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May 2022

By Electronic Submission

MOODY'S ESG SOLUTIONS' PUBLIC COMMENT ON THE FEDERAL DEPOSIT INSURANCE CORPORATION STATEMENT OF PRINCIPLES FOR CLIMATE RELATED FINANCIAL RISK MANAGEMENT FOR LARGE FINANCIAL INSTITUTIONS

Moody's ESG Solutions (MESG) appreciates the opportunity to provide comments to the Federal Deposit Insurance Corporation with respect to its consultation on the Principles for Climate-Related Financial Risk Management for Large Financial Institutions.

Moody's ESG Solutions¹ is a business unit of Moody's Corporation that provides ESG, climate and sustainable finance solutions, including ESG and climate scores, analytics and sustainable finance reviewer and certifier services.

MESG has responded to this consultation in collaboration with Moody's Analytics (MA). MA delivers a comprehensive range of data-driven and forward-looking ESG-adjusted insights, macroeconomic forecasts and credit risk tools.

There is growing understanding that insurers, banks and other financial actors face significant risks from climate change and that there is a need to size and manage these risks. This requires continued research to integrate climate risk factors into financial and economic modeling processes.

In general, we support these principles, as integrating climate-related financial risks into underwriting and portfolio management is important to manage this systemic financial risk. This an area of ongoing research for us. Building from our existing climate risk models, MA is currently establishing a framework for consideration of climate-related credit risks by expanding the traditionally limited economic capital framework to reflect new sources of concentration risk driven by geo-spatial

¹ MESG is a separate business unit from Moody's Analytics (MA) and Moody's Investors Service (MIS). MIS is a leading provider of credit ratings, research, and risk analysis. MIS incorporates ESG considerations into its credit analysis where credit relevant and is committed to increasing transparency around its systematic incorporation of material ESG considerations into its credit analysis. MIS did not contribute to this consultation response.

correlations of facility locations of counterparties in a portfolio (capturing physical risk arising from acute hazards, e.g., cyclone or flood) and between climate-relevant sectors (transition risk).² The framework can also be rolled up to quantify the risk at the level of exposures or asset classes.

Data already exists to quantify climate-adjusted credit risk and should be used alongside developing frameworks to quantify the likelihood that a portfolio will incur losses that breach an organization's Climate Risk Appetite Statement. The framework can also be applied in defining climate hazard-resilient limit setting. Based on this research and our other work developing climate risk analytics for financial stakeholders, we are glad to provide specific answers to the questions below.

Thank you for your consideration.

Your sincerely,

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Questions

A. Applicability

Question 1: What additional factors, for example asset size, location, and business model, should inform financial institutions' adoption of these principles?

MESG believes the principles can be applicable to institutions of any size and location. An argument could be made that smaller financial institutions are even more vulnerable to climate risk due to (typically) localized/concentrated composition of their portfolios. Thus, such financial institutions shall benefit from a robust climate-related financial risk management framework, e.g., in the form of capital relief from geographical diversification across less climate-hazard prone areas, or from diversification across sectors with different exposure to transition risk.

² Ozkanoglu, O. et al. 'A Framework for the Identification, Quantification and Management of Climate Hazard Concentration Risk', *Moody's Sustainability In Focus Webinar*, 2 November 2021; Ozkanoglu, O. 'Incorporating Climate Scenarios and Hazard Events in Corporate Credit Risk', *International Association of Credit Portfolio Managers (IACPM) Virtual Fall Conference*, 18 November 2021. MA's climate hazard concentration risk framework will be described in more detail in a forthcoming paper, Ozkanoglu et al. (2022)

B. Tailoring

Question 2: How could future guidance assist a financial institution in developing its climate-related financial risk management practices commensurate to its size, complexity, risk profile, and scope of operations?

While the principles capture the necessary requirements at a high level, it could be helpful to further outline how financial institutions could reflect climate-related risks in capital adequacy assessments.

There could be additional guidance on specific forward-looking metrics that institutions should use to assess and in turn, disclose their physical and transition risks. For example, some metrics have been suggested in the appendix of the TCFD report *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*, released in October 2021.

C. General

Question 3: What challenges do financial institutions face in incorporating these draft principles into their risk management systems? How should the FDIC further engage with financial institutions to understand those challenges?

Question 4: Would regulations or guidelines prescribing particular risk management practices be helpful to financial institutions as they adjust to doing business in a changing climate?

D. Current Risk Management Practices

Question 5: What specific tools or strategies have financial institutions used to successfully incorporate climate-related financial risks into their risk management frameworks?

Financial institutions are starting to integrate climate data into their risk management processes. For example, a large North American bank leveraged MA's climate macroeconomic scenarios and climate-adjusted probability of default data to assess exposure in the bank's portfolio under multiple scenarios. Likewise, insurance firms use RMS' (a Moody's Analytics Company) baseline models and climate conditioned catastrophe models to examine physical risk exposure in their portfolios. For more information on these and other examples see the UN Environment Programme Finance Initiative released *The Climate Risk Tool Landscape, 2022 Supplement*.

Question 6: How do financial institutions determine when climate related financial risks are material and warrant greater than routine attention by the board and management?

Question 7: What time horizon do financial institutions consider relevant when identifying and assessing the materiality of climate-related financial risks?

We believe that a range of short to long term time horizons are relevant depending on a financial institution's risk management objectives. For shorter-horizon analyses, MA's research³ shows how historical data can be used to estimate the probabilities of events such as cyclones, and the impact from such events. In addition to the use in business, shorter-horizon analyses can be used as steppingstones by banks to develop their methodological and data capabilities before embarking on more challenging yet important long-horizon analyses. Datasets are currently available with a variety of time horizons, such as climate-adjusted probability of default models with a 30 year time horizon.⁴ Likewise, for longer-term analysis existing datasets integrate climate risk into economic risk modeling out to 2100.⁵

Question 8: What, if any, specific products, practices, and strategies—for example, insurance or derivatives contracts or other capital market instruments—do financial institutions use to hedge, transfer, or mitigate climate-related financial risks?

Question 9: What, if any, climate related financial products or services—for example, “green bonds,” derivatives, dedicated investment funds, or other instruments that take climate-related considerations into account—do financial institutions offer to clients and customers? What risks, if any, do these products or services pose?

Question 10: How do financial institutions currently consider the impacts of climate-related financial risk mitigation strategies and financial products on households and communities, specifically LMI and other disadvantaged communities? Should the agencies modify existing regulations and guidance, such as those associated with the Community Reinvestment Act, to address the impact climate-related financial risks may have on LMI and other disadvantaged communities?

Although this question is directed at financial institutions, MA and MESG offer the following perspectives based on our experience on these topics. Academic research demonstrates that equity concerns related to climate risk exposure of vulnerable communities are indeed a major concern. For example, as per the MESG blogpost ‘Racial Justice and Climate Change: Exposure’ quoting research by Jesse Keenan and others on ‘blue-lining’ brings to light the risk of reinforcing historical and current discriminations and worsening social and racial injustice. More background on climate risk and disadvantaged communities is available [here](#).

There are opportunities to test alternative risk mitigation options such as varying insurance coverage, exploring asset-level resilience measures (such as waterproofing lower floors, upgrading to fire resistant

³ Ozkanoglu et al. (2022), forthcoming paper- title not available yet

⁴ James Edwards, Rebecca Cui, Abhishek Mukherjee, “Assessing the Credit Impact of Climate Risk for Corporates,” Moody's Analytics whitepaper, March 2021

⁵ Juan Licari, Petr Zemcik, Chris Lafakis, and Janet Lee, “Climate Risk Macroeconomic Forecasting,” Moody's Analytics whitepaper, January 2021

material, etc.), engaging with borrowers and communities on their risk exposure and risk management, or adjusting holdings within a portfolio to balance risk.

For example, lenders can engage with mortgage applicants around their asset's climate risk exposure so that they understand the risks they are taking and the true costs associated with the asset. Lenders can encourage home buyers to invest in resilience measures that will increase the viability of the mortgage while decreasing their own financial risk exposure. Likewise, lenders may be able to work with loan insurance or mortgage insurance to reduce premiums, e.g., if a homebuyer paid a higher price for a more resilient home (or if the homebuyer implements their own resilience measures that meet certain resilience standards). Engaging with local governments to ensure they are positioned to invest in adaptation and protect vulnerable communities could also mitigate potential negative impact on lower income households. Additional discussion on adaptation and racial justice is available [here](#).

E. Data, Disclosures, and Reporting

Question 11: What, if any, specific climate-related data, metrics, tools and models from borrowers and other counterparties do financial institutions need to identify, measure, monitor, and control their own climate-related financial risks? How do financial institutions currently obtain this information? What gaps and other concerns are there with respect to these data, metrics, tools or models?

We believe it is crucial for financial institutions to collect data on the geographical footprint of their counterparties due to the localized nature of physical climate change risk. For corporate loans, this includes the locations of firms' facilities, as well as their suppliers. This data is essential to properly quantify counterparties' exposures to physical risk and understand their portfolio-level implications. Business interruption due to climate related issues with suppliers needs to be addressed and quantified by banks and financial institutions, in addition to risks associated with operations of the counterparties themselves.

With respect to managing transition risk in their portfolio, we believe it is also important for the institutions to collect data on GHG emissions footprint, emissions reductions plans, business models, physical risk management plans and other relevant metrics which enable an assessment of how well-positioned a counterparty is to manage the risks associated with the transition to a low-carbon economy. This data enables capturing the "green" or the "non-green" (high-emitting) dimension of a portfolio, which is a fundamental question for assessing transition risks, as they increase with the share of "non-green" exposures or decrease with the share of "green" exposures. When data on companies' practices are unavailable, financial institutions can also use predicted metrics which approximate how

well a company is managing the risks. These predicted metrics facilitate portfolio screening for risk identification.⁶

Question 12: How could existing regulatory reporting requirements be augmented to better capture financial institutions' exposure to climate-related financial risks?

We support the ongoing work on a global level to address climate-related credit risks for lending, insurance and investment institutions, as important actors of the economy. We believe regulatory requirements should be harmonized as much as possible in order to provide effectivity and legal certainty for the markets.

We are of the opinion that the clarification of quantitative metrics for financial institutions to use to report on their exposure to physical and transition risk in regulatory frameworks can help to drive meaningful climate risk assessment and disclosure. For example, for physical risks, it is important to focus on identifying high-risk assets rather than averaging risk in a portfolio, as average risk can mask meaningful exposure to extreme conditions at individual assets. Incorporating property level physical risk profile such as climate risk score into existing credit risk models is crucial in deriving the climate-adjusted probability of defaults (PDs) and loss given defaults (LGDs) for mortgages, which can in turn inform meaningful disclosure.

Further, while heat maps are a useful starting point, they have limitations as tools for concentration risk analysis in that they typically don't reflect the correlations between and within segments. For instance, a location may have high levels of risks related to cyclones but not cause much concentration risk if the exposure to that location is low and cyclone risks in that location have low correlations with other risks relevant to the portfolio (e.g., cyclones in other locations). Traditional heatmaps can be extended to also reflect the correlations between the segment-specific risk in question and other risks relevant to the portfolio, making them more meaningful for disclosure.

The appendix of the TCFD report *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures* released in October 2021, provides additional examples of forward-looking metrics for physical and transition risk that could inform disclosure guidance.

⁶ See Licari, Juan et al. "ESG Score Predictor: Applying a Quantitative Approach for Expanding Company Coverage," Moody's white paper, July 2021: https://assets.website-files.com/5df9172583d7eec04960799a/60eb09c292affa13ff4a0e_ESG%20Score%20Predictor_090721.pdf

F. Scenario Analysis

Question 13: Scenario analysis is an important component of climate risk management that requires assumptions about plausible future states of the world. How do financial institutions use climate scenario models, analysis, or tools and what challenges do they face?

The scenarios of the Network for Greening the Financial System have emerged as common templates for scenario analysis globally. Leveraging these scenarios as a starting point helps to improve standardization and comparability across different regions and can help lower the barriers to entry for institutions. Building from these scenarios, institutions can then consider creating custom climate scenarios that are tailored to their business models, exposures and strategy to stress test their holdings. Prescribing specific scenarios, particularly those that leverage standardized scenarios and widely adopted scenarios, is an important first step. However, results from a custom climate scenario can reveal weaknesses that may otherwise not show up in the standardized regulatory scenarios, and they can be more relevant in evaluating the financial institutions' risk management objectives which makes them an important next step.

Question 14: What factors are most salient for the FDIC to consider when designing and executing scenario analysis exercises?

In a stress testing exercise, firms often need to expand on the prescribed regulatory scenarios to include more detailed concepts and more granular geographic coverage to tailor to their own exposures. Usually, for a given scenario, the economic model is calibrated by taking the variable paths specified by the scenario and setting the key levers of the model to reproduce the scenario's paths. In the context of climate risk scenarios, it is important to re-evaluate the economic model to see if the model equations are specified based on economic theory, and they feature shock properties that are essential in scenario construction, including the creation of economic forecasts consistent with different climate change assumptions. Adding climate related scenario levers such as carbon taxes, emissions and fuel consumption to the economic model should also be considered to allow for a direct linkage between climate risks and the economy. We support the adoption of scenario analysis and climate stress tests in the near term, although we also acknowledge that they will continue to evolve and improve as these models are continuously refined.

We also recognize that it is vital for regulators to necessitate short-term assessments which set out an organization's exposure to the financial risks from acute physical risk within its existing business planning horizon. Answering questions like "what impact would a cyclone in Florida have on my portfolio?" would, among other uses cases, help an institution stress test its capital planning.