

CLIMATE-RISK IMPLICATIONS



SYLVIE GOULARD

Second Deputy Governor,
Banque de France

Climate risks, new risks?

“Climate change is a source of risks that is fundamentally different from the financial risks investors and financial regulators are used to managing” (Bolton et al, 2020) Assessing them calls for new risk models based forward-looking analysis fed with original data. Assessment of physical risks requires very granular geographical analysis of potentially extreme climate events, as well as specific hypotheses regarding how impacts in one place could cascade to downstream activities and locations. Assessment of transition risks calls for developing scenarios of sectorial adjustments at granular level, foreseeing which technologies might prevail in a low-

carbon economy, and which countries, regions or firms may win or lose from the diffusion of such technologies.

Accounting for ESG risks also calls for better identifying how specific events that were traditionally not or only poorly assessed by financial agents such as rating agencies could have material financial impact. For instance, firms that do not respect basic social or environmental standards will lose clients and could face costly lawsuits with adverse impacts on market valuation and credit rating. In addition, accounting for climate-related and ESG risks might call for integrating them into macroeconomic and financial models. For instance, the low-carbon transition could have significant impacts not only on GDP, but also on other macroeconomic and financial variables such as the rate of interest or the price of assets. The transition's impacts will also exhibit significant sectorial differences and strong distributional effects. These require that assumptions in models, such as indicating the incidence of a carbon price or the use of proceeds of a carbon tax, be made explicit.

In order to size climate-related financial risks, the Banque de France and the French supervisory authority (ACPR) have run a pioneering stress-testing exercise involving banks and insurers. Launched in July 2020, the objectives are threefold: i) assessing over a long-term horizon the impact on financial stability of disorderly transition pathways as well as a 'hot house world' scenario, relying on NGFS reference scenarios; ii) understanding the strategic and mitigation reactions of financial institutions; iii)

and finally, unveiling the main obstacles to a robust assessment of these risks in terms of modelling challenges and data gaps. Significant challenges remain. First, financial institutions need adequate information to differentiate dynamically when assessing counter parties and geographies. They need, for instance, to be able to assess future vulnerability and not only existing vulnerability. Corporate disclosure such as the TCFD at the global level and the revision of non-financial reporting directive in the EU are critical steps.

Second, as climate change has barely started to materialize, climate change-related risks are not historical but modelled events meaning that using traditional methods reliant on historical data is impossible. Accordingly, the stress testing exercise is a starting point for building more appropriate models.

Third, any modelled projection over such long-term horizon needs to be considered carefully. This means questioning the traditional use of supervisory stress-test tools. Quantitative analyses need to be complemented with an assessment of the strategic resilience of supervised entities against climate change.

Finally, the climate challenge is collective and global. Being successful alone is an illusion. Cooperation should prevail, between actors and across borders. The political changes in the US as well as the coming COP 26 represent a great opportunity to make collective progress, improve risk assessment and mitigation, in particular through a better disclosure.



FRANCOIS-LOUIS MICHAUD

Executive Director, European Banking
Authority (EBA)

Building a regulatory and supervisory framework enhanced for ESG risks

In recent years, the financial sector and policy-makers have stepped up their efforts to tackle risks stemming from environmental, social and governance factors. These, and climate-related risks in particular – raise considerable challenges: their far-reaching impact, irreversibility, and dependency on short-term actions have the potential to materialize into financial risks at many levels and over multiple, including long-

term, time horizons. Financial firms cannot ignore these risks. Neither can they underestimate the role they can play in facilitating a transition towards a more sustainable environment.

Traditional risk assessment tools and metrics were not developed to cater for the specificities of ESG risks in the first place. Challenges related to data and methodologies are many. Nonetheless, financial institutions need to build their long-term risk, strategic and operational decision-making processes to embed ESG considerations. The banking regulatory and supervisory framework is actively adapting to integrate ESG factors and risks into disclosure, prudential rules and supervisory practices, at the global, European, and national levels.

The EBA is actively contributing to this, in Basel discussions, but also by directly supporting the EU Commission work, building on the EU taxonomy. It has started embedding ESG risks into the European regulatory framework by following a sequence whereby key metrics and disclosure¹ are available to support strategy and risk management.² Enhanced transparency and disclosures of simple and comparable metrics informing on institutions' strategies, such as a Green Asset Ratio, should allow to gradually get to a better picture of the current situation and on the way forward.

In spring 2021 the EBA will publish the findings of its 2020 pilot exercise on climate risk. The outcome of the pilot exercise represents the starting point for a more comprehensive discussion on how to embed climate risk in the stress test framework in the coming years and will support the EBA in shaping

methodological aspects and data requirements. While climate risk stress test and scenario analyses differ from solvency stress test in terms of objectives and framework, they can provide valuable information to financial firms institutions for their own assessments of vulnerabilities and the identification of remediating actions.

The EBA is developing key metrics to support the disclosure and management of ESG risks.

Stabilizing the referential and its metrics is of the essence if financial firms are to integrate ESG considerations into business strategies, risk management and governance. Any adjustments to prudential treatment will come later, based on appropriate evidence.

Addressing ESG risks requires a long-term forward-looking strategic approach. The ambitious EU sustainable finance agenda paves the way for the development of such an approach, bringing together scientific evidence, societal expectations, public policies, and sound and risk-based prudential standards that take into account the impact of ESG factors and facilitate meeting expectations around financing the transition to a carbon neutral economy. Data and methodologies will keep improving. Some first tools have recently been developed and we can now start implementing them.

1. See EBA press release (<https://www.eba.europa.eu/eba-launches-public-consultation-draft-technical-standards-pillar-3-disclosures-esg-risks>).

2. See EBA Discussion Paper ([https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Discussions/2021/Discussion Paper on management and supervision of ESG risks for credit institutions and investment firms/935496/2020-11-02 ESG Discussion Paper.pdf](https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Discussions/2021/Discussion%20Paper%20on%20management%20and%20supervision%20of%20ESG%20risks%20for%20credit%20institutions%20and%20investment%20firms/935496/2020-11-02%20ESG%20Discussion%20Paper.pdf)).



WILLEM EVERS

Head of Department,
Supervisory Policy,
De Nederlandsche Bank

Climate-risk implications for the EU financial sector

Climate-risks are high on the agenda of the financial sector and its policymakers. As central bank and prudential supervisor, De Nederlandsche Bank (DNB) is committed to contribute to sustainable prosperity. We are convinced that sustainable economic growth is only possible when we avoid harmful effects on the environment.

DNB's sustainable finance strategy for its supervisory tasks focuses on integrating sustainability-related risks in our

supervisory regulations, methodologies and examinations. In a broader context, and leveraging our role as central bank, DNB aims to fuel the public debate by contributing facts and insights about the energy transition and its effects on the economy.

DNB's approach on the integration of climate-related risks in our supervisory practice currently focuses on Data and disclosure, Risk management, and Governance and strategy – which follows the framework of the Taskforce on Climate-related Financial Disclosure. Taking a look at where we are at integrating climate-related risks in the regulatory framework, notable good news is that the need for embedding (financial) risks related to climate change in the prudential regulatory framework is widely recognized.

Encouraged by the expanding Network for Greening the Financial System, there's a growing number of standard setters and regulators taking a serious look at the effects climate change will have on our societies at large and how the risks stemming from these developments should be dealt with within the financial industry. However, amending a prudential framework typically requires quantitative evidence – which is, as of yet, lacking. Collecting such quantitative evidence is hampered by some specific characteristics of climate-related risks, which makes it challenging to adequately reflect their impact in a prudential regulatory framework.

First, whereas a forward-looking approach is key, there is an obvious uncertainty related to the size and timing of climate risks. Second, historical data are of very little use in making climate risk projections. Third, we lack expertise and experience in translating climate risks to financial institutions' financial risks. Furthermore, physical climate risks are subject to sizeable geographical differences, making it hard to generalize the impact of these risks. Fifth, there is a clear interrelation between climate-risks and other environmental risks (eg biodiversity loss), which may amplify their impact on financial risks. This interaction further complicates the design of risk differentials. Finally, the time horizon for climate-related risks tends to be longer than time horizons traditionally applied to prudential standards.

So, what is the way forward? Identifying and mitigating climate risks will require taking a fresh and perhaps non-traditional look at our regulatory toolkit. As the future is not in the data yet, it may be worthwhile exploring tools designed for non-cyclical and long-term events, such as concentration limits and/or targeted risk buffers, along with climate stress testing and scenario analysis.

Having said that, financial market players should not wait for all the regulations, conditions and perfect data sets to be in place before they can have impact. They, too, have a social responsibility to support a sustainable economy.



**ÅSA
LARSSON**

Executive director,
Finansinspektionen

Climate risks seen from a supervisory perspective

One problem in defining specificities of climate and other ESG related risks is to differentiate and untangle climate risks from other types of risks handled by each financial institute.

So I'd say that the specificities for these types of risks are all about challenges – in the timeframe of the risks, uncertainty

of the impact of the risk and also the uncertainty of how this risk can spread to other areas of the financial sector and to society. Not to mention the challenge in determining the size.... This is a fairly new risk area and there is a lot we do not know yet.

There is a lot of published information on sustainability and also the way insurers and other financial companies provide this information to consumers, to investors and to supervisors. In many cases, companies use different types of voluntary standards and frameworks that do specify what and how information should be compiled and published.

This is in itself a challenge since it makes it difficult to assess how companies are financially affected by various sustainability factors. We also still have different disclosure requirements in different regions in the world.

Climate risk - what's in it for a supervisor?

That means that a potential client, an investor or a researcher looking for information will find different data and answers depending on where he or she is situated.

Climate changes and the transition to a low-carbon economy include many and major changes over a long period

of time in complex ecological and social systems. It is, as we all know, very difficult to predict the future. Longer time horizons increase the uncertainty and the elements of genuine uncertainty, where risks are particularly difficult to translate into probabilities, are significant.

When uncertain, it is important to work along the lines of scenario analysis. Such analyses can help to illuminate and accept uncertainty. It can also increase the ability to handle unexpected outcomes.

One way to calculate transition risk in financial companies is to analyse how compatible the exposures are with national or global climate goals. A particularly relevant climate scenario is that of the limited global heating.

We see that more and more investors request information on the extent to which companies' operations in a forward-looking perspective are compatible with objectives of the Paris Agreement and how they are affected by the Paris Agreement's commitment to limit the global warming.

My contribution to the panel will be about the importance of data, in order to measure, compare and understand the risks related to sustainability and climate changes. I will also give a few examples of activities and tools in this risk area my authority (the Swedish FSA) has initiated.



**EMILIE
MAZZACURATI**

Global Head of Climate Solutions,
Moody's ESG Solutions Group

The true costs of climate change

Climate risk combines the characteristics of a black swan event - hard to predict, highly disruptive - with the inevitability of a systemic shift that we all know will happen. Mark Carney called this tension between the ineluctability of climate change and the limited ability of financial markets to anticipate and integrate long-term factors the "Tragedy of the Horizon."

Climate risk is also defined by dynamic uncertainty: the future will be what we make of it, through our collective policy and economic decisions. Yet some of the changes underway may not be reversible, bringing another layer of uncertainty.

Melting ice sheet and sea level rise, for example, may already be beyond the reach of policy intervention, while scientists are still working to understand the physics of the processes underway. The physical changes, combined with broader environmental

pressures – unsustainable natural resources consumption, water stress, biodiversity loss, and their ripple effects -- point to existential threats to human societies that our financial system does not yet know how to fully process.

These characteristics of climate change will mold the shape and features of risk assessment tools. Maps become an essential asset, as climate risk is fundamentally geospatial. To assess their risk, lenders and investors need to understand the spatial distribution of their portfolio – a challenge for many institutions. Climate risk assessments should be forward-looking and as granular as the science will allow; yet that granularity may still not be enough to inform investments and risk mitigation as global climate models perform best at the regional scale.

Pervasive and multifaceted, climate risk should be mainstreamed and integrated into established risk

management tools and models. To bridge the knowledge gap between disciplines, there will need to be collaboration between economists, financial modelers and climate scientists.

Financial institutions should embrace the complexity of climate impacts on economies and financial systems and be ready to work with a range of models to understand impacts across asset classes, sectors and geographies. They also need to recognize and understand the assumptions, limitations, and uncertainties of the models.

Early efforts to assess climate risks in bank and investment portfolios shed

light on the progress and limitations of the exercise. With adequate location and sector data, financial institutions can readily identify core exposure in their portfolios.

The costs of physical risk are grossly underestimated due to data limitations.

While the costs of transition risk are fairly well understood, the costs of physical risk are grossly underestimated

due to data limitations, raising the specter of potentially flawed decision making. The discrepancy comes from a lack of historical data on economic and financial weather-related losses, as well as the limitations of climate models in predicting non-linear changes, and the difficulty of modeling second and third order impacts on human and ecological systems.

Addressing these fundamental data and modeling limitations is a critical to incorporating the true costs of climate change in financial and economic decisions.



ALAN SMITH

Senior Advisor
Climate and ESG Risk,
HSBC Holdings plc

The 8Cs of effective climate risk management

Climate Risk is the defining risk management challenge and strategic opportunity for the EU Financial Sector for the generation to come. The Sector has the responsibility to play a leadership role in supporting the transition to the low carbon economy and society by 2050.

This will require that the boards, executives, regulators and investors in financial sector firms are effective at the 8Cs of Climate Risk – Clients; Communities; Culture and Capabilities; Calculations; Controls; Conduct; Contracts; and Communication.

Clients must be central and supported along the entire journey to the Net Zero world, through advice in building credible transition pathway plans and via the provision of financing to enable them to be executed;

Communities of all stakeholders, in particular the vulnerable and marginalised should be engaged, consulted and considered to ensure the Sector plays its role in a just transition so that the Green New Deal works for all;

Culture and capabilities need to be nurtured and enhanced to build financial sector firms with the right climate skills and mind-sets essential to ensuring that economies are built back better for a sustainable future and that green jobs of worth and dignity are created in support of the low carbon economy;

The 8Cs of climate risk management will be essential to EU Financial Sector being effective in supporting the transition to the low carbon economy.

Calculations underpinning climate measurement must be robust. Climate is the ultimate big data area and the calculations for scenarios, climate risk models and warming potential must be developed with rigour to inform data-driven decisions;

Controls need to strong around climate data, disclosures and risk identification. Given all that is at stake, decisions must be evidence based and strong controls must underpin all the processes

generating them to ensure that this is the case;

Conduct and treating all customers fairly must be a top priority for EU Financial Sector firms. Climate conduct programmes must be in place from the outset with the overarching goal to protect the climate vulnerable and prevent “green-lining” exclusion in credit decisions;

Contracts need to fully capture and comply with the legal requirements of climate change now enshrined in legislation across the EU. As Nationally Determined Contributions get encoded into laws and regulations, they need to be embedded into contractual relationships.

Finally, Communication must be transparent and ongoing to all stakeholders - the Board, investors, regulators, employees, NGOs, civil society.

As financial sector firms across the EU make real their climate commitments, the context in which they execute them will evolve and it is essential to be communicating transparently and constructively at all stages to all interested parties. The ultimate goal of addressing climate change is to keep average global warming to no more than 1.5 °C by 2050.

To achieve that, many of the necessary foundational actions need to be put in place and commenced over the decade which has just started, through to 2030. To be successful, we must get The 8Cs of Climate Risk right.



JOHN SCOTT

Head of Sustainability Risk,
Zurich Insurance Company Ltd

ESG & climate-risk: implications for the financial sector and EU policy

Despite the pandemic crisis, environmental risks dominate the risk landscape according to the WEF Global Risks Report, for which Zurich is a strategic partner, with 4 out of the 5 top risks being environmental.

The most common perception of climate change risks is the 'physical risks' (melting polar ice caps, sea level rise, retreating glaciers and changes in severe weather patterns). Demands for rapid reductions in greenhouse gas emissions aligned with the Paris Agreement

are coming from scientists, climate activists, civil society and increasingly the finance sector. This is driving climate related 'transition risks' as the global economy transforms, moving towards a net zero global economy. New low-carbon technologies are changing investor preferences and consumer sentiment. All of which requires new policy frameworks to influence supply and demand of low carbon products / services and successfully deliver the EU Green Deal.

This transformation comes with risks on a shorter time frame than the physical risks of climate change. The economic and societal impact of the "just" transition will be felt sooner than many might expect. The public and private sectors must act now and focus on developing strategies that build resilience and adapt to climate change. Only then will they be able to take steps that drive the low-carbon transition while managing the risks and opportunities that come with it.

Changes in climate risk assessment and disclosure

The Taskforce for Climate related Financial Disclosure (TCFD) framework for climate risk disclosure is now widely accepted and in some jurisdictions is now mandated for financial services companies.

Discussion and consultation are ongoing to better assess and disclose climate risks. Key issues are about the assumptions inherent in long-term scenario-based analyses, or stress tests and the implications for capital and

solvency in the short-term. There are also challenges with standardizing forward-looking metrics and the lack of data on which to base quantitative assessments of climate change risks. This requires using different quantitative and qualitative tools, data and metrics to monitor and assess exposure to physical, transition and liability risks.

Lessons learned

The insurance industry has a long history of analyzing natural catastrophe risks and is addressing the complex task of building long-term climate science simulations into these models. Zurich proposes analytical and risk management tools such as climate risk advisory services to clients to better understand the impacts of climate change on their physical assets and supply chains.

EU policy priorities

Policymakers should enact legislation to continue raising awareness around protection, infrastructure, information gaps for citizens and businesses and to build adaptation and resilience through sustainable investments, sound and adequate risk management tools and metrics. Public-private partnerships will be required to accelerate the delivery of critical policies supporting the transition to a net-zero economy.

The EU Green Deal and Climate Adaptation Strategy is an important first step in this, as will be the ongoing EIOPA work on ESG considerations in pricing and underwriting.



GIANLUCA CANTALUPI

Managing Director and Global
Head of Reputational, Sustainability
and Climate Risk, Credit Suisse
International

Putting ESG front and centre for our business and risk management strategy

Regulations and internal risk management frameworks of banks have often played catch up to cover risks after they manifested themselves, for example, the introduction of liquidity coverage requirements after the 08-09 crisis. It is difficult to set guidelines and internal constraints without a clear historical example of what can go wrong.

This is where ESG themes, and in particular climate risk, are breaking new ground. We cannot afford to witness multiple events with catastrophic

environmental, social and financial consequences, before acting. Hence, the need to be forward-looking, proactive and brave.

At CS, we have committed to setting Science Based Targets within the next 24 months for achieving net zero emissions from our operations, supply chain & financing activities no later than 2050. We have developed sector-specific Client Energy Transition Frameworks (CETFs) which identify priority sectors/industries and set out a methodology to categorize clients that operate in these sectors according to their energy transition readiness. In this way, we aim to actively encourage clients to transition along the CETF scale over time and support them through financing and advisory services.

To advance framework developments across the ESG spectrum, we participated

in many industry-wide initiatives, including, the Equator Principles, the PACTA project¹, and the Task Force for Nature-Related Financial Disclosures (TNFD).

Key concepts such as reporting greenhouse gas emissions, disclosing biodiversity-related aspects and reporting D&I statistics, are increasingly becoming standard. However, there is a need for more transparency and standardization on an international level to make approaches more comparable and to minimize greenwashing, while increasing the availability of reliable data. This should not come at the expense of flexibility required to recognise emerging risks.

At CS, we have aligned Reputational, Sustainability, Credit and Compliance processes to develop a more holistic

perspective when managing the bank's client risks. ESG factors are currently considered mainly based on qualitative criteria, but we are adding more structured KPIs, leveraging internal & third-party data. Credit decisions should be taken with full consideration of ESG matters, especially for clients in sensitive sectors & countries.

There is a need for more transparency and standardization on an international level to make approaches more comparable and to minimize greenwashing...

Looking ahead, we see merits in exploring mechanisms in the prudential framework to provide a preferential

treatment for green investments while ensuring that requirements remain risk-sensitive. Capital needs to be sized based on a forward view, while existing models tend to look back. Forward-looking stress testing is the key tool to obtain insights and explore risks to inform business strategy. Unfortunately, models are still at an early development stage, and data is scarce.

Our ambition is to become a Sustainability leader. However, the financial system can only facilitate the transition - governments must also play their part by charging the cost of pollution at source. Together, we share the responsibility to protect the planet and drive towards sustainable prosperity.

1. Paris Agreement Capital Transition Assessment

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