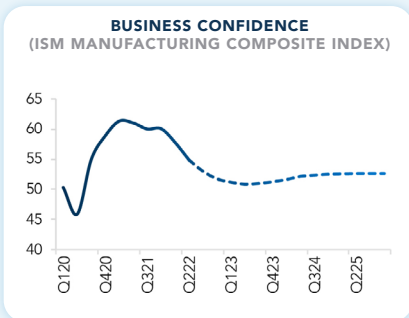
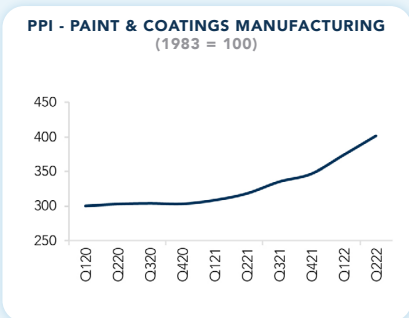
REVENUE PROJECTION



--- ON FORECAST



PROFITABILITY PROJECTION



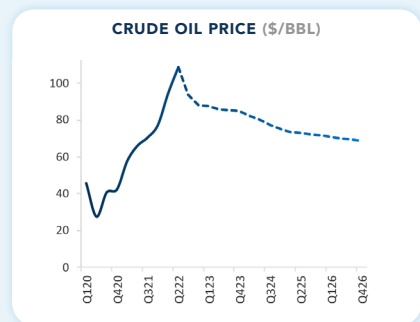
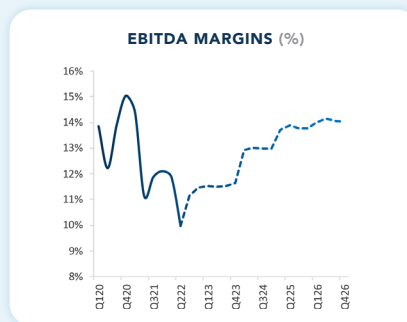
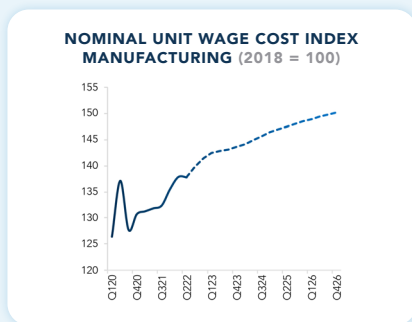
ON Credit Intelligence uses KPI-driven models. These KPIs include: housing starts, construction spending, vehicle sales, aerospace products and part sales, and indices of industrial production. These KPIs are projected to forecast the revenue curve for borrowers in the paint and coatings industry. OakNorth also underpins the final forecasts by taking into consideration management comments/guidance from a sample of relevant businesses such as: Akzo Nobel, Axalta Coatings Systems, PPG Industries, and The Sherwin-Williams Company. OakNorth anticipates the trends below:



ARCHITECTURAL COATINGS: As residential construction slows over 2H22-FY23 due to mortgage rates moving upwards and business confidence plunging on the back of increasing economic challenges, the demand for architectural coatings could contract. However, recovery in the non-residential construction sector and relatively resilient demand from home improvement is expected to limit the downside.



INDUSTRIAL COATINGS: When it comes to industrial coatings, the aerospace sector is expected to steadily recover driven by a strong order book and growth in air traffic. Automotives should also benefit as the chronic semiconductor shortages wane. Meanwhile, investments in oil and gas are expected to pick up gradually, supporting demand for protective coatings that are needed for oil transportation and drilling equipment.



--- ON FORECAST

- Crude oil and TiO₂ prices remain key drivers that determine the profitability for the borrowers in the paint and coatings industry. Both these commodities are expected to average higher prices over FY22 vs. FY21. As a result, EBITDA margins in FY22 are estimated to be lower compared to FY21.
- Crude oil prices are expected to decline from FY23 onwards. Conversely, TiO₂ prices are forecasted to grow steadily. As a result, overall raw material costs for the paint and coatings industry is not expected to rise substantially. OakNorth forecasts steady improvement in EBITDA margins.

Disruptions to the paint and coatings manufacturing



ONGOING SUPPLY CHAIN ISSUES: With ongoing supply chain issues, the availability of certain raw materials is in scarce supply – causing prices to rocket. For example, according to the American Coatings Association, various PET (polyethylene terephthalate) additives such as Fischer-Tropsch waxes, are in extremely short supply, with lead times in excess of six months. Another key raw material that is facing supply chain issues and resulting price hikes is solvents – which remains a critical component in the production of paint formulations. Cost for solvents rocketed by 78%

in November 2021, compared with the previous year. Meanwhile, prices for other raw materials required to produce paint and coatings, such as resins and pigments were up 39% year-on-year. With the cost of raw materials such as these on the rise, many businesses are feeling the impact on their profit margins.



RELIANCE ON OFFSHORE: Historically, companies based in the US and other leading developed countries have relied on offshore locations to source various raw materials needed to create their specific product(s). However now these same companies are relying heavily on the same offshore locations to also manufacture their products. For example, China has been the largest chemical producer in the world for the paint and coatings industry since 2019, with sales of almost \$1.5 trillion (source: *European Coatings*). With such heavy sector reliance on a single region that has experienced recurrent COVID lockdowns since 2020, impacting labor supply and production potential, disruptions to the wider paints and coatings are likely to be significant.



NEW TECHNOLOGIES: New technologies such as solar paint which generates energy from water vapor, and antimicrobial coatings that protect from potentially dangerous microbes, are changing the interiors and exteriors of residential, commercial, industrial, and institutional buildings. The global construction market is set to grow to \$8 trillion by 2030 (source: Oxford economics), and adoption of new technologies will result in direct impact to the paint and coatings industry which is a source of key raw material for construction.



CHANGING CONSUMER DEMANDS: The demands of consumers are ever-changing and evolving. As the world's population and the number of businesses both continue to grow in number, the buying power of consumers strengthens, as a result of their access to a larger marketplace. Businesses, including those in the manufacturing space, therefore need to be able to react to these demands in order to stay relevant and successful. As consumer demands shift, it's likely that various manufacturing businesses will need to make changes to their production lines. For example, specific moulds, tools, etc. used in factories may need to be upgraded or replaced entirely, which in turn will have a significant impact on opex and capex.

Assessing the risk of extreme weather events to loan books with climate as a scenario

Climate is another scenario which poses a huge risk to commercial banks and the businesses they lend to. As per report from The National Oceanic and Atmospheric Administration (NOAA), there were 22 extreme weather events in the US in 2021 which caused \$1 billion or more in damages. Collectively, they caused over \$145 billion in damages, but there were hundreds more such events which caused several hundred million dollars further in damages. Climate-related costs are increasing, and the cost of inaction is high - \$14.5 trillion in present value over the next 50 years.

While banks may be exposed to climate risk and industries in structural decline, they don't have to miss out on innovative industries or opportunities within their loan book. Climate opportunities exist in entirely new industries such as clean energy, carbon capture, and investments into the transformation of existing industries with technologies such as green manufacturing / construction and the electrification of vehicles. The SEC and OCC have both raised the prospect of regulations that will compel banks to account for the likely material impact of climate-related risk on their portfolio, as well as the related greenhouse gas (GHG) emissions associated with lending. How equipped is your bank to evaluate the risks to your borrowers and identify new lending opportunities?

ON Climate: a solution for future lending

ON Climate - part of the wider ON Credit Intelligence Suite - provides powerful insights, powered by a granular forward look, that enable banks and financial institutions to get ahead of climate related risks and opportunities in a data-driven manner, enabling smarter, faster, and more proactive decisions across the credit life cycle. ON Climate provides:

- An overview of your climate risk and distributed exposure across top sectors and borrowers
- Total financed emissions by sector and borrower level (Scope 1 and Scope 2)
- A list of borrowers that should be prioritized for climate reviews
- Borrowers with high climate risk that you might be able to coach to help avoid future risk
- Borrowers with lower projected climate risk, even though they are in sectors that are rated to have inherently high climate risk
- Lending opportunities in sectors that are projected to have lower climate risk in the future

THE MANUFACTURING SUPPLY CHAIN



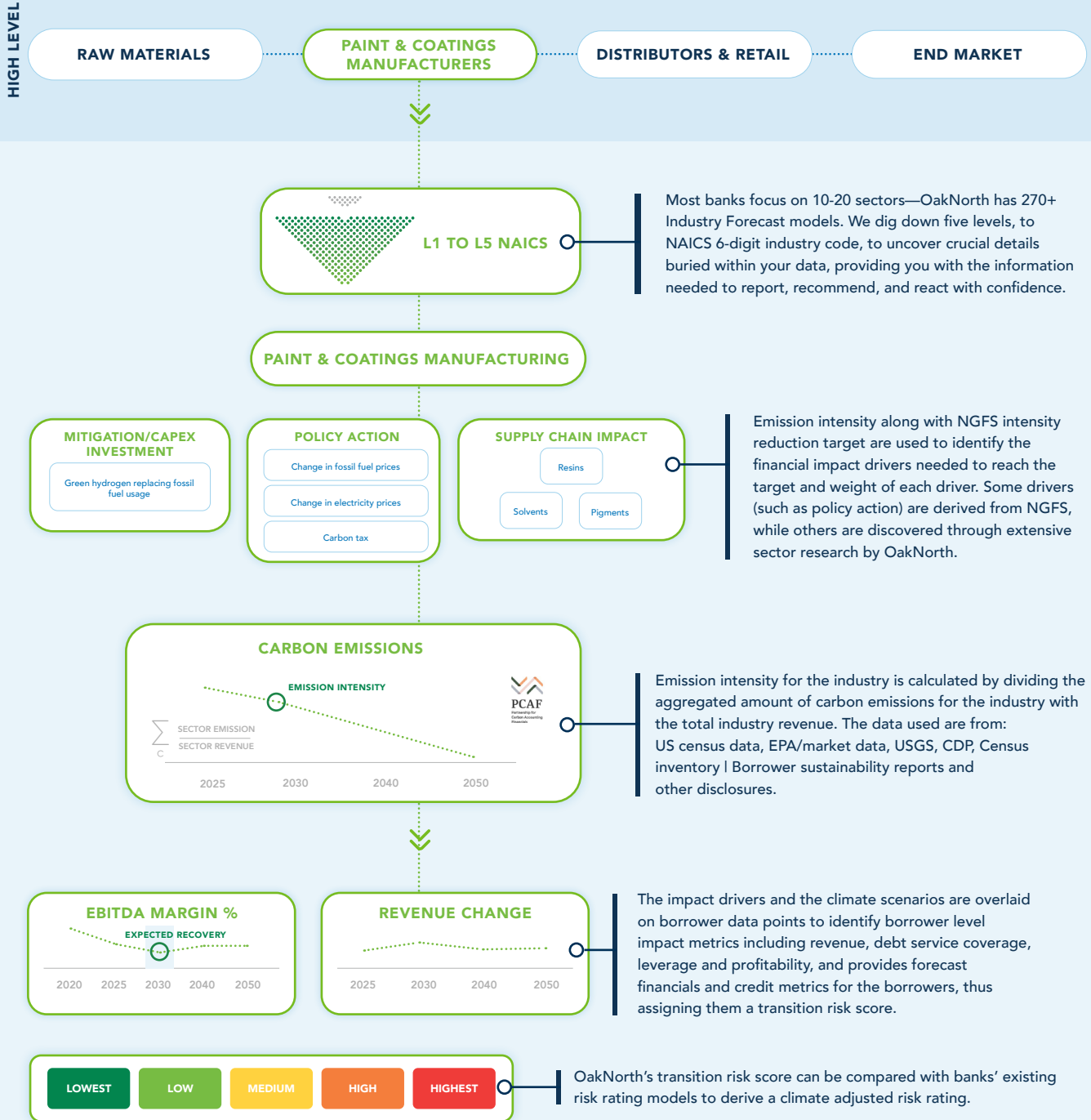
\$14.5T

COST OF CLIMATE INACTION OVER THE
NEXT 50 YEARS



A look at OakNorth's granularity and how risk ratings are generated

This sample analysis of the potential impact of climate across the manufacturing value chain reveals areas of risk and opportunity, and how they may change over time.



Industry trend and the path to net-zero

Since combustion of fossil fuels is the main source of GHG emissions for this industry, replacing fossil fuels with green hydrogen can prove to be a sustainable solution for industry. The industry will need to incur capex towards making modifications to the existing equipment in order to switch from fossil-based fuels to green hydrogen.

From the point of supply chain impact, the industry could face higher raw materials prices in future such as resins, pigments, and solvents, as the industry providing these raw materials would move towards a low-carbon economy. Accordingly, the EBITDA margin is expected to decline in the medium term before gradually moving towards normalcy in the long term. The revenue increase reflects 50% pass-through of the additional emission costs.



Let's put your loan book to the test

You could implement ON Credit Intelligence in just weeks, moving rapidly from initial briefing through exploratory workshops, an executive readout, and then go live. To discover what it could deliver to your bank, we offer a rapid onboarding that is completely customizable to your needs.

Schedule a demo to learn how the ON Credit Intelligence Suite can help your institution better evaluate and manage risks in your portfolio.

[Request a demo](#)