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Jean Boivin: Markets and the net-zero transition

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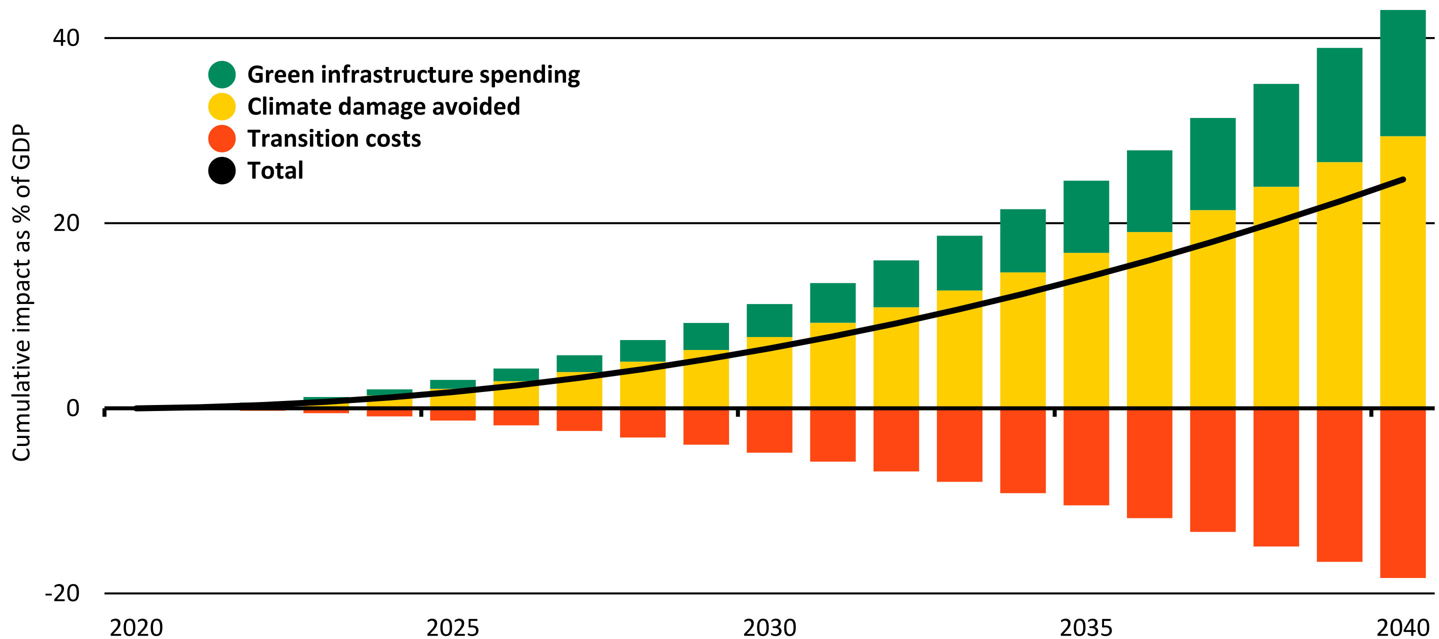
Transition results in a net economic gain

Avoiding climate-related damages and green infrastructure spending far outweigh transition costs. An orderly transition results in lower inflation, higher growth and more financial stability, in our view.

Estimated cumulative GDP impact of transition, 2020-40

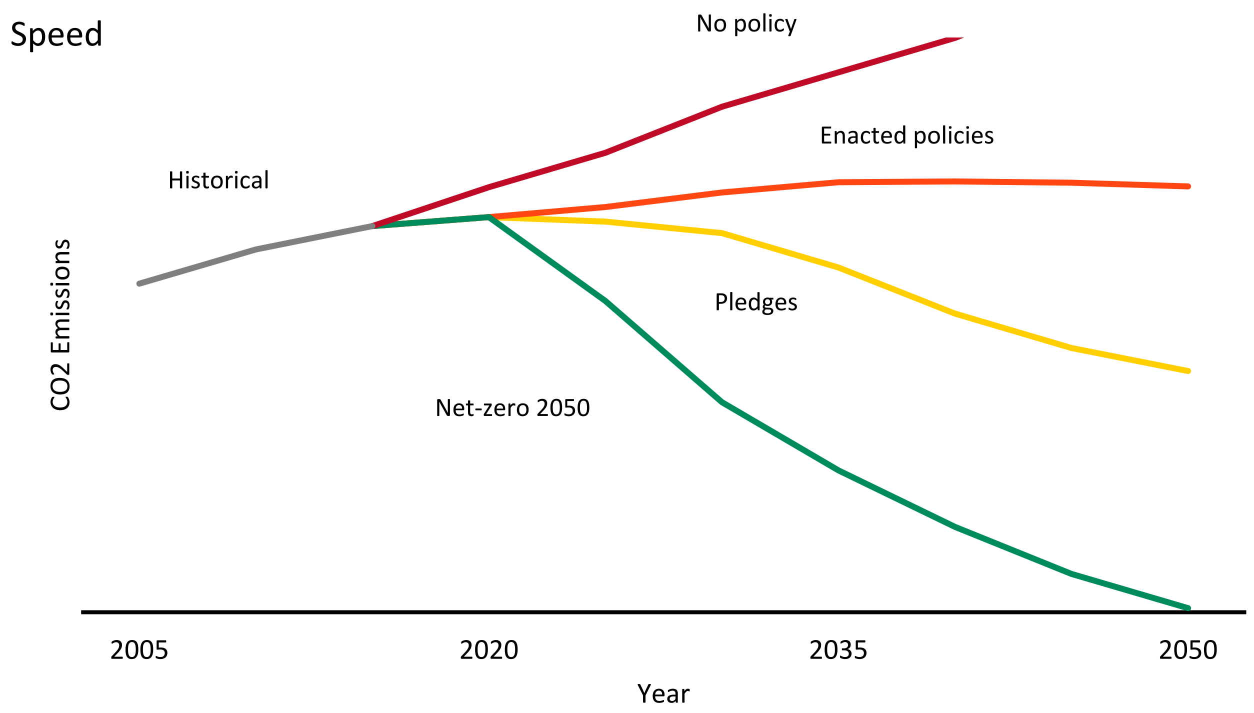


Forward looking estimates may not come to pass. Sources: BlackRock Investment Institute, Banque de France, International Energy Agency, OECD, Feb 1, 2022. Notes: The bars show the overall estimated impact of three factors – avoidance of climate damages (positive), green infrastructure spending (positive) and costs associated with the transition (negative). The black line shows the estimated net impact. Our estimates of the impact under a climate-aware scenario are based on expected changes in energy consumption including composition, relative carbon and renewables pricing and on potential losses due to global warming. Energy consumption is estimated as a function of GDP and the relative price of energy per the Banque de France's working paper no. 759 titled the Long-term growth impact of climate change and policies. GDP losses from global warming are calibrated on analysis of Impact Assessment Models per W. Nordhaus and A..Moffat (2017). We assume green infrastructure spending programs of 1% of GDP gradually phased out over the next 10 years.

Key drivers of the climate transition

We see the climate transition driven by societal preferences, technology, policy and physical climate change. We expect more climate policy actions as 2050 net-zero goals are not yet in sight.

Illustrative transition scenarios, 2022

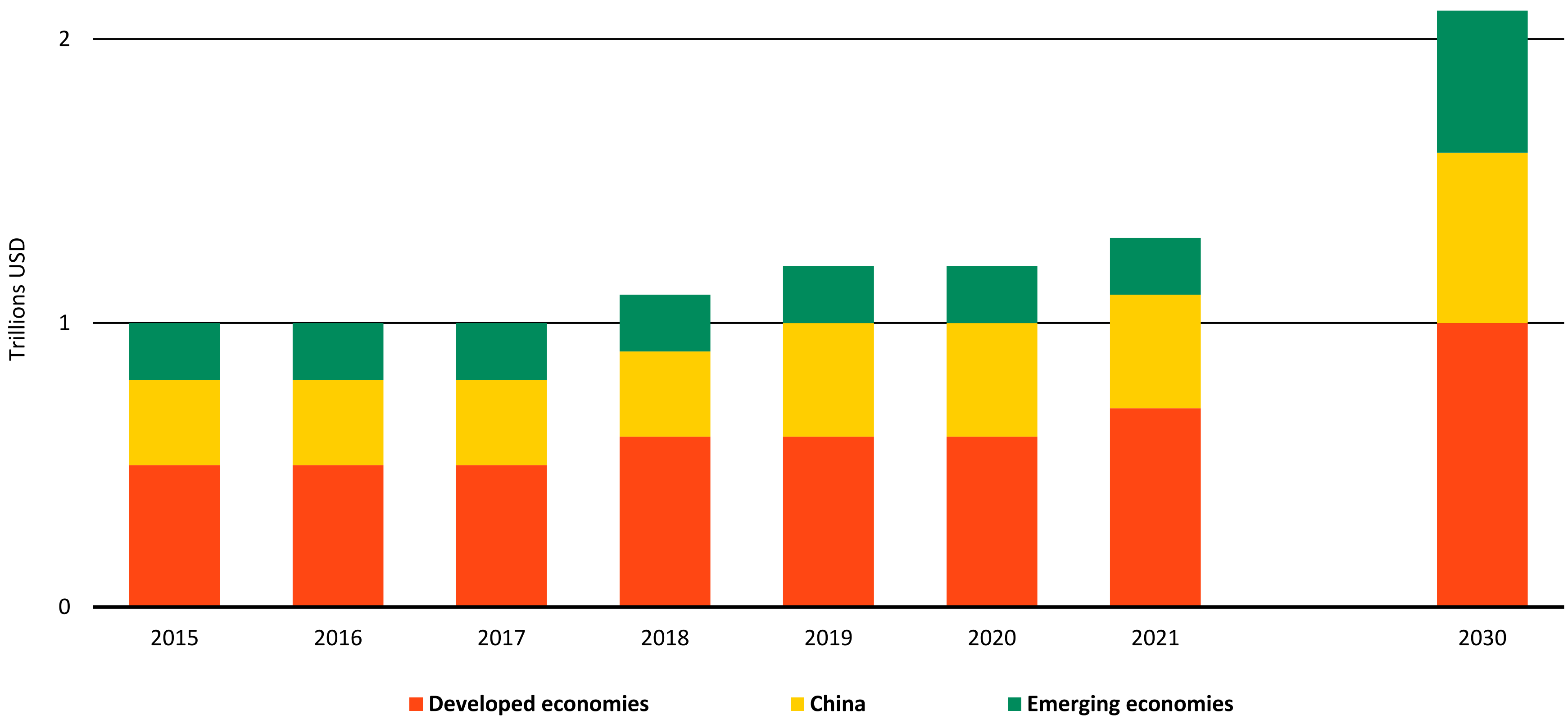


Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute, June 2022. The diagram above serves as a general summary and should not be considered exhaustive nor construed as investment advice. The chart describes how quickly the economy could reach net zero. For illustrative purposes only.

Transition scenarios key to navigating the uncertain outlook

This year's shocks – such as the war in Ukraine - are accelerating the transition on the policy front. That's why its key to have a view on the transition and keep updating it over time.

Total annual investment in climate policy, previous and planned, 2015-2030

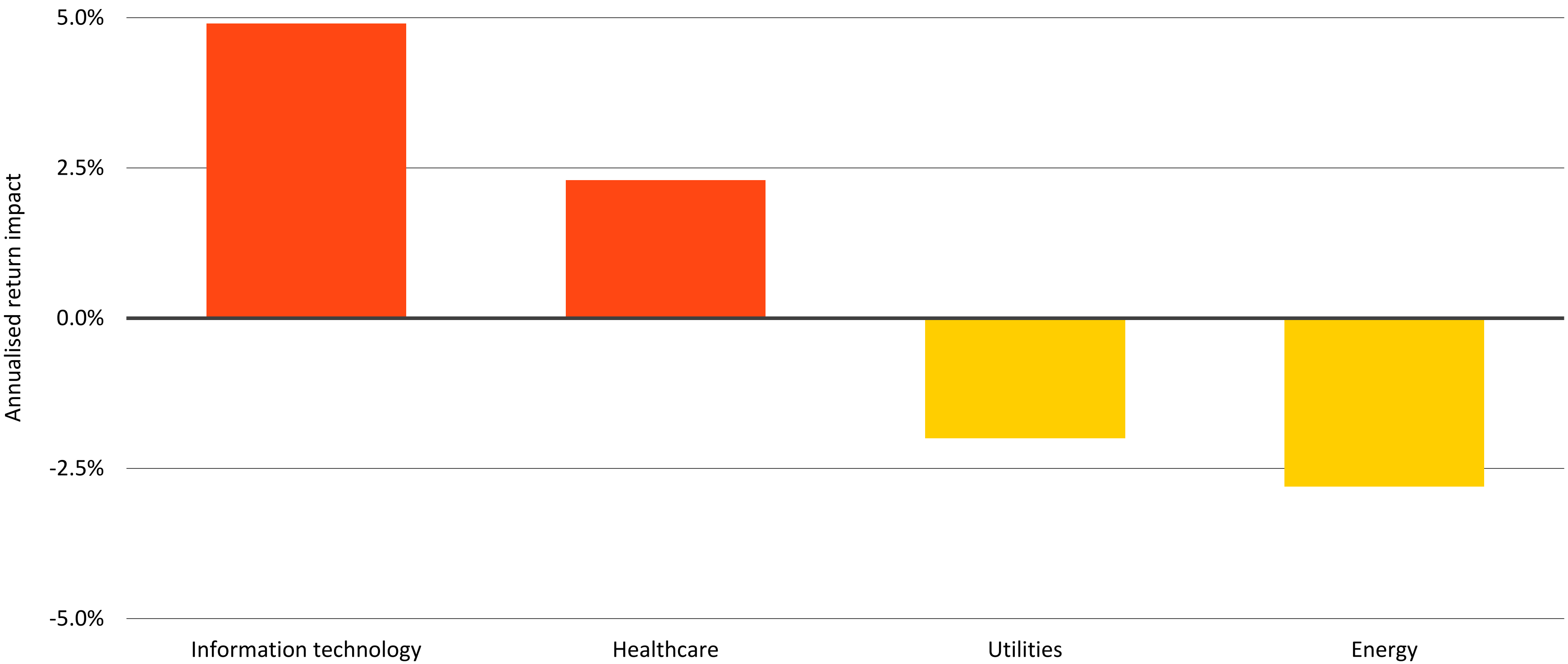


Forward looking estimates may not come to pass . Source: BlackRock Investment institute and International Energy Agency, October 2022. The chart shows the IEA's estimate annual investment in climate policy, previous and planned, in trillions of U.S. dollars.

The transition will have a big relative impact across sectors

We believe avoiding climate-related damages will help drive growth and improve returns for risk assets broadly. We see climate-resilient sectors such as tech and healthcare as potential beneficiaries

Return assumption differentials in green transition vs. no-climate-action



For illustrative purposes only. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance. Sources: BlackRock Investment Institute, with data from Refinitiv Datastream and Bloomberg, February 2021. Notes: The chart shows the difference in U.S. dollar expected returns over the next five years from February 2021 for four sectors of the MSCI USA Index in our base case of a "green" transition (policies and actions taken to mitigate climate change and damages, and to limit temperature rises to no more than 2 degrees Celsius by 2100) vs. a no-climate-action scenario. The estimated sectoral impact is based on expected differences in economic growth, corporates earnings and asset valuations across the two scenarios. Professional investors can access full details in our *Portfolio perspectives* and CMAs website.

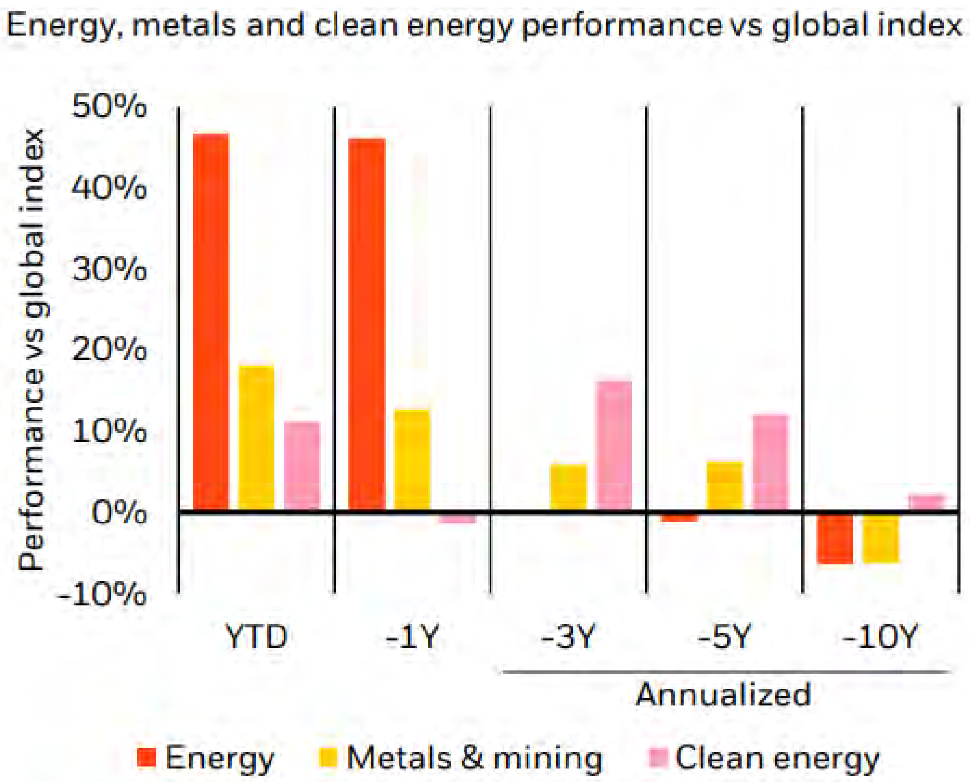
Taking a view on transition pricing

Markets are repricing risks. Companies that are better prepared and more able to benefit from the transition should be perceived as lower risk and could enjoy a lower cost of capital.

How much of the repricing has already happened?

- Using emissions intensity as a proxy for transition exposure, we estimate how future company cashflows are valued.
- Over the past five years, the value placed on low-carbon company cash flows has increased.
- We find that the repricing still has more room to run.

Energy gains ≠ clean energy underperformance

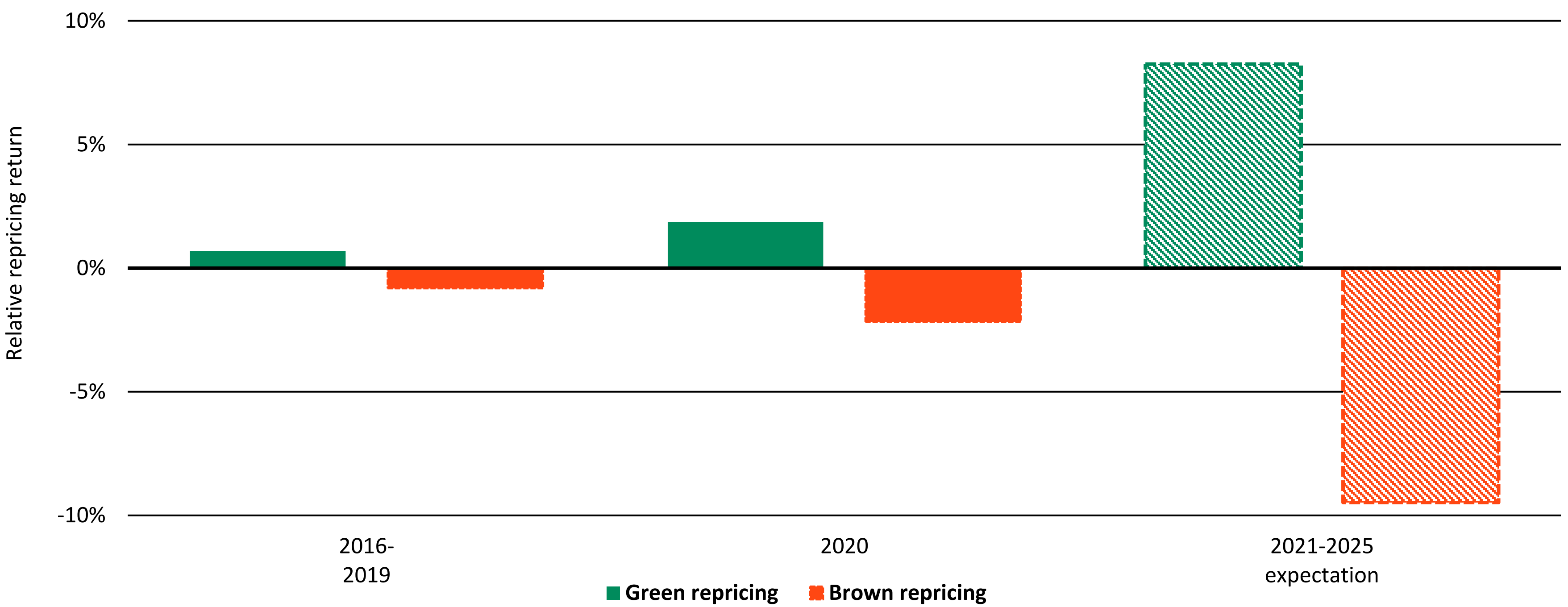


Past performance is no guarantee of future results. Indexes are unmanaged and do not account for fees. It is not possible to invest directly in an index. Source: BlackRock Investment Institute, with data from Refinitiv Datastream, June 2022. Note: The chart shows the performance of the MSCI World Energy Index , MSCI Metals and Mining Index and the S&P Global Clean Energy Index versus the MSCI World Equity Index across different time horizons: year to date, the past 12 months and annualized for the past three, five and ten years.

Climate repricing is happening but has a long way to go

The net-zero transition is now driving relative repricing. We see a return advantage over coming years for “greener” sectors such as tech and healthcare over “browner” sectors such as energy and utilities.

Relative returns of green vs. brown sectors, 2016-2025



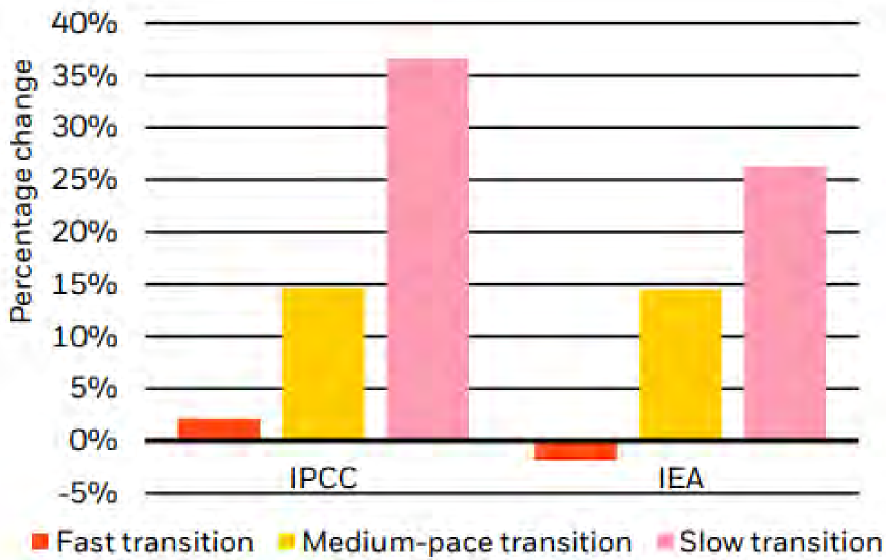
Past performance is no guarantee of current or future results. Forward looking estimates may not come to pass. Sources: BlackRock Investment Institute, with data from the Center for Research on Security Prices, Feb. 1, 2022. Notes: To estimate climate-driven repricing, we attribute historic returns to two drivers: cashflow news and discount rate (DR) news. We then identify the DR news associated with climate change using carbon emission intensity (CEI) as a proxy. To isolate the DR component of returns, we apply the standard decomposition formula of Campbell (1991) using a standard factor model of expected returns (which embed well-known predictors such as value, momentum, and quality). Attribution to climate scores is then given by forecasting regressions of DR news on a measure of CEI. Sector returns are MSCI US Sector index- weighted averages of stock level returns. Green represents the technology sector, the most “green” in our work, whereas the utilities sector is the most “brown” in the repricing. The 2016-2019 bars represent the total repricing over this period; and the 2021-2025 expectation is the cumulative repricing we expect over that period. The estimate is highly uncertain and is based on factors including risk premia effects in other long-run transitions such as demographic trends, market pricing of green bonds, and investor survey data on how much return they would be willing to give up to for more sustainable

Paths, plans and pricing across the portfolio

Carbon-intensive assets may outperform when there are mismatches between supply and demand. Investing in them can be consistent with the transition, if they have credible decarbonization plans.

Global energy demand still growing

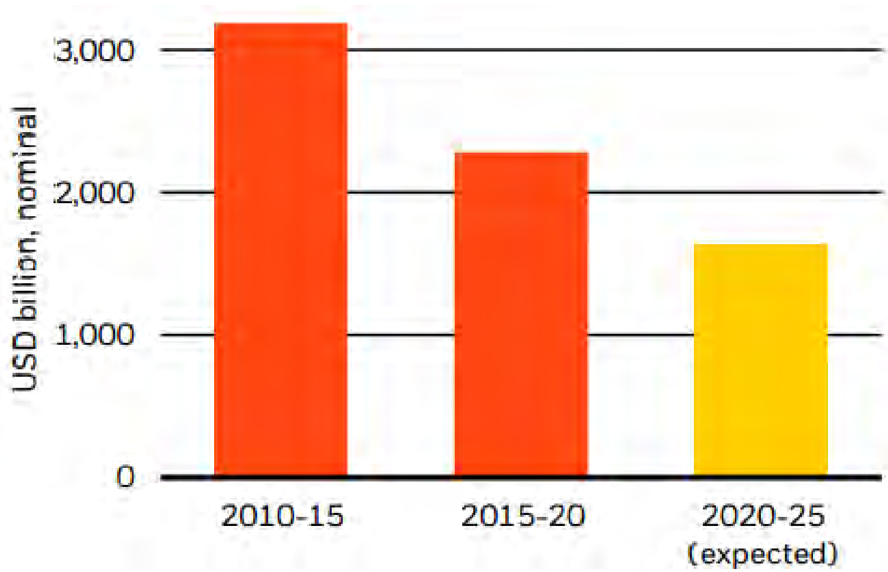
Change in global primary energy consumption, 2020-2050



Forward-looking estimates may not come to pass. Sources: BlackRock Investment Institute, Intergovernmental Panel on Climate Change (IPCC) and International Energy Agency (IEA), June 2022. Notes: Fast = global warming is limited to well below 2°C, Medium = global warming is limited to around 2°C, Slow = expectations under current policies.

Oil and gas investment declining

Capex expenditure in oil and gas, 2010-2025



Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute, Wood Mackenzie, June 2022. Notes: The chart shows capex expenditure in the oil and gas sector from 2010 to 2015 and from 2015-2020, as well as projected capex expenditure for the period 2020-2025.

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Jean Boivin

Head – BlackRock Investment Institute

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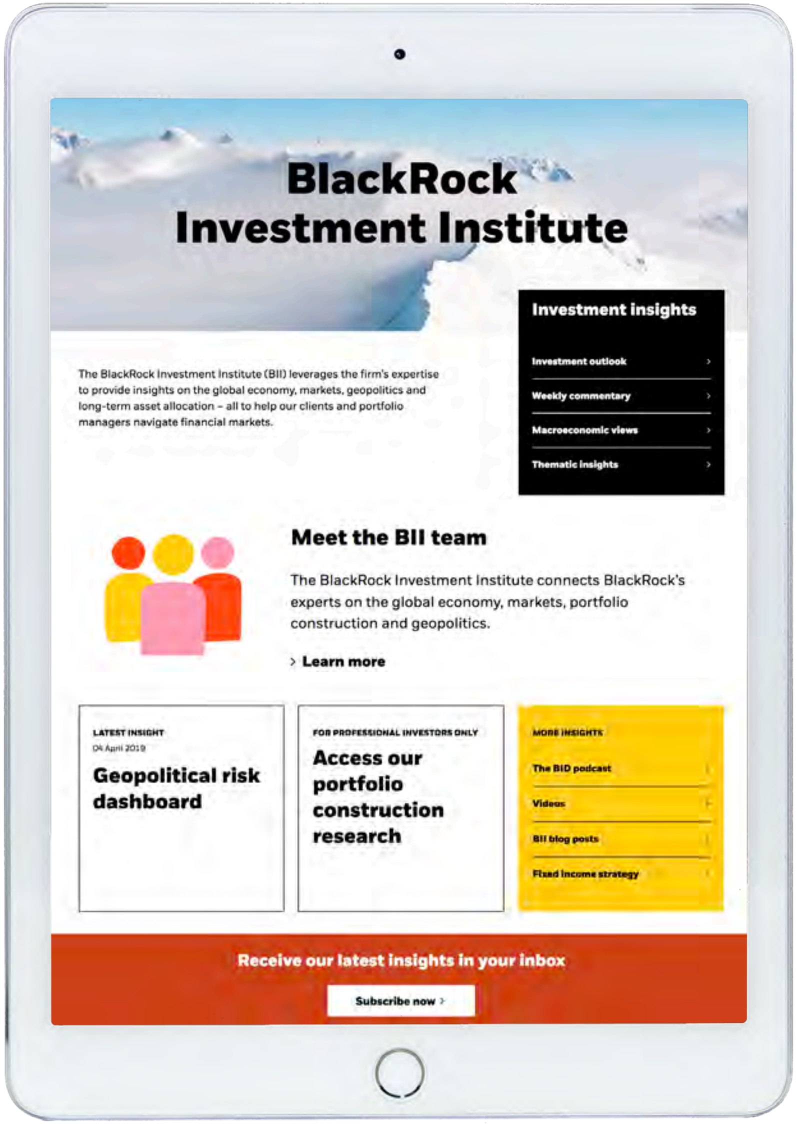

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