# Is There a Gap Between Firms and Investors in Climate Disclosure? Survey Evidence*

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**Abstract**

Using parallel surveys of US public firm managers and institutional investors, we examine whether and where the climate information firms disclose diverges from what investors find decision-useful. We document a substantial perception gap: 62% of firm managers believe that public firms currently meet investor demand for climate information, compared to only 39% of investors. This gap stems from misalignment in both content and channels. Firms prioritize disclosure of raw emissions metrics, while investors seek "financialized" information translating climate risks into financial terms. This is reinforced by a mismatch in preferred disclosure outlets, with firms preferring to provide climate information via sustainability reports while investors prefer annual reports and other investor-focused channels. Both groups perceive meaningful benefits from climate disclosure, including shareholder-value benefits, but investors identify credibility and verifiability as primary barriers to using information. Both sides view standardized disclosure frameworks as the most effective alignment mechanism. Our findings suggest that bridging the gap in climate disclosure does not necessarily require more disclosure but, instead, financially relevant and credibly verified disclosure in investor-facing disclosure channels.

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## 1. Introduction

Recent years have seen a significant increase in investors' stated demand for firms' climate-related information (e.g., Christensen, Hail, and Leuz, 2021; Cohen, Kadach, and Ormazabal, 2023; Ilhan et al., 2023). In spite of this nominal interest, the extent to which investors appear to be actually using climate-related information to make investment decisions appears limited (Frankel, Kothari, and Raghunandan, 2025). Two primary explanations exist for this gap between investors' stated and actual use of climate-related information. The first is greenwashing, i.e., that investors claim to care about sustainability in order to head off pressure from regulators or society. An extensive literature highlights the incidence of greenwashing by both firms and investors in capital markets (e.g., Raghunandan and Rajgopal, 2022; Liang, Sun, and Teo, 2022; Kim and Yoon, 2023). The second explanation, which has received less empirical examination, is the existence of a potential demand-supply gap between the climate information firms provide and the information investors would need for decision-relevance. Under this explanation, the quantity and quality of climate-related information available to investors do not match current demands (e.g., Friedman and Ormazabal, 2024); as a result, even investors that would like to use climate-related information are unable to do so. Firms may not meet investor demand if, for example, they find it too costly to disclose emissions or if they disclose in a way that prioritizes other stakeholders' needs (e.g., regulators or NGOs). Using a survey-based approach, our study examines this potential gap between what firms disclose and what investors actually want.

A gap between the supply and demand of climate-related information may arise from several sources. At least three factors can contribute. First, while the number of firms disclosing climate-related information has increased steadily over time, a nontrivial share of firms still does not disclose. This makes it difficult for investors to compare firms based on sustainability, especially in light of issues with vendor-estimated emissions data for non-disclosers (Aswani, Raghunandan, and Rajgopal, 2024; Li, 2025; Zhang, 2025). Second, even when firms disclose, what they disclose may not be what

investors find decision-useful. As of 2024, 93% of S&P 500 firms disclose some form of emissions data (The Conference Board, 2025), but less than one-third disclose the financial impact of climate risks (EY, 2025). To the extent that investors' demand for climate information is financially-motivated – i.e., if investors primarily care about the financial impact and risk associated with climate change – decision-relevant information may fail to reach investors effectively due to information processing frictions (Blankespoor, deHaan, and Marinovic, 2020; Rouen, Sachdeva, and Yoon, 2024). Third, even investors that are able assess the financial impact of a firm's emissions footprint may have concerns about the credibility and verifiability of climate disclosures (e.g., Gipper, Ross, and Shi, 2025; Cohen, Rouen, and Sachdeva, 2026).

We address these questions through parallel surveys of US public firm managers and institutional investors to simultaneously capture the supply and demand sides of climate disclosure. We organize our analyses around three research questions. First, is there a perceived gap between the climate information firms disclose and the climate information investors demand, and what are its sources? The gap could arise because firms disclose too little, because they disclose information but not in the form that investors find decision-useful, or because the information is not communicated through credible channels investors can easily process. Second, why does this gap persist? We examine whether the gap is sustained by insufficient disclosure benefits, excessive costs, or both. We further investigate whether these frictions relate more to shareholder value or broader stakeholder welfare, and whether they reflect both preferences and influence. Third, what do managers and investors think might reduce the gap? We explore which voluntary mechanisms and regulatory approaches respondents view as most promising for aligning climate disclosure with investor expectations.

A survey approach is useful in answering these questions for several reasons. First, although firms' climate disclosures can be descriptively examined, understanding whether and how investors actually use different types of climate information and the relative importance of specific disclosure

metrics is inherently challenging through archival research. Second, key disclosure frictions, such as regulatory uncertainty, heterogeneous investor preferences, and proprietary costs are typically unobservable and endogenously determined, making it difficult to assess the net benefits of disclosure through empirical proxies alone. While prior archival studies document some individual benefits or costs, providing an overall assessment is challenging. Third, our parallel survey design is essential for examining the differences in perceptions between firm managers and investors. These perception gaps constitute a central objective of our analysis and cannot be inferred from single-sided surveys or observational data.

We develop the survey instruments in consultation with academics, practitioners, and a sustainability-focused research center. The parallel surveys include 11 questions to firm managers and 13 questions to investors. These questions are organized into three parts that mirror our research questions: the current landscape of climate disclosure practices, the economic forces and frictions behind climate disclosure, and mechanisms that could reduce the gap. Similar to Edmans, Gosling, and Jenter (2023), each set of questions is designed to enable direct comparison of perceptions between firm managers and investors. We launched the survey on December 1, 2025, through email invitations and closed it on January 23, 2026. We receive 220 valid responses for the firm manager survey and 432 valid responses from investors who care about climate disclosures in their investment decision-making. Appendix A presents an overview of our key results. A key caveat is that while we did not ex-ante attempt to identify investors who focus on climate relative to those who do not, our investor responses are likely concentrated within the set of investors who would potentially use climate information. To that end, our survey should be thought of as capturing the demand for climate disclosure among investors who would potentially use such information in their decision-making, rather than the broader investor pool.

Our first set of results documents a clear perception gap between managers and investors regarding the current supply and demand of climate disclosure. While 62.4% of managers agree that public firms currently meet investor demand for climate-related information, only 38.6% of investors share that view. We trace this gap to three sources. First, the gap partly reflects the absence of disclosure: firm managers report high coverage of baseline items such as emissions (90.6%) and governance (85.4%), but disclosure drops substantially for the financial impact of climate risks (34.0%), the item investors most frequently flag as missing or unclear (68.7%). Second, and most strikingly, the gap reflects a fundamental misalignment in priorities of managers' disclosure choices relative to investors' decision-making. Managers rank carbon emissions as their top disclosure priority, while investors rank the financial impact of climate risks first and raw carbon emissions as low-priority, which suggests a near-complete inversion in terms of priorities. This divergence suggests that investors seek "financialized" climate information (i.e., disclosures that translate climate risks into financially interpretable terms), while firms concentrate on more commonly reported metrics. Third, the gap is amplified by differences in dissemination channels: firms concentrate climate disclosure in sustainability reports (85.3%) and corporate websites (77.0%), while investors rely heavily on annual financial reports (51.7%) and public investor communications (49.0%).

Our second set of results investigates the economic roots of the disclosure gap. We find that both managers and investors perceive meaningful benefits from climate disclosure, but that these benefits coexist with nontrivial frictions. Firms' primary stated benefits for climate disclosure are satisfying shareholder information demand and complying with anticipated future regulations. Investors broadly recognize the same motivations but at lower perceived intensity and when using climate information for their own decision-making, they prioritize assessing financial impact and evaluating long-term business sustainability. On the cost side, uncertainties (e.g., in future regulations, climate data measurement, or investor preferences) emerge as the most salient barriers on both sides,

while proprietary costs and competitive concerns are rated lowest. When using climate disclosures, investors further report that verifiability (67.4%) and poor information quality (60.6%) are their primary barriers, suggesting that the problem is insufficient credible disclosure rather than insufficient or excessive volume. This finding is consistent with Frankel et al. (2025), who argue that increased disclosure alone may not be sufficient to shift investor behavior.

A follow-up question is whether these frictions relate to shareholder value or broader stakeholder interests. We find that the majority of both managers (85.1%) and investors (73.7%) perceive at least some shareholder value creation from climate disclosure, suggesting that climate disclosure is demanded to improve shareholder value rather than being perceived as purely a stakeholder-oriented exercise. Next, we document that investors care about climate disclosure and would react to reductions in disclosure, primarily through engagement rather than exit (although the latter finding may be driven by the set of investors who responded to our survey). Managers, in turn, view shareholders as the second most influential stakeholder group, behind only regulators. That the disclosure gap persists, in spite of the broad view on both sides that climate information would be beneficial to shareholders, highlights the magnitude of the identified frictions.

Our third set of results explores potential mechanisms that could reduce the gap. We start with the voluntary mechanisms managers and investors view as most effective for better aligning climate disclosures with investor expectations. Both managers and investors rate standardized disclosure frameworks as the most promising mechanism for aligning climate disclosures with investor expectations, followed by direct investor interactions and benchmarking with industry best practices. Both groups assign the lowest importance to enhanced support from ESG rating agencies, consistent with growing criticism of rating divergence and limited transparency (Berg, Kölbel, and Rigobon, 2022; Dube, Lee, and Wang, 2026). Next, we examine whether they view the current regulatory framework as providing sufficient guidance. Both groups view it as inadequate, on average.

Our paper makes three primary contributions. First, we contribute to the literature on the economics of climate disclosure, and in particular, the supply and demand of climate-related information (e.g., Christensen et al., 2021; Friedman and Ormazabal, 2024). While several studies document individual benefits or costs of climate disclosure (e.g., Cohen et al., 2023; Kim, Wang, and Wu, 2023; Zakota, 2025), a comprehensive assessment of the relative importance of different frictions and their interaction is difficult to achieve through standard archival work. We contribute by eliciting both sides' perceptions of the relative importance of specific benefits, costs, and frictions directly and show that the gap is rooted in an inversion of priorities: investors are looking for "financialized" climate information while firms prioritize readily measurable metrics such as emissions intensity. These findings also speak to a broader literature highlighting the apparently limited role climate information plays in observed investment decisions (e.g., Aswani et al., 2024; Frankel et al., 2025; Zhang, 2025), in spite of investors' stated demand. While a common explanation for this disconnect is greenwashing (e.g., Raghunandan and Rajgopal, 2022; Kim and Yoon, 2023), our evidence suggests that an alternative may also be possible in some cases: stated demand is sincere, but the information investors need is not supplied in decision-useful form.

Second, our paper builds on the growing body of survey-based research on climate disclosure and sustainable finance. Krueger, Sautner, and Starks (2020) and Ilhan et al. (2023) primarily characterize investors' perceptions of climate risks and the role of climate disclosure in investors' investment decision-making. These studies show that investors value climate risks and demand climate disclosures. Along these lines, Amel-Zadeh and Serafeim (2018) survey investors on why and how they incorporate reported ESG information into investment processes. There are also surveys in the broader climate-finance space.[1] We advance this literature by focusing on the *gap* between the supply

[1] For example, Stroebel and Wurgler (2021) survey 861 finance academics, professionals, and policy makers and document that pressure from institutional investors or shareholder engagement is perceived as one of the most effective mechanisms for reducing firms' climate risks. In addition, Giglio et al. (2025) use survey data to study ESG beliefs and preferences

and demand of climate disclosure, i.e., we compare investors' perceptions directly to firms' perceptions (as opposed to investors' assumptions about firms' perceptions). This approach enables us to directly compare what firms disclose to what investors actually use, as well as where each side perceives the primary frictions and potential solutions.

Third, we contribute to the broader policy debate on climate-related disclosure regulation. The SEC's withdrawal of its climate disclosure rule has led to the US becoming a largely voluntary arena for climate disclosure, even as the EU and other jurisdictions continue to increase the scope of disclosure mandates. This divergence sharpens questions about whether mandates are warranted and what they should require (e.g., Christensen et al., 2021). Our evidence speaks to both. We show that the investor-firm disclosure gap is not closing on its own, with both sides rating the current regulatory framework as inadequate. Our findings also point to specific design features that would make disclosure more decision-useful: investors primarily seek disclosures that translate climate exposures into financial terms, delivered through annual financial reports, and accompanied by mechanisms that enhance credibility and verifiability. These patterns suggest that the content, location, and verification of disclosure are at least as important as disclosure volume.

## 2. Motivation and Literature

### *2.1. The Supply and Demand Gap in Climate Disclosure*

Recent years have seen a significant increase in attention paid to sustainability by capital market participants (Starks, 2023; US SIF, 2020) and, in turn, an increase in investors' stated demand for firms' climate-related information (e.g., Christensen et al., 2021; Cohen et al., 2023). Conversely, the extent to which investors actually make use of climate-related information appears to be limited relative to

among retail investors and link those beliefs to portfolio choices. Flammer et al. (2026) survey investors in developing economies and highlight organizational and informational frictions as key barriers to sustainable investing in those countries.

these stated demands (Aswani et al., 2024; Frankel et al., 2025; Zhang, 2025). One potential explanation for this gap between investors' claims and their actual behavior may be the perception that the quantity and quality of climate-related information available to capital markets does not match current demands (e.g., Friedman and Ormazabal, 2024).[2] For example, Krueger et al. (2020) and Ilhan et al. (2023) survey investors about the value and demand of climate disclosures. In their surveys, investors express a strong belief that high-quality information on firms' climate risk exposures is critical for informed investment decisions, and that their institutions have strong demand for such disclosures.[3] However, investors also indicate that they currently lack sufficient information on corporate climate risks (e.g., CFA, 2024; EY, 2024; PwC, 2024). To that end, investors may not use climate information even while considering it to be decision-relevant.

The gap between the climate information that investors demand and the information that firms supply can stem from at least three distinct factors. First, the gap may reflect the absence of disclosure. Although the number of firms providing climate-related information has increased steadily over time, a nontrivial share of firms still does not disclose. For example, the CDP (previously Carbon Disclosure Project) reports that over 70,000 companies were requested to disclose environmental data in 2025, whereas around 22,100 companies disclosed through the platform. The lack of disclosure can arise, in part, because even when investors value information, some disclosure benefits may accrue as

[2] The demand for climate-related information arises for two main reasons: decision-making and contracting. In this paper, we primarily focus on the demand of equity investors following the US SEC's framework. The SEC's disclosure regime is grounded in a single-materiality standard, whereby firms are required to disclose information that is material to investors' decisions. In other jurisdictions (e.g., the EU), regulators also put weight on non-investor stakeholders using a double materiality paradigm. Focusing on investors does not imply that other stakeholders' information needs are unimportant. First, it is almost impossible to survey all relevant stakeholders in one survey. Second, it reflects our institutional setting that is directly relevant to ongoing debates about the scope, content, and necessity of climate disclosure in US capital markets.

[3] Investors may demand climate disclosures for two reasons: (i) they believe that ESG performance is indicative of future financial performance, and/or (ii) they have intrinsic ESG preferences (Friedman and Heinle, 2016; Starks, 2023; Giglio et al., 2025). Stakeholder preferences often translate into financial performance implications of ESG performance (e.g., Christensen et al., 2023; Dube et al., 2026).

externalities (Christensen et al., 2021) and, hence, the benefits may not be fully internalized by firms.[4] To that end, disclosure may not create sufficient shareholder value. Thus, while the number of disclosers has risen steadily, the supply of climate-related information remains incomplete even at the most basic level of whether firms disclose at all. Although several data vendors have attempted to fill this gap by providing estimates of non-disclosing firms' carbon emissions, these data are known to have issues that impede their reliability and use in practice (Aswani et al. 2024; Li, 2025; Zhang 2025).

Second, even when disclosure occurs, information processing frictions may prevent investors from using disclosed information. Blankespoor, deHaan, and Marinovic's (2020) framework identifies three primary types of information processing frictions, related to acquisition costs, processing costs, and integration costs; each applies to climate disclosures. With respect to acquisition costs, climate-related information may be dispersed across multiple reporting channels, making it less visible, less comparable, and harder for investors to access. Consistent with this view, Rouen et al. (2024) show that ESG reports uniquely offer material insights not found in the 10-K, suggesting that relevant information does not always flow through the channels investors most commonly monitor. Relatedly, Bloomberg Law (2024) reports that only 126 of the 410 S&P 500 firms that had filed 10-K reports through May 2024 discussed emissions from direct operations in those filings, and even among firms referring to Scope 1 and 2 emissions, detailed emissions figures were often absent. Processing costs magnify these challenges. Even when granular data are available, climate disclosures are typically non-standardized, making it costly for investors to translate disclosed metrics into financially interpretable terms such as impacts on revenues, costs, asset lives, capital expenditures, or impairment assumptions. While emissions metrics have become increasingly prevalent – as of 2024, 93% of S&P 500 firms and

[4] For example, climate disclosure by one firm may improve market-wide pricing efficiency or help investors benchmark across an industry, but these benefits are shared broadly rather than captured by the disclosing firm alone. As a result, individual firms may underinvest in disclosure relative to the optimal level, particularly when the private costs of producing and verifying climate-related information are nontrivial.

54% of Russell 3000 firms disclose certain emissions metrics (The Conference Board, 2025) – financialization is limited, resulting in higher integration costs. Less than one-third of firms disclose the financial impact of climate risks (EY, 2025), and Müller et al. (2025) document limited increases in climate disclosure within US firms' financial statements. Together, these frictions suggest that growth in disclosure volume may not always translate into decision-useful information.

Even when processing costs are low, the third potential factor leading to the supply-demand gap is concerns over the reliability of disclosed climate information. Gipper et al. (2025) document that climate-related information relies on assumptions that are difficult to verify and lacks the audit rigor applied to traditional financial reporting. These concerns are borne out empirically: Cohen et al. (2026) document widespread upward revisions of self-reported emissions by major US firms, highlighting potential issues with the accuracy of disclosures – especially at the time of initial reporting when they may be most decision-relevant. Together with evidence of greenwashing (e.g., Marquis, Toffel, and Zhou, 2016; Lin et al., 2024), such findings suggest that reliability concerns may be a key factor in explaining the gap between the supply and perceived usefulness of climate information. Our goal in this study is to understand the extent to which each of these potential three explanations appears to be borne out in practice, in the views of firms and investors.

### *2.2. Potential Mechanisms to Bridge the Climate Disclosure Gap*

Several jurisdictions, most notably the EU, have developed or are developing climate-related standards or disclosure regulations to narrow the gap between the supply and demand of climate-related information (e.g., Krueger et al., 2024; Donau et al., 2025). The SEC's 2024 climate disclosure rules were introduced in a similar vein, in an attempt to more explicitly present such information to investors within a single-materiality paradigm. The withdrawal of the SEC's rule, however, leaves US

climate disclosure largely voluntary and raises a broader question of which regulatory and non-regulatory mechanisms might plausibly bridge the disclosure gap.

A range of mechanisms has emerged, each with distinct tradeoffs. Climate reporting standards, though mostly voluntary, can serve as coordinating devices by improving comparability and lowering investors' information processing costs through more consistent metrics and structure (Bochkay, Hales, and Serafeim, 2025). Mandatory disclosure regulations have also emerged, although it is difficult to quantify from archival data the costs and benefits of these regulations.[5] While third-party rating agencies and data vendors have proliferated over the past decade, they have been long criticized for measurement issues, limited transparency, and misaligned incentives (Berg et al., 2022; Dube et al., 2026). Similarly, ESG assurance is in a relatively nascent stage, and the extent to which assurance can meaningfully improve the reliability of climate metrics rather than merely certifying process compliance is still in question (Gipper et al., 2025).

Given the potential limitations of these approaches, direct shareholder engagement on environmental issues has also increased in recent times. Recent work highlights the role of institutional investors (and investor-led initiatives) in demanding climate disclosure and facilitating sustainable transitions via engagement, activism, or exit (e.g., Dimson, Karakaş, and Li, 2015, 2026; Azar et al., 2021; Cohen et al., 2023; Hoepner et al., 2024). Unlike one-way disclosure mandates, engagement allows iterative feedback, enabling investors to articulate specific informational needs and firms to explain measurement constraints. Cohen et al. (2023), for example, find that CDP signatories induce firms to provide climate-related information to cater to institutional investors, and CDP's Non-Disclosure Campaign finds that firms are more than twice as likely to respond when engaged directly by financial institutions.[6] Whether any of these mechanisms—standards, regulation, ratings, assurance,

[5] See Christensen et al. (2021) and Frankel et al. (2025) for detailed reviews about the economics of mandating ESG disclosure regulations.
[6] See https://cdp.net/en/campaigns/non-disclosure-campaign.

or engagement—actually narrows the disclosure gap depends on how firms and investors themselves perceive them: as substitutes or complements, as informative or merely procedural, as worth the cost or not. Those perceptions are difficult to infer from observed disclosure behavior and archival data alone, motivating our approach of conducting parallel surveys of firms and investors.

## 3. Survey Methodology

### *3.1. Survey Design*

We address our research question using parallel surveys to US public firms and investors (i.e., the supply and demand sides of climate disclosures under the SEC's regulatory framework). By posing similar questions to both groups, this design allows us to directly assess the extent to which firms' disclosure practices align (or misalign) with investors' information needs. Our approach also sheds light on mechanisms that could improve information provision, thereby helping firms achieve more cost-effective climate disclosure practices that better align with investors' needs.

A survey approach has two primary advantages in this setting. First, while firms' climate disclosures can be descriptively examined, whether and how investors actually use different types of climate information – and the relative importance of specific disclosure metrics – is difficult to recover from archival data. Second, archival research relies on constructed proxies for key frictions in the disclosure process (e.g., litigation risk, shareholder preferences, agency frictions, proprietary costs) that are typically unobservable and endogenously determined; even where proxies exist, the resulting correlations admit multiple causal and non-causal interpretations. Prior studies document individual costs or benefits, but assessing the *net* benefits of climate disclosure remains challenging. A survey approach sidesteps many of these limitations, allowing us to directly elicit the frictions perceived by both sides and evaluate their relative importance.

Our survey instruments are organized into three parts. The first part asks about what firms currently disclose and through which channels, as well as which disclosure mediums investors consult, what information they use, and what they find missing or unclear. This part of the survey speaks to the existence of the gap in the supply and investors' demand of climate-related information. The second part asks about economic benefits and costs of climate disclosure as well as associated frictions, which examines the root of the gap. The third part asks both groups to evaluate specific mechanisms (standards, regulation, assurance, ratings, and direct shareholder engagement) that might reduce the gap. We asked a total of 11 questions to firms and 13 questions to investors, with the survey designed to take roughly 10 minutes. Similar to Edmans et al. (2023), the question sets are designed to enable direct comparisons between managers and investors. We also collect demographic information from both groups. Appendix B presents the full survey instruments.

We benefited from extensive feedback from academics and practitioners before launching the survey. We developed the initial survey questions through conversations with professionals and by reviewing relevant literature, practitioner articles, and prior survey studies (e.g., Krueger et al., 2020; Ilhan et al., 2023). We then refined these questions based on feedback from researchers and practitioners and from presentations in academic seminars. We also hired a survey professional to polish the questionnaire and the online interface.

### *3.2. Survey Audience and Delivery*

Our survey targets two audiences: (i) firm managers responsible for climate disclosure at US publicly traded firms (e.g., investor relations officers, chief sustainability officers, or sustainability reporting officers) and (ii) US institutional investors. For the firm sample, following prior survey-based studies (e.g., Call et al., 2024), we begin with firms in the Compustat-CRSP universe with non-missing market value as of fiscal year-end 2023. For each firm, we search for the most recent investor

relations email address from quarterly earnings releases or the investor relations page of the corporate website, excluding outsourced investor relations representatives to ensure responses from insiders. Because our survey focuses on climate disclosure issues, we also include corporate sustainability contacts by searching for the most recent CSR report for each firm. Since contact information in CSR reports is typically generic (e.g., sustainability@mt.com) and yields low response rates (Brown et al., 2019), we supplement this with an email list of chief sustainability officers and sustainability reporting officers of US public firms obtained from Apollo, a B2B contact database. Combined, these sources yield 6,225 successful email invitations to 2,470 US public firms. For the investor sample, we obtain a comprehensive email list of US asset managers or asset owners from Refinitiv (now LSEG), yielding 22,789 successful email invitations to investors affiliated with 6,950 institutions.

We launched the survey on December 1, 2025, and closed it on January 23, 2026. All invitations were sent via email with a unique access link and personalized using "Dear <First Name>" (except for those sent to generic addresses). Respondents could opt to receive a summary of results, and we sent up to three reminders to non-respondents.

The firm survey yielded 220 valid responses from 197 unique firms, with a median completion time of 8 minutes.[7] The investor survey yielded 564 responses; we exclude those who explicitly indicate that they do not use climate disclosures in investment decisions, since such respondents have no stake in what is disclosed. To that end, those respondents' responses are likely to reflect noise. We note that most such investors likely did not respond at all, mechanically lowering the headline response rate given that our investor pool was not pre-screened for investors who use climate information. After this exclusion, we retain 432 investor responses from 369 institutions, with a median completion time of 11 minutes.

[7] Since participation was voluntary, respondents were free to exit the survey at any time or skip any questions. We exclude respondents who drop out in the middle or who submit responses within three minutes.

### *3.3. Survey Limitations*

Our study is subject to several caveats common to survey-based research. We describe each below along with the design choices we make to mitigate their potential impact on our inferences.

First, survey respondents are more likely to be firms and investors who already pay attention to climate disclosures. To that end, our sample is unlikely to represent the full universe of market participants. However, we view this as a feature rather than a limitation: our study concerns the *intensive* margin of climate disclosure, i.e., what firms and investors who value climate-related information actually disclose and demand. This intensive-margin focus is reinforced by our exclusion of survey respondents who report not using climate disclosures in their investment decisions. Selection into the sample is therefore aligned with the object of interest rather than a source of bias for the questions we examine.

Second, respondents may provide socially acceptable answers rather than fully truthful ones. Several design choices mitigate this concern. Participation in the survey is voluntary and respondents are free to exit the survey at any point or to skip individual questions. Additionally, we guarantee anonymity and report results only in aggregate, reducing reputational concerns associated with revealing individual views. Moreover, survey questions are framed in a neutral manner and often focus on tradeoffs, constraints, and relative importance rather than normative judgments. Crucially, many of our key findings arise from between-group comparisons (managers versus investors), which are less susceptible to social desirability bias than within-group averages: even if both sides bias their answers in socially desirable ways, the gap between them remains informative.

## 4. Survey Results

### *4.1. Respondent Demographics*

We begin our empirical analyses by presenting demographic information on our survey respondents in Table 1. Panel A provides information on firm managers and firms, while Panel B provides information on investors. Among firm managers, investor relations officers account for 24.5% of respondents, followed by chief sustainability officers (23.6%) and sustainability reporting officers (21.8%). Chief financial officers represent 9.5% of the sample, vice presidents 8.2%, and the remaining respondents include other senior executives (5.5%) or individuals who did not disclose their position (6.8%). These respondents are directly responsible for climate disclosure activities in their firms. Turning to respondents' firm characteristics, the average market capitalization is $51.0 billion, slightly larger than an average S&P 1500 firm of $42.1 billion. Because larger firms are disproportionately represented in academic research, the respondent firms are comparable to those commonly examined in other settings (Call et al., 2024). In terms of industry composition, manufacturing firms constitute the largest share of respondents (43.6%), followed by services (18.6%) and transportation and public utilities (12.7%).

Investor respondents are most commonly from asset managers (35.6%), followed by hedge funds (10.6%), mutual fund management companies (9.3%), private equity funds (7.9%), and banks (6.3%). In terms of assets under management (AUM), 29.6% of respondents manage between $1 billion and $20 billion in assets, while 24.3% manage less than $1 billion. At the upper end of the distribution, 18.8% of respondents are affiliated with institutions managing over $100 billion in assets. Consistent with the long-term nature of many institutional investors, the majority of respondents report relatively long investment horizons: 46.3% indicate a typical holding period of two to five years, and an additional 30.1% report holding periods exceeding five years. Only 11.3% of respondents report short-term horizons of less than one year. On average, respondents allocate 71.3% of their

portfolios to equity securities, with a median equity allocation of 80%. Active investment strategies are prevalent, with a mean of 86.3% and a median of 100% of portfolios managed actively. Respondents report that, on average, 45.1% of their portfolios incorporate ESG considerations, with a median value of 27.5%.

Fund and portfolio managers account for 27.8% of respondents, followed by investment analysts and strategists (24.1%). Senior executives, including managing directors (11.6%), chief investment officers (6.3%), and chief executive officers (5.8%), represent approximately one-quarter of the sample. ESG or responsible investment specialists comprise 7.9% of respondents.

### *4.2. The Perceived Gap in Climate Disclosure*

We begin by documenting the existence of a perceived gap between firms' provision of climate-related information and investors' demand for such information. Figure 1 reports responses to a question posed to both groups: whether they agree that public companies currently meet investor demand for climate-related information. The two groups differ markedly in their assessments. While 62.4% of managers agree (strongly or somewhat) that public firms currently meet investor demand, only 38.6% of investors share that view. This figure reveals a clear perception gap: managers are considerably more confident than investors that current disclosure is adequate. We examine this perceived gap along three dimensions: (i) what information is disclosed, (ii) which information each group prioritizes, and (iii) the channels through which information is disseminated.

#### *4.2.1. What Information is Disclosed?*

Table 2 focuses on the information being disclosed. In Panel A we ask managers which climate-related aspects they currently disclose, and in Panel B we ask investors which aspects are most frequently missing or unclear. Respondents are given the choice to tick as many options as they believe

apply. The two panels present a mirror image along several key dimensions. For instance, the most commonly disclosed attribute by firms is carbon emissions (90.6%). This figure aligns with investor perceptions: only 10.5% of investors flag emissions information as missing. Similarly, 74.5% of firms report disclosing targets, goals, and progress tracking, closely mirroring the 25.1% of investors that find this information to be missing. Conversely, only 34.0% of firms disclose the financial impact of carbon risks, which is also the item that investors most frequently identify as missing or unclear (68.7%). The same pattern holds, albeit not as precisely, for other items: scenario analysis, transition planning, and internal carbon pricing has both the second-lowest disclosure rate among firms (30.2%) and the second-highest "missing or unclear" rate among investors (42.1%), while mitigation and adaptation strategies sits in the middle on both sides (56.1% disclosed; 34.6% flagged as missing). Collectively, our evidence suggests that what firms do not disclose matches what investors claim is missing, and in particular that firms are least likely to provide climate-related information along the financialized dimension most sought by investors.[8]

*4.2.2. Which Information does Each Group Prioritize?*

Table 2 suggests that the perception gap reflects divergent priorities for firms relative to investors. Table 3 further examines this gap, reporting the average rank each group assigns to the seven climate aspects (where lower values indicate higher priority/importance), along with the full distribution of ranks for both firm managers (Panel A) and investors (Panel B).

In Panel A, managers' top-ranked priority is carbon emissions (average rank 2.55), with 40.0% placing it as Rank 1 (most important). Managers also assign relatively high priority to identification of climate risks (average rank 3.13) and targets, goals, and progress tracking (average rank 3.38), with

[8] This inverse relationship also validates our survey results. Overall, the evidence indicates a gap in climate disclosure: investors report missingness or lack of clarity is concentrated in the disclosure dimensions that firms report providing less often.

27.6% ranking targets/goals/progress as Rank 2. In contrast, managers rank the financial impacts of climate risks substantially lower (average rank 4.74), with a large share of responses concentrated in the lowest ranks (Rank 6: 28.1%; Rank 7: 15.7%). Scenario analysis, transition planning, and internal carbon pricing is the lowest-ranked aspect for firms (average rank 6.22), with 61.9% assigning it Rank 7. Investors invert this ordering: the financial impact of climate risks is their top priority (average rank 2.16), with 40.1% placing it as Rank 1 and 31.7% placing it as Rank 2. Investors also rank identification of climate risks relatively highly (average rank 2.65). In contrast to managers, investors place carbon emissions near the bottom (average rank 4.82). Investors also rank targets, goals, and progress tracking lower (average rank 4.23), most frequently assigning it Rank 5. As in Panel A, scenario analysis, transition planning, and internal carbon pricing is the lowest-ranked aspect (average rank 5.91), with 54.2% assigning it Rank 7.

Figure 2 plots the two sets of rankings side by side; the largest and most statistically significant gaps appear precisely on the items that distinguish financialized from raw climate information (financial impact and carbon emissions). Taken together, our evidence highlights that investors seek information that translates climate exposure into financial consequences, while firms concentrate disclosure efforts on more commonly reported and readily measurable metrics such as emissions.

*4.2.3. Information dissemination channels*

We next examine, in Table 4, the channels through which firms disseminate climate-related information (Panel A) and the channels investors use when collecting such information (Panel B). Firms concentrate climate disclosure in standalone sustainability/ESG reports (85.3%) and corporate websites (77.0%). In contrast, 53.0% of firms provide some form of climate-related disclosure in annual financial reports (e.g., the 10-K). Conversely, investors rely relatively more evenly on financial and non-financial channels. Investors' most relied-upon channel is annual financial reports (51.7%),

followed by sustainability reports (49.2%), public investor communications (49.0%), and corporate websites (42.2%). The most notable discrepancy is in the use of financial reporting channels: investors report substantial reliance on annual financial reports (Müller et al., 2025), while firms are much more likely to provide climate disclosure in dedicated sustainability/ESG reports and corporate websites.

A common theme arises from Tables 2-4. The supply-demand gap is not a generalized shortfall in climate disclosure; rather, what we observe appears to be a specific shortfall in *financialized* climate disclosure. Firms most readily disclose raw climate metrics through sustainability-oriented channels, while investors demand financial translations of climate exposures, communicated through the channels they already use in investment analyses to evaluate firms.

### *4.3. Frictions in Climate Disclosure*

Having documented the existence of the perceived gap between firms' provision of climate-related information and investors' demand for such information, we next examine why this gap persists. In a voluntary disclosure setting, firms are unlikely to provide additional climate-related information unless the perceived benefits of disclosure outweigh its perceived costs. The persistence of the gap may therefore reflect either insufficient benefits from disclosure, disclosure costs that are too high, or both. To investigate this question, we first examine what managers seek to achieve when they disclose climate-related information and how investors perceive the benefits of disclosure. We then turn to the frictions that may limit firm managers' willingness to disclose and investors' ability to use climate-related information.

#### *4.3.1. Benefits of Climate Disclosure*

Table 5 examines the benefit side of firms' climate disclosure choices. It presents what managers seek to achieve through climate disclosures (Panel A), how investors prioritize the goals

they pursue when using climate disclosures in investment decision-making (Panel B), and which benefits investors see from firms' climate disclosures (Panel C). Panels B and C of Table 5 capture two conceptually distinct constructs. Panel B asks investors what they are trying to accomplish when using climate disclosures, while Panel C asks investors to assess what firms gain from providing them. Panels A and C report average ratings on a 0–4 scale (higher values indicate greater importance or more strongly perceived benefits), together with the full distribution of responses. Panel B reports investors' rankings of disclosure-use goals (lower average ranks indicate higher importance). Figure 3 plots Panel A and Panel C together, with a statistical comparison between the two.

Managers' top stated objectives are satisfying shareholder information demand (average rating 2.97), complying with anticipated future regulations (average 2.77), and fostering reputation (average 2.49). Objectives tied to financing outcomes are comparatively weaker: increasing firm value has an average rating of 1.72, while reducing the cost of debt is lowest (average 1.10). These results are consistent with survey evidence from Krueger et al. (2020) and Ilhan et al. (2023) that firms perceive shareholder demand and regulatory pressure as the primary motivators for climate disclosure.

With respect to how investors use climate disclosures, they rank assessing climate-related financial impact (average rank 1.83) and evaluating the long-term sustainability of the business (average 1.92) as the two most important goals when using climate disclosures, reinforcing the financialized information theme from Section 4.2. Aligning investing values with portfolio choices (average 2.74), and supporting engagement and stewardship activities (average 3.52) are viewed as secondary.

Panel C tells a more nuanced story. Investors' assessments of firms' benefits broadly track managers' stated objectives, but at lower intensity. The highest perceived benefits identified by investors are shareholder information demand (average rating 2.21) and anticipated regulation (average 2.19). The drop is most pronounced for satisfying shareholder information demand (2.97 for managers versus 2.21 for investors), suggesting investors do not view firms as fully supplying the climate-related

information that they demand. Investors also assign relatively high perceived benefits to increasing firm value (average 2.00) and reducing information uncertainty (average 1.94). By contrast, fostering reputation averages 1.82, and satisfying non-shareholder stakeholders' information demand is lowest (average 1.52), with 26.8% rating it 0 and 21.5% rating it 1, indicating investors do not view stakeholder-oriented audiences as a meaningful source of value from climate disclosure.

Table 5 yields two key insights. First, both sides see meaningful benefits from climate disclosure, so the persistence of the climate disclosure gap is unlikely to reflect a complete absence of perceived disclosure benefits on the part of firms and investors. Second, the level mismatch in Panel C, where investors uniformly rate firms' benefits lower than managers themselves do, is itself informative: if investors view the payoffs from disclosure as more modest than firms, they may be less inclined to push firms toward the types of disclosures most likely to be decision-relevant.

*4.3.2. Costs of Climate Disclosure*

We next turn to frictions that may limit climate disclosure and investors' ability to use climate information. Table 6 examines frictions that limit climate disclosure (Panel A), investors' perceptions of the frictions that prevent companies from disclosing (Panel B), and investors' ability to use climate-related information (Panel C). Panels A and B report average ratings on a 0–4 scale (higher values indicate greater importance of each friction), together with the full distribution of responses. Panel C reports the percentage of investors selecting each factor as a barrier to using climate-related information. Figure 4 plots Panels A and B side by side, with a statistical comparison between the two.

In Panel A, managers identify regulatory uncertainty and climate data constraints, rather than strategic concerns, as the most important barriers to climate disclosure. The highest-rated frictions are uncertainty about future regulations (average rating 2.86) and climate data availability/quality (average 2.75). Direct data collection costs and reporting are also salient (average 2.45). By contrast, strategic

and competitive concerns are rated lowest: concerns about revealing negative impacts and about competitors using the information to their advantage both average 1.15, with substantial mass at 0.

In Panel B, investors attribute firms' non-disclosure primarily to costs, regulatory uncertainty, and heterogeneous investor preferences. Investors attribute nondisclosure primarily to direct costs (average rating 2.24), regulatory uncertainty (average 2.21), and heterogeneous investor preferences (average 2.20). Investors also assign relatively high importance to litigation risk (average 2.10) and rate climate data availability/quality somewhat lower than firms do (average 2.05). As in Panel A, competitive concerns are rated lowest: competitors using the information to their advantage averages 1.31, with 34.3% rating it 0. These patterns broadly track managers' own assessments and suggest that in the climate disclosure context, uncertainty and data quality frictions dominate concerns related to proprietary costs.

Panel C examines investors' own barriers to using climate information, revealing a qualitatively different picture. Credibility concerns dominate: 67.4% cite lack of verifiability, while 60.6% cite poor data quality as constraints on their ability to use climate-related information. By comparison, 35.5% cite lack of climate information and 31.3% cite limited processing capacity, with only 12.5% reporting the presence of too much information. To that end, the frictions underlying the climate disclosure gap are unlikely to reflect the absence of climate information but rather the absence of trust in such information, consistent with Frankel et al. (2025) and Bailey et al. (2025) who argue that more climate or ESG information in and of itself is unlikely to meaningfully impact investor behavior. Taken together, the frictions firms and investors document are complementary: firms struggle to produce disclosures precise enough to be meaningful because of measurement and regulatory uncertainty, and investors in turn struggle to use what is produced because of credibility and quality concerns.

*4.3.3. Shareholder Value of Climate Disclosure*

A natural follow-up question to the preceding sections is whether respondents view climate disclosure primarily through the lens of shareholder value or as an exercise in creating broader stakeholder welfare. As discussed in Section 2.2, firms might be reluctant to disclose because disclosure does not create sufficient shareholder value, even if it would benefit other stakeholders. Even if firms do disclose, if the information provided caters to non-investor stakeholders then investors may not find it decision-useful. Table 7 asks both groups how much shareholder value they believe climate disclosure creates, using a five-point scale ranging from "none" to "a great deal."

Both sides perceive value, but the distributions differ. Among managers (Panel A) the modal response is "a little" (40.9%), followed by "a moderate amount" (31.6%). Only 14.9% of managers report that climate disclosure creates no shareholder value. Investors (Panel B) are more dispersed, with nearly twice as many investors as managers (26.3% versus 14.9%) reporting no value creation. At the upper end, for "a lot" or "a great deal", the gap is smaller (9.4% versus 12.6% for firms). Overall, while a nontrivial minority of investors – even amongst those likely to self-select into our response pool – sees no shareholder value at all, the majority of respondents view climate disclosure as generating modest shareholder value. That majorities on both sides perceive at least some shareholder value creation is important: it indicates that climate disclosure is viewed primarily through the lens of shareholder value rather than being perceived as purely a stakeholder-oriented exercise.

*4.3.4. Preferences and Influence in Climate Disclosure*

The frictions documented in Table 6 may reflect the joint effect of stakeholders' preferences for climate-related information and their influence over firms' disclosure choices. Our next set of analyses therefore distinguishes preferences from influence. A given stakeholder may care about climate disclosure and react to changes in it, but the resulting disclosure incentives may remain limited

if firms do not view that stakeholder's reactions as consequential. Friction becomes meaningful only when both conditions hold. We examine preferences in Table 8 via the perceived consequences of a reduction in climate disclosure, and influence in Table 9 via the stakeholder groups firms perceive as influencing their disclosure decisions.

Table 8 reports the perceived consequences of a reduction in climate disclosure. Panel A asks managers, while Panel B asks investors. Responses are distributed across three categories (Yes / Maybe / No). In Panel A, firm managers most frequently associate reduced disclosure with engagement from socially oriented groups (38.4% Yes; 45.0% Maybe), reputational damage (28.9% Yes; 43.1% Maybe), and engagement from investors (28.0% Yes; 48.8% Maybe). Of note is the 'Maybe' response representing the plurality in all of these cases, highlighting the uncertainty perceived by respondents. Regulatory scrutiny is characterized by especially high uncertainty, with 58.3% of respondents selecting "Maybe". In contrast, firms are unlikely to predict litigation (8.1% Yes; 50.7% Maybe; 41.2% No) as a major concern, consistent with recent work highlighting the relative rarity of climate disclosure-related lawsuits in the US setting (Frankel et al., 2025) – even if the realization of such lawsuits can shape disclosure behavior (Robinson, Skinner, and Wang, 2025).

Panel B of Table 8 highlights a preference for voice over exit; 26.7% respond Yes and 46.4% respond Maybe to engaging with the company to improve disclosure. By comparison, only 8.2% of investors indicate they would reduce investment in the company. Investors' perception of investment risk resulting from a reduction in disclosure is limited (21.4% Yes, 38.8% Maybe, 39.8% No). Collectively, Table 8 indicates that both firms and investors most commonly associate reduced climate disclosure with subsequent increased engagement and potential reputational consequences.

We next examine the stakeholder groups that influence climate disclosure in Table 9. Panel A focuses on managers' assessments of which stakeholder groups influence disclosure, while Panel B provides investors' assessments of their own influence. Panel A reveals a clear hierarchy: managers

rate regulators as the most influential stakeholders (average 3.28; 52.8% assigning the highest rating of 4 on a 0-4 scale), followed by shareholders (average 2.70), customers (average 2.39), and industry peers (average 2.08). By contrast, financial analysts (average 1.47), employees (average 1.40), and suppliers (average 1.20) receive the lowest influence ratings. In Panel B, investors assess their own influence more modestly: only 25.9% view shareholders as having "a lot" or "a great deal" of influence, compared to the 63.1% of managers who rate shareholders in their top two sources of influence. In other words, investors are significantly less convinced of their own influence than managers are.

Taken together, Tables 8 and 9 suggest that the conditions for meaningful disclosure frictions are present. Investors care and would react to climate disclosure, and managers view shareholders as the second most influential group over disclosure decisions, behind only regulators. Yet the disclosure gap persists, for two related reasons, indicating that the frictions identified in Table 6 are sufficiently large to offset shareholder pressure. First, the asymmetry in perceived influence may weaken the feedback loop. If investors underestimate their own influence, they may not push for disclosure as much as firms would expect, even though firms claim they would be responsive. Second, the most influential group, regulators, operates primarily through (anticipated) regulations rather than an iterative market-based mechanism that might surface investors' specific informational needs (e.g., the demand for financialized disclosure).

### *4.4. Reducing the Climate Disclosure Gap*

Having documented the existence of a perceived climate disclosure gap and the frictions that sustain it, we turn to potential solutions. We examine which voluntary mechanisms managers and investors view as most effective for aligning climate disclosures with investor expectations (Table 10), and whether they view the current regulatory framework as providing sufficient guidance (Table 11).

*4.4.1. Alignment mechanisms*

Table 10 reports managers' (Panel A) and investors' (Panel B) assessments of the importance of different alignment mechanisms on a 0-4 scale (with higher values indicating greater importance), together with the full distribution of responses. The two groups broadly agree on rankings of relative importance: managers rate standardized climate disclosure frameworks as the most important approach (average rating 2.95), with 36.0% rating it 4 and 36.5% rating it 3. Investors also rate standardized disclosure frameworks as highest, though with a lower average (2.39) and proportion rating it 4 (20.7%) or 3 (32.5%). Direct interactions with investors and benchmarking with industry best practices are the second- and third-highest rated approaches for firms (averaging 2.64 and 2.40) and investors (2.19 and 2.20). By contrast, firms assign the lowest importance to enhanced support from ESG rating agencies (average 1.50), as do investors (average 1.41). Investors also report lower average ratings for third-party verification/assurance (average 1.86) and internal management and training procedures (average 1.78), with meaningful mass in the bottom two categories.

In spite of the agreement on ordering noted above, Figure 5 highlights two patterns. First, managers consistently rate every mechanism higher than investors do. This parallels the intensity gap in perceived benefits (Table 5): managers consistently perceive a greater potential for these mechanisms to narrow the gap, just as they are more optimistic about the benefits of disclosure itself. Second, the mechanisms both groups rate highest, standardized frameworks and direct interactions, map directly onto the two key frictions documented in Sections 4.2 and 4.3. Standardized frameworks address the measurement and comparability frictions that both sides identify, while direct interactions offer a channel through which investors can communicate their demand for financialized disclosures and work with firms to overcome measurement-related limitations. That both groups rank ESG rating agencies last is consistent with growing criticism of these ratings (Berg et al., 2022; Dube et al., 2026) and also suggests that neither side views intermediaries as a promising path to alignment.

*4.4.2. The adequacy of current regulatory frameworks*

Table 11 reports both groups' perceptions of whether the current regulatory framework provides sufficient guidance for climate disclosure, for firm managers (Panel A) and investors (Panel B). Both groups tilt toward inadequacy, with 30.2% of firms rating the framework as adequate overall (8.7% extremely adequate; 21.5% somewhat adequate), 48.9% as inadequate (35.2% somewhat inadequate; 13.7% extremely inadequate), and 21.0% as neutral. Similarly, only 28.1% of investors rate the framework as adequate overall (13.2% extremely adequate; 14.9% somewhat adequate), while 48.6% rate it as inadequate (29.7% somewhat inadequate; 18.9% extremely inadequate) and 23.3% as neutral. Together, Tables 10 and 11 tell a coherent story. Both groups view standardized disclosure frameworks as the most promising alignment mechanism, but neither regards the current regulatory environment as adequate in this regard. Respondents in both groups see a role for more structured coordination, whether through regulation or voluntary adoption of common standards, but view the status quo as falling short.

## 5. Conclusion

Using parallel surveys of 220 US public firm managers and 432 institutional investors, we examine whether a gap exists between the climate information firms disclose and what investors find decision-useful, why it persists, and the mechanisms that might reduce it.

We document a substantial perception gap: 62% of firm managers believe that public firms currently meet investor demand for climate information, compared to only 39% of investors. This gap stems from misalignment in both content and channels. Firms prioritize disclosure of raw emissions metrics, while investors seek "financialized" information translating climate risks into financial terms. This divergence is reinforced by a mismatch in preferred disclosure outlets, with firms preferring to

provide climate information via sustainability reports while investors prefer annual reports and other investor-focused channels.

The gap persists despite both managers and investors perceiving meaningful benefits from climate disclosure. The primary frictions highlighted by both groups are not related to proprietary costs but rather uncertainties about future regulations, data measurement, and investor preferences that make producing financially meaningful disclosures difficult. On the demand side, investors identify lack of verifiability and poor information quality, not insufficient volume, as their dominant barriers to using climate information. Both sides converge on potential solutions. Standardized disclosure frameworks are rated as the most promising alignment mechanism, followed by direct investor interactions and industry benchmarking, while ESG rating agencies are rated last. Both groups also view the current US regulatory framework as inadequate.

These findings have several implications. For firms, our results suggest that investors place less value on additional climate data and more on disclosures that translate climate exposures into financial terms, delivered through the channels investors already use. For investors, the gap partly reflects a feedback problem: investors assess their own influence over disclosure more modestly than firms perceive it, potentially dampening their willingness to engage with firms. To that end, for policymakers, effective regulation would focus not on expanding disclosure volume but on its design: emphasizing the financial impact of climate risks, standardizing disclosure outlets, and implementing mechanisms that improve data quality. We caveat that our investor sample is likely concentrated among those who would already use climate information, so our results capture the perception gap relative to this subset rather than the broader investor population. Despite this caveat, our findings suggest that bridging the gap requires not more disclosure but more directly financially relevant and credible disclosure to ensure decision-usefulness for investors.

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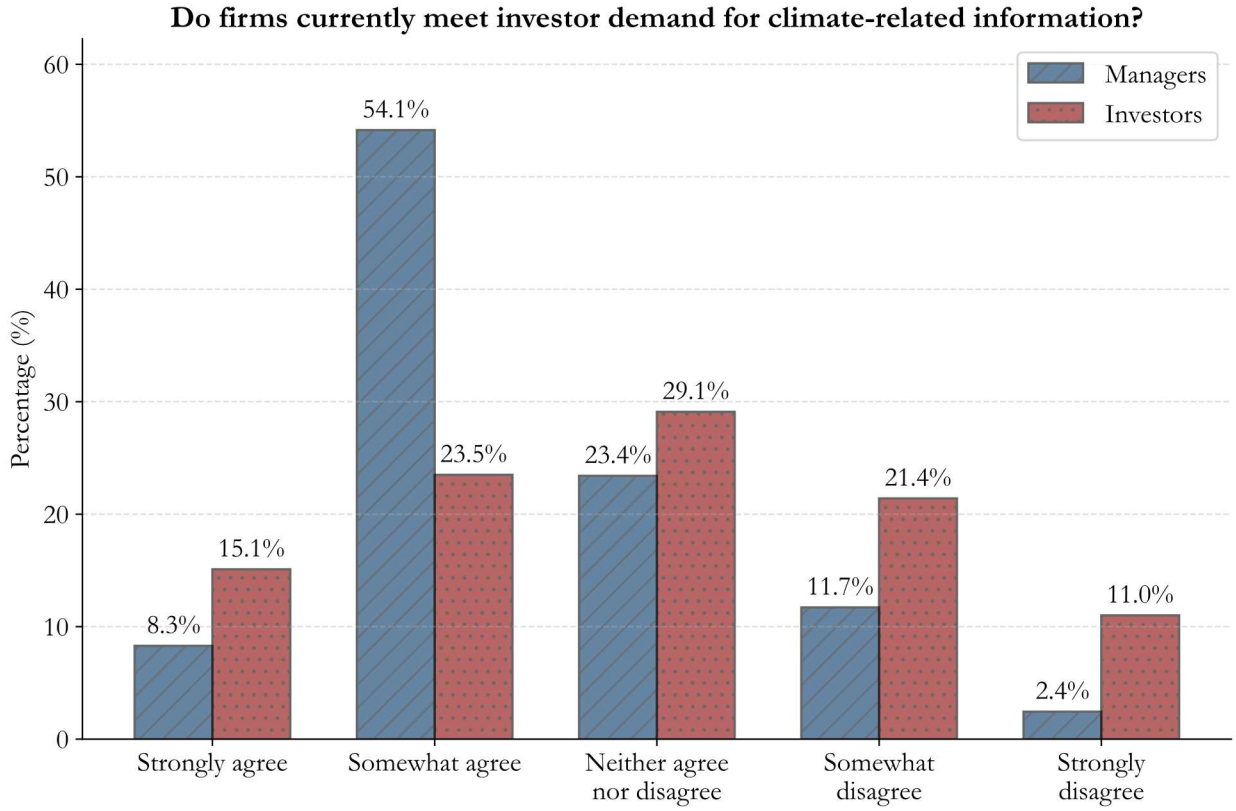
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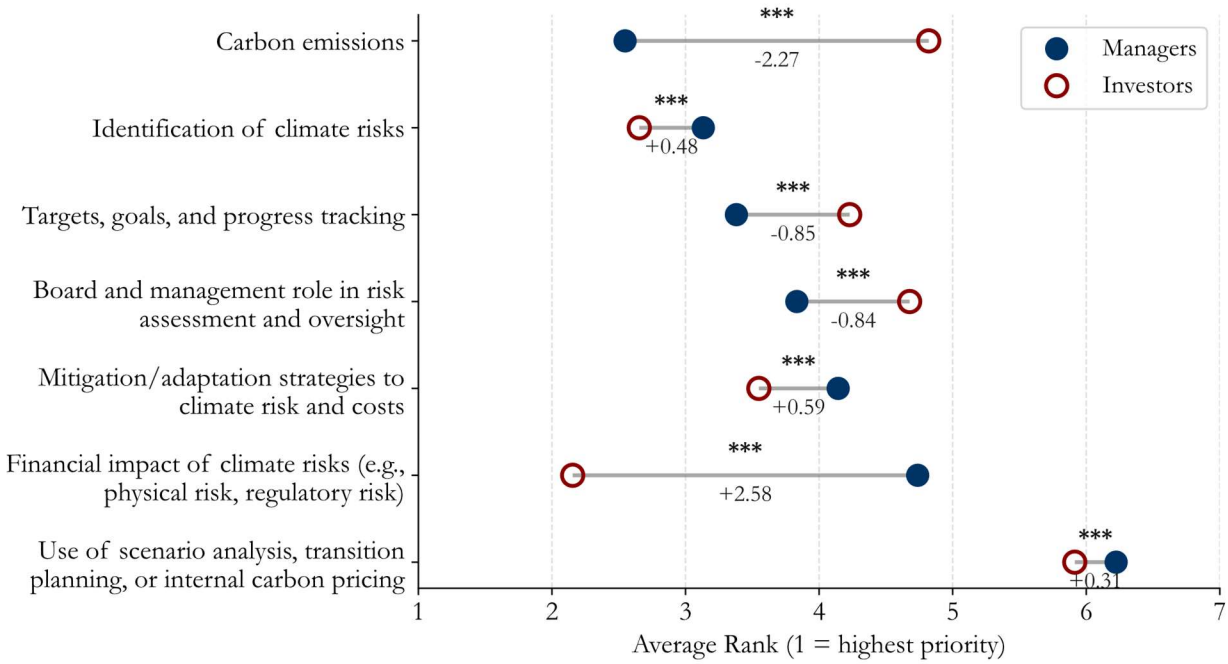
**Figure 1: Perceptions of the Gap Between Climate Disclosure Supply and Investor Demand**

This figure plots the distribution of responses from firm managers and investors to the question "Do you agree that public companies currently meet investor demand for climate-related information?" Responses are reported on a five-point scale: strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree. Blue bars represent firm managers and red bars represent investors.



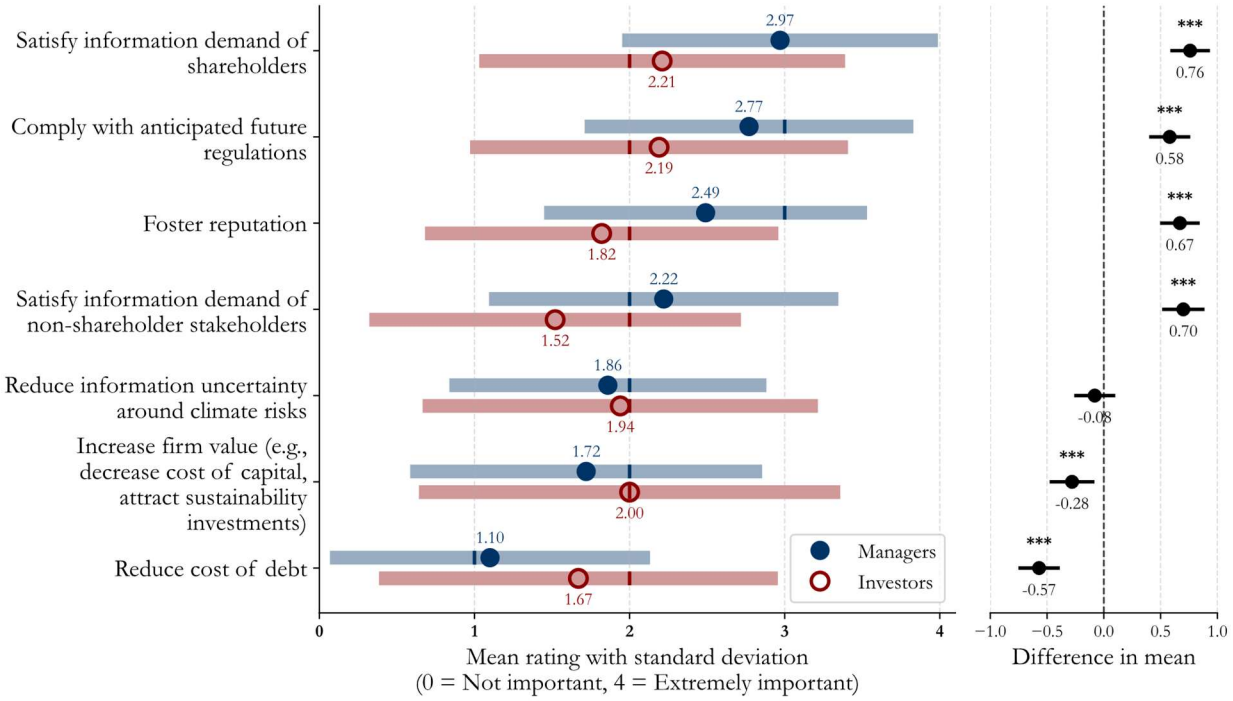
## Figure 2: Priorities for Climate Disclosure

This figure plots the average ranking of priorities assigned by firm managers and investors. Firm managers (blue solid circles) rank the priority of each aspect in their disclosure decisions; investors (red open circles) rank the importance of each aspect in their investment decision-making. The x-axis reports the average rank, where lower values indicate higher priority (1 = highest priority). The difference in means is displayed between the two markers, and its statistical significance is assessed using a Welch's t-test. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively. The underlying data are reported in Table 3.



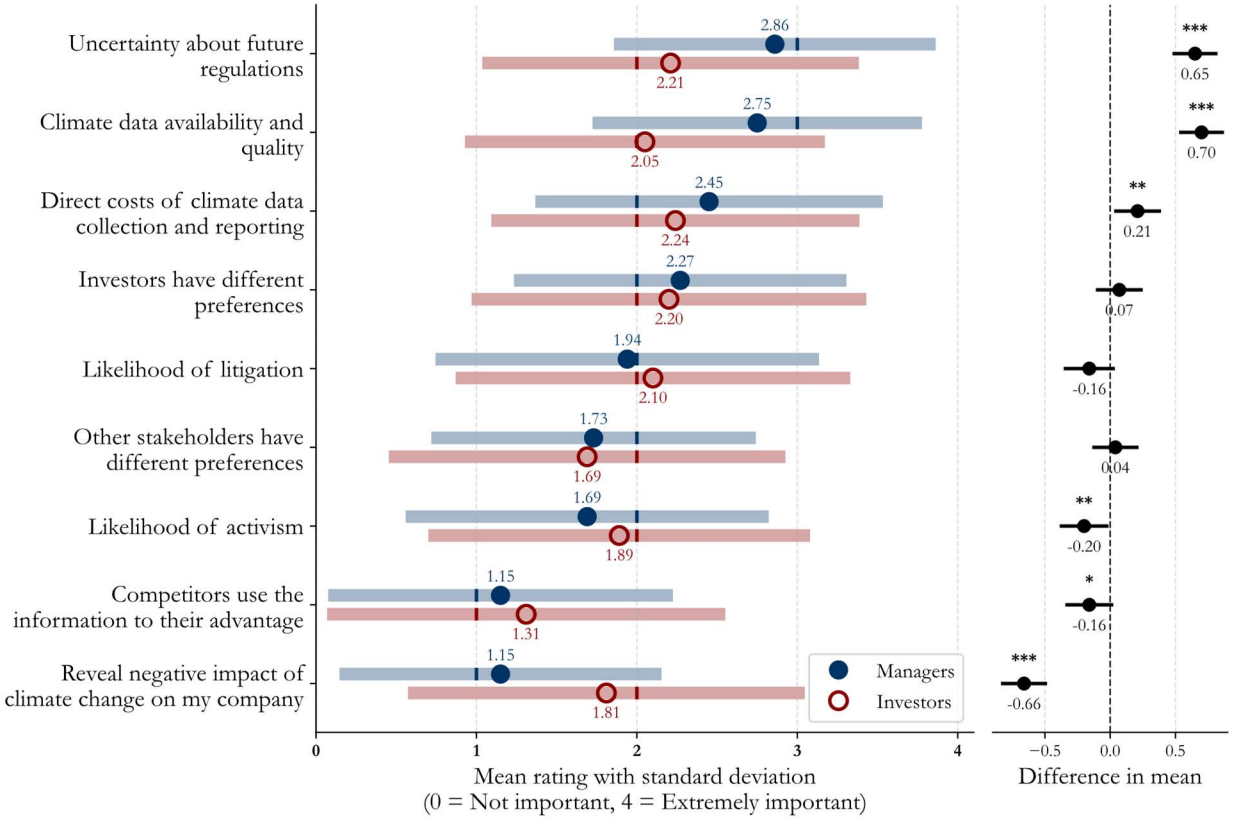
## Figure 3: Perceived Benefits of Climate Disclosure

This figure plots the average ratings of perceived benefits by firm managers and investors. For firm managers (blue solid circles), the figure reports the average importance rating of each objective when providing climate disclosures. For investors (red open circles), the figure reports the average perceived benefit from firms' climate disclosures. Ratings are on a 0–4 scale (0 = not important; 4 = extremely important). Horizontal bars represent one standard deviation above and below the mean. Vertical lines indicate the median ratings. The right panel displays the difference in means, and its statistical significance is assessed using a Welch's t-test. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively. The underlying data are reported in Table 5.



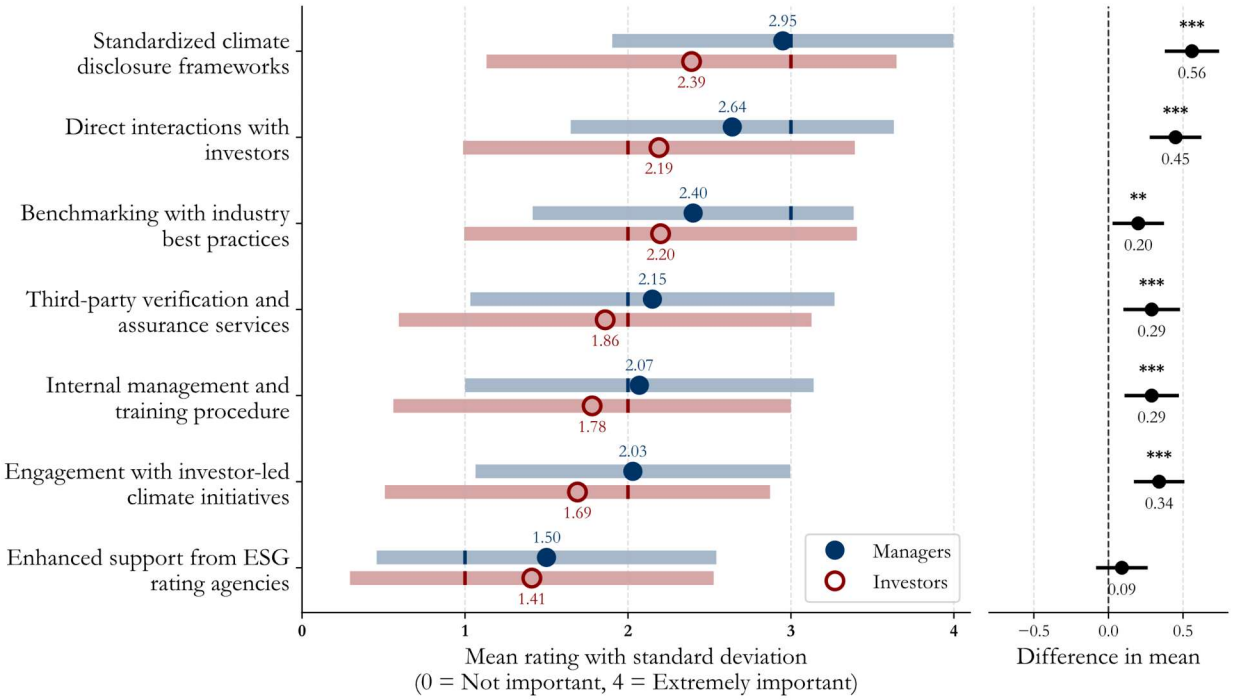
## Figure 4: Perceived Costs in Climate Disclosure

This figure plots the average ratings of perceived costs by firm managers and investors. For firm managers (blue solid circles), the figure reports the average importance rating of costs in limiting their climate disclosures. For investors (red open circles), the figure reports investors' perceptions of the costs that prevent companies from disclosing climate-related information. Ratings are on a 0–4 scale (0 = not important; 4 = extremely important). Horizontal bars represent one standard deviation above and below the mean. Vertical lines indicate the median ratings. The right panel displays the difference in means, and its statistical significance is assessed using a Welch's t-test. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively. The underlying data are reported in Table 6.



## Figure 5: Mechanisms to Reduce the Climate Disclosure Gap

This figure plots the average ratings of perceived importance by firm managers (blue solid circles) and investors (red open circles) to mechanisms for aligning companies' climate disclosures with investor expectations. Ratings are on a 0–4 scale (0 = not important; 4 = extremely important). Horizontal bars represent one standard deviation above and below the mean. Vertical lines indicate the median ratings. The right panel displays the difference in means, and its statistical significance is assessed using a Welch's t-test. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively. The underlying data are reported in Table 10.



## Table 1: Survey Demographics

This table presents demographic information for the survey respondents. Panel A reports the distribution of firm manager positions and firm characteristics. Panel B reports the distribution of investors by institution type, assets under management, investment type, holding period, and position at institution. The firm survey yielded 220 valid responses from 197 unique firms, and the investor survey yielded 432 valid responses from 369 institutions, after excluding respondents who indicate they do not use climate disclosures in investment decisions.

### Panel A: Firm Managers and Firms

| Position at company | Observations | Percentage |
|---|---|---|
| Investor Relations Officer | 54 | 24.5% |
| Chief Sustainability Officer | 52 | 23.6% |
| Sustainability Reporting Officer | 48 | 21.8% |
| Chief Financial Officer | 21 | 9.5% |
| Vice President | 18 | 8.2% |
| Others | 12 | 5.5% |
| Prefer not to say | 15 | 6.8% |

| Firm Characteristics | Mean | Std. | P25 | P50 | P75 |
|---|---|---|---|---|---|
| Market Cap (in billions) | 50.978 | 121.258 | 1.179 | 9.915 | 38.235 |
| Total Assets (in billions) | 74.328 | 239.497 | 1.838 | 7.968 | 34.992 |
| Leverage | 0.628 | 0.233 | 0.496 | 0.616 | 0.749 |
| ROA | 0.007 | 0.204 | 0.005 | 0.039 | 0.075 |
| **Industry** | | | | | |
| Manufacturing | | | | 96 | 43.6% |
| Services | | | | 41 | 18.6% |
| Transportation & Public Utilities | | | | 28 | 12.7% |
| Finance, Insurance, & Real Estate | | | | 26 | 11.8% |
| Retail Trade | | | | 9 | 4.1% |
| Mining | | | | 7 | 3.2% |
| Wholesale Trade | | | | 5 | 2.3% |
| Others | | | | 8 | 3.6% |

### Panel B: Investors

| Institution type | Observations | Percentage |
|---|---|---|
| Asset manager (for pension funds, endowments, etc.) | 154 | 35.6% |
| Hedge fund | 46 | 10.6% |
| Mutual fund management company | 40 | 9.3% |
| Private equity fund | 34 | 7.9% |
| Bank | 27 | 6.3% |
| Insurance company | 8 | 1.9% |

| | | |
|---|---|---|
| Others(pension fund, sovereign fund, endowment, etc.) | 77 | 17.8% |
| Prefer not to say | 46 | 10.6% |
| **Asset under management** | **Observations** | **Percentage** |
| < $1 billion | 105 | 24.3% |
| $1 billion - $20 billion | 128 | 29.6% |
| $20 billion - $50 billion | 28 | 6.5% |
| $50 billion - $100 billion | 29 | 6.7% |
| > $100 billion | 81 | 18.8% |
| Prefer not to say | 61 | 14.1% |
| **Investment type** | **Average** | **Median** |
| Percentage of portfolio invested in equites | 71.3% | 80.0% |
| Percentage of portfolio invested actively | 86.3% | 100.0% |
| Percentage of portfolio incorporating ESG issues | 45.1% | 27.5% |
| **Typical holding period** | **Observations** | **Percentage** |
| Short (< 6 months) | 9 | 2.1% |
| Medium (6-12 months) | 40 | 9.3% |
| Long (2-5 years) | 200 | 46.3% |
| Very long (+5 years) | 130 | 30.1% |
| Prefer not to say | 53 | 12.3% |
| **Position at institution** | **Observations** | **Percentage** |
| Fund/Portfolio Manager | 120 | 27.8% |
| Chief Executive Officer | 25 | 5.8% |
| Investment Analyst/Strategist | 104 | 24.1% |
| Executive/Managing Director | 50 | 11.6% |
| Chief Investment Officer | 27 | 6.3% |
| ESG/Responsible Investment Specialist | 34 | 7.9% |
| Other | 24 | 5.6% |
| Prefer not to say | 48 | 11.1% |

## Table 2: Content of Climate Disclosure

This table presents the content of climate disclosure as reported by firm managers and investors. Panel A reports the percentage of firm managers who indicate that their firm currently discloses each climate-related aspect (tick all that apply). Panel B reports the percentage of investors who identify each aspect as most frequently missing or unclear in current climate disclosures (tick all that apply). Aspects are listed in descending order of frequency within each panel.

### Panel A: Firms – What climate-related aspects are you currently disclosing?

| Option | Observations | Percentage |
|---|---|---|
| Carbon emissions | 192 | 90.6% |
| Board and management role in risk assessment and oversight | 181 | 85.4% |
| Identification of climate risks | 164 | 77.4% |
| Targets, goals, and progress tracking | 158 | 74.5% |
| Mitigation/adaptation strategies to climate risk and costs | 119 | 56.1% |
| Financial impact of climate risks (e.g., physical risk, regulatory risk) | 72 | 34.0% |
| Use of scenario analysis, transition planning, or internal carbon pricing | 64 | 30.2% |

### Panel B: Investors – What aspects are most frequently missing or unclear in current climate disclosures? Tick all that apply

| Option | Observations | Percentage |
|---|---|---|
| Financial impact of climate risks (e.g., physical risk, regulatory risk) | 268 | 68.7% |
| Use of scenario analysis, transition planning, or internal carbon pricing | 164 | 42.0% |
| Mitigation/adaptation strategies to climate risk and costs | 135 | 34.6% |
| Board and management role in risk assessment and oversight | 122 | 31.3% |
| Targets, goals, and progress tracking | 98 | 25.1% |
| Identification of climate risks | 78 | 20.0% |
| Carbon emissions | 41 | 10.5% |

## Table 3: Priorities for Climate Disclosure

This table presents the priority rankings that firm managers and investors assign to seven climate disclosure aspects. Panel A reports firm managers' rankings of each aspect in order of priority to their company, and Panel B reports investors' rankings in order of importance to their investment decision-making. Lower average ranking values indicate higher priority (1 = highest priority, 7 = lowest priority). For each aspect, the table reports the number of observations, average ranking, and the full distribution of ranks from Rank 1 through Rank 7.

**Panel A: Firms – In order of priority to your company, rank the following aspects of climate disclosures:**

| Option | Observations | Average Ranking | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 | Rank 6 | Rank 7 | < ** |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon emissions | 210 | 2.55 | 40.0% | 22.4% | 10.5% | 8.6% | 10.0% | 5.7% | 2.9% | 2 |
| Identification of climate risks | 210 | 3.13 | 19.5% | 17.1% | 20.5% | 23.3% | 14.3% | 3.3% | 1.9% | 4 |
| Targets, goals, and progress tracking | 210 | 3.38 | 14.8% | 27.6% | 14.8% | 12.4% | 12.9% | 13.3% | 4.3% | 4 |
| Board and management role in risk assessment and oversight | 210 | 3.83 | 12.9% | 12.9% | 22.4% | 16.2% | 8.6% | 20.0% | 7.1% | 6 |
| Mitigation/adaptation strategies | 210 | 4.14 | 5.2% | 10.0% | 20.5% | 19.5% | 25.2% | 13.3% | 6.2% | 6 |
| Financial impact of climate risks | 210 | 4.74 | 7.1% | 8.6% | 9.0% | 13.3% | 18.1% | 28.1% | 15.7% | 7 |
| Use of scenario analysis, transition planning, or internal carbon pricing | 210 | 6.22 | 0.5% | 1.4% | 2.4% | 6.7% | 11.0% | 16.2% | 61.9% | |

**Panel B: Investors – In order of importance in your investment decision-making, rank the following aspects of climate disclosures:**

| Option | Observations | Average Ranking | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 | Rank 6 | Rank 7 | < ** |
|---|---|---|---|---|---|---|---|---|---|---|
| Financial impact of climate risks (e.g., physical risk, regulatory risk) | 419 | 2.16 | 40.1% | 31.7% | 13.1% | 7.2% | 4.3% | 2.6% | 1.0% | 2 |
| Identification of climate risks | 419 | 2.65 | 33.2% | 24.1% | 14.1% | 12.9% | 6.9% | 6.2% | 2.6% | 3 |
| Mitigation/adaptation strategies to climate risk and costs | 419 | 3.55 | 4.5% | 15.5% | 35.1% | 20.5% | 16.0% | 6.4% | 1.9% | 4 |
| Targets, goals, and progress tracking | 419 | 4.23 | 5.0% | 11.5% | 13.8% | 20.0% | 29.6% | 15.0% | 5.0% | 5 |
| Board and management role in risk assessment and oversight | 419 | 4.68 | 7.6% | 9.5% | 11.2% | 12.4% | 13.4% | 29.8% | 16.0% | 7 |
| Carbon emissions | 419 | 4.82 | 8.4% | 4.1% | 6.0% | 21.2% | 18.9% | 22.2% | 19.3% | 7 |
| Use of scenario analysis, transition planning, or internal carbon pricing | 419 | 5.91 | 1.2% | 3.6% | 6.7% | 5.7% | 11.0% | 17.7% | 54.2% | |

## Table 4: Channels of Climate Disclosure

This table presents the channels through which firms disseminate and investors collect climate-related information. Panel A reports the percentage of firm managers who indicate that their firm discloses climate-related information through each channel (tick all that apply). Panel B reports the percentage of investors who indicate that they collect climate-related information through each channel (tick all that apply). Channels are listed in descending order of frequency within each panel.

### Panel A: Firms – Through which channel(s) do you disclose climate-related information?

| Option | Observations | Percentage |
|---|---|---|
| Dedicated report (e.g. Sustainability/ESG Reports) | 185 | 85.3% |
| Corporate Website (e.g., dedicated climate or sustainability page) | 167 | 77.0% |
| Third-Party and Industry-Specific Disclosures (e.g., CDP Questionnaire, TCFD, Science-Based Targets) | 127 | 58.5% |
| ESG rating agencies | 116 | 53.5% |
| Annual Financial Reports (e.g., 10-K, 20-F) | 115 | 53.0% |
| Private/Direct Communication (e.g., One-to-One Meetings, Phone calls) | 88 | 40.6% |
| Public Investor Communication (e.g., Presentations, Earnings Calls, Investors Days) | 80 | 36.9% |
| Social media (e.g., X, Instagram) | 34 | 15.7% |
| Other: | 16 | 7.4% |

### Panel B: Investors – Through which channel(s) do you collect climate-related information? Tick all that apply

| Option | Observations | Percentage |
|---|---|---|
| Annual Financial Reports (e.g., 10-K, 20-F) | 246 | 51.7% |
| Dedicated report (e.g. Sustainability/ESG Reports) | 234 | 49.2% |
| Public Investor Communication (e.g., Presentations, Earnings Calls, Investors Days) | 233 | 49.0% |
| Corporate Website (e.g., dedicated climate or sustainability page) | 201 | 42.2% |
| ESG rating agencies | 153 | 32.1% |
| Private/Direct Communication (e.g., One-to-One Meetings, Phone calls) | 148 | 31.1% |
| Third-Party and Industry-Specific Disclosures (e.g., CDP Questionnaire, TCFD, Science-Based Targets) | 142 | 29.8% |
| Other: | 90 | 18.9% |
| Social media (e.g., X, Instagram) | 63 | 13.2% |

## Table 5: Benefits of Climate Disclosure

This table presents the perceived objectives and benefits of climate disclosure. Panel A reports firm managers' average importance ratings (0–4 scale, where 0 = not important and 4 = extremely important) for each goal when providing climate disclosures, along with the full distribution of responses. Panel B reports investors' average rankings of the goals they pursue when using climate disclosures in investment decision-making (lower average ranks indicate higher importance). Panel C reports investors' average importance ratings (0–4 scale) of the benefits they perceive from firms' climate disclosures, along with the full distribution of responses.

**Panel A: Firms – How important are the following goals when providing climate disclosures?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Satisfy information demand of shareholders | 214 | 2.97 | 34.1% | 42.5% | 11.7% | 9.3% | 2.3% | 2 |
| Comply with anticipated future regulations | 214 | 2.77 | 28.5% | 35.5% | 22.9% | 10.3% | 2.8% | 3 |
| Foster reputation | 214 | 2.49 | 16.4% | 36.4% | 31.3% | 11.2% | 4.7% | 4 |
| Satisfy information demand of non-shareholder stakeholders | 214 | 2.22 | 13.6% | 28.0% | 34.1% | 15.9% | 8.4% | 5 |
| Reduce information uncertainty around climate risks | 214 | 1.86 | 4.2% | 23.8% | 35.5% | 26.6% | 9.8% | 7 |
| Increase firm value (e.g., decrease cost of capital, attract sustainability investments) | 214 | 1.72 | 6.1% | 20.6% | 28.0% | 29.9% | 15.4% | 7 |
| Reduce cost of debt | 213 | 1.1 | 2.3% | 7.5% | 22.5% | 33.3% | 34.3% | |

**Panel B: Investors – Rank the importance of the following goals when using climate disclosures:**

| Option | Observations | Average Rank |
|---|---|---|
| Assess climate-related financial impact | 377 | 1.83 |
| Evaluate long-term sustainability of business | 377 | 1.92 |
| Align investing values with portfolio choices | 377 | 2.74 |
| Support engagement and stewardship activities | 377 | 3.52 |

**Panel C: Investors – Do you see the following benefits of firms disclosing climate-related information?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Satisfy information demand of shareholders | 414 | 2.21 | 11.8% | 35.7% | 25.1% | 16.2% | 11.1% | 3 |
| Comply with anticipated future regulations | 411 | 2.19 | 13.6% | 32.6% | 25.8% | 15.6% | 12.4% | 3 |
| Increase firm value (e.g., decrease cost of capital, attract sustainability investments) | 413 | 2 | 14.3% | 29.5% | 18.2% | 18.2% | 19.9% | 5 |
| Reduce information uncertainty around climate risks | 415 | 1.94 | 9.9% | 30.6% | 21.9% | 19.3% | 18.3% | 5 |
| Foster reputation | 413 | 1.82 | 6.1% | 23.0% | 33.9% | 20.8% | 16.2% | 6 |
| Reduce cost of debt | 413 | 1.67 | 9.0% | 20.1% | 24.2% | 22.3% | 24.5% | |
| Satisfy information demand of non-shareholder stakeholders | 410 | 1.52 | 5.4% | 16.3% | 30.0% | 21.5% | 26.8% | |

## Table 6: Costs of Climate Disclosure

This table presents the perceived costs and frictions associated with climate disclosure. Panel A reports firm managers' average importance ratings (0–4 scale, where 0 = not important and 4 = extremely important) for each factor that prevents climate disclosures, along with the full distribution of responses. Panel B reports investors' average importance ratings (0–4 scale) for each reason they perceive as preventing companies from disclosing climate-related information, along with the full distribution of responses. Panel C reports the percentage of investors who select each factor as a barrier to utilizing climate-related information (tick all that apply).

### Panel A: Firms – How important are the following factors in preventing climate disclosures?

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Uncertainty about future regulations | 210 | 2.86 | 27.6% | 43.3% | 21.0% | 3.8% | 4.3% | 3 |
| Climate data availability and quality | 210 | 2.75 | 23.3% | 43.8% | 21.4% | 7.1% | 4.3% | 3 |
| Direct costs of climate data collection and reporting | 210 | 2.45 | 18.6% | 31.0% | 31.4% | 14.8% | 4.3% | 5 |
| Investors have different preferences | 208 | 2.27 | 8.7% | 38.9% | 28.8% | 17.8% | 5.8% | 5 |
| Likelihood of litigation | 210 | 1.94 | 13.3% | 18.1% | 28.1% | 30.0% | 10.5% | 6 |
| Other stakeholders have different preferences | 208 | 1.73 | 3.8% | 18.8% | 35.1% | 31.2% | 11.1% | 8 |
| Likelihood of activism | 209 | 1.69 | 7.7% | 15.8% | 28.7% | 33.5% | 14.4% | 8 |
| Reveal negative impact of climate change on my company | 209 | 1.15 | 1.4% | 9.6% | 22.0% | 36.8% | 30.1% | |
| Competitors use the information to their advantage. | 210 | 1.15 | 3.8% | 8.6% | 17.6% | 38.6% | 31.4% | |

**Panel B: Investors – Do you see the following reasons that prevent companies from climate disclosures?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Direct costs of climate data collection and reporting | 386 | 2.24 | 14.2% | 29.3% | 31.6% | 16.1% | 8.8% | 4 |
| Uncertainty about future regulations | 386 | 2.21 | 13.2% | 31.9% | 27.7% | 17.1% | 10.1% | 5 |
| Investors have different preferences | 392 | 2.2 | 16.3% | 27.3% | 27.3% | 17.9% | 11.2% | 6 |
| Likelihood of litigation | 389 | 2.1 | 14.7% | 24.7% | 28.8% | 19.5% | 12.3% | 6 |
| Climate data availability and quality | 387 | 2.05 | 7.8% | 30.2% | 33.1% | 17.1% | 11.9% | 6 |
| Likelihood of activism | 388 | 1.89 | 10.1% | 21.4% | 30.9% | 23.2% | 14.4% | 8 |
| Reveal negative impact of climate change on my company | 387 | 1.81 | 8.3% | 24.5% | 26.6% | 21.2% | 19.4% | 9 |
| Other stakeholders have different preferences | 389 | 1.69 | 9.0% | 17.5% | 28.8% | 23.4% | 21.3% | 9 |
| Competitors use the information to their advantage | 388 | 1.31 | 6.7% | 11.9% | 21.4% | 25.8% | 34.3% | |

**Panel C: Investors – What factors prevent you from utilizing climate-related information. Tick all that apply**

| Option | Observations | Percentage |
|---|---|---|
| Lack of verifiability of climate-related information | 258 | 67.36% |
| Poor quality of climate-related information | 232 | 60.57% |
| Lack of climate-related information | 136 | 35.51% |
| Limited processing capacity of climate-related information | 120 | 31.33% |

## Table 7: Shareholder Value of Climate Disclosure

This table presents firm managers' and investors' perceptions of the shareholder value created by climate disclosures. Panel A reports the distribution of firm managers' responses and Panel B reports the distribution of investors' responses, both using a five-point scale ranging from "none" to "a great deal."

**Panel A: Firms – H ow much shareholder value do you believe will be created as a result of climate disclosures?**

| Option | Observations | Percentage |
|---|---|---|
| A great deal | 3 | 1.4% |
| A lot | 24 | 11.2% |
| A moderate amount | 68 | 31.6% |
| A little | 88 | 40.9% |
| None | 32 | 14.9% |

**Panel B: Investors – How much shareholder value do you believe will be created as a result of climate disclosures?**

| Option | Observations | Percentage |
|---|---|---|
| A great deal | 10 | 2.4% |
| A lot | 29 | 7.0% |
| A moderate amount | 125 | 30.2% |
| A little | 141 | 34.1% |
| None | 109 | 26.3% |

## Table 8: Consequences of Decreasing Climate Disclosure

This table presents the perceived consequences of a decrease in climate disclosures. Panel A reports firm managers' assessments of whether reduced climate disclosure would lead to each consequence, with responses distributed across three categories (Yes/ Maybe/ No). Panel B reports investors' assessments of how they would react to a decrease in firms' climate disclosures, with responses distributed across the same three categories.

**Panel A: Firms – Do you think a decrease in climate disclosures will lead to the following consequences?**

| Option | Observations | Yes | Maybe | No |
|---|---|---|---|---|
| Increased regulatory scrutiny | 211 | 16.6% | 58.3% | 25.1% |
| Reputational damage (e.g., negative media coverage) | 211 | 28.9% | 43.1% | 28.0% |
| Engagement from investors | 211 | 28.0% | 48.8% | 23.2% |
| Engagement from socially-oriented groups (i.e., NGOs, activists) | 211 | 38.4% | 45.0% | 16.6% |
| Litigation | 211 | 8.1% | 50.7% | 41.2% |

**Panel B: Investors – What aspects are most frequently missing or unclear in current climate disclosures? Tick all that apply**

| Option | Observations | Yes | Maybe | No |
|---|---|---|---|---|
| Reduced investment in the company | 401 | 8.2% | 38.2% | 53.6% |
| Increased perceived investment risk (e.g., adjustment of risk premiums) | 402 | 21.4% | 38.8% | 39.8% |
| Engagement with the company to improve disclosure | 401 | 26.7% | 46.4% | 26.9% |

## Table 9: Influence over Climate Disclosure

This table presents the perceived influence of different stakeholder groups over corporate climate disclosures. Panel A reports firm managers' average importance ratings (0–4 scale, where 0 = none and 4 = a great deal) of the influence exerted by each stakeholder group, along with the full distribution of responses. Panel B reports the distribution of investors' assessments of the influence shareholders have on corporate climate disclosures, using a five-point scale ranging from "none" to "a great deal."

**Panel A: Firms – How much influence do you believe [group] have on climate disclosures?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Regulators | 214 | 3.28 | 52.8% | 31.8% | 7.5% | 6.1% | 1.9% | 2 |
| Shareholders | 214 | 2.7 | 22.9% | 40.2% | 23.8% | 9.8% | 3.3% | 3 |
| Customers | 213 | 2.39 | 23.5% | 25.4% | 24.4% | 20.2% | 6.6% | 4 |
| Industry peers / competitors | 213 | 2.08 | 6.6% | 27.2% | 39.4% | 21.6% | 5.2% | 6 |
| ESG rating companies | 210 | 2.06 | 8.1% | 28.1% | 32.4% | 24.8% | 6.7% | 6 |
| Creditors | 213 | 1.78 | 5.6% | 18.8% | 31.5% | 36.2% | 8.0% | 8 |
| Socially-oriented groups (e.g., NGOs, activists) | 211 | 1.75 | 2.8% | 19.0% | 37.4% | 31.8% | 9.0% | 8 |
| Financial analysts | 212 | 1.47 | 2.4% | 16.0% | 27.4% | 34.9% | 19.3% | 10 |
| Employees | 212 | 1.4 | 1.4% | 10.8% | 31.1% | 39.6% | 17.0% | 10 |
| Suppliers | 211 | 1.2 | 0.9% | 10.9% | 22.7% | 38.4% | 27.0% | |

**Panel B: Investors – How much influence do you believe shareholders have on corporate climate disclosures?**

| Option | Observations | Percentage |
|---|---|---|
| A great deal | 23 | 5.60% |
| A lot | 84 | 20.30% |
| A moderate amount | 128 | 30.90% |
| A little | 142 | 34.30% |
| None | 37 | 8.90% |

## Table 10: Approaches to Reduce the Climate Disclosure Gap

This table presents firm managers' and investors' assessments of the importance of different approaches for aligning companies' climate disclosures with investor expectations. Panel A reports firm managers' average importance ratings (0–4 scale, where 0 = not important and 4 = extremely important) for each approach, along with the full distribution of responses. Panel B reports investors' average importance ratings (0–4 scale) for each approach, along with the full distribution of responses.

**Panel A: Firms – How important do you think the following approaches can help align companies' climate disclosures with investor expectations?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Standardized climate disclosure frameworks | 203 | 2.95 | 36.0% | 36.5% | 17.2% | 7.4% | 3.0% | 2 |
| Direct interactions with investors | 204 | 2.64 | 18.6% | 42.2% | 27.0% | 8.8% | 3.4% | 3 |
| Benchmarking with industry best practices | 205 | 2.4 | 10.2% | 42.0% | 29.3% | 14.6% | 3.9% | 4 |
| Third-party verification and assurance services | 205 | 2.15 | 10.7% | 29.3% | 33.2% | 17.6% | 9.3% | 7 |
| Internal management and training procedure | 204 | 2.07 | 10.3% | 24.0% | 33.8% | 26.0% | 5.9% | 7 |
| Engagement with investor-led climate initiatives | 204 | 2.03 | 5.4% | 25.5% | 42.2% | 20.6% | 6.4% | 7 |
| Enhanced support from ESG rating agencies | 204 | 1.5 | 2.5% | 15.2% | 30.9% | 32.4% | 19.1% | |

**Panel B: Investors – How important do you think the following approaches can help align companies' climate disclosures with investor expectations?**

| Option | Observations | Average Rating | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Rating 0 | > ** |
|---|---|---|---|---|---|---|---|---|
| Standardized climate disclosure frameworks | 391 | 2.39 | 20.7% | 32.5% | 24.3% | 10.5% | 12.0% | 2 |
| Benchmarking with industry best practices | 391 | 2.2 | 11.5% | 36.1% | 26.9% | 11.8% | 13.8% | 4 |
| Direct interactions with investors | 388 | 2.19 | 12.6% | 34.5% | 23.5% | 18.0% | 11.3% | 4 |
| Third-party verification and assurance services | 388 | 1.86 | 10.8% | 22.4% | 27.8% | 19.6% | 19.3% | 6 |
| Internal management and training procedure | 385 | 1.78 | 8.6% | 21.3% | 28.3% | 23.1% | 18.7% | 7 |
| Engagement with investor-led climate initiatives | 386 | 1.69 | 6.2% | 20.7% | 29.0% | 24.1% | 19.9% | 7 |
| Enhanced support from ESG rating agencies | 390 | 1.41 | 3.3% | 12.6% | 33.3% | 23.1% | 27.7% | |

## Table 11: Perceived Adequacy of Current Regulatory Framework

This table presents the perceived adequacy of the current regulatory framework for climate disclosures. Panel A reports the distribution of firm managers' responses and Panel B reports the distribution of investors' responses, both using a five-point scale ranging from "extremely inadequate" to "extremely adequate."

**Panel A: Firms – To what extent do you believe that current regulatory framework provides sufficient guidance for climate disclosures?**

| Option | Observations | Percentage |
|---|---|---|
| Extremely adequate | 19 | 8.7% |
| Somewhat adequate | 47 | 21.5% |
| Neither adequate nor inadequate | 46 | 21.0% |
| Somewhat inadequate | 77 | 35.2% |
| Extremely inadequate | 30 | 13.7% |

**Panel B: Investors – When evaluating US firms, to what extent do you believe that current regulatory framework provides sufficient guidance for climate disclosures?**

| Option | Observations | Percentage |
|---|---|---|
| Extremely adequate | 56 | 13.2% |
| Somewhat adequate | 63 | 14.9% |
| Neither adequate nor inadequate | 99 | 23.3% |
| Somewhat inadequate | 126 | 29.7% |
| Extremely inadequate | 80 | 18.9% |

## Appendix A. Summary of Results

| Issue | Firm Managers | Investors | Divergence | Source |
|---|---|---|---|---|
| **Is There a Gap?** | | | | |
| **Perceived Gap of Current Climate Disclosures** | 62.4% agree that firms currently meet investor demand | 38.6% agree that firms currently meet investor demand | **High** | Figure 1 |
| **What is the Nature of the Gap?** | | | | |
| **Absence of Disclosure?** | High coverage of baseline information (emissions and governance), but still sparse on financial impacts | Financial impacts of climate risks is most frequently flagged as missing or unclear | **Medium** | Table 2 |
| **Irrelevant Disclosure?** | Top priority is carbon emissions and financial impacts of climate risks ranks near the bottom | Top priority is financial impacts of climate risks and carbon emissions ranks near the bottom | **High** | Table 3, Figure 2 |
| **Inadequate Dissemination Channel?** | Concentrate disclosure in sustainability/ESG reports and corporate websites | Rely most on annual financial reports — greater emphasis on financial channels | **Medium** | Table 4 |
| **Why Does the Gap Exist?** | | | | |
| **Low Benefits of Disclosure?** | Top goals: satisfying shareholder demand and anticipating regulation | Top use: assessing climate financial impact and long-term business sustainability | **Low** | Table 5, Figure 3 |
| **High Costs of Disclosure?** | Primary barriers: Regulatory uncertainty and data quality; competitive concerns are not | Primary barriers for firms: costs and regulatory uncertainty; Primary barriers to use: lack of verifiability and data quality | **Low** | Table 6, Figure 4 |
| **Modest or Negative Net Effect on Shareholder Value?** | Expect modest shareholder value | Expect modest shareholder value, slightly less than managers | **Medium** | Table 7 |
| **Do Shareholders Lack Leverage to Compel Disclosure?** | Regulators most influential and shareholders second | Assess their own influence more modestly; prefer engagement over exit | **Medium** | Tables 8 & 9 |
| **How to Reduce the Gap?** | | | | |
| **Which Alignment Mechanisms Should be Prioritized?** | Standardized reporting frameworks first; ESG rating agencies last | Standardized reporting frameworks first; ESG rating agencies last | **Low** | Table 10 |
| **Improve the Current Regulatory Framework?** | Half rates it as inadequate | Similar but more dispersed distribution | **Low** | Table 11 |

## Appendix B. Survey Instruments

B.1 Firm Survey

Informed Consent to Participate in Research

**Study title: Understanding Climate Disclosures**
We invite you to participate in a survey for academic research purposes. In recent years, the amount of climate-related information requested by investors has increased. This survey seeks to understand the factors that shape firms' decisions to provide this information. Your responses will help us better understand firms' disclosure practices, which may inform the evolving regulatory framework on climate disclosure.

Your participation is completely voluntary, and you may choose not to answer any question or stop at any time. At the end of the survey, you may provide your contact information if you are interested in receiving a copy of our results.

**Expected time to complete:**
The survey has **11 questions** and will take approximately **8 minutes**.

**What are we asking of you?**
This survey will ask questions about the climate-related information your firm publicly discloses (if any) and the extent to which this is shaped by investors' preferences or demands.

**Potential risks and benefits**
We do not foresee any risks. There are no specific benefits associated with participating, although we hope that you will find our research findings useful.

**How will my information be handled?**
All responses will be **strictly confidential**. The research team will store all electronic data securely and the data we collect will **never** be disclosed, deanonymized, or shared with any external parties. In our analysis, we will only present results in aggregate form and the information you provide cannot be connected to you.

**Questions or concerns:** Please contact either the study's Primary Investigator XXX, at XXX; or the [University] IRB at [IRB email].

**Consent:** If you would like to start the survey, click the button below.
**What climate-related aspects are you currently disclosing?** *Tick all that apply*
□ Identification of climate risks
□ Financial impact of climate risks (e.g., physical risk, regulatory risk)
□ Mitigation/adaptation strategies to climate risk and costs
□ Carbon emissions
□ Targets, goals, and progress tracking
□ Board and management role in risk assessment and oversight
□ Use of scenario analysis, transition planning, or internal carbon pricing

**Through which channel(s) do you disclose climate-related information?** *Tick all that apply*

□ Annual Financial Reports (e.g., 10-K, 20-F)
□ Dedicated report (e.g. Sustainability/ESG Reports)
□ Corporate Website (e.g., dedicated climate or sustainability page)
□ Third-Party and Industry-Specific Disclosures (e.g., CDP Questionnaire, TCFD, Science-Based Targets)
□ Public Investor Communication (e.g., Presentations, Earnings Calls, Investors Days)
□ Social media (e.g., X, Instagram)
□ ESG rating agencies
□ Private/Direct Communication (e.g., One-to-One Meetings, Phone calls)
□ Other _____

**In order of priority to your company, rank the following aspects of climate disclosures:**

| | |
|---|---|
| Identification of climate risks | ( ) |
| Financial impact of climate risks (e.g., physical risk, regulatory risk) | ( ) |
| Mitigation/adaptation strategies to climate risk and costs | ( ) |
| Carbon emissions | ( ) |
| Targets, goals, and progress tracking | ( ) |
| Board and management role in risk assessment and oversight | ( ) |
| Use of scenario analysis, transition planning, or internal carbon pricing | ( ) |

**To what extent do you believe that current regulatory framework provides sufficient guidance for climate disclosures?**

| | | | | |
|---|---|---|---|---|
| ○ Extremely inadequate | ○ Somewhat inadequate | ○ Neither adequate nor inadequate | ○ Somewhat adequate | ○ Extremely adequate |

**How important are the following goals when providing climate disclosures?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Foster reputation | ○ | ○ | ○ | ○ | ○ |
| Satisfy information demand of shareholders | ○ | ○ | ○ | ○ | ○ |
| Satisfy information demand of non-shareholder stakeholders | ○ | ○ | ○ | ○ | ○ |
| Increase firm value (e.g., decrease cost of capital, attract sustainability investments) | ○ | ○ | ○ | ○ | ○ |
| Comply with anticipated future regulations | ○ | ○ | ○ | ○ | ○ |
| Reduce cost of debt | ○ | ○ | ○ | ○ | ○ |

**How much shareholder value do you believe will be created as a result of climate disclosures?**

| | | | | |
|---|---|---|---|---|
| ○ None | ○ A little | ○ A moderate amount | ○ A lot | ○ A great deal |

**How important are the following goals when providing climate disclosures?**

| | None | A little | A moderate amount | A lot | A great deal |
|---|---|---|---|---|---|
| Regulators | ○ | ○ | ○ | ○ | ○ |
| Shareholders | ○ | ○ | ○ | ○ | ○ |
| Creditors | ○ | ○ | ○ | ○ | ○ |
| Customers | ○ | ○ | ○ | ○ | ○ |
| Suppliers | ○ | ○ | ○ | ○ | ○ |
| Employees | ○ | ○ | ○ | ○ | ○ |
| ESG rating companies | ○ | ○ | ○ | ○ | ○ |
| Socially-oriented groups (e.g., NGOs, activists) | ○ | ○ | ○ | ○ | ○ |
| Industry peers/competitors | ○ | ○ | ○ | ○ | ○ |
| Financial analysts | ○ | ○ | ○ | ○ | ○ |

**How important are the following factors in preventing climate disclosures?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Climate data availability and quality | ○ | ○ | ○ | ○ | ○ |
| Direct costs of climate data collection and reporting | ○ | ○ | ○ | ○ | ○ |
| Uncertainty about future regulations | ○ | ○ | ○ | ○ | ○ |
| Investors have different preferences | ○ | ○ | ○ | ○ | ○ |
| Other stakeholders have different preferences | ○ | ○ | ○ | ○ | ○ |
| Likelihood of litigation | ○ | ○ | ○ | ○ | ○ |
| Likelihood of activism | ○ | ○ | ○ | ○ | ○ |
| Competitors use the information to their advantage | ○ | ○ | ○ | ○ | ○ |
| Reveal negative impact of climate change on my company | ○ | ○ | ○ | ○ | ○ |

**Do you think a decrease in climate disclosures will lead to the following consequences?**

| | Yes | Maybe | No |
|---|---|---|---|
| Increased regulatory scrutiny | ○ | ○ | ○ |
| Reputational damage (e.g., negative media coverage) | ○ | ○ | ○ |
| Engagement from investors | ○ | ○ | ○ |
| Engagement from socially-oriented groups (i.e., NGOs, activists) | ○ | ○ | ○ |
| Litigation | ○ | ○ | ○ |

**Do you agree that public companies currently meet investor demand for climate-related information?**

○ Strongly disagree ○ Somewhat disagree ○ Neither agree or disagree ○ Somewhat agree ○ Strongly agree

**How important do you think the following approaches can help align companies' climate disclosures with investor expectations?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Direct interactions with investors | ○ | ○ | ○ | ○ | ○ |
| Standardized climate disclosure frameworks | ○ | ○ | ○ | ○ | ○ |
| Benchmarking with industry best practices | ○ | ○ | ○ | ○ | ○ |
| Engagement with investor-led climate initiatives | ○ | ○ | ○ | ○ | ○ |
| Enhanced support from ESG rating agencies | ○ | ○ | ○ | ○ | ○ |
| Third-party verification and assurance services | ○ | ○ | ○ | ○ | ○ |
| Internal management and training procedure | ○ | ○ | ○ | ○ | ○ |

**<u>Demographics</u>**

**What is your primary role in your organization?**

○ Chief Executive Office
○ Chief Financial Officer
○ Chief Sustainability Officer
○ Vice President
○ Investor Relations Officer
○ Chief Strategy Officer
○ Chief Marketing Officer
○ General Counsel
○ Other _____

**Please share any other comments about climate disclosures:**

_____

**Email address to receive a copy of the results (optional):**

_____

B.2 Investor Survey

Informed Consent to Participate in Research

**Study title: Understanding Climate Disclosures**

We invite you to participate in a survey for academic research purposes. In recent years, the amount of climate-related information provided by firms has increased. This survey seeks to understand how investors use this information in their decision-making. Your responses will help us better identify investors' information needs, which may inform the evolving regulatory framework on climate disclosure.

Your participation is completely voluntary, and you may choose not to answer any question or stop at any time. At the end of the survey, you may provide your contact information if you are interested in receiving a copy of our results.

**Expected time to complete:**
The survey has **13 questions** and will take approximately **9 minutes**.

**What are we asking of you?**
This survey will ask questions about the extent to which climate-related factors affect the investment decisions you make and the information you find useful.

**Potential risks and benefits**
We do not foresee any risks. There are no specific benefits associated with participating, although we hope that you will find our research findings useful.

**How will my information be handled?**
All responses will be **strictly confidential**. The research team will store all electronic data securely and the data we collect will **never** be disclosed, deanonymized, or shared with any external parties. In our analysis, we will only present results in aggregate form and the information you provide cannot be connected to you.

**Questions or concerns:** Please contact either the study's Primary Investigator XXX, at XXX; or the [School] IRB at [IRB email].

**Consent:** If you would like to start the survey, click the button below.

**Through which channel(s) do you collect climate-related information?** *Tick all that apply*
□ Annual Financial Reports (e.g., 10-K, 20-F)
□ Dedicated Report (e.g. Sustainability/ESG Reports)
□ Corporate Website (e.g., dedicated climate or sustainability page)
□ Third-Party and Industry-Specific Disclosures (e.g., CDP Questionnaire, TCFD, Science-Based Targets)
□ Public Investor Communication (e.g., Presentations, Earnings Calls, Investors Days)
□ Social media (e.g., X, Instagram)
□ ESG rating agencies
□ Private/Direct Communication (e.g., One-to-One Meetings, Phone calls)
□ Other _____

**In order of importance in your investment decision-making, rank the following aspects of climate disclosures:**

| | |
|---|---|
| Identification of climate risks | ( ) |
| Financial impact of climate risks (e.g., physical risk, regulatory risk) | ( ) |
| Mitigation/adaptation strategies to climate risk and costs | ( ) |
| Carbon emissions | ( ) |
| Targets, goals, and progress tracking | ( ) |
| Board and management role in risk assessment and oversight | ( ) |
| Use of scenario analysis, transition planning, or internal carbon pricing | ( ) |

**What aspects are most frequently missing or unclear in current climate disclosures?** *Tick all that apply*

□ Identification of climate risks
□ Financial impact of climate risks (e.g., physical risk, regulatory risk)
□ Mitigation/adaptation strategies to climate risk and costs
□ Carbon emissions
□ Targets, goals, and progress tracking
□ Board and management role in risk assessment and oversight
□ Use of scenario analysis, transition planning, or internal carbon pricing

**When evaluating US firms, to what extent do you believe that current regulatory framework provides sufficient guidance for climate disclosures?**

| | | | | |
|---|---|---|---|---|
| ○ Extremely inadequate | ○ Somewhat inadequate | ○ Neither adequate nor inadequate | ○ Somewhat adequate | ○ Extremely adequate |

**Rank the importance of the following goals when using climate disclosures:**

| | |
|---|---|
| Assess climate-related financial impact | ( ) |
| Evaluate long-term sustainability of business | ( ) |
| Align investing values with portfolio choices | ( ) |
| Support engagement and stewardship activities | ( ) |

**Do you see the following benefits of firms disclosing climate-related information?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Foster reputation | ○ | ○ | ○ | ○ | ○ |
| Satisfy information demand of shareholders | ○ | ○ | ○ | ○ | ○ |
| Satisfy information demand of non-shareholder stakeholders | ○ | ○ | ○ | ○ | ○ |
| Increase firm value (e.g., decrease cost of capital, attract sustainability investments) | ○ | ○ | ○ | ○ | ○ |
| Comply with anticipated future regulations | ○ | ○ | ○ | ○ | ○ |
| Reduce cost of debt | ○ | ○ | ○ | ○ | ○ |

**How much shareholder value do you believe will be created as a result of climate disclosures?**

○ None ○ A little ○ A moderate amount ○ A lot ○ A great deal

**How much influence do you believe shareholders have on corporate climate disclosures?**

○ None ○ A little ○ A moderate amount ○ A lot ○ A great deal

**What factors prevent you from utilizing climate-related information?** *Tick all that apply*

□ Lack of climate-related information
□ Poor quality of climate-related information
□ Lack of verifiability of climate-related information
□ Too much climate-related information
□ Limited processing capacity of climate-related information

**Do you see the following reasons that prevent companies from climate disclosures?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Climate data availability and quality | ○ | ○ | ○ | ○ | ○ |
| Direct costs of climate data collection and reporting | ○ | ○ | ○ | ○ | ○ |
| Uncertainty about future regulations | ○ | ○ | ○ | ○ | ○ |
| Investors have different preferences | ○ | ○ | ○ | ○ | ○ |
| Other stakeholders have different preferences | ○ | ○ | ○ | ○ | ○ |
| Likelihood of litigation | ○ | ○ | ○ | ○ | ○ |
| Likelihood of activism | ○ | ○ | ○ | ○ | ○ |
| Competitors use the information to their advantage | ○ | ○ | ○ | ○ | ○ |
| Reveal negative impact of climate change on my company | ○ | ○ | ○ | ○ | ○ |

**Do you think a decrease in climate disclosures will lead to the following consequences?**

| | Yes | Maybe | No |
|---|---|---|---|
| Reduced investment in the company | ○ | ○ | ○ |
| Increased perceived investment risk (e.g., adjustment of risk premiums) | ○ | ○ | ○ |

| | | | |
|---|---|---|---|
| Engagement with the company to improve disclosure | ○ | ○ | ○ |

**Do you agree that public companies currently meet your demand for climate-related information?**

○ Strongly disagree ○ Somewhat disagree ○ Neither agree or disagree ○ Somewhat agree ○ Strongly agree

**How important do you think the following approaches can help align companies' climate disclosures with investor expectations?**

| | Not important | Slightly important | Moderately important | Very important | Extremely important |
|---|---|---|---|---|---|
| Direct interactions with investors | ○ | ○ | ○ | ○ | ○ |
| Standardized climate disclosure frameworks | ○ | ○ | ○ | ○ | ○ |
| Benchmarking with industry best practices | ○ | ○ | ○ | ○ | ○ |
| Engagement with investor-led climate initiatives | ○ | ○ | ○ | ○ | ○ |
| Enhanced support from ESG rating agencies | ○ | ○ | ○ | ○ | ○ |
| Third-party verification and assurance services | ○ | ○ | ○ | ○ | ○ |
| Internal management and training procedure | ○ | ○ | ○ | ○ | ○ |

**Demographics**

**How is the institution at which you work best described?**

○ Public pension fund
○ Insurance company
○ Mutual fund management company
○ Asset manager (for pension funds, endowments, etc.)
○ Sovereign wealth fund
○ Private pension fund
○ Hedge fund
○ Private equity fund
○ Endowment, charity
○ Bank
○ Other

**What is the typical holding period for investments in your portfolio, on average?**

○ Short (< 6 months)
○ Medium (6-12 months)
○ Long (2-5 years)
○ Very long (+5 years)

**What percentage of your portfolio is invested in fixed income vs equity securities?**

Equity securities ( )
Fixed income ( )

**What percentage of your portfolio is invested actively vs passively?**

Active investments ( )
Passive investments ( )

**What percentage of your portfolio incorporates ESG issues?**

% ESG-related issues ( )

**What is the total size of assets under management in your institution?**

○ < $1 billion
○ $1 billion - $20 billion
○ $20 billion - $50 billion
○ $50 billion - $100 billion
○ > $100 billion

**In which country is your institutions' HQ based? _____**

**What is your position?**

○ Fund/Portfolio Manager
○ Chief Executive Officer
○ Investment Analyst/Strategist
○ Executive/Managing Director
○ Chief Investment Officer
○ ESG/Responsible Investment Specialist
○ Other

**Please share any other comments about climate disclosures:**

_____

**Email address to receive a copy of the results (optional):**

_____