

Investment Implications of Climate Change

| Euan Finlay |

The economic growth propagated by the industrial revolution has resulted in unparalleled technological advances and standard of living improvements globally. Over the last century, life expectancy rates have almost doubled after years of stagnation. Child mortality has fallen from 40% in 1800 to c. 5% today and global extreme poverty rates have collapsed from 42% to under 10% in just the last 40 years. However, in recent years, global awareness has grown surrounding the negative externalities associated with this economic growth, most notably, the changes to our climate and associated environmental damage.

There is widespread agreement amongst the scientific community that human activity, most notably the burning of fossil fuels for the production of energy, has caused the atmospheric changes which have led to increased temperatures and the associated effects such as rising sea levels. Recognising the implications that the continued warming of the planet could have on human populations, biodiversity and economic growth, the international community has sought to pursue efforts to limit the global temperature increase this century to 1.5 degrees Celsius above pre-industrial levels.

Achieving this target would require rapid and significant changes to global energy production and usage. Global net emissions of carbon dioxide caused by human activity would need to fall by c. 45% from 2010 levels by 2030 and reach net zero around 2050 which would likely still require some form of carbon capture.

Such significant changes implied by the migration to a less carbon intensive economy could have wide ranging implications for investment portfolios given the impact on the risk profile of sectors, companies and economies. Equally, a failure to arrest the current trajectory of climate change would have a different but potentially as large an impact on asset prices from the physical effects of climate change. We believe that the investment risks and opportunities that arise from climate change

and the global actions taken to mitigate its impact will be one of the defining investment trends for the next generation with implications for portfolio positioning and asset manager due diligence and will form a key component of responsible investment strategies.

This whitepaper provides an overview of the changes in climatic conditions over the last century, the international commitments to address climate change and the investment implications including their integration within the Partners Capital Responsible Investment Policy framework.

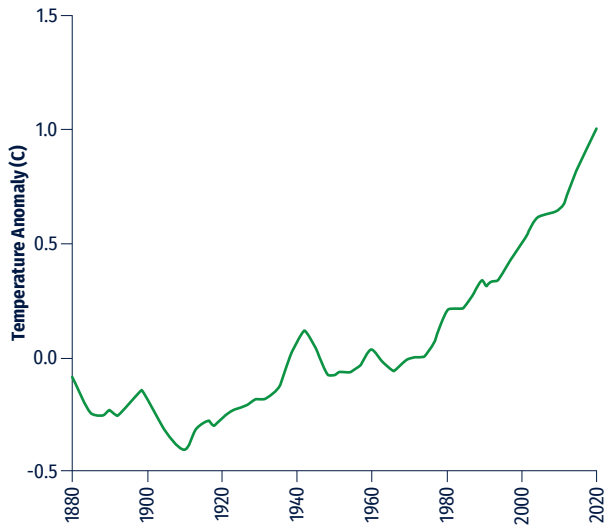
Overview of climate change and its causes

There is widespread agreement within the scientific community that human activity has been the key driver of climate change in the last century. The transmission mechanism is through the intensity of greenhouse gases (GHG) in the atmosphere, the most common of which is carbon dioxide (CO₂). GHGs occur naturally and serve to trap a portion of the sun's warmth from reflecting back into space which, in turn, provides for the climatic conditions that make Earth habitable. However, in the last 100 years, the concentration of GHGs in the atmosphere have risen dramatically primarily due to the carbon dioxide released during the burning of fossil fuels for energy production.

As shown in Figure 1, the planet's average surface temperature has risen by c. 0.9 degrees Celsius (1.6 degrees Fahrenheit) since 1880. However, most of the warming has actually occurred in the last 40 years with 5 of the warmest years on record occurring since 2010.

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Figure 1: Global Land-Ocean Temperature Index

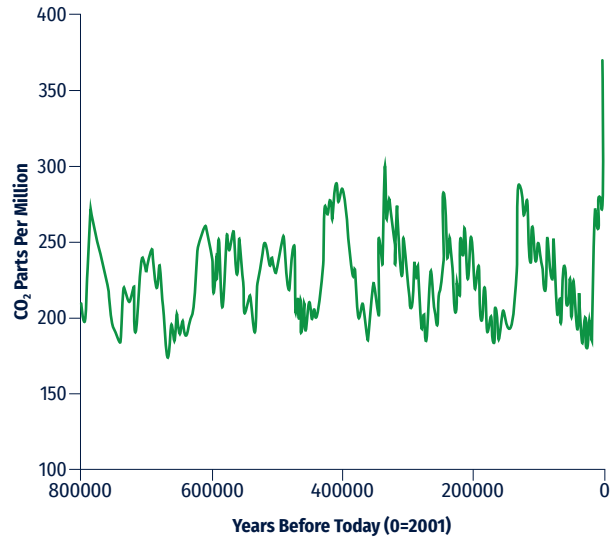


Source: NASA's Goddard Institute for Space Studies

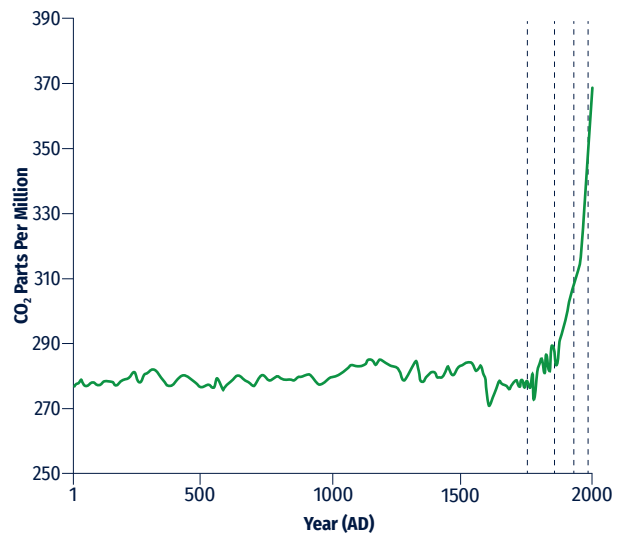
The increase in global temperatures has occurred concurrent with the increase in the levels of carbon dioxide in the atmosphere which are currently unprecedented in at least 800,000 years. Over this long period, there have been consistent fluctuations of CO₂ concentrations in the atmosphere caused by changes in the Earth's orbit around the sun. However, atmospheric concentrations of CO₂ did not exceed 300 parts per million at any point in time. This changed with the Industrial Revolution and the increase of CO₂ emissions from burning fossil fuels. Analysing just the last 2,000 years, Figure 2 shows the dramatic increase in the carbon dioxide levels in the atmosphere since the first industrial revolution, with CO₂ concentration now well above 400 parts per million.

The increase in atmospheric concentrations of GHG have been the result of rapidly increasing global emissions per annum. Global GHG emissions increased from c. 35 billion CO₂ equivalent tonnes in 1990 to c. 55 billion by 2017. Figure 3 shows the composition of GHG emissions to the atmosphere. Carbon Dioxide is the largest component accounting for over 75% of total GHG with the bulk produced by burning fossil fuels. Methane accounts for c. 16% of total GHG emissions and is primarily produced as a byproduct of the digestive process of cattle. Analysed by sector, electricity production, agriculture, transportation and industry are the key emitters.

Figure 2: Carbon dioxide in the atmosphere over the last 800,000 years



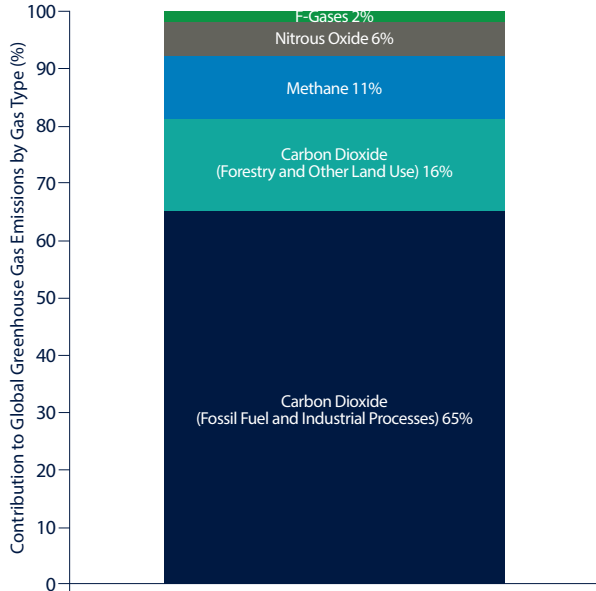
Carbon dioxide in the atmosphere over the last 2,000 years



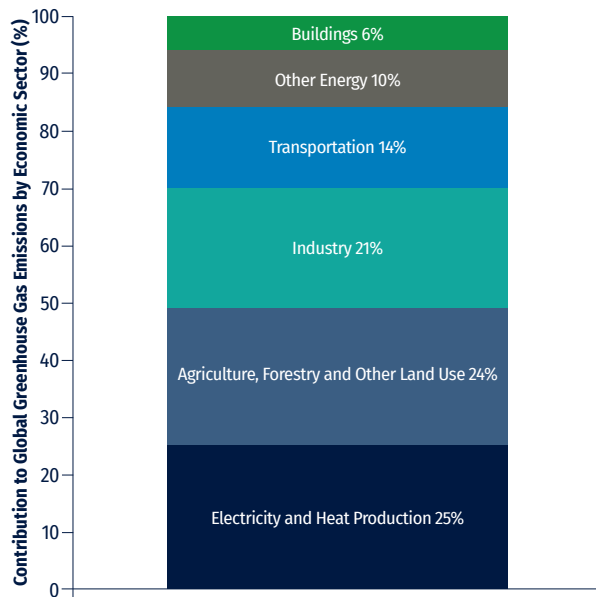
Source: Deutsche Bank, World Data Center for Paleoclimatology, Boulder and NOAA Paleoclimatology Program

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Figure 3: Global greenhouse gas emissions by gas type



Global greenhouse gas emissions by economic sector



Source: Aberdeen Standard Climate Change Research

The largest emitting countries have varied over time aligned with the relative stages of their economic development. In 1995, the United States and Europe were the source of over 50% of global emissions with China accounting for c. 14%. However, by 2017, the absolute level of emissions in the United States and

Europe has actually fallen, which has been more than compensated for by a 3x increase in the absolute levels of emissions from China and India. As of 2017, the share of global emissions from the United States and Europe had fallen to 31% with China alone accounting for 27%, as shown in Figure 4.

Figure 4: Annual total CO₂ emissions, by world region (billion tonnes per year)

Billion tonnes per year	1995	% of Total in 1995	2017	% of Total in 2017
United States	5.4	23%	5.3	15%
Other Americas	1.6	7%	2.4	7%
Europe	6.5	28%	5.7	16%
China	3.3	14%	9.8	27%
India	0.8	3%	2.5	7%
Other Asia	3.4	14%	5.1	14%
Middle East	1.1	5%	2.7	7%
Africa	0.8	3%	1.3	4%
International Transport	0.6	3%	1.2	3%

Source: Hannah Ritchie and Max Roser (2019) - "CO₂ and other Greenhouse Gas Emissions". Published online at OurWorldInData.org

The Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change, projected that based on the current trajectory of GHG emissions, over 70 billion tonnes of carbon dioxide equivalent is expected to be emitted per year by the second half of this century. This is expected to cause the warming of global temperatures by 3.7 degrees Celsius by 2100 relative to the 1986-2005 average.

In response to the growing threat of climate change, Parties of the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement at a conference in Paris in 2015 to accelerate the actions and investments needed to

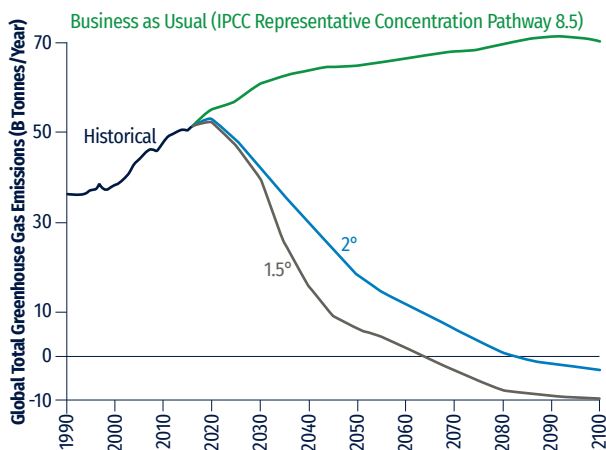
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transition to a low carbon economy. The central aim of the Paris Agreement is to ensure that global temperature rises this century are below 2 degrees Celsius above pre-industrial levels while pursuing efforts to limit temperature increases even further to 1.5 degrees Celsius. There are currently over 180 countries that have ratified the Paris Agreement.

In October 2018, the IPCC issued a special report highlighting the required changes to energy production to adhere to both a 2 degree and 1.5 degree Celsius increase in global average temperatures this century. To adhere to the 2 degree Celsius warming of the planet, GHG emissions would need to decline by 25% by 2030 and reach net zero by around 2070. To adhere to a target of 1.5 degree Celsius warming, GHG emissions would need to fall by 45% by 2030 and reach net zero by 2050 (Figure 5).

The IPCC outline a number of potential pathways to this end goal, which generally involve renewable energy's share of global electricity generation increasing above 70% with a commensurate decrease in the share of coal, oil and natural gas. This compares to the current 26% of global electricity generation from renewable energy sources. The pathways also include increases in the proportion of primary energy production from nuclear sources and an increase in carbon capture and storage techniques.

Figure 5: Global Total Greenhouse Gas Emissions (billion tonnes per year). Current trajectory and requirements to adhere with Paris Agreement temperature increase targets



Source: POLES-JRC 2018, JP Morgan

Since the ratification of the Paris Agreement, a large body of research has been published estimating the economic and non-economic benefits of limiting global average temperature increases to 1.5 degrees Celsius as opposed to 2 degrees. Based on this analysis, adhering to the 1.5 degree scenario would improve global .GDP per capita by 5% in 2100 as compared to the 2 degree warming scenario, reduce the population impacted by coastal flooding by 12M per year and significantly reduce the proportion of plants, insects and animals that would lose over 50% of their climatic range (Figure 6). Each of these criteria are expected to be significantly worse in a scenario whereby global temperatures rise according to current trajectories.

Figure 6: The impacts of global temperature increases of 1.5C and 2C

	1.5 C	2.0 C
Global Per Capita GDP in 2100	-8%	-13%
Sea level rise by 2100	48cm	56cm
Annual flood damage losses from sea level rise	\$10.2T	\$11.7T
Global population flooded in coastal areas by 2095	60M per year	72M per year
Population facing at least one severe heatwave every 5 years	14%	37%
Global population exposed to severe drought	133M	195M
Average maize yield change by 2100	-6%	-9%
Proportion of plants losing >50% of their climatic range	8%	16%
Proportion of insects losing >50% of their climatic range	6%	18%
Proportion of mammals losing >50% of their climatic range	4%	8%
Proportion of birds losing >50% of their climatic range	2%	6%

Source: Carbon Brief, sourced from the aggregation of 70 underlying academic research publications

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Investment Implications

While there remains great uncertainty as to how climate change will affect the global economy, it is clear that there are a number of potentially important implications that investors need to be cognisant of when building portfolios. The Bank of England grouped these implications into “transition risks” and “physical risks” which are described below. As to which of these dominate will be dependent on the success with which climate change is tackled.

Transition Risks and Opportunities

This refers to the impact on sectors and companies from the transition towards a low-carbon economy which could impact the cost of doing business or the value of particular assets. Specific risks include:

- 1. Regulation:** businesses could increasingly be subject to regulation increasing the cost of certain business models. For example, a comprehensive global carbon pricing scheme could impact the profitability of companies with large emissions who do not make changes to their business model.
- 2. Stranded asset risk:** the likely reaction to climate change will be a continued transition away from carbon-intensive fossil fuels and towards renewable energy sources. This increases the risk that fossil fuels become “stranded” with commensurate declines in valuations as demand declines.
- 3. Liability/reputational risk:** where businesses fail to demonstrate adherence to their environmental responsibilities, they could face financial, reputational or litigation risks.

However, an economic transition of this scale also gives rise to a number of investment opportunities, including:

- 1. Renewable energy generation and storage:** the growth in renewable energy required to meet the Paris Accord is considerable which will require significant investment across renewable energy generating capacity, batteries, transmission and distribution.
- 2. Energy efficiency:** increased demand for energy efficient technology and products to meet increasing standards, either driven by regulation or consumer expectations.

- 3. Electric vehicles:** opportunities for investment across the entire supply chain of electric vehicles.
- 4. Carbon removal:** the Paris Accord does not solely require CO₂ emission reduction, it also requires CO₂ removal from the atmosphere. Carbon Capture and Storage technologies are far behind schedule currently implying a potential significant opportunity.

Physical Risks and Opportunities

In addition to the implications on businesses during the transition to a low carbon economy, climate change implies more frequent extreme weather events like flooding, droughts and storms. Businesses affected by such acute physical effects are likely to face short term disruption and one-off costs, particularly those that are heavily reliant on water (e.g., food and drink production, agriculture, energy, cement production); real estate (particularly those situated in vulnerable coastal locations); insurance (to the extent that extreme weather events increase in frequency which is not offset by premium increases) and businesses reliant on agricultural commodities (which could be impacted by changing harvest yields).

However, this should also imply increased demand from such businesses for products and services which help them adapt to their new environment. This is likely to include infrastructure spend. A global analysis of 136 coastal cities reported indicative annual adaption costs of \$350M per city, or approximately \$50B annually in total. Furthermore, there should be growing demand for technology which reduces the susceptibility of businesses to expected changes to their environment, for example, reducing water intensity from production processes.

Partners Capital Responsible Investment Framework (RIF)

As to whether physical or transition risks dominate asset prices in the coming decade will depend on the extent to which climate change is mitigated through regulation and changes in behaviour. However, the sheer scale of the issue implies that any Responsible Investment Policy will increasingly need to incorporate this specific factor. This is obviously true of those investors that wish to use their portfolio as a tool to combat climate change. But, this could also become an economic imperative for all investors given the potential ubiquity of the issue affecting both fund flows and company profitability.

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Partners Capital segment the myriad of Responsible Investment Strategies into three main policies; Negative Screening, Manager ESG Integration and Impact Investing. We use this consistent framework to outline the investment options that our clients have to integrate climate change considerations into their investment decision making and portfolio construction. These options include: 1) the simple exclusion of certain companies based on their susceptibility to the physical risk associated with climate change or during the transition to a low carbon economy, 2) ESG integration into investment decision making and could involve active engagement with portfolio company management teams to improve their policies with regard to the carbon intensity of the business model and investments in innovative technologies which can actively contribute to renewable energy production or improved energy efficiency.

Negative Screening

Negative screening is the exclusion of sectors or companies based on the investor's assessment of the undesirability of its impact on the environment or society. A number of institutional investors have attempted to combat climate change through the exclusion of all or a subset of the fossil fuel sector, most commonly coal and oil-sands companies. The theory is that exclusion of these sectors from their portfolio will have the dual effect of increasing the cost of capital for the business and removing their social license to operate making it easier for governments to introduce effective regulation and impacting consumer preferences. A negative screening strategy ensures that the resulting portfolio has little or no exposure to those sectors which the investor believes are contributing most directly to climate change.

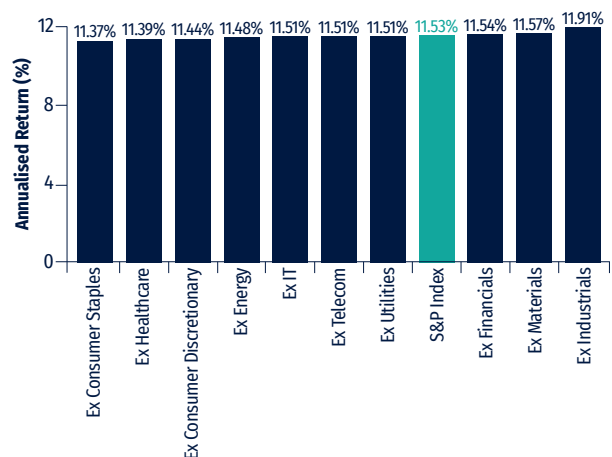
However, many have questioned the efficacy of these strategies, due to a combination of the fungibility to global capital markets and the philosophical belief that influencing company management behaviour through engagement is likely to be more impactful, which is discussed below.

The most common question asked by investors in regard to a negative screening (or divestment) strategy is the impact on portfolio returns. The conventional theory says that by removing a sector from the portfolio, diversification will fall resulting in lower risk adjusted returns. This is certainly true over short periods of time. In any one year, we see significant

dispersion of sector investment performance. We can see, even over 10-year periods, the exclusion of a single sector can contribute to significant over or under performance, which is nearly impossible to predict. Over longer periods of time, sector exclusion matters much less.

The Jeremy Grantham Research Institute on Climate Change and the Environment produced analysis of the impact of excluding any one sector from the S&P 500 between 1925 and 2017. Over this time period, the S&P 500 returned 11.53% per annum. Had an investor excluded the consumer staples sector, that return would have fallen to 11.37% per annum, a 16bps reduction. If the energy sector was excluded, the returns would have fallen to 11.48% per annum, a 5bps reduction in comparison to the S&P 500, as shown in Figure 7. The researchers concluded that the base case assumption of any investor should be that excluding any sector will not result in meaningfully different performance from investing in an index which includes the sector over the long term.

Figure 7: S&P 500 performance 1925-2017 with selected sectors excluded



Source: Jeremy Grantham Research institute on Climate Change and the Environment

This is a powerful conclusion which, all else equal, would be expected to embolden long term investors to exclude as they can align their portfolio with their values with a base case assumption that doing so will have minimal impact on ultimate financial returns. That has the potential to lead to a self-fulfilling devaluation of the excluded sector as investors without the same ethical considerations nonetheless

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underweight the sector in question to avoid the potential multiple contraction from significant fund flows associated with ethical exclusion.

Environmental, Social and Governance (ESG) Integration

ESG integration involves the inclusion of non-financial criteria, including environmental, social and governance factors, into the investment decision making process. As with all investment strategies, there is a spectrum of ways in which this could be implemented in practice, each of which could be employed as part of a strategy focused on positioning a portfolio for the effects of the climate change driven changes to asset values.

- Quantitative stock selection based on ESG rating: this involves the use of third party (e.g., MSCI, Sustainalytics, Refinitiv) or internal proprietary ESG scoring systems to rate companies on ESG factors with a minimum threshold score for companies included in portfolios. Such a strategy could be employed with a specific focus on the company's alignment with the migration to a low carbon economy. As an example, FTSE recently launched the "Transition Pathway Initiative Climate Transition Index" which aims to invest in companies likely to benefit from the transition to low carbon economy. Selection for inclusion in the index includes assessing the company's alignment with globally recognised best practice climate related financial disclosures. This index does not blindly exclude companies based on sector. For example, Shell and Repsol are included within the index given their publicly stated emission reduction targets and related planned business model changes whilst Exxon and Chevron are excluded.
- Qualitative fundamental research process including "ESG" lens: whilst portfolio construction based on quantitative scoring of companies lends itself well to passive strategies tracking newly created indices, most active managers do not employ a strict threshold score for the inclusion of a company in their portfolio. Rather, they have an ESG lens which is a component of their broader investment analysis with the risks and opportunities associated with the specific ESG issues to which the company is most exposed, incorporated into decision making as one of many factors. As climate change has an increasing impact on asset valuations, it would

follow that the managers that integrate climate related factors into decision making will improve their performance, all else equal. Accordingly, Partners Capital monitor the degree to which managers evaluate the susceptibility to climate change of their underlying portfolio companies as part of our regular ESG integration survey. We also commit to engage with our underlying asset managers to assist them in improving the quality of their ESG integration processes. We believe that assisting in the changing of the behaviour of these asset managers, who manage multiples of the capital that we invest with them, is the most leveraged impact that we can have on the world as a force for good whilst also continuing our relentless pursuit of incremental improvements to investment performance.

- ESG Activism through Engagement: the asset management community can have a tangible impact on climate change via active engagement with the management teams of underlying portfolio companies. The London based hedge fund, The Children's Investment Fund, has asked all its portfolio companies to publish their annual carbon dioxide emissions, through the Carbon Disclosure Project (CDP), an environmental non-profit consultancy, and targets for emission reductions which will be tracked over time. Failure to comply will result in publicly highlighting failures, voting against the board in proxy contests and, potentially, divestment. Such engagement has been successful. For example, a prolonged campaign by the Church Commissioners led to changes implemented by Royal Dutch Shell, including a commitment to a 50% reduction in CO₂ emissions by 2050. While some asset managers may not have the skill set or resources to engage with underlying portfolio companies, all can ensure that their proxy voting is conducted in a manner which is consistent with a transition to a low carbon economy.
- Thematic Investments: investors could also choose to introduce thematic skews within the portfolio based on the belief that the spending directed towards companies and technologies that are assisting in the migration to a low carbon economy will result in revenue improvements and asset value appreciation. For example, GMO launched a Climate Change Fund to invest in companies positioned to benefit from efforts to mitigate the long-term effects of climate

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change. This includes allocations to companies focused on renewable energy, energy efficiency, agriculture, water and the components of batteries. Investors could take the view that such companies will be the beneficiaries of the spending directed to migrating to a low carbon intensity economy with the commensurate profit enhancement. These companies could also potentially benefit from multiple arbitrage associated with flow of investor funds to these sectors.

Climate-related Impact Investments

This strategy involves any investment in any asset class which the investors believes can have a positive impact on specified climate-related missions, purposes or aims whilst also generating a financial return. These are suitable for those investors aiming to have a measurable impact on the climate, either through emission reductions or saved emissions. While impact through public investments is possible, particularly the activist strategies described above, we would expect most impact investments to be in private businesses. An obvious example would be investing in clean energy developments, particularly in those jurisdictions which are largely reliant on coal fired energy production. Impact investments could also include energy efficient real estate, technology companies focused on carbon capture and those businesses focused on improving energy efficiency. Partners Capital recently concluded due diligence on a private equity firm focused on the acquisition of emission-reducing industrial technologies, mainly related to chemical and biochemical processes which they plan to roll out at commercial scale.

There are no bright lines between the climate-related investment strategies described above. Some managers engage in negative screening and quantitative ESG scoring concurrently. A few of the more qualitative ESG integration strategies also engage as activists with company management teams on climate initiatives. Thematic investments can look like impact investments. There is blurring at the edges of each strategy.

Fund flows towards ESG

To provide a sense for the pace of global adoption of responsible investment strategies, currently, \$31 trillion or one third of professionally managed assets, employ a responsible investment strategy of some type, up from \$18 trillion in 2014 (Figure 8). By 2030, Deutsche Bank and the Global Sustainable Investment Alliance

(GSIA) estimate that this will increase to \$120 trillion and represent 95% of global assets under management.¹

The growing adoption of responsible investment strategies by institutional investors can also be evidenced through the rapid increase in members of global sustainability initiatives. As an example, Climate Action 100 is an investor led initiative launched in December 2017 to ensure the world's largest greenhouse gas emitting corporations take necessary action to mitigate their contribution to climate change. In less than two years since inception, Climate Action 100 has attracted 450 signatories that, in combination, manage \$41 trillion of assets. These are meaningful proportions of total professionally managed assets globally which, if acting in concert, have the ability to be a major driver of asset prices, highlighting the necessity for investors to be ahead of these trends when positioning portfolios.

Linkages between ESG Scores and Investment Performance

We believe that evolving ESG standards of measurement will increasingly enable investors to quantify and measure ESG considerations across their portfolio, with the result being that higher scores translate into outperformance over the long term. Academic research has long analysed the linkages between ESG scores and share price performance with a general conclusion that there has been a positive relationship.

A “study of studies” published by the Smith School of Enterprise and the Environment at the University of Oxford in conjunction with Arabesque, an asset manager, in September 2014 found that the preponderance of academic research reviewed concluded that there was a positive correlation between the “sustainability” of a company and its cost of capital, operational performance and, ultimately, share price performance. The results are shown in Figure 9. The paper concluded that 80% of the academic literature reviewed found a positive correlation between the sustainability of a company and its share price performance with as high as 90% of the literature finding that more sustainable companies had a lower cost of capital.

The research produced more recently, which

¹ Global Sustainable Investment Alliance, 2018

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incorporates the last 5 years of rapid adoption of responsible investment strategies, reaches similar conclusions. Amundi, an asset manager, compared the share price performance of the bottom quintile and top quintile North American stocks when ranked by their internal proprietary ESG rating on a sector neutral basis. The top quintile ESG stocks outperformed the bottom quintile ESG stocks from 2014 to 2017 by +3.6% per annum. This was a sharp reversal from the period from 2010 to 2013 when the highest rated ESG stocks actually underperformed those with lower ratings.

These findings are corroborated by those research papers focused solely on climate change. Max Gorgen and colleagues conducting the Carima project have attempted to measure the exposure to carbon risks of more than 10,000 listed companies globally by aggregating 55 indicators of a company's exposure to

climate change. They found that since 2013, the “green” companies have significantly outperformed those which are more susceptible to climate change.

To analyse the impact of environmental practice on share price performance, Deutsche Bank used their artificial intelligence platform to read company announcements and all Dow Jones news articles in the last two decades related to 1,600 companies in the MSCI World Index to ascertain whether those companies had experienced positive or negative sentiment on climate change in any given month. All companies were then ranked by the positive climate change news as a proportion of total news (and adjusted so the data was neutral by region to remove North American bias in English language news sources). They took the top 20% of stocks ranked by positive climate change news per month and analysed

Figure 8: Global assets managed subject to a responsible investment policy

Total Professionally Managed Assets				
Responsible Investment Strategy	2014	2016	2018	CAGR 2014 - 2018
1. Negative Screening	\$12.0 T	\$15.0 T	\$19.8 T	13%
2. ESG Integration	\$7.5 T	\$10.4 T	\$17.5 T	24%
3. Impact Investment	\$0.1 T	\$0.2 T	\$0.4 T	45%
Total Assets	\$18.3 T	\$22.8 T	\$30.7 T	14%

Note: The numbers in the table above do not sum to the “Total Assets” due to double counting (i.e. assets which are managed subject to two or more of the three strategies).
Source: Global Sustainable Investment Alliance, Global Sustainable Investment Review 2016 and 2018

Figure 9: Smith School of Enterprise and the Environment (2014) – meta review of empirical research findings

	Number of Empirical Reports Reviewed	Number of Empirical Reports with Positive Correlation	% of Empirical
Linkage between company sustainability rating and lower cost of capital	29	26	90%
Linkage between company sustainability rating and operational performance	49	43	88%
Linkage between company sustainability rating and share price performance	39	31	80%

Source: “From the stockholder to the stakeholder”, – Smith School of Enterprise and the Environment University of Oxford and Arabesque Partners

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their share price performance relative to the MSCI World Index. They repeated the analysis but using those companies with the most improved climate change news over the preceding 12 months. The results were stark: the companies with the most positive climate change news flow outperformed the MSCI World Index by +0.8% per annum from 2007 to 2019; the companies with the most improved climate change news flow in the preceding 12 months outperformed the MSCI World Index by +1.4% per annum.

Interestingly, as can be seen from Figure 10, the periods in which the portfolio of stocks with the most positive climate change news underperformed the MSCI Index was in 2008, 2011, 2015-16 and late 2018, all of which are periods of significant equity market drawdowns. This would suggest that investors are more sensitive to corporate environmental news when equity markets are rising but become less discerning when the wider market is dislocating.

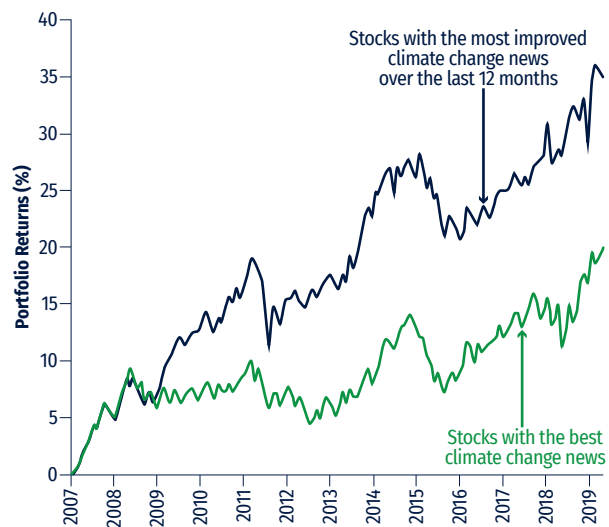
Despite this large body of research identifying a link between share price performance and the ESG scores of a company, scepticism remains as to the efficacy of integrating ESG factors into decision making in pursuit of financial outperformance. This scepticism seems to be due to a combination of 1) the underperformance of many of the active ESG integrated asset managers (Deutsche Bank found that European active “ESG” equity managers underperformed their benchmarks by -1.2% between 2000 and 2017 in aggregate); and 2) a lack of consensus on the composition of ESG scores making comparison across studies challenging.

We expect the academic literature on this subject to become increasingly uncontroversial in the coming years as the weight of capital adopting responsible investment strategies swells with the related impact on financial performance of stocks which score highly on ESG grounds and the quality of ESG measurement improves.

Conclusion

Our aim in deploying this investment theme with our clients is to find the most exceptional managers across any of these different climate focussed strategies who find the optimal intersection between impact and outperformance. We believe we will enhance client investment performance by allocating to managers who can best identify the winners from the economic changes implied by climate change and capitalise on the continued flow of funds into

Figure 10: Return of portfolios with positive climate change news relative to the MSCI World Index



Source: Deutsche Bank, DIG

those firms. These initiatives will also allow our clients to contribute to the mitigation of the effects of climate change.

As we have highlighted in the past, given that the social and environmental causes that our clients support are personal and subjective, Partners Capital cannot recommend specific responsible investment policies for our clients. However, we believe that climate change, and the reaction to it, has implications for investment portfolios. Accordingly, regardless of the responsible investment policy of the underlying client, Partners Capital will engage with our underlying managers to encourage integration of climate related risks and opportunities into their investment decision making process (as part of a broader ESG integration policy). However, we will also aim to tactically skew portfolios towards those sectors and companies that will benefit from the transition to a low carbon economy through a combination of fund flow driven multiple accretion and breakthroughs in climate changing technologies and business models with strong earnings potential. This will require an improvement in our responsible investment reporting to include specialist data on the carbon intensity of our portfolios and the degree to which underlying companies and sectors are prepared for the impending transition.

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Firm Profile

Partners Capital is a leading Outsourced Investment Office located in London, Boston, New York City, San Francisco, Paris, Singapore and Hong Kong serving investment professionals, endowments, foundations, pensions and high net-worth families globally. We provide wholly independent advice on asset allocation and access to what we believe to be best-of-breed asset managers across all asset classes and geographic markets. This access is strongly enhanced by the quality of our community of shareholders and clients, most of whom are veteran investors themselves in specialist sectors around the world.

The firm was founded in 2001 by investment professionals seeking an independent and conflict free adviser to provide portfolio construction advice and rigorous analysis of investment opportunities. From its initial focus as the “money managers to the money managers” with a base of 70 clients, Partners Capital has grown to become an adviser to endowments and foundations as well as prominent family offices and successful entrepreneurs across the U.S., U.K., Europe and Asia. Endowments have become a large proportion of the institutional client base, which now includes Oxford and Cambridge Colleges, and many of the most highly respected museums and charitable foundations located around the world.

Among Partners Capital services are bespoke outsourced investment solutions for endowments, foundations and tax-efficient and tax-deferred investment strategies for taxable private clients. Partners Capital predominantly advises on entire portfolios but also specialty strategies, such as Private Equity or Private Debt strategies.

Partners Capital deploys an investment philosophy that embraces many of the powerful diversification benefits of the “endowment model” of investing. However we apply a more dynamic approach to asset allocation, which seeks to clearly delineate between performance derived from market factors as opposed to the skill of individual managers.

Today, with over \$32 billion of assets under management, Partners Capital’s clients comprise an equal mix of private individuals and institutional clients. Many of our clients are among the most sophisticated investors in the world, with a sound understanding of investment principles and experience across multiple asset classes.

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Further information can be found on our website:
www.partners-cap.com

Europe

5 Young Street
London W8 5EH
England
Tel: +44 (0)20 7938 5200

28 Cours Albert 1^{er}
75008, Paris
France
Tel: +33 (0)1 7038 1054

North America

Federal Reserve Plaza
600 Atlantic Avenue
30th Floor
Boston, MA 02210
USA
Tel: +1 617 292 2570

1330 Avenue of the Americas
22nd Floor
New York, NY 10019
USA
Tel: +1 212 951 1288

Asia

One Embarcadero Center
Suite 3500
San Francisco, CA 94111
USA
Tel: +1 415 862 7100

50 Raffles Place
Level 13
Singapore Land Tower
Singapore 048623
Tel: +65 6645 3733

10/F Champion Tower
3 Garden Road
Central, Hong Kong
Tel: +852 3614

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