Vanguard

2023

Vanguard's approach to climate change

Climate change will have far-reaching consequences that will shape future trends in economics, financial markets, politics and society.

As an investment manager and the steward of our clients' assets, Vanguard has a duty to maximise total return for investors and to seek to encourage portfolio companies to take appropriate steps to mitigate material risks to those returns. Vanguard considers climate change—and the evolving global policy responses required to mitigate its impact—to be a material and fundamental risk to companies and to their shareholders' long-term financial success. Accordingly, we have an important role to play in engaging with portfolio companies and encouraging real progress to mitigate the potential consequences of climate change.

Some of our efforts to inform and safeguard investors on climate change include:

Direct engagement with the boards and management of companies held in our funds regarding climate risk oversight, mitigation and disclosure on progress against their stated strategies. We select engagements through a lens of material risk and set out governance expectations on behalf of each fund.

Investment products that can help manage certain climate-related risks and opportunities, whether by excluding companies in the fossil-fuel value chain or by investing in those better poised for a low-carbon future.

Participation in market-based efforts that seek to facilitate an effective transition to a low-carbon economy and mitigate risk to investors.

A commitment to working with global policymakers and regulators in this arena on behalf of long-term investors.

A set of corporate goals and actions to make progress toward reducing Vanguard's own carbon emissions and reaching carbon neutrality as a company by 2025.

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How climate change could affect economic activity in the coming decades

In a recent research paper, *The Economics of Climate Change*, Vanguard economists used consensus data and forecasts from the international scientific community to assess the impact of climate change on economic activity under four different scenarios for greenhouse gas emissions and resulting temperature increases.

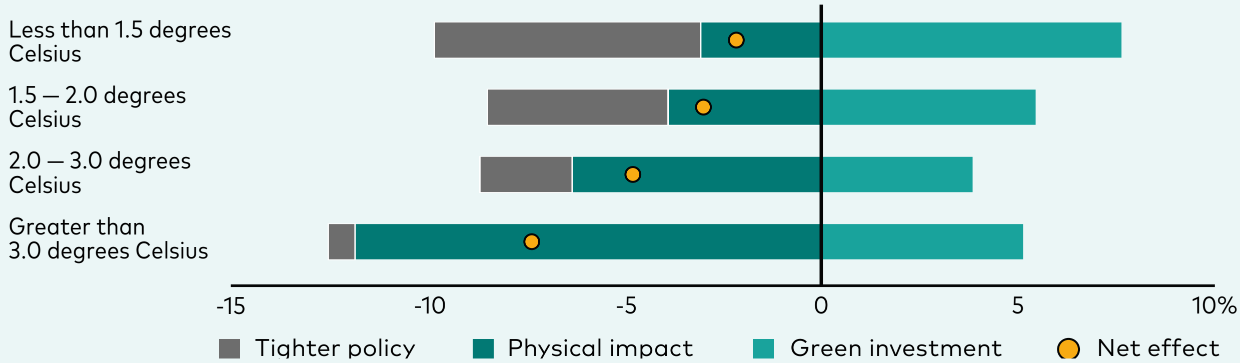
In all four scenarios, costs to the economy associated with the direct physical impact of climate change and stricter environmental policies would be, to some extent, offset by an increase in "green" investment. The net impact on global GDP is negative, however, in all scenarios.

In the best-case scenario, if countries and companies align to adhere to the 1.5 degree Celsius target versus pre-industrial levels set by global policymakers in the Paris Agreement[1], our forecast is for a net drag of around 2%-4% on global GDP by 2050. In the worst-case scenario, where policymakers make no additional progress to reduce emissions and temperatures rise by more than 3 degrees, the global economy could see a net drag closer to 10%. (See figure below.)

In the coming decades, the effects of climate change on the global economy and financial markets will not follow a straight line. We expect significant regional disparities, and the possibility of climate-related economic shocks. Investors may experience periods of heightened volatility in the financial markets as the effects of climate change become more apparent through events such as storms, droughts, flooding, heat waves and wildfires. Policy measures aimed at combating climate change can hamper economic growth too, particularly if those measures are late, abrupt or reactive rather than early, transitioned and thoughtful.

Of course, efforts by consumers, businesses and policymakers to address climate risk offer investors opportunities as well. As our economic analysis indicates, significant investments will be required in the decades ahead to change how power is generated, buildings are constructed, agriculture is managed, and goods are shipped to achieve policymakers' goals. While transition effects, market changes and regulations may provide headwinds for some, this transformation will spur new technologies, markets and growth opportunities for others.

The net impact of climate change on global GDP by 2050



Source: Vanguard as at 15 April 2022. Any projections should be regarded as hypothetical in nature and do not reflect or guarantee future results.

1 The Paris Agreement is a legally binding international treaty created in 2015 that set long-term goals to reduce greenhouse gas emissions and limit global temperature increases; 192 nations and the European Union have joined the agreement.

Ways Vanguard is mitigating climate risk

1 Investing and engaging

2 Providing choice for our investors

3 Advocating for responsible action on climate risk

4 Committing to working with policyholders on behalf of long-term investors

5 Doing our part as a company

1 Investing and engaging

Vanguard views climate risk, like other risks, through the lens of financial materiality for long-term investors. Our investment stewardship teams have ongoing engagements about climate risk with the companies our funds invest in, particularly as our index funds are near-permanent shareholders on behalf of our 30 million investors. (By design, an index fund will hold the shares of a company for as long as it is included in the benchmark index.)

Through engagements with company boards and management—and through proxy voting on behalf of Vanguard's internally managed equity funds—Vanguard's Investment Stewardship team encourages companies to have sound risk management practices, including with respect to climate risk. For companies where climate risk is a material risk, this includes effective oversight of climate risk at the board level, risk-mitigation targets that are aligned with the Paris Agreement and disclosure of progress against those targets.

On behalf of investors in our index equity funds, we must stay invested in constituent companies. We believe that encouraging these companies to take positive action on material climate risks can deliver long-term sustainable value and real economic impacts. This approach can be more effective than (1) divesting from these companies by selling them to other owners who may be less interested in sustainable, long-term value creation; or (2) investing solely in green start-ups.

Our approach boils down to a belief that responding to risk, including climate risk, requires a responsible, long-term perspective – and we do not believe wholesale divestment is a productive way to safeguard the long-term investment returns of our clients. Vanguard Investment Stewardship regularly publishes perspectives, policies and reports to keep investors informed of our approach and activities.

2 Providing information and choice for our investors

We aim to provide investors with the insights they need to make well-informed decisions. We believe that investors are best served by diversified portfolios that include appropriate allocations to the broad global stock and bond markets. For some investors, however, owning certain companies is not consistent with their values or preferences. This is particularly true in the context of climate change, which is why we offer passively managed environmental, social and governance (ESG) funds that enable investors to avoid companies in the fossil fuel value chain.

There are also investors who prefer to invest in companies with leading sustainability practices. For them, we offer actively managed funds that choose to invest in companies deemed to have leading ESG practices.

In addition, given the growing importance of climate risk, many managers of our other active funds—even those that don't explicitly target sustainability—take ESG factors, including climate risk, into consideration in their engagement practices and security selection because these factors can materially impact a company's future revenue and liabilities. We believe this is just good risk management.

3 Advocating for responsible action on climate risk

Over the years, we have worked with a number of organisations that encourage collaborative and constructive dialogue across our industry to safeguard long-term shareholder returns and encourage responsible action on climate change.

Task Force on Climate-Related Financial Disclosures (TCFD)

We have supported the Task Force on Climate-Related Financial Disclosures (TCFD) since 2017. TCFD advocates for constructive climate-change disclosure practices that will help investors understand the material financial impacts of climate-related risks associated with the companies in which they invest. Such disclosures are making climate change a more prominent consideration in the business and investment decisions that

4 Committing to working with policymakers on behalf of long-term investors

Vanguard is committed to working with policymakers to represent the best interests of investors. While companies, asset managers and individual investors can all play a role in mitigating climate risk, we firmly believe that governments must lead the way. Government leaders are specifically empowered and charged with considering competing interests and crafting public policy that will address complex societal impacts and make the appropriate tradeoffs. Government action may also have the added benefit of applying equally to relevant entities such as private companies and state-owned enterprises. Our hope is that policymakers will set long-term expectations that provide clarity to individuals, companies and the financial markets as to government plans and targets.

The 2015 Paris Agreement remains the most referenced example of an inter-governmental climate change agreement that has resulted in commitments and targets for countries and companies to meet. Vanguard expects the companies that our funds invest in to follow applicable climate rules and commitments set out by policymakers in their respective jurisdictions, and to plan appropriately for emerging risks and regulation in this area. We engage with the companies in our funds' investment portfolios accordingly.

Still, significant opportunities remain for policymakers to develop the frameworks and mechanisms that will enable markets to function effectively in the coming years. For example, despite a number of domestic and regional initiatives, the global capital markets continue to lack specific policy direction and clarity from policymakers about the best way forward. Options abound, each with its own trade-offs and challenges. These range from a standardised mechanism for pricing carbon, to consistent taxonomies for "sustainable" investing, to specific pathways for aligning with the goals agreed on in the Paris Agreement. Governments, companies and financial-market participants also lack a single global standard for climate risk reporting, which could provide stakeholders with information that is consistent, comparable and therefore more useful for decision-making. Given the global impact of climate risk, we are hopeful that governments will act individually and collectively with these long-term realities in mind.

5 Doing our part as a company

Finally, as a company of more than 18,000 employees in locations around the world, Vanguard has embraced our own sustainability goals. They include using 100% renewable energy, a milestone we first achieved in 2021, and reaching carbon neutrality throughout our own global operations in 2025.

2021

100% RENEWABLE ENERGY

2025

100% CARBON NEUTRAL

Our corporate sustainability strategy balances growth and efficiency. To achieve carbon neutrality, we use a combination of tactics—operational enhancements to reduce our carbon emissions, investment in the sustainability of our global real estate portfolio and the purchase of renewable energy certificates and carbon offsets.

We will continue to report on progress against our corporate sustainability strategy and on our efforts across Vanguard's operations to address the risks of climate change.

Investment risk information

The value of investments, and the income from them, may fall or rise and investors may get back less than they invested.

Important information

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