

CFTC Market Risk Advisory Committee
Briefing Report of the Climate-Related Market Risk Subcommittee
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Thank you for giving me the opportunity to chair the Climate-Related Market Risk Subcommittee and to discuss the subcommittee's report, "Managing Climate Risk in the U.S. Financial System," with you today. As you know, the report itself was made public last fall on September 9, almost six months ago.

As you have recognized, the financial sector has an important role to play in addressing the risks that climate change creates that threaten our economy and the well-being of future generations.

The central message of this report is that U.S. financial regulators must recognize that climate change poses serious risks to the U.S. financial system, and they should move urgently and decisively to measure, understand, and address these risks as well as help to increase the flow of capital toward the building the net-zero economy of the future.

The key recommendations in our report include the following:

- U.S. regulators already have wide-ranging and flexible authorities to start addressing climate-related risks. They and market participants are at an early stage in understanding and should be experimenting with how best to monitor, manage, and disclose climate-related risks.
- Insufficient data and analytical tools, including common transition scenarios and agreed upon decision-useful measures of exposure to climate-related financial risks, remain a critical constraint.
- The lack of common definitions and meaningful standards for climate-related data and financial products is hindering the ability of market participants and regulators to manage climate risk.
- International engagement by the U.S. could be significantly more robust.
- Financial markets will be able to channel resources efficiently, and at the scale needed, to activities that reduce greenhouse gas emissions if, and only if, an economy-wide price on carbon is in place that reflects the true social cost of such emissions.

I hope you are as pleased with this report as the subcommittee is. The quality of the content, the recommendations, the editing, and the production all certainly

exceeded my expectations and reflected the extremely high caliber of the members of our subcommittee, as well as our ability to reach far into the expertise of all the institutions represented. The fact that the subcommittee members unanimously endorsed the report in a vote on September 8 gave the recommendations additional significance.

Credit for this report goes to you, the MRAC, and Chairman Behnam for giving us the assignment and structuring our mandate in a manner that set us up for success. You began this process to address climate risk management almost two years ago. I was not present that day in June 2019 when you heard from experts and discussed climate risk, but I was able to watch it later, and I want to congratulate you for following up that meeting with the courage to create our subcommittee, when many others were afraid to address what was viewed as a controversial topic.

You asked us to examine the risks created by a changing climate and to create a roadmap for how to address them. Given the importance and urgency of this task, and the undisputed fact that, as then Commissioner Behnam put it at the time, “the playing field is empty,” the subcommittee pushed forward with energy and enthusiasm.

You made sure that we had members with appropriately diverse perspectives and different dimensions of expertise. But you also gave us a mandate to try to reach consensus. And armed with our diverse members, each of whom no doubt would have written a very different report if on their own, we were charged with moving as far as we could together in an effort to reach common agreement. The committee was asked to write a high-level report, but to include many specific recommendations. We took our job as a risk committee seriously, and we had plenty of experience and expertise in both climate risk management and sustainable finance, which served us well.

I have already mentioned several important aspects of our mandate that contributed to success:

- that we were given an appropriately broad mandate to address the fundamental cause of climate risk.
- that we included members from a remarkably diverse spectrum of financial market stakeholders including banks; insurers; investors; asset owners; an exchange; agricultural, oil, and data companies; academics; and environmental NGOs.
- that we had an ambitious but agreed upon goal to try to reach consensus.
- that we should keep the report to a manageable length.
- and finally, that we should include many specific recommendations.

This was very much a team effort, and I want to highlight especially Chairman Behnam’s vision which I trust we have fulfilled, and the extraordinary help of Chairman Behnam’s chief of staff, David Gillers, who I have described as my co-pilot in this venture. He provided all the operational support the subcommittee needed, he kept us

on track, he listened in all the subcommittee discussions, and he provided the subcommittee, and me personally, counsel on all the important decisions.

As you may recall from my interim progress report in July, our subcommittee began with two in-person meetings marked by wide agreement on broad principles. Early on, the progress was fast. The meetings led to agreement on an outline, workstreams with leads and volunteers, and multiple drafts of each chapter were developed and reviewed. Very able editors Jesse Keenan, Leo Martinez-Diaz and Stephen Moch were chosen from within the committee, and drafts of chapters with recommendations emerged.

With our initial draft ready, we asked the members to distribute it to relevant people in their organizations to ask for feedback and suggestions. We received almost a thousand responses to this initial draft. The workstream leads, the editors, David and I carefully went through every one of those responses and made decisions of how to incorporate the feedback. Few paragraphs were untouched.

We then focused on areas of disagreement and red lines that organizations would be unable to cross. Over the summer these quickly narrowed to a few areas of concern and serious negotiations. It was not an easy task, and there was a period of time when it was not clear that we would get to consensus, but we continued to push on to try to find wording that all could agree upon.

Ultimately, we were successful and all members recorded their votes on behalf of their organizations to support forwarding the report to this committee. Since then, it has been widely read and well received. For example, Mary Schapiro, former Chair of the SEC, on February 2 in a Brookings webinar called the report, “a superb roadmap for financial regulators to managing climate risk in the financial system.” The Energy Transition Institute called it “a groundbreaking report.”

Let me now review each chapter and its main conclusions:

- The **Executive Summary** lays out key findings:
 - Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy.
 - Policy and regulatory choices must be flexible, open-ended, and adaptable to new information about climate change and its risks, based on close and iterative dialogue with the private sector.
 - Climate policies must ensure that the burden does not fall on low-to-moderate income households and on historically marginalized communities.
- Chapter 1: **Introduction to Finance in the Face of Climate Change** highlights the policy context:

- The report addresses two interrelated challenges: 1) safeguarding the soundness and stability of the financial system in the face of climate change and 2) helping the financial system to facilitate the transition to a low-carbon, climate-resilient economy.
- Incentives to reduce emissions are crucial: there is one recommendation in this chapter, to establish a carbon price that is fair, economy-wide, and effective in reducing emissions consistent with the Paris Agreement.
- Chapter 2: **Physical and Transition Risks in the Context of the United States** digs into the risks themselves:
 - Climate-related physical and transition risks are already impacting, or are anticipated to impact, nearly every facet of the U.S. economy, and, if not well-managed, likely will materially impact the valuations of a wide range of assets.

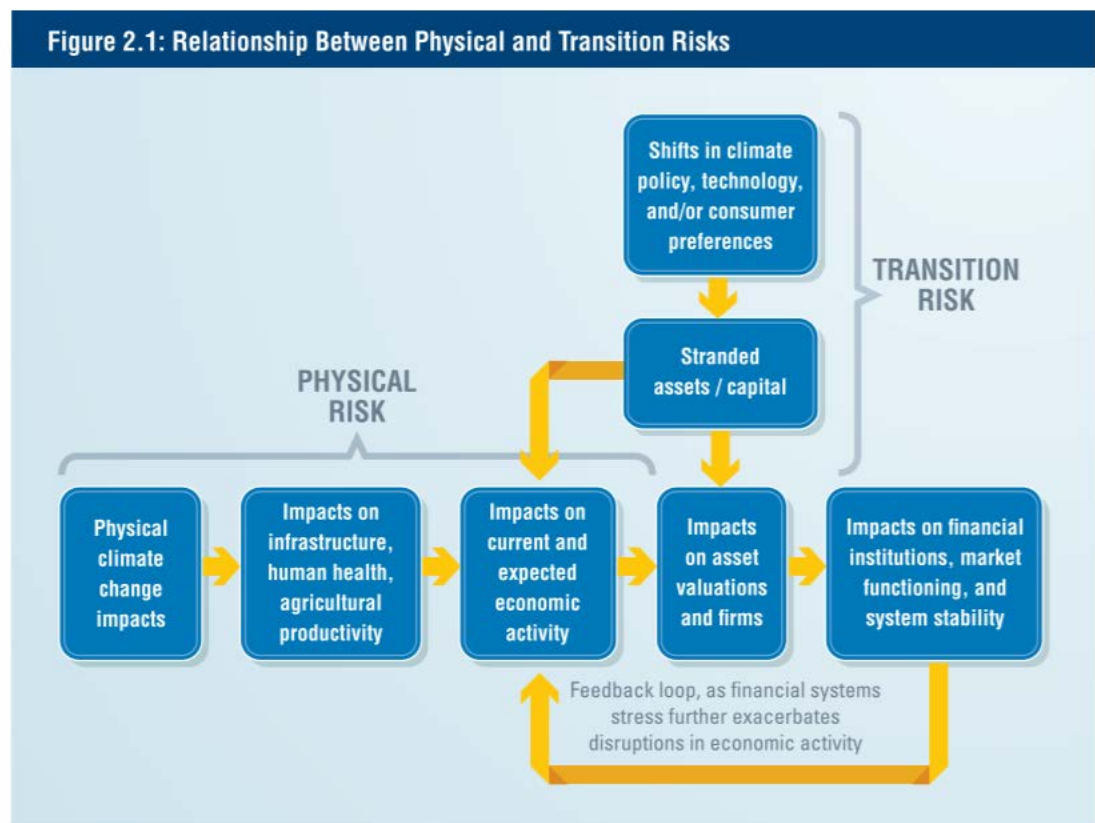
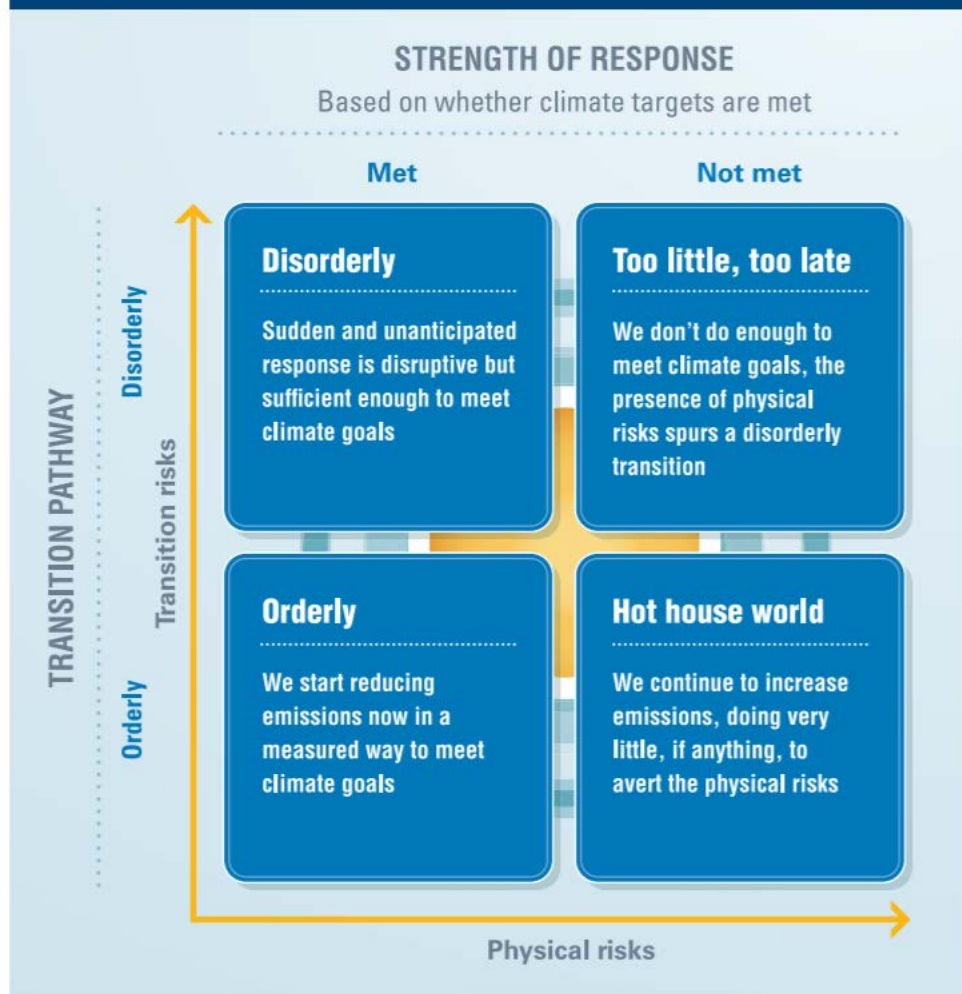


Figure 2.3: High-level Framework for the Scenario Analysis of Physical and Transition Risks



Source: NGFS (2019b)

- Chapter 3: **Implications of Climate Change for the U.S. Financial System** introduces the concepts of acute and chronic impacts, tipping points, and both systemic and sub-systemic risks:
 - Climate-related financial impacts associated with physical and transition risks may manifest throughout the financial system.
 - Climate change could pose systemic, uninsurable risks to the U.S. financial system. At the same time, regulators should also be concerned about the risk of climate-related “sub-systemic” shocks that could impact entire regions.
 - How impacts flow through the financial system depends on who holds these exposures. Insurance, reinsurance, and government assistance

today provide shock absorbers; however, these resources could be exhausted over time.

Table 3.1: Categories of Assets Exposed to Climate Change Impacts	
Categories	Examples
Financial assets directly tied to real property	<ul style="list-style-type: none"> ● Commercial mortgage-backed securities (CMBS) ● Commercial real estate (CRE) bank loans ● Government-sponsored enterprise (GSE) Credit Risk Transfer securities ● Real Estate Investment Trusts (REITs) ● Residential mortgage-backed securities (RMBS) ● Residential mortgages
Financial assets tied to infrastructure	<ul style="list-style-type: none"> ● Debt and equities of power and water utilities and communications companies ● Debt and equities of public and private transportation infrastructure
Financial assets tied to companies with businesses models or operations likely to be impacted by physical or transition risk	Equities and debt of firms in the following sectors: <ul style="list-style-type: none"> ● Agriculture ● Airlines and the broader transportation sector ● Automobiles ● Cement, steel, chemicals, plastics ● Energy, including coal, oil, and gas production ● Hospitality ● Metals and mining ● Power generation ● Service and infrastructure providers to oil and gas ● Tourism
Financial assets tied to insurance coverage providers	<ul style="list-style-type: none"> ● Insurance and reinsurance company debt and equities ● Insurance linked securities (ILS)
Financial assets tied to streams of government revenue	<ul style="list-style-type: none"> ● Municipal bonds ● Sovereign bonds

- Chapter 4: **Existing Authorities and Recommendations for Financial Regulators** looks at their role in managing climate-related risks:
 - Financial regulators can better protect the U.S. financial system from climate risk by ensuring emerging risks are identified, measured, and effectively managed, including through existing legislation which already

provides financial regulators with wide-ranging and flexible authorities and pragmatic approaches that stress continuous monitoring, experimentation, and learning.

- Recommendations in this chapter span systemic risk oversight (4.1-4.4), international coordination (4.6), risk management and stress testing (4.7-4.9), asset purchases (4.10), insurance (4.5 & 4.12-4.13), credit rating agencies (4.14), and derivative risk management (4.11, 4.15-4.16)
- Chapter 5: **Climate Risk Management and Data** examines why climate risk analysis is at an early stage and needs to be further developed:
 - Financial institutions can undertake climate-related risk management but need reliable, consistent, and comparable data and methodologies.
 - Regulators should support new and existing precompetitive open-source platforms, as well as proprietary efforts to develop new climate risk datasets and tools.
 - Recommendations are made to support availability of climate risk data and analysis (5.1), to standardize definitions through U.S.-appropriate taxonomies (5.2), and to build capacity (5.3).
- Chapter 6: **Climate Scenarios** focuses on how scenario analysis is used to analyze alternative climate-related future outcomes:
 - Climate-related scenario analysis can be a useful tool to understand and manage climate-related risks.
 - Recommendations are made on scenario structure (6.1-6.5), regulators' role in prescribing scenarios (6.6-6.10), capabilities and applications (6.11-6.13) and risk manager usage (6.14-6.16).
- Chapter 7: **Climate Risk Disclosure** states that current climate-related risk disclosure is inadequate and needs to be improved:
 - Disclosure of material climate risk information to investors is an essential building block to ensure it is measured and managed.
 - Recommendations are made to build on TCFD, the G20 sponsored Taskforce on Climate-related Financial Disclosures, (7.1), to clarify definition of materiality for medium- and long-term climate risk which must be disclosed under existing law (7.2), to update the 2010 SEC Guidance (7.5); to find avenues for disclosure of other substantive climate risks (7.3), and with respect to emissions (7.6), derivatives (7.7), accounting standards (7.8-7.9) and municipals (7.10-7.12)
- Chapter 8: **Financing the Net-Zero Transition**, which is perhaps the most urgent, examines how financial regulators can accelerate the transition and the

flow of capital to a net-zero climate-resilient economy. The chapter begins by highlighting that “a price on carbon,” is the single most important step. Beyond that:

- Financial regulators can foster effective and well-functioning markets that allocate capital efficiently, spur innovation, and create jobs in a growing net-zero economy.
- We have recommendations to consider including climate risk in fiscal policy (8.1), catalyzing climate finance (8.2-8.3), confirming the appropriateness of climate factors in fiduciary duty situations (8.4) and support for climate finance markets (8.5)

Four of the report’s recommendations are directed specifically to the CFTC and so I will highlight those now. Recommendation 4.11 suggests the CFTC should:

- Undertake a program of research aimed at understanding how climate-related risks are impacting and could impact markets and market participants, and
- Drawing on the conclusions of the research program above, review the extent to which existing CFTC rules are adequate to monitor and manage climate-related risks.
- Expand its own central counterparty stress testing to cover the operational continuity and organization resilience of central counterparties.
- As better understanding emerges of the risk-transmission pathways and of where the material climate risks lie, consider expanding the CFTC’s risk management rules and related quarterly risk exposure reports to cover material climate-related risks.

In addition, recommendation 4.16 suggests:

- The CFTC should review the extent to which financial market infrastructure—including but not limited to systemically important financial market utilities for which it is the primary regulator—is resilient against losses that could arise through the physical impacts of climate change.

Recommendation 7.7, from the chapter on disclosure, suggests:

- Regarding derivatives, financial regulators should examine the extent to which climate impacts are addressed in disclosures required of the entities they regulate and consider guidance and rulemaking if disclosure improvements are needed. This could include, for example, swap dealers

registered with the CFTC, risk management rules that govern risk identification approaches; Quarterly Risk Exposure Reports, and business conduct rules that govern disclosure of material information to counterparties prior to entering into a swap.

Recommendation 8.5, regarding financing the transition to a net-zero economy,

- The CFTC should pursue the following activities to further catalyze climate finance market development:
- Survey market participants about their use of climate-related derivatives, the adequacy of product availability and market infrastructure, and the availability of data to incorporate climate impacts into existing and new instruments.
- Consider appropriate and targeted exemptions where needed to help facilitate coordination with other regulators and promote market development.
- Support the study and adoption of alternative execution methods, such as block trading, auction style markets, or incentive programs, to attract liquidity providers to make climate-related markets.
- Coordinate with other regulators to support the development of a robust ecosystem of climate-related risk management products.

Many of our recommendations are now being considered, and some have already been implemented. The Federal Reserve, for example, recently established a climate risk management committee and joined the Network for Greening the Financial System. The Treasury Department has established a climate-risk hub with multiple workstreams focused on climate risk. The New York State Department of Financial Services sent a letter outlining its expectations related to addressing the financial risks from climate change to all New York-regulated banking organizations.

Business organizations are also evolving in their statements about climate change. The Business Roundtable, the Chamber of Commerce, the National Association of Manufacturers, and even the American Petroleum Institute are all now supporting or moving toward support for market approaches to reducing emissions. Hundreds of companies, municipalities, universities, states, and countries are now making pledges to reach net-zero by 2050, and many investors and asset owners are pledging to align their portfolios with a rapid transition to net-zero.

Market valuations of fossil fuel companies have significantly declined in recent years even as the broad market has continued to rise. Meanwhile companies focused on clean tech, electric vehicles, batteries, renewable energy, carbon allowances and other assets associated with the clean-energy transition have seen their relative valuations increase dramatically, especially in the past six months as the prospects for carbon pricing have increased. For example, since the post-COVID low in March 2020, Tesla has increased in valuation by over \$700 billion, while Ford and GM together have increased by less than \$90 billion. In this sense the transition to net-zero is already happening, though not nearly fast enough.

In closing I would like to focus attention on the urgency of Recommendation 1 of our report, the need to establish an effective price on carbon.

As a risk management professional focused on climate change, I have been working for the past decade to highlight the need to create strong, globally-harmonized incentives to reduce emissions. It is important to understand that this root cause of climate change is a problem that can be easily fixed if our leaders have the will to do so. What is required is simply a small change in the tax code that will create appropriate incentives to reduce emissions and significant revenues that governments need to address climate challenges. European countries have already created such strong incentives to reduce emissions, China is in the process of implementing a nationwide carbon pricing system, and it is long past time for the United States to move forward. Like a bug in computer code, there is a bug in the United States tax code. We understand how to fix it and it is critically important to the safety of future generations that we do so immediately.

In closing I would like to tell you a true story that may, in part, explain my passion on this topic. In 2014 my wife, Mary, and I nearly died in a traffic accident. Mary saw a flaming, out-of-control gasoline tanker about a quarter of a mile away but barreling straight at us from across a divided freeway, and she exclaimed, "Oh my god, Bob, watch out!" just in time to allow me to slam on the brakes, swerve, and avoid a head-on crash into a huge gasoline conflagration which erupted seconds later right in our path, closed the entire freeway, and burned for seven hours. Those five seconds, between when Mary saw the danger and when we passed through the flames and debris but avoided disaster by a fraction of a second, were the longest five seconds of our lives, and play over and over in our memories.

Since that experience, I feel in my gut the parallel with managing climate risk, where we have heard the warning from science, and we have seen the danger. And yet, even today while we do not know how much time we have left and we watch as the risk continues to grow, collectively we have not yet reacted. I continue to try to warn that because of the long lags in the planetary system we must create those strong incentives now in order to hope to ensure that future generations can avoid climate disasters decades from now. Pricing carbon is the only brake with the power and the

scale to guide the required flow of capital toward the net-zero economy, but our foot, unfortunately, is still on the accelerator.

Thus, when Chairman Behnam asked me to chair this subcommittee, I was not only honored to do so but committed to using this risk committee and its report to make clear that the roadmap to addressing the systemic risks to the U.S. financial system created by climate change includes buying insurance for future generations by pricing carbon.

I suspect we all understand how incredibly efficient the financial markets are in driving capital toward opportunities to make profits, given the incentives that investors face. Today, unfortunately, those incentives continue to direct capital in what we all agree is the wrong direction: toward the existing, fossil-fuel-driven, high-carbon economy. When those incentives change there will be a rapid phase change in the flow of economic capital toward the net-zero economy of the future.

The longer we delay in implementing carbon pricing, however, the more pollution will enter the atmosphere, the higher will be the ultimate average temperature change, and the greater will be the risk of crossing a tipping point leading to the type of non-linear response that can create irreversible damage to global ecosystems and human well-being.

Let me conclude by summarizing our message succinctly: “It is time to slam on the brakes.”

Thank you.