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Climate-transition risk and asset allocation

A methodology that focuses on climate-transition risk may help to identify investment implications of moving toward a low-carbon economy.

- _ Climate change remains a considerable risk for investors, but it presents investment opportunities across all sectors of the world economy.
- _ From a sector perspective, we identify energy, materials, real estate and utilities as having some of the highest degree of climate-transition risk.
- _ We believe investment opportunities are most concentrated in the information-technology, utilities and industrials sectors.

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CIO for Responsible Investments

Climate change continues to present a significant risk for investors, from financial losses incurred due to extreme weather events, to asset re-pricing when transitioning to a low-carbon economy and use of the legal system as a new instrument to enforce and accelerate climate-change action. However, we believe climate change could also present investment opportunities across all sectors of the world economy.

A traditional approach to assess climate risk within investment portfolios has been through carbon foot-printing – that is identifying the concentrations of carbon across the portfolio. However, this approach was not without its share of shortcomings, not the least of which was to capture information on changes in a company's carbon exposure or strategy. Data sets also have historically suffered from inconsistent company disclosure when it comes to greenhouse-gas emissions. Therefore, within the past few years, we have witnessed increasing efforts to improve ESG and specifically climate-related disclosure.

When it comes to integrating transition risk, a number of low-carbon-transition-risk methodologies are available, including those of MSCI, ISS-Oekom and Sustainalytics. The MSCI low-carbon-transition methodology is based on a carbon-intensity footprint measure. According to MSCI, 20% of the constituents of the MSCI All Country World Index (ACWI) face asset stranding or significant transition challenges.[1] ISS-Oekom calculates a carbon-risk rating which captures not just the carbon-related performance of the company, but also incorporates the company's industry-specific characteristics. It favors companies involved in clean-tech solutions and penalizes those with high greenhouse-gas emissions along their value chain. Finally, Sustainalytics provides its carbon-pillar risk rating that covers the emissions of the companies' own operations as well as the emissions of the company's products and services.

Given the variety of approaches available, DWS has designed and implemented a proprietary climate-transition-risk rating, which seeks to identify the risks and opportunities associated with a transition to a low-carbon economy. With it, an A to F rating system helps to identify climate-transition leaders and laggards by amalgamating the latest generation of climate-risk measures of MSCI, ISS-Oekom and Sustainalytics.

From our analysis, we have found that some of the highest- and excessive-transition-risk companies can typically be found

[1] Source: MSCI; low carbon transition categories and scores as of March 2019

operating in the energy, materials, real-estate and utilities sectors while those companies with limited climate-transition risk are typically in the financials, communication-services and IT sectors.

How climate-transition risk might affect financial performance in practice is at the heart of this mapping exercise. For example, within materials, the need for key inputs such as water and energy in the mining sector will physically and financially constrain the establishment of new operations. On the other hand, new business opportunities might arise as demand for materials used in existing and future low-carbon energy and industrial technologies is likely to increase. Examples include copper, which is key for electrification and improving energy efficiency.

To address high carbon emissions in the transportation sector, governments, most notably in Europe, have begun to adopt stringent fuel-economy and emissions regulations. These include standards for carbon-dioxide and nitrogen-oxides emissions, which may not only see car manufacturers incur penalties due to missed emission-reduction targets, but also force companies to invest in new product strategies. As a result, we expect regulation and technologies to combine to eventually drive out internal combustion engines and enable e-mobility sectors to become key growth markets for carmakers. The oil sector widely dismissed the threat of electric vehicles, arguing as late as 2017 that they were a drop in the ocean of cars. However, leading car companies have already started to shift their strategy. According to Reuters, the world's leading automotive companies had committed 90 billion dollars to electric-vehicle strategies by January 2018.[2] According to Bloomberg New Energy Finance, incremental sales of electric vehicles are likely to exceed those of vehicles with internal combustion engines by 2020; by 2023 internal-combustion-engine sales may already be falling.[3]

When it comes to the fossil-fuel sector, investors may be financially impacted even before companies see the peak in fossil-fuel demand. For example, we have seen a significant re-pricing of equity valuations in the global coal and European-electricity sectors in response to new technologies and/or government regulation. The share prices of major U.S. coal producers are a case in point. Some of the leading companies saw their share price peak around 2011 at the point when rapid coal demand growth slowed. By 2014, global coal demand stagnated and the largest one had filed for bankruptcy.[4] Similarly, fossil fuels in electricity generation peaked across the OECD in 2007 at a time when solar systems and wind were just 1% of the electricity mix.[5] Shortly before then, the share price of leading German power utilities also peaked. Since then, assets in excess of 150 billion dollars have been written down, and the European power sector's capitalization has fallen substantially.

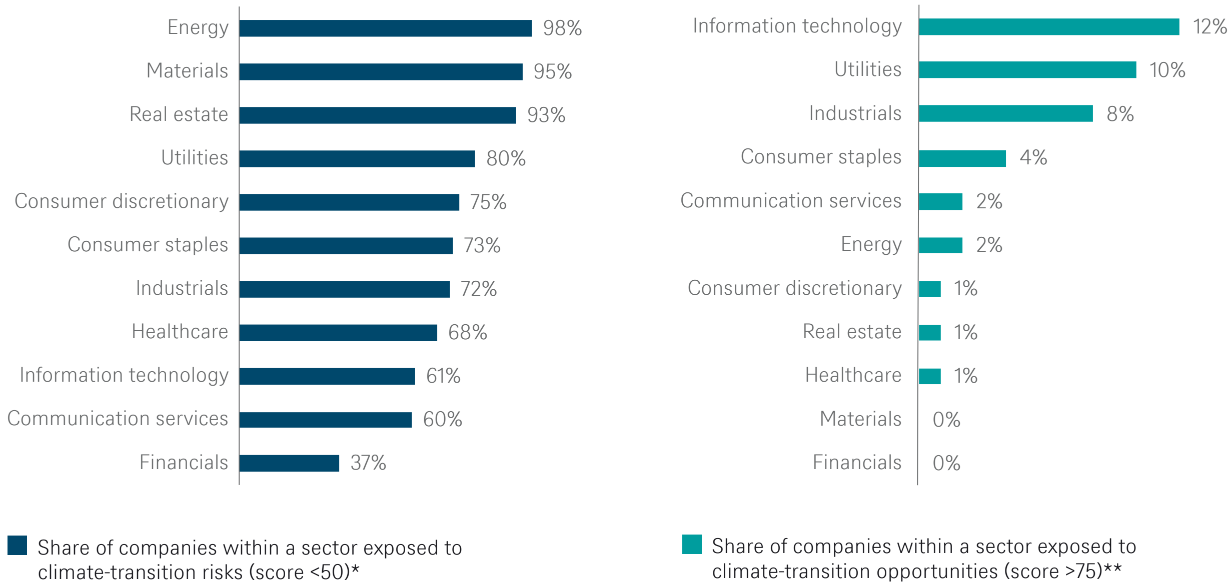
In order to enhance our asset-allocation process in light of ongoing asset-re-pricing risk, we aim to reduce exposure to climate risk, as well as capture low-carbon investment opportunities. Taking steps to identify the climate-risk leaders and laggards on a sub-sector and security level, might help to identify leaders in sectors that do not seem appealing on a headline-climate-transition-risk basis. From a sector perspective, we identify energy, materials, real estate and utilities as having the highest degree of climate-transition risk, before digging deeper. For utilities, for example, our analysis has found that the largest share of entities with excessive transition-risk was among independent power. Within materials, construction and then metals and mining were the most prevalent for climate-transition risks and within industrials, securities in the marine and airline sectors tended to be most exposed.

Aside from identifying where high levels of climate risk have a tendency to reside, we have also been able to identify the sectors, sub-sectors and individual securities where climate change could be providing the most opportunities. We found that such opportunities tend to be most concentrated in the information-technology, utilities and industrials sectors. Within IT, we found it specifically in the hardware and communications sectors. In utilities, it was among the water-utility entities and a small portion of the independent power companies focused on renewable parks while in industrials it tended to be in the electrical-equipment and building-producing sub-sectors.

2 Reuters (15 January 2018).
3 Bloomberg NEF (May 2019); Electric Vehicle Outlook 2019.
4 For details on this and the European electricity companies discussed below, see Carbon Tracker as of September 2018. According to their estimates, fossil fuels will peak in the 2020s as renewables looks set to supply all growth in energy demand.
5 BP Statistical Review of World Energy (1965-2018).

CLIMATE-TRANSITION RISKS AND OPPORTUNITIES BY SECTOR

Our proprietary climate-transition-risk rating, allows us to identify the risks and opportunities associated with a transition to a low-carbon economy in various sectors.



* Score <50 in the DWS climate-transition-risk rating
** Score >75 in the DWS climate-transition-risk rating
Source: DWS Investment GmbH as of 9/18/19

GLOSSARY

Environmental, Social and Governance (ESG) is a way of assessing a company that investors increasingly use to screen potential investments, using environmental, social and governance criteria.

The MSCI All Country World Index (ACWI) captures large- and mid-cap securities across 23 developed- and 24 emerging-markets.

The Organization for Economic Co-operation and Development (OECD) started in 1948 as the Organization for European Economic Co-operation (OEEC) and changed its name in 1960, now representing 34 countries with democratic governments and market economies.

The U.S. dollar (USD) is the official currency of the United States and its overseas territories.

Valuation attempts to quantify the attractiveness of an asset, for example through looking at a firm's stock price in relation to its earnings.

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