Climate transition finance metrics effectiveness: An industry perspective

Executive Summary

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Abstract

Climate transition finance metrics (TFMs) have become crucial for directing capital toward low-carbon pathways, yet their credibility, data integrity, and effectiveness in achieving near-term climate targets remain uncertain. In this study, we systematically examine TFMs reported by some of the largest global financial institutions-including banks, insurers, asset owners, and asset managers-and conduct a cross-industry global survey with 219 practitioners to assess perceptions of TFM effectiveness and data availability. Our analysis uncovers a significant discrepancy: while widely adopted TFMs such as climate risk exposure and green financing metrics are regarded as moderately to highly effective, the underlying data supporting these metrics is often incomplete or fragmented. Regression analysis indicates that organisations with advanced climate transition and adaptation plans exhibit greater scepticism toward conventional TFMs, suggesting that single-purpose or narrowly focused metrics may inadequately capture the complex dynamics of large-scale climate transition efforts. Looking ahead, our results highlight the importance of providing strategic recommendations for policymakers, researchers, and financial leaders to optimise TFMs for achieving both near-term and systemic climate goals. (JEL Q56, Q54, G32, O32)

Keywords: sustainable finance, climate risk, decarbonisation, ESG disclosure, transition finance.

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Executive summary

We critically examine the credibility, data integrity, and overall effectiveness of climate transition finance metrics (TFMs) across the global financial industry. We investigates how TFMs—key tools designed to direct capital toward low-carbon pathways—are perceived and implemented by major financial institutions, including banks, insurers, asset owners, and asset managers. We explore whether these metrics truly guide capital flows to support near-term decarbonisation and systemic climate action and highlights the growing concerns about data fragmentation and the risk of greenwashing.

Transition finance metrics are pivotal yet face significant challenges in capturing the complex dynamics of decarbonisation. TFMs are distinguished from broader climate or green finance by their focus on the shift from high- to low-carbon economies. While these metrics are increasingly integrated into institutions' climate strategies, we identify a notable disconnect: widely adopted indicators such as climate risk exposure and green financing commitments are often backed by incomplete or inconsistent data. This discrepancy raises critical questions about the metrics' reliability and their role in influencing financial decision-making and capital allocation.

Methodological framework

We adopted a three-pronged methodology: first, we compiled and categorised approximately nearly 1600 TFMs extracted from official climate strategy documents of the 100 largest global financial institutions; second, we gathered insights through a global survey of 219 practitioners, assessing both perceived effectiveness and data quality; third, we employed advanced econometric modelling—including Heckman ordered probit analysis—to address selection bias and understand how institutional and respondent characteristics shape perceptions of metric utility.

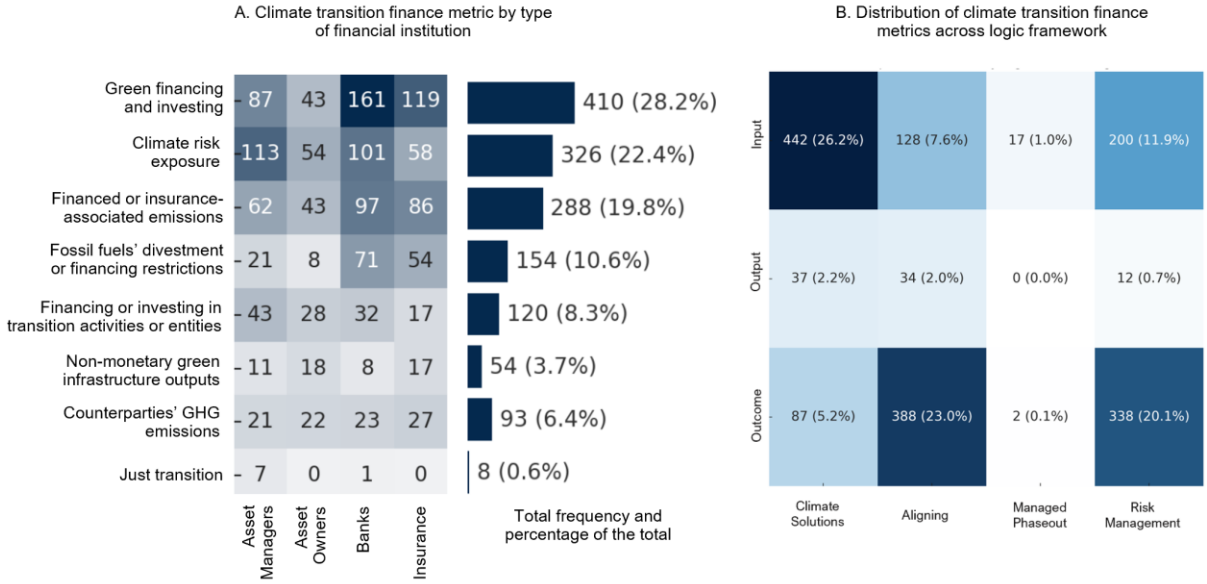
Key Findings

To begin with we find three notable patterns (Figure 1):

- **Banks lead in reporting both green financing commitments and financing restrictions on fossil fuels**, reflecting their prominent role in underwriting large-scale projects.
- **Climate risk exposure metrics are widely adopted—particularly by banks and asset managers**—likely due to increasing regulatory and investor pressure to quantify climate-related risks.

- **Just transition, counterparties' GHG emissions, and non-monetary green infrastructure outputs rank among the least frequently reported metrics**, underscoring persistent gaps in social impact and granular emissions tracking.

Fig. 1: Climate Transition Finance Metrics Reported by 100 Global Largest Financial Corporations



Note: The figure summarises climate-related metrics reported by 100 financial institutions, using a methodology described in the Methods section. Metrics were categorised as inputs (reflecting financing and investment decisions), outputs (enabling climate impact, e.g., renewable energy capacity funded), or outcomes (measuring direct climate impact, e.g., emissions reductions). Institutions were filtered and reclassified to ensure relevance to climate financing and investment. Metrics associated with climate services were excluded due to their indirect relationship with financing flows. In total, 1,685 metrics were reviewed: 365 from asset managers (N=25), 216 from asset owners (N=24), 504 from banks (N=21), and 378 from insurance companies (N=24), representing over $110 trillion in assets under management. Countries where these institutions are headquartered include United States (N=26), United Kingdom (N=10), France (N=7), Japan (N=7), China (N=6), Germany (N=5), Canada (N=5), Netherlands (N=3), United Arab Emirates (N=3), Singapore (N=2), Switzerland (N=2), South Korea (N=2), and Others (N=20).

We find that practitioners view TFMs as effective tools, yet significant challenges persist regarding data quality and comprehensive impact measurement. Our detailed findings can be summarised as follows.

While effective metrics emerge, data gaps limit their effectiveness. Metrics such as climate risk exposure and green financing commitments are consistently rated as moderately to highly effective. For instance, effectiveness ratings for these metrics often fall in the upper

tier of a five-point Likert scale (mean values around 3.8–4.0), indicating strong perceived utility in steering capital flows towards low-carbon investments. However, we also find a notable gap: while the utility of these metrics is acknowledged, the quality of the underlying data remains only average. Many respondents highlighted that data quality—characterised by fragmented, proprietary, or inconsistent datasets—lags the aspirational design of these metrics.

Perceptions of effectiveness differ across different financial institutions. Financial institutions with advanced climate transition or adaptation plans tend to be more sceptical of single-focus metrics, indicating that these metrics may not capture the comprehensive changes required. Different sectors (banks, insurers, asset managers, asset owners) emphasise different priorities based on their unique operational contexts and risk profiles. In the case of banks, they stand out by emphasizing green financing commitments and stringent financing restrictions on fossil fuels, thereby aligning these metrics with their lending practices and project underwriting. Moreover, banks with advanced climate strategies are more critical of narrowly defined metrics, as these measures fail to capture broader decarbonisation challenges—such as technology adoption and supply chain restructuring—evidenced by regression models that show banks exhibit lower coefficient estimates for narrow metrics compared to asset managers or insurers, suggesting a preference for more nuanced, multi-dimensional measures.

There are significant gaps in intermediate indicators. Our research highlights a gap in mid-level output measures that connect capital allocations (inputs) with measurable outcomes in decarbonisation and resilience. This gap underscores the need for intermediate indicators that more directly reflect progress toward long-term climate objectives. Thus, enhanced data quality and integrated frameworks are essential for aligning financial flows with climate objectives.

Recommendations

Based on the findings, we offer several key recommendations to improve effectiveness and availability of TFMs:

Improve data infrastructure. The evidence shows that data infrastructure is a major bottleneck. With key metrics derived from diverse sources and methodologies, there is an urgent need to develop standardised, granular data collection processes. We recommend establishing common definitions and reporting methodologies for climate-related metrics to mitigate data fragmentation. For example, while green financing data is often well-documented in banks, other metrics—such as financed or insurance-associated emissions—

register raw mean availability scores as low as 1.9 on a five-point scale, signalling significant room for improvement.

Integrate intermediate output indicators. Current TFMs are predominantly focused on inputs (e.g., capital allocated to green bonds) and end outcomes (e.g., portfolio carbon intensity). However, we find a consistent lack of mid-level output indicators—such as the rate of high-emitting asset phaseout or incremental renewable energy capacity installed—which are essential to link financial decisions with tangible decarbonisation impacts. By incorporating intermediate outputs, financial institutions can better track and validate the progression from initial capital commitments to real-world emissions reductions.

Leverage advanced technologies. We now discuss the promising role of advanced technologies in enhancing TFM design. Respondents pointed to the potential of artificial intelligence (AI) and dynamic "smart KPIs" to predict and prescribe adjustments to metrics as climate risks evolve. By harnessing AI-driven analytics, institutions could uncover hidden correlations—for example, between specific portfolio adjustments and reduced market volatility due to climate risks—and optimize their metrics in real time. This approach not only improves analytical precision but also helps in mitigating greenwashing risks, as automated cross-checks can flag discrepancies in reported data.

Broaden metric scope. Our research underscores that current metrics narrowly focus on financial and environmental dimensions. There is a pressing need to broaden the metric scope to include social indicators such as just transition metrics, which capture labour and community impacts, as well as measures of adaptation financing. In fact, just transition metrics were among the least reported despite their critical importance for ensuring an equitable transition. Expanding the framework to cover both short-term risk management and long-term systemic change would better align financial strategies with broader societal objectives.

Engage with policymakers and other stakeholders. Effective TFMs require not only technical robustness but also robust governance mechanisms. Our research emphasizes that policymakers, researchers, and financial leaders must collaborate to refine metric design. Such engagement would help establish transparent reporting practices and mitigate greenwashing risks. For example, when governance structures are in place, metrics like fossil-fuel divestment—adjusted through regression analysis with statistically significant coefficients—tend to yield more credible, transformative outcomes.

Conclusion

We provides actionable insights that call for a recalibration of climate finance metrics to better support an equitable, low-carbon future. By bridging the gap between perceived effectiveness and data quality, and by highlighting the importance of integrated, multi-dimensional frameworks, our research makes a compelling case for the refinement of TFMs. This is not merely a technical adjustment but a foundational step toward embedding a culture of credible, equitable, and impactful climate finance across the global financial system.