



Integrating climate risks in the risk management framework

Introduction

Financial institutions are at the heart of the economy and play a key role in financing the transition towards a more sustainable society. Politicians have formulated ambitions to reduce carbon emissions by reorienting capital flows towards carbon-neutral investments. But asset management companies, insurance firms, pension funds and banks also face financial and operational risks themselves from climate change. In this light, it is no surprise that recently, the banking supervisor in the European Union focused on the integration of climate risk management in the enterprise risk management framework. It can be expected that other companies in the financial services sector will have to follow suit. What can financial institutions (hereafter: FI) do now to ensure the integration of climate risks in their risk management processes? This article gives recommendations on what risk professionals in the financial services sector can do to timely and properly identify, assess, mitigate and monitor climate-related risks, based on recent supervisory and regulatory publications, guidance papers and market practices (see below for an overview of these papers and how they touch the risk management framework).

We have seen that adequately responding to climate-related risks is a comprehensive exercise for FIs, which starts with setting the institution's strategy and determining the risk appetite, and extends to governance and culture, risk management policies and procedures, and required disclosures. For risk management, integrating climate-relating risks means a comprehensive re-assessment of the risk management framework, meaning that FIs need to identify and assess climate-related risks in a timely manner to be able to monitor them and, if needed, mitigate them. In addition, FIs need to have an enterprise-wide and well-documented view of the impact of climate-related risks on other risk types. They should map climate risks as drivers of prudential risk types. To be integrated into stress testing frameworks to ensure capital and liquidity adequacy, climate risks require quantification and the need to oversee a time horizon that is sufficiently long. FIs also need to include climate risks when categorising clients in terms of their risk profiles.

In this article, we focus on the integration of climate risks in FIs existing risk management frameworks, aligned with the institution's strategy and forthcoming targets. We have seen that this is challenging in practice. Hence, we recommend actionable steps to start with, around four inherent functions of risk management: risk identification, risk assessment, risk mitigation and risk monitoring. This framework constitutes an iterative risk management cycle which serves as an appropriate basis to understand which actions may be required to manage material climate-related risks effectively.



Such enterprise-wide integration allows financial institutions to go beyond compliance and enables them to leverage opportunities (for more, see sustainable finance as a strategic opportunity). For example, operating in a carbon-neutral way can drive long-term value for financial institutions. Climate factors are in this context often seen within the realm of ESG, Environmental, Social and Governance. Reality is that currently, market practices as well as standards and regulations focus mostly around climate-related risk factors (as part of the ‘E’ component). Therefore, the focus of this article is on climate-related risks. (For a more detailed description of the ESG risks, see: Six key challenges for financial institutions to deal with ESG risks.)

Multi-point impact of climate risks

Physical risks

Physical climate risks caused by extreme weather events or chronic changes to the climate can lead to damage assets in, for example, the agricultural sector. FI’s may face losses if they are exposed to activities, via loans, investments or financial products. For instance, insurance companies may face increased underwriting risk due to higher than expected claims on damaged assets. Banks may have to deal with elevated credit risks as counterparties might be unable to repay their loans.

Transition risks

In addition to the physical risks, FI’s also need to take the energy transition and its potential risks and opportunities into account. Transition risks can stem from regulation aimed at climate change mitigation, from new technologies enabling low-carbon production, or from an increased demand for sustainable products and services. And such trends will affect existing business models of counterparties. Market risks may materialise, as the energy transition will negatively impact carbon-intensive industries, through the write-downs of assets. This increases through the potential for a deprivation of an asset portfolio, especially if there is concentration in a single sector or area. In addition, transition risks could lead to adverse changes in financial markets, for example in commodity prices. Such credit and market losses may negatively impact an institution’s capital and liquidity adequacy. In addition, FIs may incur losses due to not being compliant with regulation, resulting in fines and sanctions. Reputational risk is another issue, as customers may hold institutions responsible for lending to or investing in counterparties that negatively impact the environment and decide to end their business relation.

To fully understand the impact of climate-related risks on the risk management framework, and to understand the view of regulators, supervisors and other relevant organisations for financial markets on how these risks should be embedded within risk management, we have looked into a broad range of frameworks, papers and legislation. We mainly investigate how the different papers touch the risk management framework. See the table below for the overview. Based on these papers, we carefully formulated eight recommendations (two per stage of the risk management framework) on the integration of climate-related risks in the risk management framework.

Table 1:

Papers and publications on the management of climate-related risks and their relation to the risk management framework

Legislation/frame-work/ guidelines/ initiative	Scope and objective	How it touches the risk management framework
Task Force on Climate-related Financial Disclosure (TCFD) Guidance on Risk Management Integration and Disclosure	<i>Recommendations on uniform disclosures on climate-related financial risks to enable effective climate-related reporting for all sectors. The 2020 guidance includes recommendations tied to governance, strategy, risk management, and metrics and targets that are supported by key climate-related financial disclosures - referred to as recommended disclosures. Supplemental guidance is provided for the financial sector to assist. The Task Force also developed supplemental guidance to provide additional context for the financial sector when preparing disclosures consistent with the TCFD recommendations. A key element of the Task Force was the development of climate-related disclosures that "would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks."</i>	<i>Includes recommendations on how to integrate climate risks into strategy, governance and ambitions settings, with concrete recommendations for methodologies and tools for risk identification (e.g. heat mapping) and risk assessment (e.g. scenario analysis).</i>
Science Based Targets initiative (SBTI)	<i>Initiative that prescribes committing companies from all sectors CO2 emission reduction target pathways in line with the 1.5 degrees scenario.</i>	<i>Determines the CO2 emission reduction pathway for committed companies, hence it identifies (transition) risks as well as sets the strategy and risk appetite.</i>
Sustainable Finance Disclosure Regulation (SFDR)	<i>Regulation targeted at financial markets participants on integration of sustainability risks and opportunities, with the aim to integrate ESG in companies' strategies. This includes disclosure of sustainability risks on entity-level and product-level and 'due diligence' policies. Sustainability risks need to become part of remuneration policies.</i>	<i>Increased transparency due to more detailed and consistent disclosures on sustainability risks will in the future also lead to more accurate risk identification and risk monitoring.</i>
Non-Financial Reporting Directive (NFRD), Guidelines 2019	<i>The 2014 Directive prescribes rules on disclosures of non-financial and diversity information (including environmental information) for large-public interest companies, including banks and insurance companies. The (non-binding) 2019 supplement guidelines for disclosing climate-related risks and opportunities are further detailed out, with a direct link with TCFD. The supplement introduces the double materiality concept: climate-related information should include both the principal risks to the development, performance and position of the company resulting from climate change, and the principal risks of a negative impact on the climate resulting from the company's activities. The proposed disclosures in these guidelines reflect both these risk perspectives.</i>	<i>The guidelines for climate risk disclosures clarify climate risk triggers, which enable risk identification, monitoring and mitigation. In the future, risk identification and risk monitoring will be facilitated by increased transparency due to increased data availability.</i>
Corporate Sustainability Reporting Directive (CSRD)	<i>The CSRD is a proposed Directive which amends the existing reporting requirements of the NFRD, including an extension of the scope to all large companies and a specification of more detailed reporting requirements in line with mandatory EU sustainability reporting standards which build on existing frameworks.</i>	<i>The climate reporting requirements will increase data availability and data reliability as a result of mandatory limited assurance, and thereby enable climate risk identification and monitoring.</i>
Principles for Responsible Investment (PRI)	<i>Six investment principles describing possible actions for investors, with the aim of incorporating ESG factors into investment and ownership decisions, policies and practices and disclosures. Signatories have the obligation to report on the progress of PRI implementation in their annual reporting.</i>	<i>Enables risk mitigation through the integration of climate issues into investment analysis and decision-making processes.</i>
EU Taxonomy for sustainable activities	<i>Uniform EU-wide criteria for determining whether an economic activity is environmentally sustainable. The taxonomy sets mandatory requirements companies subject to NFRD to disclose on how and to what extent their activities are associated with environmentally sustainable economic activities. The main KPIs for financial companies (banks, investment firms, asset managers, insurers/reinsurers) relate to the proportion of taxonomy-aligned economic activities in their financial activities, such as lending, investment and insurance.</i>	<i>The disclosure of Taxonomy-aligned proportion of activities enables transparency and comparison of companies and investment portfolios, which enables risk identification and risk mitigation (through transparent investment decisions).</i>
ECB Guide on climate-related and environmental risks	<i>ECB expectations relating to climate-related and environmental risk management and disclosure for banks (also expected for insurers and asset managers), serving as basis for supervisory dialogue.</i>	<i>Explains ECBs ambitions, target and timelines for banks for risk identification (expectation #1 and 2), risk monitoring (expectation #4 relates to the risk appetite framework) and the overall risk management framework (expectation #7) per prudential risk type (expectation #7 - 12).</i>
European Banking Authority (EBA) Report on management and supervision of ESG risks for credit institutions and investment firms	<i>Report presenting EBA's understanding of ESG risks for credit institutions and investment firms, with definitions of ESG factors, ESG risks and transmission channels, indicators, metrics and methods to evaluate ESG risks, ESG risk management recommendations and ESG risk supervision recommendations.</i>	<i>Recommendations on risk monitoring (through e.g. the risk appetite and forthcoming risk limits), risk identification, risk assessment (by e.g. climate stress testing and ESG evaluations of counterparties) and risk mitigation (through e.g. customer engagement or excluding policies) of climate-related risks</i>

Risk monitoring is neither the beginning nor the end of the risk management cycle. Climate-related risks and their impact on current market positions and future investments are to be monitored on an ongoing basis. This requires a full update of the Risk Appetite Framework (RAF) and collection of (granular) risk data on climate factors.

Recommendation 1:

Calibrate the Risk Appetite Framework ,monitor portfolios on climate-related risks

The appetite for all risks identified as material to an organisation needs to be delimited. Only then, firms can steer and determine how much risk they can and cannot take. The risk appetite framework (RAF), defined in conjunction with strategy setting and business planning, allows FIs in the monitoring phase to assess their current risk profiles against their appetites. As the ECB defines climate-related as drivers of existing risk types (in particular credit, operational, market and liquidity risk), climate-related indicators need to be mapped to existing risk categories within the RAF. To further calibrate the RAF, FI's should use quantitative Key Risk Indicators (KRI) as much as possible, such as credit risk acceptance parameters, cascaded down to exposure, counterparty and portfolio level. KRIs could be a combination of backward-looking and forward-looking indicators that take the business model into account. In addition, this should be supported by limits (e.g. to investing in certain high-risk sectors) and checkpoints. Follow-up processes within the risk management framework should be in place in case these limits are breached (see risk mitigation). Setting limits to investment decisions could lead to a reassessment of the composition of the asset portfolio and to lower concentration risks. One of the main difficulties is to reconcile the long-term horizon that characterises climate-related risks with the typical capital planning time horizons of FIs.

Recommendation 2:

Collect climate risk data

To monitor climate-related risks adequately, FIs should have appropriate data at their disposal. Climate data extends to both qualitative information, such as sustainability policies, as well as quantitative metrics, for example figures on carbon emissions. Availability and quality of climate risk data are among the key challenges for financial institutions. The EBA states that FI's should start with taking remedial action with respect to the data gaps. Sourcing data from external vendors is an attractive potential option, for example for data on climate-related extreme weather events. This data could then be combined with information on the geolocation of clients and issuers, which is challenging when considering the fact that this data is needed for all components within a counterparty's legal structure. Another challenge is that data institutions need to fully leverage existing contact moments with clients and issuers. Banks, for instance, are recommended by the EBA to actively engage with borrowers at onboarding, loan origination and revision stages. Similarly, insurers can source data from policyholders. Asset managers can explore possibilities to receive information from corporations as their shareholders. Climate-risk data can then be used to conduct a targeted due diligence assessment of the sustainability risk profile as part of the non-financial analysis of a counterparty.

Risk identification

As part of their risk identification process, FIs should integrate climate risks in their risk taxonomy as drivers of existing risk types. For example, counterparties may have to deal with higher costs in the future resulting from increased taxes on carbon emissions. This then translates for an FI into a financial risk. In order to get to a comprehensive risk taxonomy, we recommend taking the following actions, which combine a top-down (recommendation 3) and bottom-up (recommendation 4) approach.

Recommendation 3:

Screen portfolios using heat maps

Heat maps, segmenting portfolios across locations and sectors, are recommended by the ECB, TCFD and SBTi as a useful tool to quickly and efficiently screen portfolios for climate-risk exposure. Heat maps indicate which investments or loans are more vulnerable to transition or physical risks, by focusing on inherent sector sensitivities to climate-related risks. The sensitivity of sectors and/or locations is determined based on vulnerability factors. Examples include for physical risks the reliance on natural resources and secure and continuous supply of power, and for transition the impact of emissions costs on production costs. Sectors or locations that have high sensitivity to climate-risk factors and in which there is a considerable exposure can be selected for further (scenario) analysis. The heat mapping output determines which sectors are to be prioritised in terms of risk mitigation, and can serve as input for the RAF calibration.

Recommendation 4:

Use climate-related scenarios to identify risks to the business model

Climate-related risk data needs to be translated into expectations for financial performance (see also risk assessment). Both TCFD and the ECB strongly recommended to use climate scenarios for this. Scenario analysis helps to identify emerging risk drivers in the short and long run and is particularly useful due to the uncertainty of the future course of climate change. Traditional risk identification methodologies rely on historical data, which will not allow for the potential impact of climate change, as there is no or limited precedent that is reflected in the historical data. Ideally, scenarios cover the conventional business planning cycle (3-5 years) as well as longer term horizons (5+ years). The results of these scenario analyses are relevant input for strategic decision-making and risk assessments. Insurers, under Solvency-II, need to use climate scenarios for the ORSA, and similarly, under IORP-II, pension funds are to do the same for the ORA.

Risk assessment

There are multiple ways to quantify climate-related factors to enable an informative risk assessment. In this section, the focus is on assessment methodologies on two different levels: portfolio-level (recommendation 5) and company-level (recommendation 6).

Recommendation 5:

Extend current stress testing frameworks with climate scenarios

Stress testing with climate scenarios brings the future climatic environment to today's balance sheets. Due to the dynamic nature of scenarios, it allows for interaction between sectors, economic and climate variables. Climate scenarios with temperature pathways can be applied, but FIs can also model event-based scenarios that reflect policy shocks, technology shocks or shocks related to changing consumer behavior impacting demand for certain products and services. Supervisors are gradually developing pilot climate stress testing frameworks, however, currently, there is no single universally accepted methodology. Most commonly, pre-defined climate scenarios, based on certain temperature pathways are applied, issued by for example the Intergovernmental Panel on Climate Change. In 2020, the EBA did the first EU-wide stress testing exercise for a sample of 29 volunteer banks. Bank data was mapped to different classification approaches, including the EU taxonomy and scenario analysis based on a joint EBA/ECB tool was used to model transmission mechanisms. The main challenge appeared the lack of granular disclosures on transition strategies and greenhouse gas emissions, which are needed to assess climate risk accurately. The Bank of England (BoE) launched in June its climate stress test for both banks and insurers, with a sample of general insurers that collectively represent 60% of the market. The methodology applies three scenarios of early, late and no policy action, with a focus on invested assets and insurance liabilities.

Recommendation 6:

Calibrate climate risk ratings at company-level

This so-called exposure method can be used to complement standard risk assessment methods with a climate-related due diligence. ESG, and specifically sustainability, ratings are to be calibrated at company level. For the loan portfolio, this method creates an opportunity for banks to engage in a dialogue with individual counterparties in the loan origination process. For the asset manager's portfolio, such ratings can be used to integrate the assessment of climate-related risks of financial products and their fund counterparties. There are several ESG ratings and evaluation sources available, created by specialised rating agencies, traditional rating agencies or (ESG) data providers. However, applying multiple ratings from different agencies currently leads to discrepancies in outcomes. The different methodologies behind the various ESG rating vendors assess ESG risks heterogeneously. Increasing the effectiveness of the exposure method requires standardisation of the ESG risks and their underlying factors across industries and firms, which is currently in progress by the Sustainability Accounting Standards Board. In the meantime, FI's should add counterparty data they source themselves to their climate-related risk assessments of their counterparties.

Risk mitigation

Which mitigation measures are most effective, depends on the source of the risk. If climate change mainly impacts credit risk, guarantees and collateral can be considered. For market risk mitigation, diversification of portfolios with financial instruments or hedging, thereby reducing concentration risks, is advisable. To mitigate operational risks, FIs can impose obligatory insurance on, for instance, counterparties that are disproportionately exposed to extreme weather events. Underwriting risk can be mitigated by adjusting insurance policies' pricing strategies or by reinsurance. However, due to the multipoint impact of ESG risks, institutions need to combine different mitigation strategies. Here, two specific corrective measures are highlighted.

Recommendation 7:

Adjust pricing strategies

A way to mitigate climate-related risks is to account for them in pricing strategies. Climate-related risks may affect policyholders and their claims for example in the case of transport or liability insurance. Insurers can amend their underwriting policies by increasing the price of insurance contracts in order to mitigate these risks. Banks can differentiate loan pricing or the maximum loan amount that is extended based on climate risk exposure. For example, in retail banking, mortgage clients with collateral that does not meet the energy efficiency standards can be subjected to a lower LtV limit. Corporate clients in the manufacturing industry that do not take sufficient measures to limit carbon emissions can be subjected to a higher interest rate or other disadvantageous loan conditions. FIs can adjust their pricing strategy by adopting a two-step approach, starting with a traditional model-driven credit risk or underwriting risk-based price and then applying a climate overlay.

Recommendation 8:

Integrate climate-related risk assessment in due diligence process

FIs will have to include climate-related factors in the conditions for counterparty acceptance. Such an assessment extends to physical and transitional risks the counterparty is exposed to, but also to potential reputational risks. This results in a climate-risk rating for each client (for example red, amber, green). Clients with red ratings are rejected unless additional approval of a specialised climate risk officer is provided. Amber clients can be actively assisted by FIs with the development of an action plan and designated funding to implement such a plan. Approval or decline of a loan application or investment will hence partially depend on the counterparty's sustainability performance. Institutions could also choose to introduce climate factors in their investment criteria, directed at certain sectors or regions that are, for example, particularly vulnerable to a transition towards a more sustainable economy or more prone to corruption or money laundering. This is where risk management is the starting point of a more active role for FIs in the energy transition: applying a climate overlay on a (credit) risk assessment points out which counterparties in a portfolio need advice and support in becoming future-proof, and FIs can then hence bring this to the real economy.

The Way Forward

Adopting the 8 recommendations will help FIs to integrate climate-related risks into their risk management frameworks. This will in turn enable them to maintain or even improve the long-term resilience of their business models, which would lead to FIs playing the key role that is expected of them in financing the transition towards a more sustainable society.

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