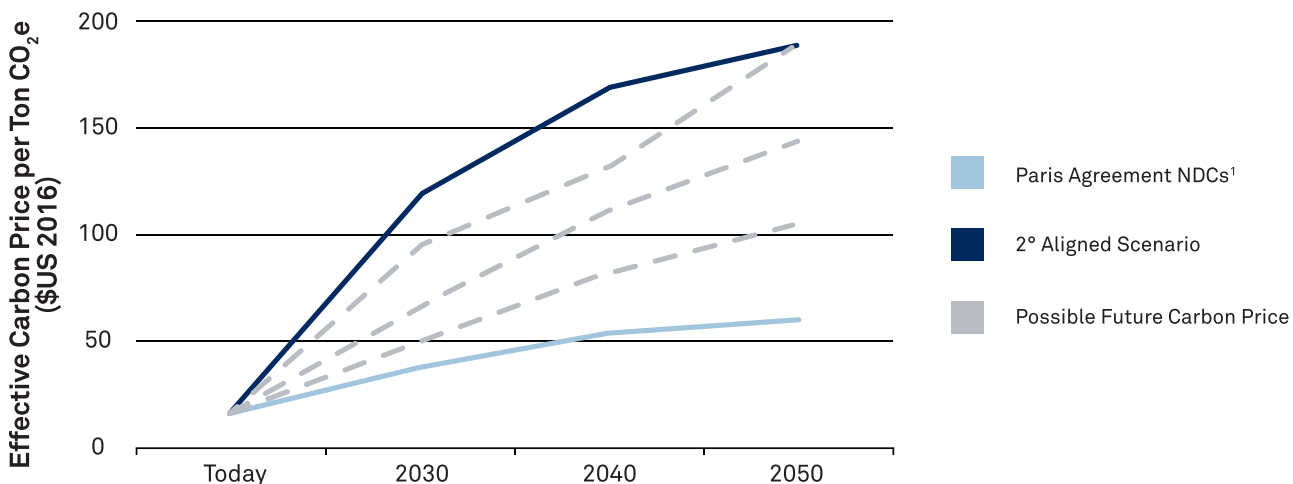


Trucost Carbon Earnings at Risk

Forward-looking Estimates of Financial Risk

Trucost's Carbon Earnings at Risk dataset can be used to stress test a company's current ability to absorb future carbon prices and understand potential earnings at risk from carbon pricing on a portfolio level. Integral to this analysis is the calculation of the Unpriced Carbon Cost, which is defined as the difference between what a company pays for carbon today and what it may pay at a given future date based on its sector, operations, and a given price policy scenario.

Figure 1: Global Average Carbon Price Scenario Analysis to Meet 2°C Paris Agreement Goal



Source: IEA and IRENA (2017); Trucost Analysis. Data as of June 2017

Carbon Price Pathways

Trucost has developed three carbon price pathways that may impact companies based on research by the OECD² and the IEA³ and current carbon prices (e.g., global emissions trading schemes, and taxes on carbon or fossil fuels)

1. A low carbon price scenario assumes full implementation of countries' NDCs,¹ some of which are not expected to meet the Paris Agreement goal of limiting climate change to 2°C above pre-industrial levels by 2100.
2. A medium carbon price scenario assumes full implementation of policies in line with the Paris Agreement goal of 2°C, but with action delayed in the short term.
3. A high carbon price scenario assumes full implementation of policies in line with the Paris Agreement goal of 2°C.

¹ Nationally Determined Contributions

² Organization for Economic Co-operation and Development

³ International Energy Agency

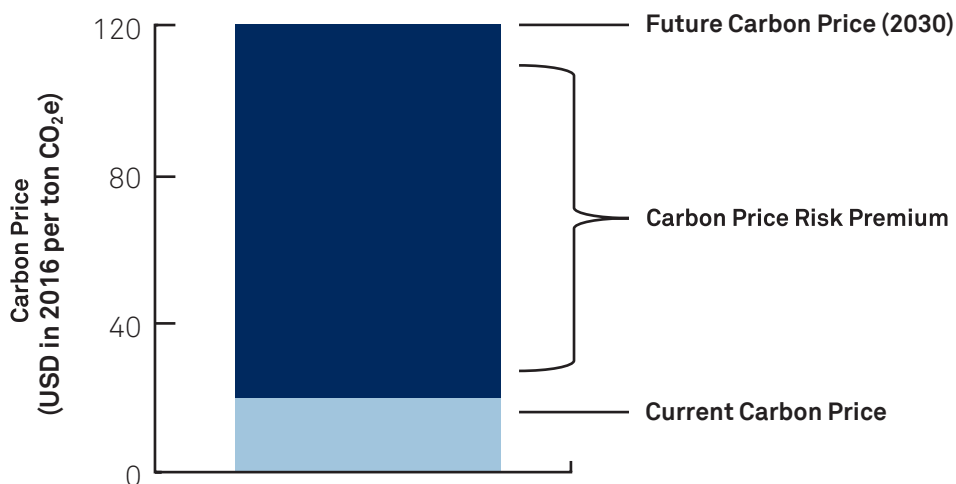
Applying the Carbon Price Risk Premium

The Carbon Price Risk Premium reflects the additional financial cost per ton of greenhouse gas emissions from the price that is currently paid, due to potential future pricing or tax hikes (Figure 2). It varies based on the choice of scenario, as well as a company's primary sector of operations, geographical exposure, and the time horizon of the analysis.

Understand Portfolio Exposure

- Examine the financial impact of carbon prices at a company and portfolio level under a range of scenarios.
- Report estimates of financial risk across various time horizons including 2020, 2025, 2030, 2040, and 2050.
- Conduct peer comparisons using earnings metrics: EBIT and EBITDA.
- Representation of financial risk exposure of companies across greenhouse gas emissions scopes, sectors, or geographies.

Figure 2: Carbon Prisk Premium in Relation to Current and Future Carbon Prices



Integrate Carbon Price Risk into **Portfolio Analysis**

Benefit from forward-looking data and scenario analysis tools, as recommended by the TCFD.⁴

From Earnings at Risk to Value at Risk

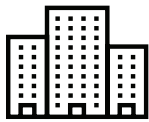
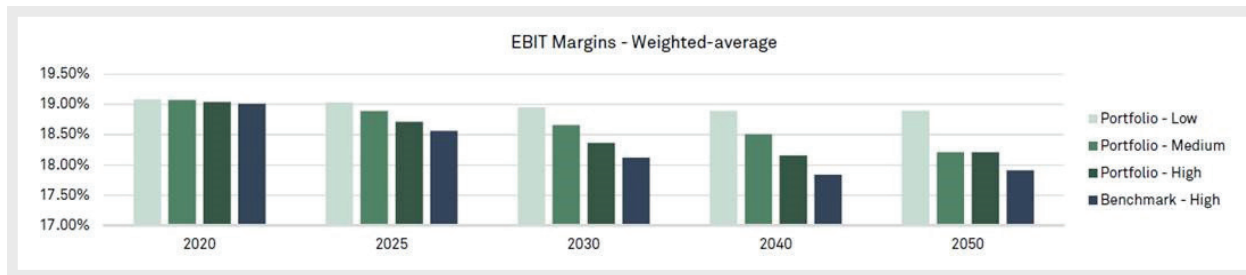
Private markets play a key role in redirecting capital to companies that are capable of financial resiliency as carbon costs rise. Trucost's dataset allows equity and credit investors to capture potential value at risk by creating adjusted cash flows for fundamental analysis.

⁴ The Task Force for Climate-Related Disclosures

Use Portfolio-level Metrics

- Apportioned Unpriced Carbon Cost (company emissions multiplied by the price per ton of emissions)
- Weighted-average EBIT(DA) at risk
- Weighted-average reduction of EBIT(DA) margins
- Weighted-average adjusted valuation multiples
- Top geographic, sector, and emissions scope exposure

Figure 3: Analyze weighted-average EBIT margins and assess your portfolio's relative exposure by investment weight (% of total value invested in the portfolio)



Coverage on
15,000+
companies



Carbon Price
Risk Premium
for **44** jurisdictions



Range of timeframes
between 2020
through to **2050**



Annual data
subscription and
portfolio footprinting

Benefit from TCFD-aligned Scenario Analysis

- Screen or optimize portfolios by measuring financial risk exposure over time associated with holdings' Scope 1 and 2 emissions.
- Use data for equity and credit risk assessments, loan portfolios, and other asset classes, such as private equity or infrastructure.
- Report to stakeholders on forward-looking estimates of financial risks in line with TCFD recommendations.
- Distinguish carbon price risk from broader carbon risk, such as physical risks or possible stranded assets.
- Engage with companies on their preparedness for policy changes and strategies for adaptation.

About Trucost

Trucost is part of S&P Global. A leader in carbon and environmental data and risk analysis, Trucost assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance factors. Companies and financial institutions use Trucost intelligence to understand their ESG exposure to these factors, inform resilience and identify transformative solutions for a more sustainable global economy. S&P Global's commitment to environmental analysis and product innovation allows us to deliver essential ESG investment-related information to the global marketplace. For more information, visit www.trucost.com.

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