Climate Change Risk Management in Financial Services

Laying the Foundations for Outperformance
Executive Summary

Climate change has long been on the radar of regulators, policymakers, non-governmental organisations (NGOs) and sustainable investors. It may affect individual companies’ financial resilience as well as the stability of the overall financial system. Climate change risks can result from the physical consequences of future climatic conditions as well as from the transition to a low carbon economy. Another focus area is the role the financial sector is expected to play in financing the green transition given the huge amount of investment required.

These considerations have led to increased scrutiny regarding how financial institutions address climate change related risks and how well positioned they are to take advantage of the opportunities. In April 2019, the Prudential Regulation Authority (PRA) published supervisory statement (SS3/19) which outlined their expectations regarding financial institutions’ governance, risk management, scenario analysis and disclosure of climate change risks. Three months later, the UK government published its Green Finance Strategy, stressing the role of the financial sector in supporting the green transition. In October, the Financial Conduct Authority (FCA) further published a Feedback Statement focussing on transparency of climate change risks and opportunities, their incorporation into decision making and the availability and quality of green finance products.

Coupled with heightening regulatory expectations, there is also rising pressure from climate conscious investors for financial institutions to improve their climate change disclosures in line with the recommendations of Financial Stability Board led Task Force on Climate-related Financial Disclosures (TCFD). Financial institutions need to better demonstrate how they are incorporating climate risk into their risk management and decision making to respond to these developments.

Climate change risk is different

Uncertainties around the impact of climate change may limit the ability of financial institutions to fully prepare. However, this makes the role of effective climate change risk management more, not less, critical. Strong climate change risk management will help to navigate the long term impacts even where climate risks are not currently perceived as material or that there is too much uncertainty for specific actions to be justified. Having an effective climate risk management should not only be about managing the financial impact. It should also provide valuable insights about how company’s strategy may need to adapt to the new risks and opportunities that climate change may create.

Overall, strong climate risk management should help companies to improve new business risk selection and to reposition themselves strategically, which will ultimately lead to a stronger risk return profile over the medium term. In addition, such a company should perform better at times of climate related disruption as it will be better placed to take advantage of any recovery following such a disruption.

If financial institutions are committed to effective enterprise risk management, they will need to develop new ways of approaching and addressing climate change risks, which exhibit a number of distinct features, including:

- The characteristics of many traditional risks are likely to alter due to climate change. For example, relying on the existence of home insurance to mitigate flood risk in mortgage lending may become insufficient if properties or locations become uninsurable at reasonable cost;
- The fact that climate change risk drivers may not appear material today should not lead to false comfort as future regulation and technological developments and climatic changes may significantly increase their materiality;
- Uncertainty requires continuous review of which risk drivers need to be monitored and managed;
- Climate change is a source of a systemic risk as it can affect negatively many different exposures at the same time leading to significant accumulations;
- There is a propensity for sudden shocks, which may catch unaware those who believe there is ample time to adapt given the long-term horizon of climate change.

Laying the foundation for outperformance

Incorporating climate change risks into the existing risk management framework is likely to be the best way to ensure that the impact of climate change is properly considered in decision making. For many financial institutions, this will be challenging and the process may take many years. Each firm must therefore carefully define its priorities and development path.

Financial institutions should start with the following steps to lay the foundation for future outperformance:

- Ensure adequate coverage of and accountability for climate change at board and executive levels;
- Recognise the unique characteristics and challenges climate change presents for risk management;
- Start early rather than wait for the best practices to emerge and uncertainties of impact to reduce – uncertainty will never go away and best practice will continuously advance;
- Identify and explore the most material climate drivers for the current business model but be mindful that this will evolve over time;
- Develop all elements of climate change risk management simultaneously as they are interconnected;
- Outline the roadmap and investments required to develop the required data infrastructure, which is likely to be the biggest challenge for most financial institutions;
- Approach climate change with the mindset that it can help to improve risk selection now, which should then translate in better future risk adjusted performance;
- Consider the many opportunities climate change will present - climate change risk management can provide the tools and insights to take advantage of them.
Understanding climate change risks and opportunities

All financial institutions (banks, insurers, asset manager) are likely to be affected by climate change. Climate change may affect various exposures, risk types and operations (see Figure 1). The magnitude and nature of climate change impacts will depend not only on the type of the institution but also on its specific exposure profile. Most material exposure will likely arise from their assets, with magnitude depending on their specific sectoral and geographic exposure as well as firm-specific consideration. In addition, insurers will be exposed through their liabilities, in particular from natural catastrophe insurance and liability protection for companies which could be sued for causing climate change related damages. Even if individual impact may appear immaterial, when aggregated across the whole company it could become sizeable.

New risk drivers, not new risk types

Climate change related risks are often not new categories of risk, rather they act as new risk drivers which transform the characteristics of existing risks and affect how those risks impact financial institutions. Climate change developments will therefore necessitate changes in how financial institutions manage and mitigate existing risks.

For example, while the need to consider the impact of flood risk on a mortgage book is not new, climate change may lead to more severe flooding. Therefore, the focus should be to understand how flood risk in the future will be different from the present. Based on that companies should consider whether any adjustments to their risk management may be required to ensure that any changes to the nature and magnitude of future flood risk is properly captured.

Also, it is important to incorporate new, non-direct risks that may be introduced as a consequence of the actions taken to address climate change (e.g. move to electric cars increases demand for rare metals from conflict regions, building flood defences to protect a major city may increase flood risk in neighbouring towns).

The social implications arising from the transition to low carbon economy could be particularly important. Closing down of high carbon companies, especially in areas with limited alternative employment, may significantly weaken the local economy and in turn the social environment. This could present a reputational risk to the investors and creditors of companies taking such actions, in particular if they are perceived as being somehow responsible for the decision. In addition, financial institutions must consider whether the deterioration in the local area could have implications to the credit and financial profiles of any assets they have in the affected area, e.g. mortgage lending and SME financing.

At the same time, there may be an upside for financial institutions investing in affected areas as the concept of “Just Transition” – ensuring the transition to low carbon economy is fair to those communities – is becoming an increasingly important consideration for sustainable development and investment. In addition to any reputational benefits, there could be potential financial benefits for investing there due to the likely lower cost base compared to neighbouring regions.

The timing and magnitude of impact of many climate change related drivers remain uncertain. While some may not appear to be material at present, this could change abruptly. Firstly, despite the Paris Climate Agreement, the world is still not fully committed to limiting global warming to 2°C. Even countries which have strong commitments to decarbonise, such as the UK, are finding it difficult to meet their short-term targets. The required scale of change is vast. The combination of huge challenges, uncertain government policies and slow progress makes it difficult to plan. Potentially, different companies can take very different views on the type and speed of transition. In particular, some may decide to delay taking actions and therefore expose themselves to considerable financial impact if the 2°C aligned transition occurs.

Despite our aspirations, we may still end up in a much warmer world, which will present a very different mix of risks. Even if the world takes a path to limit global warming to 2°C, the manner of transition could have a materially different impact on financial institutions. The transition is likely to be bumpy with possible sudden changes to regulation, emergence of new technological developments and occurrence of extreme climatic events. Such events could lead to material one-off impacts.

Figure 1: Climate change presents new opportunities as well as new risks

Source: Parker Fitzgerald analysis
Also, we should not forget that while our understanding of climate change has advanced, climate modelling is still being improved with increasing resolution and through incorporating second order impacts and climatic tipping points that have been hard to model. As such, there could still be surprises: for example that 2°C global warming may indicate more dramatic climatic changes than currently expected, with, for instance, substantially higher risk of water scarcity in some key population and agricultural areas. All of these elements will increase the overall risk to the financial system and subsequently to financial institutions.

Not everything can be controlled

The biggest risk for the financial sector is that a climate change related event could trigger a macroeconomic shock. This could be a major natural catastrophe linked to climate change or financial shock triggered by a sudden climate policy change. If the impact is sufficiently large it could destabilise social order, political systems and financial markets across the world leading to financial losses being a multiple of the financial impact of the original climate change event. Even those with best in class climate change risk management would be affected due to the interconnectedness of the financial system.

A key to reduce the risk of a sudden change in climate policy is for the policymakers to commit to a specific long term decarbonisation plan. Climate policy which outlines clearly how the transition to a low carbon economy will occur will allow all stakeholders to prepare which will reduce the uncertainty of the transition to all parties. Financial institutions should engage with policymakers and stress the importance of clear climate policy to assist them in managing the consequences of climate change.
Incorporating climate change risks into the existing risk management framework should be the best way to ensure that the impact of climate change is properly considered in the risk management of a financial institution (see Figure 2). This means considering how climate change can impact each separate risk category (market, credit, underwriting etc.), and subsequently incorporating it into risk management tools and processes for that risk. If a climate change risk driver is not integrated but managed separately, the danger is that material interactions with the traditional risks are missed, jeopardising the effectiveness of the whole risk management system. Even when climate risk is fully incorporated into existing risk management systems, special attention should be given to how exposures to different climate change risk drivers may aggregate and how best to manage these accumulations.

Actions taken to manage one climate change related risk may affect, often in unforeseen ways, other risks. For example, divesting fossil fuel related assets to invest in wind energy will reduce exposure to transitional risks but could increase exposure to physical climate risks (i.e. the impact of climate change on wind). It is important that such potential interactions are properly understood. When optimising the overall risk/return profile of the company, any risk management actions may require taking a view on the trade-offs between different risk drivers.

Understanding the inherent uncertainty in projections of climate risk drivers is critical and it should be explicitly reflected in decision making. Up to a certain level, the bigger the uncertainty the more prudence is required in decision making; above that level – delaying taking decisions until more information is available may be the best option.

Good risk management starts with culture. If an institution’s culture is focused too exclusively on short term financial metrics, it is unlikely that climate change risks will be effectively integrated into decision making process. As for any aspect of risk management, while having a strong framework is a must, its effectiveness will depend of how well it is incorporated within the organisation. To ensure embeddedness, climate change considerations need to be established particularly in companies’ governance, risk appetite and risk policies.

### Governance

The most fundamental step in integrating climate change risks is the establishment of governance around how climate change is considered in the company. Climate change issues should be regularly reviewed by the board and it should be stipulated how climate change is incorporated in decision making. Having climate change related targets in remuneration is one way for ensuring that climate change holds an important role in decision making. Ultimately, the best evidence for strong governance is the occurrence of limited number of controversies and breaches of policies and limits, and exceptions applied.

![Figure 2: Primary actions to incorporate climate change drivers into the risk management framework](source: Parker Fitzgerald analysis)
Risk appetite

Equally important is that climate change risk is incorporated into risk appetite. The most direct way to do this is if climate change is reflected in the capital modelling. In this way, any capital related risk metric included in the risk appetite statement will implicitly incorporate climate change. For many risks, it may be relatively straightforward to reflect climate change in capital requirements. For example, if internal credit ratings explicitly consider climate change related risks, the credit risk model will implicitly capture climate change.

We recognise that for many financial institutions it may not be possible to quickly and robustly incorporate climate change in their models. Alternative approaches for reflecting climate change in risk appetite could be via simple climate exposure metrics such as exposure to companies in high carbon intensive sectors or assets with high exposure to specific types of physical risk. Due to their simplicity, such metrics may not be very risk sensitive, which will limit their application in decision making. Nevertheless, simple metrics can still be suitable to steer the high-level climate change exposure in line with company’s strategy, for example if it intends to reduce its financing of high carbon assets. Given the systemic nature of climate change, it will be appropriate to have in addition an overarching climate change related appetite aiming to limit the overall financial impact of climate change shocks. Prescribed climate change scenarios could be used to measure such an impact, however, performing such scenarios is not easy and not all companies may have the necessary capabilities to perform the quantification.

Risk policies

An important step in incorporating climate change in the existing risk framework is to ensure that all relevant risk policies consider potential climate change effects. As climate change risk will often materialise as a new driver of an existing risk, it may be necessary to ensure that in all risk policies there is a requirement that relevant climate change drivers are factored in.

However, there is one aspect which may require a new type of a consideration – how climate change related risks accumulate, given that its systemic nature could lead to several developments simultaneously affecting the company. While there may be a lot of similarities with processes covering macroeconomic scenario analysis, a separate climate change specific framework may be necessary to reflect the distinctive characteristics of climate change related shock scenarios.

Risk identification

The starting point is to establish a register of the full range of climate change risk drivers (see Figure 3). Given the uncertainty associated with climate change risks, it is critical that the register is regularly updated to reflect any new developments, such as regulatory changes or technological breakthroughs. Next, there should be a mapping exercise to establish the potential “climate impacts”, i.e. for each climate change risk driver to determine which elements of the balance sheet and business activities may be impacted.
The impact could be financial (i.e. affecting the balance sheet or earnings projections), strategic (i.e. affecting the ability to generate business) or both. The differentiation of risks between financial and strategic should reference the expected timeframe for risk materialisation compared to the behavioural life of the impacted exposure (see Figure 4). Afterwards, the company needs to assess which of those “impacts” are material, ideally through a quantitative criteria. For those risk drivers which are identified as not yet material, there should be a process to monitor how they will develop in the future and identify a materiality threshold for when to incorporate them explicitly in risk management.

Risk Controls

For those drivers which are material, financial institutions will need to select appropriate tools to measure the impact. This will require a wide range of tools given the need to assess many different exposures and risk drivers. For example, it will be necessary to have tools to assess the increased probability of default and loss given default of a mortgage book due to changes in energy efficiency requirements and flood risk.

Those tools will need to rely on output of models projecting the developments of key climate change risk drivers. For example, an increase in carbon tax could be a major transitional risk driver. So, if companies consider the impact of a shadow carbon price in their investment and lending decisions, they will need tools allowing them to project future carbon prices under different climate policy scenarios.

With regards to physical risk, it will be necessary for financial institutions to understand changes in their risk exposure. For example, they need to identify geographical areas where there could be a significant increase in flooding due to both higher sea levels and increased precipitation. For that financial institutions will need to use flood risk models which explicitly reflect climate change projections. Such information will allow them to judge whether the cost of insurance could increase significantly or even if some assets become uninsurable. These considerations may impact key metrics driving investment and lending decisions.

Many of these tools will require input from external models, for example energy projections, climate risk models, natural catastrophe (see Figure 5). When selecting the models companies need to consider the wide variety of cost and depth of such tools. Also, the variety and quality of those external models are likely to continuously develop, requiring companies to regularly review their model selection, taking into account the additional effort and cost of changing them. It is also important to understand the limitations and uncertainties of the tools used for decision making. One way to deal with these uncertainties is to consider the results from a range of tools and models. Even if the right tools existed, a constraint could be the quality of available exposure data.

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Source: Parker Fitzgerald analysis
Risk limits

The existence of adequate risk limit system is critical to ensure that the risk appetite and high level strategic targets are cascaded effectively. The risk limits should be set relative to the long term direction of the company, and not just reflect the current exposure. Given the uncertainty, having risk limits based on multiple metrics may be appropriate to allow better understanding and ability to manage the exposure. However, it should be recognised that using multiple metrics increases the possibility of breaches, so the risk management framework may need to have greater tolerance for certain types of breaches. Anyway, as for any other risks, companies need to have a robust framework to take action in response to any limit breaches.

Some of the metrics could be quite simple, for example limiting total financing to specific high carbon sectors or limiting exposure to real estate on the coast. However, the most useful metrics are those which translate climate change risks into financial impact and those which allow for finer risk discrimination. For example, they could quantify the financial impact if there is a sudden increase in a carbon price, the financial impact of extreme climatic events on the property book, taking into account expected insurance recoveries.

Risk monitoring and reporting

The dissemination of climate change risk information (metrics, limits, targets, risk developments) throughout the company is critical for the effective operation of climate change risk management. Internal reporting should be regular and provide sufficient information for decision makers to safeguard compliance with risk policies and limits. Given the importance of ICAAP/ORSA and the board risk report for the overall strategic and risk management of a company, it is particularly important that the critical climate risk information and developments are incorporated in those documents.

Capital management

It is important to consider all implications of climate change in capital management given that climate change may have the most significant impact in the tail risk. Financial institutions should consider whether and how climate change needs to be reflected in some of the extreme scenarios driving their capital requirements. While the perception is that the most material impact may occur over medium to long term, a climate change related shock with material near term impact, e.g. one triggered by a large increase in a carbon tax or a major drought, cannot be ruled out. It is therefore necessary to assess whether the likelihood of such a shock is outside of the confidence level of the capital requirements. If any of them are considered as more likely than the above thresholds, it needs to establish whether the capital requirements will require adjustments to reflect this.

More generally, as many of the parameters in a capital model are based on historic data, firms will need to be review whether changes are necessary to capture forward looking climate drivers. This may be most relevant in respect of high carbon exposures, for example fossil fuel companies. Also, the low carbon transition is creating new assets with relatively short history such as subsidy-free renewable energy. For these assets, an assessment of whether any new risks factors are adequately reflected should be conducted.

Overall, consideration must be given to whether capital requirements should be adjusted for green assets compared to assets with similar risk profile; negative due to the short term history; positive as the transition may improve their risk profile. This issue may be expedited if regulators conclude that it is appropriate to have an explicit green supporting factor, reducing capital requirements for “green” exposures.

Scenario analysis

Given its long-term nature, another important way to understand the implications of climate change is through performing climate change scenario analysis. Most external climate change related requirements (including SS3/19 and TCFD) reference scenario analysis as an important tool for assessing exposure to climate change. Scenario analysis is useful as it can show the complex interactions between different drivers and exposures. However, scenario analysis is not forecasting. While it is informative about what the future may hold, it still has limited use for decision making as it may only represent one or a few trajectories out of a wide range of possible pathways. Nevertheless, it could provide useful insights about the strategic direction of a financial institution. Scenario analysis could indicate the relative growth prospects of different sectors and highlight which ones could face headwinds. Also, it can help illustrate the expected changes in future climates.

Over time, we expect that the uncertainties will reduce with the implementation of national climate policies and improved climate science. So, in the medium term, scenario analysis should become more useful for decision making. Also, this is likely to raise regulators and investors’ expectations about the quality of disclosures financial institutions will make on the impact of climate change. A useful case study in how this may play out is the recent trend in regulatory stress testing in the macro-economic domain, as exemplified by EBA, PRA stress testing exercises and the CCAR framework in the US. What starts as a light touch and simplistic exercise may rapidly evolve into a robust, comprehensive and operationally challenging set of requirements.
The strategic side of climate risk management

Climate change is creating new strategic risks and opportunities for the finance industry. Risk management insights can help steer the strategic response. One important element is to help management move away from high risk exposures, especially if those climate change risks are not yet recognised or priced in. The second is to help understand new areas of market demand, for which new expertise may need to be built and products developed.

In order to inform the strategic direction, the potential impact of climate change should be considered. For example in:

- **Financial planning** - whether projected earnings could be impacted by climate related costs;
- **Capital management** – whether it is appropriate to incorporate stress and scenario analyses reflecting the potential impact of climate change;
- **Product development** – whether there are any relevant climate change risks which need to be reflected in the product design and pricing;
- **Long-term strategic direction** – what new capabilities are required to take advantage of opportunities arising from the transition to low carbon economy;
- **Major strategic decisions** – when a financial institution undertakes strategic transactions (i.e. a large acquisition) to consider how climate change aspects may affect the strategic and financial profile of that transaction.

**Climate opportunities and the risks arising from them**

The new business opportunities arising from climate change should be one of the key strategic considerations. These are going to be driven firstly by the need to finance the new technologies and infrastructure required for the low carbon transition, e.g., renewable energy, green buildings, electric cars, new battery technologies, flood defences. At the same time there are new financing instruments (green and sustainability bonds/loans) being developed to finance such sectors by offering preferential pricing relative to comparable instruments. Also, there is an increasing demand by climate conscious clients for new financial products with strong green or sustainability credentials to ensure that their savings go into companies which will contribute to the transition to low carbon economy and are resilient to climate risk.

Increasing demand for green financial assets can also help financial institutions with strong green credentials to increase their investor base by attracting investors with explicit green mandates. In particular, they can issue green bonds backed by the green assets they have financed (e.g. renewable energy, green mortgages). The increased investor base could potentially reduce their own cost of capital.

Having effective risk management around the design of green products is critical given that financial institutions may lack necessary expertise in some of these new products and not yet have the requisite data, pricing processes and systems to support them. Pricing may be particularly challenging if the necessary data is not be available.

While prudence may be appropriate, it needs to be traded off against being too cautious and missing out on the business opportunities.

In addition, it is critical that any new risks introduced by the new products are recognised. A key such risk is mis-selling of the “greenness” of products if customers are misled about their green credentials. This is a risk because the market for green products may become established before the infrastructure required to evidence that the lineage of the financial flows resulting from the product are adequately green. Therefore, it is critical that both product documentation and marketing materials do not create the impression that the product has stronger green credentials than it actually has. There are many examples of how misleading customers have led to very costly mis-selling scandals to the financial industry. So, this is an area where effective risk management may prevent destroying significant shareholder value.

Such mis-selling risk is likely to increase in the near future as and consumer groups place greater scrutiny on sustainability and green themed investment products given the rapid increase in new products and funds being offered. The FCA recently stated that it will challenge companies where they see potential ‘greenwashing’ and take appropriate actions to prevent consumers being misled.

It is likely that common standards on what constitutes a green product will emerge, potentially on the back of the EU Green taxonomies, which the FCA has indicated that it may consider. In the short term such standards may lead to the re-design of products and changes to processes and systems to support them. At the same time, it should help reduce the mis-selling risk in the long term if it provides the legal clarity around what “green” is. In the meantime, financial institutions should focus on the rigour behind the green criteria used in their products, i.e. is its environmental impact sufficiently different from standard products to justify the label.

**Addressing external scrutiny**

Financial institutions’ role and exposure to climate change has long been under scrutiny. It started with pressure from NGOs, which was usually the main driver behind climate change related actions taken by financial institutions, such as the divestment from coal. Whilst NGO pressure will continue into the future, there is now also increasing scrutiny from regulators and investors.

Reputational risk could arise if NGO demands are not met but this must be weighed against the financial rationale of a specific action demanded by NGOs. Appropriate risk tools can help inform the difficult trade offs between financial rationale and the potential consequences from reputational damage, for example when asked to divest from oil & gas companies. Such reputational risk could increase if a company takes a position different from the industry leaders. To manage this risk, financial institutions should communicate clearly the reasons for their decisions.
Another NGO focus is companies’ voting record on climate change issues and engagement with high carbon companies. If a company decides to vote against climate change related resolutions, again, it should clearly communicate the rationale for it.

Investors are also exerting pressure as they (often themselves financial institutions) are asked to assess and disclose their own climate risk. The main focus of the pressure is likely to be on the quality of external climate change reporting, in particular to provide sufficient detail in line with TCFD. While many financial institutions have expressed support for TCFD and some have started disclosing some climate information, the general view is that the reporting is not yet detailed enough to help investors understand the institutions’ exposure to climate change (TCFD: 2019 Status Report). Pressure on climate change disclosure is also coming from the UK government, which stated in its Green Finance Strategy that it expects that all listed companies and large asset owners will disclose in line with the TCFD recommendations by 2022.

However, the most important scrutiny is coming from regulators. The number of expected climate and sustainability related regulations is increasing fast, in particular, those likely to originate from the EU Sustainable Finance Action Plan.

In the UK the main new regulatory initiative is SS3/19. While the letter of the requirements is demanding, we expect the PRA to be patient so long as financial institutions demonstrate continuous progress towards compliance. At the same time the PRA has indicated that it will continue to develop its approach in this area. To support it, the PRA together with the FCA established Climate Financial Risk Forum.

The Forum will publish guidance on the integration of climate-related factors into decision making and develop relevant analytical tools and techniques to help companies’ progress. Essentially, it will be a continuous development process for many financial institutions given that the climate change risk landscape may change frequently requiring readjustments in the tools. It is important that financial institutions recognise the need to constantly adapt to the changing environment.

Pressure is also coming from the FCA. Similar to the PRA they expect regulated financial services firms to integrate consideration of material climate change risks and opportunities into their business, risk and investment decisions. Another focus area for them is disclosures to ensure that issuers provide markets with reliable and consistent information on their exposure to material climate change risks and opportunities. FCA will publish a consultation paper proposing new disclosure rules for certain issuers aligned with the TCFD’s recommendations on a ‘comply or explain’ basis. Also, it will clarify existing disclosure obligations relating to climate change risks.

The FCA’s third focus area is ensuring that consumers have access to green finance products and services and that they receive appropriate information and advice to support their investment decisions.

Overall, in order to demonstrate externally how financial institutions are addressing climate change, they may make various disclosures and external commitments. This carries risks as any breaches of publicly stated climate change related targets and policies could become another source of reputational damage. To minimise it, it is critical that all targets and policies are well communicated and understood throughout the companies.

Unlocking long-term value

Financial institutions may find it challenging to respond to climate change, given their limited specialist expertise in this domain and the complex company-wide implications of the issue. As a consequence firms may be tempted to do the minimum required. Instead, a company should use the pressure arising from the new regulations and disclosure requirements to trigger improvements in climate change risk management aiming to achieve industry leading standards. This should allow the company to outperform peers, both in terms of resilience to climate risk and their ability to take advantage of the new opportunities.

To achieve this, climate change must be embedded into the management framework from the start. There are many different aspects required to manage climate risks successfully: identifying climate change risk drivers and their developments, understanding company’s exposure to those drivers, developing tools to manage the exposure, gaining expertise in new business areas. As they are all interdependent, it is critical that a company ensures that all are being developed in parallel. Whilst major investment is inevitable, starting the process early is likely to be the most cost effective approach.
Starting the journey

As the process of fully implementing climate change in risk management is likely to take several years, it is important to decide on the priorities which will drive the initial developments. While in the long term it is best to incorporate climate change risk considerations within the risk management framework, for some companies this may be too great a stretch at the beginning. For such companies, it may be useful to initially have a simple stand-alone climate change risk approach. Such an approach could focus on identifying the most material risk drivers and quantifying their potential impact. Also, such a framework should help to identify the high level strategic risks and opportunities arising from climate change.

At the start, there are number of factors and developments which should be considered when determining priority areas, the level of integration and the speed of development:

• Initially, the regulatory requirements as outlined by SS3/19 are key. Over time, risk management considerations should also play an important role;
• There is an expectation by the UK government that all listed companies and large asset owners should report on TCFD by 2022;
• For both SS3/19 and TCFD, the focus is demonstrating appropriate governance around assessing the impact of climate change and initial, even if only high-level, observations on the potential impact;
• Even though the bulk of climate change impacts are not expected to hit financial institutions in the short term, some impacts may materialise sooner. Identifying and managing the most susceptible exposures should be a priority;
• In the short term the biggest impact may stem from reputational damage, e.g. arising from an NGO campaign to stop financing or insuring controversial sectors and companies. Companies should have a process to assess these risk and clear communication strategies;
• The transition to a low carbon economy is presenting many new opportunities and financial institutions may need to react quickly to develop strong propositions in their key market segments.

The initial aim is to raise the importance of looking into climate change within the company. Meeting the key requirements of SS3/19 provides a good starting point, as the PRA expects companies to define clear roles and responsibilities for the board and its relevant sub-committees and appoint an existing Senior Management Function holder to be responsible for identifying and managing the financial risks from climate change. Even if at the beginning climate change is perceived as a low priority, discussions at such committees should prompt high-level analyses to identify potential exposures using simple tools and industry research. Such initial analyses should focus on the most exposed areas and establish a regular monitoring of climate change risk developments to spot when a driver could become material.

Considering and assessing the impact of climate change will be valuable even if the outcome is that climate change is not yet a material issue. This will provide a stronger basis for justifying such conclusions to external stakeholders. Climate change risk observations should be included in the group risk report to raise its profile within the organisation and to provide evidence to the regulator that climate change is taken seriously.

Risk appetite is critical for both risk management and strategic decision making, so how climate change is incorporated here will have a major impact on how it is considered throughout the organisation. At the beginning it will be useful to include high-level metrics with short-term and medium-term targets reflecting the initial findings from any climate change exposure analyses and external research, e.g. reducing exposure to high carbon sectors.

Reputational risk arising from climate change related controversies deserves a special attention as these could be amongst the most damaging climate change related impacts in the short term. It is critical that companies have clear communication strategy about their climate change related goals and a process in place to quickly respond and address any controversies and shortcomings relative to peers.

Green Opportunities

Early identification of climate change related opportunities may be even more important than assessing risk exposures as the opportunities are likely to have a bigger impact on the strategic direction of the company in the short to medium term. The additional benefit is that, by taking advantage of green opportunities, materiality of the exposures to climate change risk factors is likely to reduce over time as the balance of high carbon assets to green assets reduces.

By examining results from scenario analysis and considering external research, companies should assess the type and scale of new opportunities that may arise from the transition to low carbon economy, e.g. financing renewable energy and green buildings, offering green sustainability focussed investment products. As these new opportunities will require new skills and data processes (e.g. to identify and monitor whether assets meet the target green criteria) companies should develop plans to start addressing any gaps in their capabilities. At the same time companies should consider any new risks introduced through such new products, in particular, the risk of greenwashing.
At the beginning of the journey it is important to recognise the shortcomings of some widely used tools, so that these limitations are reflected in how they are used and inform the agenda for future improvements:

- As performing scenario analysis is required by many external initiatives, there is the expectation that scenario analysis will become one of the main tools for climate change risk and strategic management. There are several relatively easy to apply tools available at the moment, which are useful to provide high level picture of alignment with 2°C global warming. However, the modelling behind those tools is not sufficiently granular to allow them to be used for risk management;

- Historical carbon emissions are often used for measuring exposure to transitional climate change risk. While they are a great indicator to measure the current carbon intensity of a company, they do not incorporate any expected changes in the future reflecting planned decarbonisation actions. Also, they do not provide insights about the capacity for emission reductions relative to peers. In addition, scope 3 emissions (i.e. emissions of their supply chains) represents the largest share for many companies but often they are not disclosed because they are typically hard to calculate. Furthermore, because of the calculation difficulties, there are inconsistencies between companies in the published scope 3 emissions. All those issues limit the usefulness of carbon metrics for decision making;

- Assessing financial institutions’ counterparties exposure to physical risk is particularly hard due to the highly granular data required to perform an accurate assessment. As a result, high level risk maps are often used but they are typically too crude to identify the most highly exposed counterparties. Furthermore, for a complete physical risk assessment information about companies’ vulnerabilities and adaptation measures are also required. This level of detail is particularly hard to obtain and incorporate into the assessment;

- Sector based risk benchmarking. It is true that a sector is one of the most important factors in determining a company’s exposure to climate change risks. However, there is a significant variability of exposure to climate change within each sector. Even within a highly exposed sector there could be some companies which will be relatively immune because of management’s actions and strategic response. Such companies cannot be identified by using sector benchmarks alone.

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**Figure 6: Your top five priorities**

1. Identify the top 5-10 most material risk drivers based on literature review and expert judgement;
2. Use stress tests to perform an initial quantification of climate change exposure for portfolios considered to be most exposed, based on expert judgement;
3. Determine materiality thresholds above which climate exposures should be actively managed;
4. Consider performing long term scenario analysis (based on off-the-shelf tools) to identify the biggest strategic issues: exposures to reduce, new opportunities to explore;
5. Identify the major gaps in data and infrastructure, which need to be overcome to improve climate change risk management.
Miroslav Petkov
Expert – Climate Risk

Miroslav leads the Parker Fitzgerald's climate change related consulting propositions. Prior to joining Parker Fitzgerald, Miroslav was a Director in S&P Global, working in Financial Services Ratings Group and Sustainable Finance Team, where he was a Head of the EMEA ERM team and a Head of Financial Services Environmental and Climate Risk Research.

Miroslav has been a member of several industry working groups and initiatives focussing on sustainable finance and climate change including PRA Physical Climate Change Risk Working Group, EFRAG led European Lab Project Task Force on Climate-related Reporting, EBRD led Advancing TCFD Recommendations for Physical Climate Risk initiative, ClimateWise Physical Risk framework. He has authored several articles on the impact of climate change and natural catastrophes on the rating profiles of financial services and corporates, and insurers' risk management, economic capital modelling and natural catastrophe modelling.

He is an actuary and has MSc in Mathematics.

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The financial sector must transform its management of climate risks, as changes in climate policies, new technologies and growing physical risks prompt reassessments of the values of most financial assets. This report explores how banks can integrate climate risks into their optimisation of risk-adjusted performance.

**IBOR Transition: A Strategic Response**
IBOR Transition could create considerable conduct, reputational, and legal risks. This presents significant challenges for market participants, the greatest of which is the scale of change across all core business lines and functions.

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Tech giants pose existential challenges to incumbent banks. Yet as banks seek new sources of radical efficiency gains, their dependence on technology providers – BigTechs included – will also heighten. This report explores the emerging dilemma around how banks should address challenges from ‘frenemies’ at the doorstep.

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**IBOR Transition: A Strategic Response**
IBOR Transition could create considerable conduct, reputational, and legal risks. This presents significant challenges for market participants, the greatest of which is the scale of change across all core business lines and functions.

**Safeguarding Digital Transformation**
Digital is re-setting banking economics and the mechanism through which risks emerge, grow and spread. The net outcome is heightened vulnerability to conduct risks and financial crime, greater inter-dependency between financial and non-financial risks.

**From Cyber Security to Operational Resilience**
This report examines the cyber risks facing financial services, the current landscape and future directions of cyber regulations, and the business responses needed to safeguard the resilience of financial institutions and systems.

**FinTech as Brexit-Proof Appeal**
FinTech adds to London’s Brexit-proof appeal. Technology will be the dominant driver of change in global financial services, and that of the new risk landscape. The City is in the prime position to address these risks and reap the benefits of digital finance.
About Parker Fitzgerald

Parker Fitzgerald, now part of Accenture, is an award-winning strategic advisor and consulting partner to the world’s leading financial institutions.

Headquartered in London, our global network of senior industry practitioners, technical experts and change specialists is trusted by the leaders of the world’s largest financial institutions, regulatory authorities and government agencies.

We are experts in all areas of financial and non-financial risk, regulation and financial technology. We provide independent advice, assurance and market-leading solutions to help our clients navigate their most critical issues, reduce complexity and improve their overall risk-adjusted performance.

Our unparalleled knowledge and experience in financial services, world-class thinking and excellence in delivery has seen Parker Fitzgerald recognised as one of the most dynamic and progressive consulting firms in Europe.

Areas of expertise include:

- Risk Management
- Financial Regulation
- Banking Technology
- Digital Innovation
- Cybersecurity
- Financial Crime
- Strategic Change
- Transaction Support