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Schroder International Selection Fund

Global Climate Change Equity Monthly Newsletter

September 2019

Special topic

Disruption from climate change is only just beginning

Financial markets remain unprepared for the extent of disruption that climate change will bring, according to a new report. In September, the United Nation's Principles for Responsible Investment (PRI) - a network of investors whose members include 500 global asset managers - released a report concluding markets have not priced in the coming policy response to climate change. More importantly, it concluded that investors should expect a response by 2025 "*that will be forceful, abrupt and disorderly because of the delay*".

The Schroders Global Climate Change team have long believed that climate change disruption is not factored in by markets. It is generally well perceived that financial markets are fairly good at factoring in short-term, minor changes to company prospects quickly, but bad at factoring in uncertainty, inflection points, and disruption. Climate change represents all of these things.

Uncertainty

How long will it take voters and policy makers to recognise that the long-term consequences of inaction dwarf the costs of a fast transition away from fossil fuels? Will voters sustain support for 2050 net-zero carbon government policies or will they turn away from them in periods of economic stress?

Inflection points

Inflection points are rarely clear at the time. All that is apparent are the early indicators of change. It is often hard to have conviction in a radically different situation to the current one, and comforting to identify reasons why change may be slow. The substitution of renewable energy and electric vehicles for fossil fuel power and mobility is at a clear inflection point, and it is now possible to see a complete decarbonisation of these industries with available technology. Even so, few investors appreciate the scale of change underway.

Disruption

Markets are very bad at pricing in disruption, as we have written about before (here). Management teams often fall into the "incumbents' dilemma". That is to say, even if they recognise a threat to their business, they often feel compelled to protect their existing revenue streams. Investors also tend to focus too much on near-term cash flows of a disrupted business, comforting themselves that the shares are 'cheap' relative to current earnings, only to be surprised when things start to decline. Businesses in decline are generally terrible investments, as it is very costly to restructure a business, the whole process saps workforce morale, and fixed costs usually result in profit disappointments.

Until recently, most of the market attention on climate-disrupted assets has focussed on coal. These are the most obvious "stranded assets" as the developed world moves away from coal-fired power. Coal prices have fallen to multi-year lows, every week there is another announcement of early retirements of coal-fired power stations.

September newsletter

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We are likely just at the beginning of a very long period in which climate change drivers have an increasing and significant effect on markets.

Policy developments and climate change news

Every company and every investor will be affected by climate change. Finding companies striving adapt will generate attractive new investment opportunities for years to come.

Investment philosophy

While the path to a low-carbon economy is predictable, we do not believe it is well understood, or discounted, by the equity market – representing a significant alpha generation opportunity. A broad investment universe gives us the opportunity to select only the best stock ideas across all sectors, and we believe that a portfolio consistently focused on these stocks will outperform global equities over time.

Stock selection strategy and activity

We believe that the structural growth trends created by climate change will remain a powerful underlying driver to performance in global equities, with the hugely compelling returns on energy efficiency investments making this the most powerful theme in the short term.

Schroder ISF* Global Climate Change Equity is a product of the Global and International Equity Team

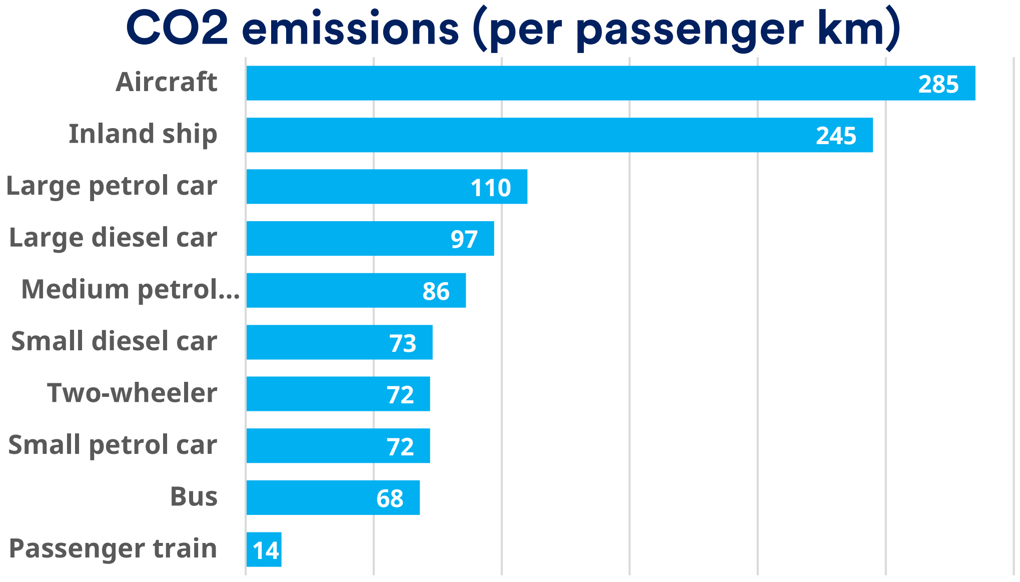
*Schroder International Selection Fund is referred to as Schroder ISF throughout this document

As we write, Spanish utility company Endesa has announced it is closing its two remaining coal-fired generation plants in Spain, likely resulting in a booked loss of most, if not all, of the €1.3bn value of these assets. However, much less attention has been given to other parts of the economy that will be disrupted by climate change. Property and aerospace are two examples where asset prices might just be at the beginning of factoring in the consequences of climate change.

Aerospace

The aerospace industry has had a fantastic run. A record long economic expansion and growth of global tourism have driven very steady growth in the industry. Over the last 10 years, the MSCI World Aerospace and Defence industry produced an annual total return of 13.8%, double the 6.8% annual return on the MSCI World.

The assets in this industry (mainly airports and aircraft) are very long-lived and so future industry conditions are critical to their value. Yet, unlike the automobile industry, the commercial aerospace industry has no commercially viable technological solution to substantially reduce its emissions. Its continued expansion is thus entirely inconsistent with many of the new long-term targets and ambitions being put in place by governments. After decades of declines in the cost of air travel that have promoted its growth, prices will need to be raised to either curtail demand growth, or simply to price in the costs of CO_2 emissions produced by the industry. The CO_2 emissions per passenger kilometre for air travel are very high.



Source Bernstein Research, September 2019

Research from Sanford Bernstein suggests that if the airline industry had to pay the CO_2 costs of its emissions, it would have wiped out 40% of last years' industry profits. In future, as carbon rises further, the burden will grow much bigger. At the same time, video conferencing technology has matured to the point that it can be a substitute for a significant portion of business travel. Business travel is the most profitable part for airlines, and with more and more corporates embracing plans to become net carbon neutral, the use of air travel is in the cross-hairs. The next 10 years does not look as good for this industry as the last.

Physical property asset values

Until recently, the physical effects of climate change have seemed largely theoretical to many people. However, increasing extreme weather events and accelerating sea level rise are raising public awareness to a level where property asset prices are likely to be affected. For example, this month a report by investment group CLSA and CWR (China Water Affairs) looked at the vulnerability of Hong Kong to storm surges under rising sea levels. In particular, they looked at the 2018 Super Typhoon Mangkhut, which caused a storm surge of 3.9m in Hong Kong's Victoria Harbour, and Super Typhoon Hato, which reached 5.6m in Macau's Inner Harbour. The research concludes that Hong Kong Hong Kong was lucky.

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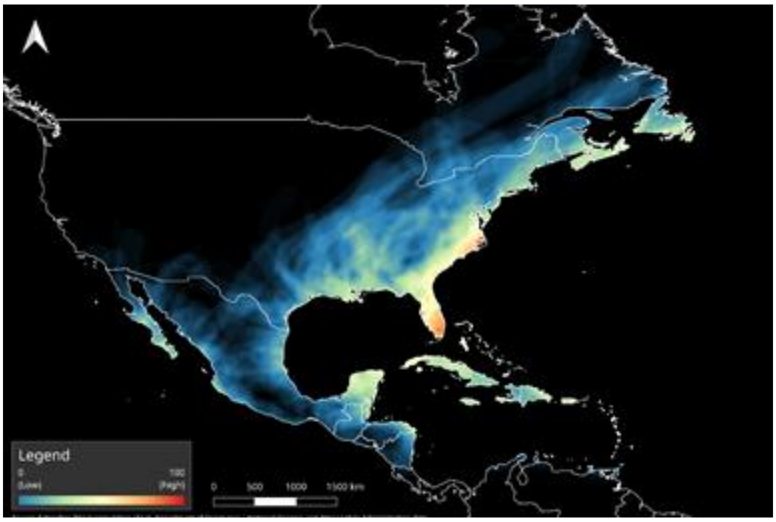
"Mangkhut could have caused a storm tide of 5. 7m, which would have inundated Central, Hong Kong's financial district. According to our mapping, storm surges could have reached past Des Voeux Road, which would have been extremely costly and disruptive."

Potential storm surge from Super Typhoon Mangkhut

Source: CWR, "New Atlantis", Sept 2019. Based on digital terrain model (5m) from the Lands Department of Hong Kong, Google Maps. Tide gauge location from the HKO website. Infographic from China Water Risk, copyright, all rights reserved.

Turning to another region highly vulnerable to climate change, Schroders' Data Insights Unit and Global Cities Team have recently undertaken an analysis of hurricane trajectories in the Atlantic. The work was part of an ongoing project to integrate climate change risk into models for evaluating urban property values. The image below shows a simulation of 100 years' worth of hurricane paths stacked on top of each other, highlighting the clear vulnerability of Florida and North Carolina to Hurricanes.

1919 – 2019 Scaled intensity of tropical storms



Source: Schroders Data Insights Unit

Gillian Tett, in an excellent recent article for the Financial Times, has also noted the vulnerability of Florida to increased flooding risk as rising sea levels and more frequent hurricanes increase the frequency and severity of property damage.

The article described the organisational barriers that exist in financial banking institutions to factoring in this information properly. This matters when flooding-related losses are expected to triple in Southern Florida over the coming decades, precisely the timeframe that corresponds to the duration of the typical new US mortgage. While the insurance industry will reprice its premiums relatively rapidly (annually) as flooding incidence and losses rise, homeowners will face rising costs to insure, assets values will come under pressure, and some may even need to be relocated/reconstructed.

Asset values often seem immune to emerging factors until a critical mass of participants recognise the new information and start factoring it into their investment decisions. At that point, there can be quite dramatic impacts on valuation. We are likely just at the beginning of a very long period in which climate change drivers have an increasing and significant effect on asset prices.

Science and Policy Developments

Investment needs to rise to curb climate change, and that means opportunities

On 20 September 2019, an estimated four million people around the world took to the streets to demand that their governments take immediate and decisive action to combat climate change. These were the largest environmental protests in history. And with further high-profile events lined up in the coming months, the pressure on politicians, companies and investors to take action to address climate change looks set to intensify.

So, why has climate change become such a hot topic this year?

We are in a "climate super year". The impact of human activity on the planet is now so severe that the scientific community is on the brink of introducing a new geological age. This is a key moment in our history, since in this new "Anthropocene" era (or age of humans) we as a species are now recognised as the single most powerful geological force on the planet, shaping the earth beneath us and the climate above us. It draws to an end the approximately 12,000-year Holocene era of stable and predictable climate, which allowed us to build the societies, economies, and trade networks we live and work in today.

The 2015 Paris Agreement aims to limit the increase in global average temperatures to well below 2°C above pre-industrial levels, ultimately striving to limit the global temperature rise to 1.5°C. While considerably negative, the consequences of a 1.5°C increase in global mean surface temperature (GMST) are understood to be manageable. However, research by the Intergovernmental Panel on Climate Change (IPCC) in 2019 concluded that the world's mean surface temperature has already increased by around 1°C, and by more than 1.5°C if we take into account temperature above land in isolation. As climate change investors, we see this discrepancy between where we are and where we ought to be as one of the most attractive investment opportunities of our time.

What progress has been made this year?

The recent global protests were part of the Fridays For Future school strike movement that was inspired by Swedish teenage climate activist Greta Thunberg. While global civil action peaked before the UN Climate Action Summit on September 23, the level of civil action has been steadily rising in the recent past. These actions range from public protests, votes in favour of parties supporting a more progressive climate agenda or a shift in private pension allocations towards more sustainable investments[1].

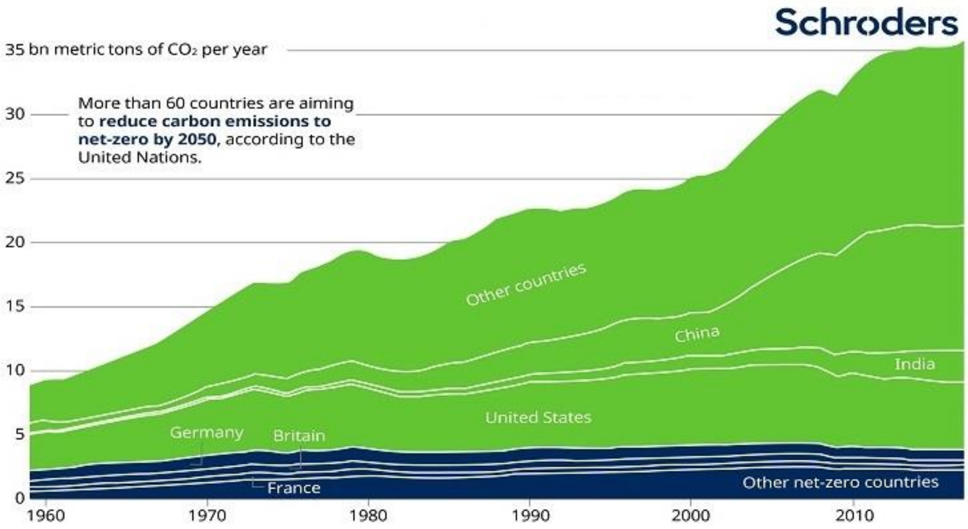
Following the summit, 77 countries committed to cutting greenhouse gases (GHGs) to net zero by 2050, with 70 announcing that they will boost their national action plans by 2020. While this could be perceived as a strong signal by policymakers, the share of global emissions actually captured by such commitments is still low, barely passing the 10% mark of global

[1] https://www.schroders.com/en/lu/professional-investor/insights/markets/what-the-prisoners-dilemma-tells-us-about-climate-change/

emissions (Figure 1[2]). The top three CO_2 emitting countries (China, USA, and India) have not yet committed to net zero targets.

In addition to country pledges, the summit also saw a significant number of private sector organisations commit to new targets aligned with the Paris agreement. These include some of the world's largest asset-owners directing more than $2 trillion in investments, 87 major companies, and around one third of the global banking sector, demonstrating the importance and opportunities associated with addressing climate change.

World's biggest emitters not on list of countries pledging "net-zero" by 2050



Source: New York Times. CS2027

Is this enough?

Some progress has been made and seemingly more stringent targets have been set. However, there is still a long way to go if we are to avoid a significant increase in global temperatures and the knock-on effects that this will have on the environment and, consequently, the global economy.

While Thunberg and her army of activists have done much to raise public awareness of the issue, achieving climate change targets is going to require radical changes to the global economy and the way we live our lives – a complete structural rewiring of the economy as we know it. While this includes first and foremost the transition from fossil fuels to renewable sources of energy, this will also require other fundamental shifts such as the electrification of our current economy including transportation[3] and more sustainable solutions for industries such as food[4] and fashion[5].

Why should climate change matter to investors?

Climate change is one of the defining themes of the 21st century and will affect all of us for decades to come. Companies providing the solutions needed to help us mitigate and adapt to climate change will by necessity require significant growth, posing attractive investment opportunities for investors in this space.

Ultimately, every company, and by extension every investor, will be affected by climate change in one way or the other. This is either as a result of the actions taken to achieve the targets set out in the Paris Agreement or through the physical impacts of rising temperatures. Seeking out those companies striving to transform and improve their business models to this new reality will generate attractive new investment opportunities for years to come.

[2] https://www.nytimes.com/interactive/2019/09/25/climate/un-net-zero-emissions.html
[3] https://www.schroders.com/en/lu/professional-investor/insights/markets/have-investors-missed-the-real-revolution-in-electric-vehicles/
[4] https://www.schroders.com/en/lu/professional-investor/insights/markets/greed-isnt-good-the-climate-challenges-posed-by-feeding-the-planet/
[5] https://www.schroders.com/en/lu/professional-investor/insights/markets/the-material-consequences-of-choosing-sustainable-fashion/

Strategy and outlook

Momentum behind the transition to a low carbon economy is picking up. Global policy makers, leaving the Federal US Government in the dust, continue to offer support and incentives for low emission infrastructure and technology investments. However the most crucial driver of acceleration has been the dramatic improvement in competitiveness of clean technology economics to the point where they require little or no subsidy to compete head to head with fossil fuel technologies. This means that the opportunity for growth is vast, as investments are made to displace combustion engine vehicles and fossil fuel power generation, and we expect the next 5 years to be a critical inflection point in that transition.

Current allocation (%)

Investment theme	% of fund
Energy Efficiency	23.4
Sustainable Transport	22.3
Clean Energy	20.9
Environmental Resources	16.0
Low-Carbon Leader	11.8
Other	3.7
Cash	1.9
Total	**100**

Source: Schroders, as at 30 September 2019

We continue to believe the automotive sector is set for very rapid and fundamental change, with an accelerated adoption of electric vehicles (EV), taking EV penetration up towards 25% of global new car sales in 10 years time. We have good and diversified exposure to this space through car makers, battery manufacturers, materials and component suppliers.

We also expect rapid adoption of renewable energy practices worldwide, particularly in solar but also in wind, where technological gains are helping make installation more affordable. We have selective exposure to higher quality investments in these areas, mindful of inherent industry volatility, but have raised position sizes in wind stocks in recent months as buying opportunities presented themselves.

The returns on energy efficiency investments continue to be financially compelling, though we have been using some of our long standing holdings exposed to this theme as funding sources for our increased holdings in sustainable transportation and clean energy related stocks. This theme includes lightweight materials, insulation, efficient housing, or more efficient use of energy by businesses.

We continue to believe that agriculture-related stocks remain cyclically attractive, after years of excess inventories and declining crop prices due to record harvests. We expect farmer incomes to be near a floor, but we are also cognisant, shorter-term, that recent trade war concerns are likely to dampen the trajectory for recovery next year.

There were no material trades over the month.

Investment philosophy

Tackling climate change will have a powerful impact on the global economy. Long-term policy goals to cut greenhouse gas emissions require nothing less than an industrial revolution to engineer a low-carbon economy. Adapting to some climate change that is already inevitable and mitigating further climate change through the transition to a low-carbon economy will therefore affect all industries over time. What is distinctive about our philosophy is our appreciation that the effects of climate change will be far-reaching and affect a great many more companies than those purely involved in renewable energy, energy efficiency and environmental resources. As such, we believe that a dynamic and evolving universe across all sectors is the best way to capture the investment opportunity.

Schroders' Global Climate Change Team has undertaken a fundamental analysis of every major sector of the economy in constructing our investment universe. We have created a comprehensive investment universe comprising approximately 600 stocks from developed and developing markets from which to select our best ideas. This broad investment universe also gives us the opportunity always to focus on great investment ideas, not just the stocks of the moment. Only the very best stock ideas make it into the portfolio, and we are not afraid to exclude whole sectors if they become overvalued.

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While the path to a low-carbon economy is predictable, we do not believe it is well understood, or discounted, by the equity market. As a result, the fast-changing growth and relative valuation opportunity that climate change presents to investors represents a significant opportunity for alpha generation. We believe that companies that recognise the threats and embrace the challenges early, or that form part of the solution to the problems linked to climate change, will ultimately outperform the broader global equities market.

Sustainability performance measures

Category	Measure	Description	Units	Fund	MSCI World
Environment	Carbon intensity	Scope 1&2 GHG emissions relative to each $1mn of sales	Tonnes of CO_2 per $mn sales	282	222
Environment	Energy efficiency policy	Does the company publish a policy to improve energy efficiency?	% companies with explicit policy	95%	87%
Environment	Emissions reduction policy	Does the company publish a policy to reduce GHG emissions?	% companies with explicit policy	86%	82%
Human rights	Human rights policy	Does the company publish a policy governing human rights standards of its operations?	% companies with explicit policy	71%	66%
Social	Employee fatalities	Employees killed during the year, while at work	Number of employees	2.6	2.7
Social	Employee community work program	Is there a program for employees to volunteer with community initiatives?	% companies with explicit program	84%	90%
Governance	Independent Board members	Percentage of independent directors on the Board	% of total directors who are independent	66%	75%
Governance	CEO-Chairman separation	Are the CEO and Chairman separate role (different people)?	% of companies with separate CEO and Chairman	45%	46%
Governance	Board gender diversity	Percentage of women on the Board	Average percentage of women on Board	20%	24%

Summary (Right indicates stronger performance)

Source: Thomson Reuters ASSET 4. Data represents the latest available data as at 30 June 2019. Note: All of the analysis shown is based on company-disclosed information collected and provided by Thomson Reuters. We recognise that some judgement is applied in determining these specific datapoints (for example, whether a broad Corporate Social Responsibility policy which refers to energy efficiency constitutes an energy efficiency policy). We have calculated the weighted average for each metric for the fund and benchmark. For further details on each metric, please refer to the Additional information on sustainability performance measures on the following page. The fund is not managed with reference to a benchmark but its performance may be measured against one or more.

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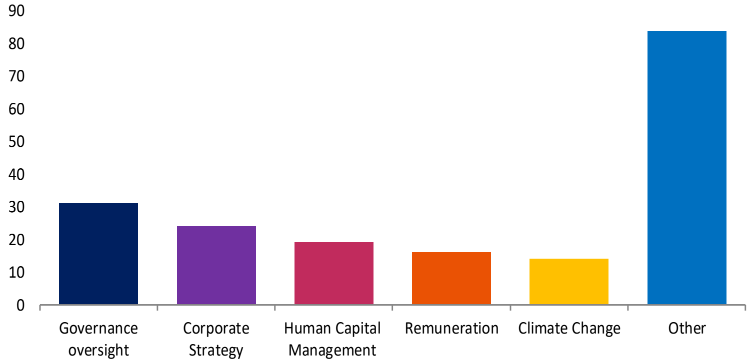
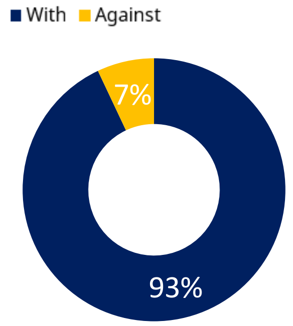
Stewardship activity

Most significant engagements by topic



Votes cast with or against management



Source: Schroders. Rolling 3-year data as at 30 June 2019.

Our Schroders sustainability accreditation helps investors distinguish how ESG factors are considered across our products. The fund has been awarded an Integrated accreditation. ESG factors are embedded into the investment process and can be clearly evidenced. There is a strong commitment to stewardship and company engagement. The fund has been awarded a Screened accreditation. The fund has additional stock/security restrictions (not necessarily for ethical reasons) beyond cluster munitions and anti-personnel mines. For further information about our Schroders Sustainability Accreditation please visit www.schroders.lu/sustainabilityaccreditation.

Risk Considerations: The capital is not guaranteed. Investments denominated in a currency other than that of the share-class may not be hedged. The market movements between those currencies will impact the share-class. The Fund will not hedge its market risk in a down cycle. The value of the fund will move similarly to the markets. Changes in China's political, legal, economic or tax policies could cause losses or higher costs for the fund.

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