Key Findings | CROSS ASSET Investment Strategy

Carbon Price and Credit Default

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Climate change affects the functioning of human societies and global economic activity. Unless properly addressed in a holistic manner from a multitude of global actors, such effects will only continue to grow in intensity and frequency.

The international community committed to the Paris Agreement in 2015 with the aim to prevent unfavorable consequences of climate change and protect global economic and social stability. Notably by reducing global greenhouse gas (GHG) emissions to keep global average warming below 2 degrees Celsius, along with a more ambitious objective of 1.5 degrees Celsius.

The unprecedented transition associated to achieving the goals of the Paris Agreement generates a transition risk for the financial system. Following the warning of Mark Carney, the investor community established climate change as a financial risk to current investment portfolios.

Thus, various initiatives attempting to estimate financial market exposure to transition risk manifested. For example, the main findings of the current literature reveal that financial actors such as banks, investment banks, pension funds, and insurers generally assess their exposure to transition risk to be around 10% of portfolios while forward looking methodologies demonstrate exposure up to 40% in the future.

"Amundi, as a responsible investor and a leading innovator in green finance, is committed to supporting investors in integrating environmental, social, and governance issues into investment decision-making. Amundi's quantitative research aims to identify the financial risks and associated portfolio exposure levels in a clear and transparent manner."

A New Metric for Transition Risk

The risks and opportunities associated to climate change are of high importance for long-term investors. Identifying the exposure of investment portfolios to risks, such as transition risk, faces various challenges. It requires modeling the dynamic interactions between the macro-economy, the financial system, climate change, and environmental policies.

For transition risk, the current market best practice relates to the measurement of associated GHG emissions of an investment as a proxy for its exposure to future regulation, such as a carbon price. Indeed, given the potential future wide application of carbon prices, the carbon emission intensity of issuers is a promising first step. However, a company's emission intensity alone does not determine the sensitivity of the issuer to future scenarios of carbon prices. Amundi found that the financial materiality of carbon prices depends on the company's ability to weather a decrease in a corporate's earnings before interest, tax, depreciation, and amortization (EBITDA) along with the occurrence of a credit default.

With that in mind, Amundi proposes a new metric, the "Carbon Price Margin", for investors to use when assessing exposure to transition risk at the investment and/or portfolio level. The new metric is easier to understand from the perspective of financial analysts since it can be compared with current and future carbon prices. Using this new metric, Amundi analyzed the exposure of financial markets to the foreseeable increases in carbon taxes around the world. The analysis covered 795 stocks in the MSCI World Index, which is originally composed of 1644 stocks from 23 developed market countries. The sectors included were consumer discretionary, consumer staples, energy, health care, industrials, information technology, materials, and utilities.

> **Carbon Price Margin is defined as the carbon price that would increase a specific firm's likelihood of default to 50%.**

The study explores multiple configurations. First, it models the future scenarios of average carbon prices around the world and the future carbon emissions of issuers. Together, these make up the future expected cost impacts on companies. The analysis includes a medium-term (five-year) and long-term (forty-year) analysis. The medium-term analysis focuses on the years between 2019 and 2023 while the long-term analysis covers the period until 2060. Under these scenarios, the authors assessed different trajectories of carbon price increases. For example, in the medium-term, carbon prices range between USD17 per ton to USD20 per ton by 2023. Thereafter, it increases to USD780 per ton by 2060.

Overall, our findings suggest the impact of future carbon prices are heterogeneous across and within sectors. Largely, there is an inverse relationship between an issuer's carbon intensity and its Carbon Price Margin. However, the relationship is not linear. This means that two companies with similar carbon intensity could display dissimilar impacts from future carbon prices. Thus, transition risk can be potentially mitigated by a company's capital structure. Even the most carbon intensive industries seem capable of managing increased cost pressure in the medium term. However, in the long term, nearly all sectors lack resilience against serious credit default probabilities.

Key Findings

The impact of carbon prices on corporates' EBITDA is already material in the medium term. The long term exacerbates the impact with significant results of corporate default events. Utilities, materials, and energy sectors experience the majority of the impact.

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Average regional carbon price variations are limited in the medium term. For instance, the average price paid in Europe does not exceed USD 20 per ton in 2023, despite the growing number of pricing initiative (World Bank, 2019).

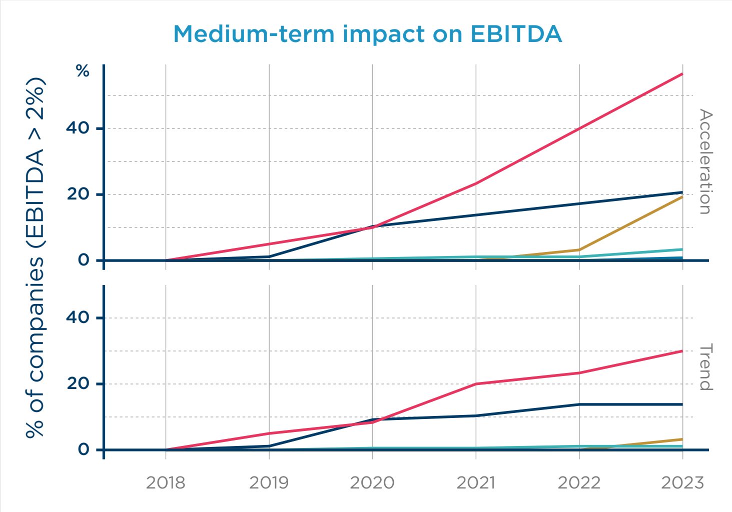
The impact on the EBITDA of corporates across sectors is heterogeneous. Only the utilities, materials, and energy sectors are directly impacted. The Utilities sector is the main sector impacted, with more than 50% of its companies experiencing a reduction of more than 2% on its EBITDA. Materials and energy sectors are impacted to a smaller extent with 20% of their companies impacted. Indeed, this mostly results in a negligible direct impact on credit risk.

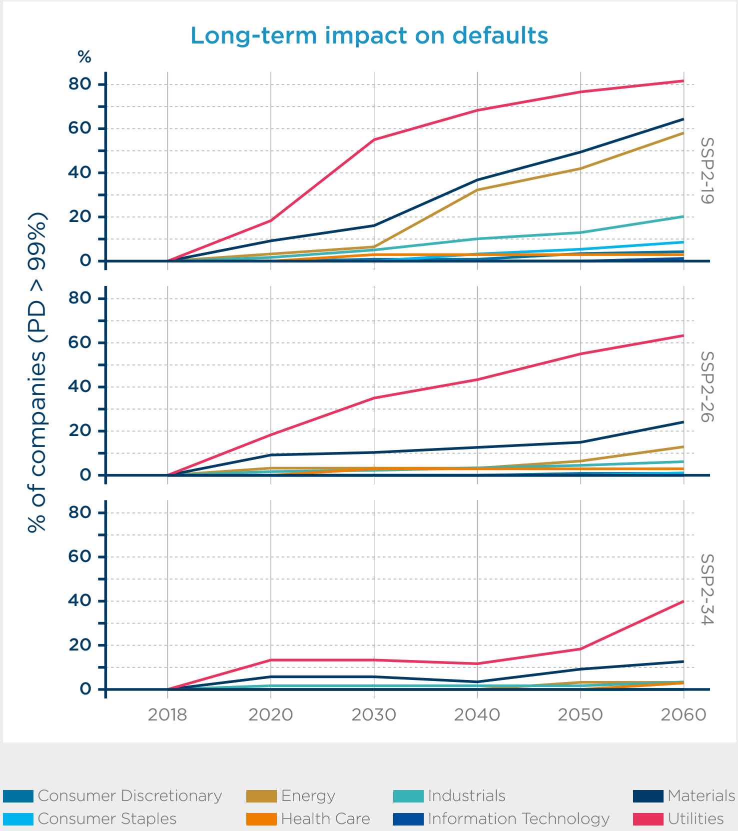
In the long-term, carbon price variations reach up to USD780 per ton by 2060 as suggested in IPCC scenarios.

Indeed, the impact is greater than in the medium term scenario. Three sectors are highly impacted with companies experiencing an EBITDA impact by more than 20%. Utilities, materials and energy, all record about 80% of companies reaching that 20% impact level. Industrials and consumer staples are impacted to a lesser extent with only 30% of companies recording a 20% impact on their EBITDA.

As a result, credit default are also higher. Companies in the utilities sector show a default probability of more than 99% by 2060. These figures are between 10% and 60% for the materials sector. Other sectors show more resilience. For example, fewer than 10% of Consumer Staples companies are at risk, while more than 25% of them showed an EBITDA reduction by more than 20% by 2060.

These results suggest that business models of companies in most sectors will have to change, and that direct carbon emissions will have to be drastically reduced. Therefore, their carbon intensity trajectories will have to be carefully monitored in the coming years (Le Guenedal et al., 2020).





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