

Assurance and ESG rating divergence limit the informational value of sustainability disclosure mandates

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Abstract

Regulators increasingly treat disclosure quantity as the principal policy lever, assuming that more sustainability disclosure yields better-informed investors and more efficient capital allocation. This conceptual paper argues that the assumption is misspecified. Disclosure moves investor beliefs only insofar as it is credible, and credibility is manufactured downstream of the reporting entity, by assurance providers who verify and rating agencies who aggregate. We develop the construct of the credibility wedge, the gap between the quantity of sustainability information a firm discloses and the reliability investors attach to it. Drawing on costly state verification, cheap-talk and signalling models, ambiguity-based asset pricing and institutional theory, we specify a three-layer architecture of preparer, assurer and rater, each with a distinct failure mode. Twelve propositions connect regime design to the wedge, and the wedge to belief revision, the cost of capital and capital allocation. A two-by-two typology is derived and applied to the four architectures observable in 2026: the narrowed European regime, jurisdictions adopting IFRS S1 and S2, the United States, and India's BRSR Core. As the wedge grows, the marginal informational return to additional disclosure tends to zero, implying that verification and rating infrastructure must be built before disclosure scope is widened. India offers an unusually favourable research setting, and eight estimable models are specified. For the 2030 Agenda, target 12.6 and its report-counting indicator track disclosure volume rather than decision-useful information, making credible verification a precondition for reporting to advance SDGs 12 and 13.

1. Introduction

The policy case for mandatory sustainability disclosure rests on an information argument that is straightforward and, at first glance, hard to dispute. Firms differ in their exposure to environmental and social risks; those exposures are financially consequential but imperfectly observable from outside the firm; a disclosure mandate therefore reduces information asymmetry, allows investors to price the exposures more accurately, lowers the cost of capital for well-managed firms and reallocates capital accordingly (Diamond & Verrecchia, 1991; Healy & Palepu, 2001; Leuz & Wysocki, 2016; Verrecchia, 2001). On this logic, mandatory environmental, social and governance (ESG) disclosure is an informational instrument rather than an environmental one, and its environmental consequences, if any, arrive indirectly through the portfolio decisions of investors.

The argument has been taken seriously by regulators. Twenty-eight jurisdictions had adopted the IFRS Sustainability Disclosure Standards on a voluntary or mandatory basis by April 2026, with a further twelve indicating an intention to do so (S&P Global Sustainable1, 2026). It has also been taken seriously by researchers, and the evidence is broadly, if unevenly, supportive at the first link in the chain. Disclosure mandates improve stock liquidity, particularly where they are imposed by government institutions rather than on a comply-or-explain basis and are accompanied by strong enforcement (Krueger et al., 2024). Voluntary non-financial disclosure has been associated with a lower cost of equity capital and with more accurate analyst forecasts (Dhaliwal, Li, et al., 2011; Dhaliwal, Radhakrishnan, et al., 2012). Markets react

to sustainability information when it is financially material and largely ignore it when it is not (Grewal et al., 2019; Khan et al., 2016).

This policy architecture is not free-standing. It is the principal financial-market instrument through which the 2030 Agenda for Sustainable Development expects private capital to be redirected (United Nations, 2015). Target 12.6 calls on companies, and on large companies in particular, to adopt sustainable practices and to integrate sustainability information into their reporting cycle, and the global indicator adopted to monitor that target counts the number of companies publishing sustainability reports (United Nations, 2017). Corporate reporting is therefore treated within the SDG framework as both an instrument of progress and a measure of it, and it is measured by volume. The same reasoning underlies the reporting-based elements of climate policy associated with SDG 13 and the expectation under SDG 16.6 that transparent and accountable institutions will discipline corporate conduct. If disclosure quantity is a poor proxy for the information investors actually use, an indicator built on disclosure counts will register progress that has not occurred, and the capital reallocation on which the sustainable development case for disclosure rests will not follow. The sustainable development stake in the credibility question is, in that sense, larger than the accounting-policy stake.

What the argument does not address is the question this paper takes up. The disclosure literature has, for the most part, treated disclosure and information as interchangeable. They are not. A disclosure becomes information only if the recipient assigns it non-trivial reliability, and reliability is not something the discloser can confer on its own statements. In financial reporting, this problem was solved, imperfectly but durably, by statutory audit: an independent party with reputational capital at stake attests to the correspondence between the statements and the underlying records (Jensen & Meckling, 1976; Watts & Zimmerman, 1983). No settled institutional equivalent exists for sustainability reporting. Where assurance is provided, it is often not reasonable but limited, often by non-accountant providers, and narrowly scoped (Cohen & Simnett, 2015; Simnett et al., 2009). And unlike financial reporting, sustainability information does not arrive in its raw form for most investors, but pre-digested into an ordinal score by a commercial rating agency whose methodology is proprietary and whose output correlates only weakly with that of its competitors (Berg et al., 2022; Chatterji et al., 2016; Christensen et al., 2022).

These two facts have been studied separately and have seldom been brought together. The assurance literature is large, and the rating-divergence literature is growing rapidly, but the two have largely proceeded in parallel, and neither has been well integrated into the disclosure-to-cost-of-capital chain that motivates the policy. The outcome is a conceptual gap. If assurance is weak and rating divergence is high, then the mapping from a firm's disclosure to an investor's posterior belief is neither reliable nor stable, and the entire policy chain is broken at a point upstream of where most empirical work looks for it. Expanding disclosure scope under those conditions adds text without adding information.

This paper develops that argument formally. We introduce the credibility wedge as a construct: the gap between the quantity of sustainability information a firm discloses and the reliability that investors

attach to it. We locate the wedge in a three-layer architecture running from preparer through assurer to rater, identify a distinct failure mode at each layer, and theorise how the design of a disclosure regime determines the size of the wedge. Twelve propositions are developed. A typology of credibility regimes is derived, and the four principal disclosure architectures observable in 2026 are mapped onto it.

This paper makes three contributions. First, it redefines the dependent variable of disclosure regulation. The important thing is not the amount of disclosure but the credibility of the disclosure, and the two can move in opposite directions. A regime that expands the scope faster than it builds verification capacity increases the former and reduces the latter. Second, it bridges two literatures that have developed in isolation, and demonstrates that assurance and rating convergence are complements rather than substitutes: verified data that raters aggregate unequally and consistent scores based on unverified inputs both fail, but they fail in different ways and call for different remedies. Third, it identifies India as an unusually clean research setting. Because BRSR Core assurance is phased by market-capitalisation rank with sharp cut-offs (Securities and Exchange Board of India, 2023, 2024), verification status is assigned by a continuous running variable in a way that few other jurisdictions replicate, and this permits identification strategies that are unavailable in the European or United States settings. The three contributions share a single implication for the sustainable development agenda, developed in Section 11.4: it is the credibility of sustainability information, and not its volume, that determines whether disclosure regimes can deliver the reallocation of capital the Goals require.

1.1. Aim, research questions and structure

The aim of the paper is to explain why expanding the scope of sustainability disclosure does not, on its own, generate the information investors need in order to price sustainability exposures, and to specify the institutional conditions under which it would. Three questions organise the argument. First, where in the reporting chain is credibility produced, and how does each layer of that chain fail? Second, how does the design of a disclosure regime determine the size of the credibility wedge, and how does the wedge transmit to investor beliefs, to the cost of capital and to capital allocation? Third, what follows for jurisdictions, and for the SDG monitoring framework, that currently treat disclosure volume both as the policy lever and as the measure of progress? The sustainable development value of answering these questions is direct. Capital cannot be moved towards firms with genuinely lower environmental and social exposures unless those exposures are measured, independently verified and made comparable across firms; and a regime that expands reporting obligations ahead of its verification capacity consumes scarce compliance resources, most acutely in developing markets, without producing that reallocation.

The remainder of the paper proceeds as follows. Section 2 sets out the problem of credibility. Section 3 develops the theoretical foundations. Section 4 describes the method. Section 5 characterises the credibility architecture of the four major regimes in 2026. Section 6 develops the three-layer model and Section 7 the credibility wedge construct. Section 8 presents the framework and propositions, Section 9

the typology and boundary conditions, Section 10 the research agenda and Section 11 the implications. Sections 12 and 13 state limitations and conclude.

2. The problem of credibility in sustainability disclosure

2.1. Disclosure is not information

The disclosure literature developed its central results in a setting where the credibility problem had already been institutionally solved. In the canonical models, a firm either discloses or does not, and the market learns from the decision itself. Unravelling arguments show that with costless and verifiable disclosure, the equilibrium is full revelation (Grossman, 1981; Milgrom, 1981), and deviations from full revelation are accounted for by disclosure costs, proprietary concerns or uncertainty about whether the firm is informed (Dye, 1985; Verrecchia, 2001). This apparatus has been described in the broader review literature as the settled core of the field (Beyer et al., 2010). Its intellectual antecedent is the adverse-selection problem in markets for goods of unobservable quality (Akerlof, 1970). Verifiability is assumed by these models throughout this. You can check on a statement once it is made, and you can catch and punish a company that lies.

Sustainability disclosure violates this assumption in a way that is not simply a matter of degree. Many of the quantities reported are estimates constructed by the firm using methodological choices the firm itself makes: the organisational boundary, the emission factors applied, the treatment of leased assets, the definition of a serious injury, the scope of the value chain considered in-scope. Two firms with identical physical operations can report materially different numbers without either being untruthful. The problem is less one of falsification than of the absence of a determinate fact of the matter against which a statement could be falsified. Christensen et al. (2021) make the related point that the constructs in this domain are heterogeneous, unstandardised and only partially quantifiable, and that this heterogeneity conditions everything that follows in the empirical literature.

The consequence is that sustainability disclosure sits closer to the cheap-talk end of the communication spectrum than to the verifiable-disclosure end (Crawford & Sobel, 1982). Where the sender's and receiver's interests are imperfectly aligned and messages are costless and unverifiable, information transmission in equilibrium is partial at best. Empirical work using textual methods is consistent with this. Binger et al. (2022) find that climate-risk disclosures are dominated by non-committal, cherry-picked language, with specificity concentrated precisely in the areas where disclosure is least costly to the firm. Michelon et al. (2015) reach a comparable conclusion about the relation between reporting practices and disclosure quality.

2.2. The verification problem

The institutional response to unverifiability in financial reporting was independent attestation. Assurance reduces the residual uncertainty investors face about whether reported numbers correspond to underlying facts, and the demand for it is standardly explained by agency, information and insurance

motives (Watts & Zimmerman, 1983). Sustainability assurance has grown substantially, but it has grown in a form that delivers considerably less than statutory audit. Simnett et al. (2009) documented early on that the decision to seek assurance, and the choice of provider, varied systematically with country-level legal and stakeholder characteristics rather than with the informational needs of investors. Likewise, Martínez-Ferrero and García-Sánchez (2017) explain the same pattern using isomorphism, identifying coercive, normative and mimetic pressures rather than demand for verification as the drivers of voluntary assurance. The importance of this interpretation is that assurance taken up for legitimacy reasons need not, and often does not, enhance reliability (Meyer & Rowan, 1977).

Where assurance is substantive, the evidence suggests it works. Moroney et al. (2012) find that assured voluntary environmental disclosures are of higher quality than unassured ones. Ballou et al. (2018) show that assurance is associated with a lower incidence of subsequent restatement of sustainability metrics. Pflugrath et al. (2011) find experimentally that financial analysts assign higher credibility to assured disclosures, and that the professional affiliation of the assurer matters to that assessment. Carey et al. (2021) report an association between voluntary sustainability assurance and a lower cost of debt for capital-constrained firms. The difficulty is that the level of assurance actually mandated in most regimes is limited rather than reasonable. A limited assurance engagement results in negative-form conclusions on a restricted scope. The practitioner states that nothing has come to his or her attention that suggests material misstatement. This is a materially weaker claim than an opinion that the information is fairly stated. The resulting market is described by Casey and Grenier (2015) as one where the assurance product is heterogeneous and, therefore, its signal value is difficult for users to interpret. The adjacent evidence points in the same direction. Barth et al. (2017) find capital-market and real effects related to the quality of integrated reports rather than to their existence. Flammer (2021) shows that green bonds attract a market response when they have third-party certification, which is the credibility mechanism of this paper operating in a debt-market setting.

2.3. The aggregation problem

Even if it were fully vetted, a disclosure would not reach most investors in its raw form. Most investors encounter sustainability information through the scores issued by commercial rating providers rather than through primary filings, and those scores differ substantially from one provider to another. Berg et al. (2022) decompose the divergence into scope, measurement and weight components and attribute the largest share to measurement, i.e. providers disagree not only about which attributes matter, but also about the value of the same attribute for the same firm. Chatterji et al. (2016) arrive at a similar conclusion for social ratings, and Christensen et al. (2022) find, counter-intuitively, that more disclosure is associated with greater, rather than lesser, rating disagreement, as more disclosed items provide providers with more raw material over which to apply divergent methodologies. Kimbrough et al. (2024) qualify this: voluntary ESG reporting reduces disagreement but only partially and unevenly across dimensions.

It is important enough to state this finding clearly, because it runs contrary to the intuition upon which disclosure policy is based. If the quantity of disclosure increases the disagreement in ratings, then the

marginal disclosure has negative informational value to an investor who consumes ratings rather than raw filings. This is consistent with the asset-pricing implications of ESG rating disagreement: it is associated with return premia (Gibson Brandon et al., 2021), weaker price reactions to ESG news (Serafeim & Yoon, 2023), and portfolio implications that arise when investors treat ESG signals as ambiguous rather than merely noisy (Avramov et al., 2022). The recent syntheses confirm that divergence is a structural feature of the ratings industry rather than a transitional artifact (Rubino et al., 2026), and that among the few firm-level factors that mitigate it are reporting standards and assurance practices (Arena et al., 2025).

2.4. The demand side: why credibility is binding rather than incidental

One might object that credibility problems only matter if investors want the information in the first place. The evidence is that they do for two different reasons which have different implications for the argument. The first is financial. Institutional investors report using sustainability information primarily for financial, not ethical, reasons, treating climate exposure as an input to risk management (Amel-Zadeh & Serafeim, 2018; Krueger et al., 2020). Climate risk disclosure is linked to institutional ownership patterns consistent with active demand for the information rather than passive tolerance (Ilhan et al., 2023). The second reason is not money. Investors are willing to accept lower expected returns for holdings that are congruent with their values. This preference is documented in field experiments and administrative data (Bauer et al., 2021; Riedl & Smeets, 2017) and is reflected in fund flows following salient sustainability rankings (Hartzmark & Sussman, 2019). Heeb et al. (2023) qualify this strongly, showing that willingness to pay responds to the presence of impact, not its magnitude, which itself is a credibility finding: investors are responding to a signal that they cannot calibrate.

In equilibrium models that include both motives, sustainability preferences impact expected returns and the size of the shift depends on how spread out preferences are and how accurately the underlying characteristic can be measured (Pástor et al., 2021; Pedersen et al., 2021). That is the point being pushed here: measurement enters in these models as an input parameter and not an afterthought. Barber et al. (2021) demonstrate that investors are willing to sacrifice return for impact in the private-market context, while Kölbel et al. (2020) explain how such investment could credibly induce a change in corporate behavior at all. Starks (2023) frames the distinction between value and values motives and argues that both operate simultaneously in the same investor base. What none of this literature establishes is whether the characteristic that investors think they are buying is the characteristic that the data are describing.

The aggregate empirical picture is accordingly mixed. Friede et al. (2015) find that most primary studies report a non-negative relationship between ESG and financial performance. However, the underlying studies apply inconsistent constructs and predominantly cross-sectional designs. In the words of Edmans (2023), ESG as a category is neither conceptually coherent nor separable from ordinary intangible-value analysis, and its measurement apparatus has outgrown its conceptual foundation. That

critique is a statement about the wedge; after reading through the framework developed here: the category is doing less work than its measurement infrastructure implies because the infrastructure is not providing reliable, commensurable inputs.

2.5. Credibility and the sustainable development agenda

The literature reviewed in this section has developed almost entirely within accounting and finance, and its connection to the sustainable development literature has remained largely implicit. Making it explicit matters, because the two bodies of work rest on different assumptions about what reporting accomplishes. In the SDG framework, corporate sustainability reporting is monitored by counting the companies that publish reports (United Nations, 2015, 2017), and the implicit theory of change is that reporting disciplines conduct: firms that measure and publish will manage, and stakeholders, investors among them, will reward those that manage well. The evidence reviewed above qualifies every step of that sequence. Reporting practice responds to the intensity of external scrutiny and to legitimacy pressure rather than to underlying performance (Marquis et al., 2016; Patten, 2002). Assurance is frequently adopted for isomorphic reasons and delivered at a level too weak to support inference (Martínez-Ferrero & García-Sánchez, 2017; Simnett et al., 2009). Aggregation into scores introduces disagreement that rises rather than falls with disclosure quantity (Christensen et al., 2022). The real-effects evidence is correspondingly mixed: emission reductions have been documented in some mandated-disclosure settings (Downar et al., 2021; Tomar, 2023) and in international samples of standard adopters (Luo & Tang, 2023), while other settings show limited real effects (Fiechter et al., 2022). That pattern is what the framework developed here predicts. Reporting advances sustainable development outcomes where the reported information is verified and commensurable, and not otherwise. What the sustainable development literature has lacked is a construct that separates the two cases and renders the difference measurable, and that is what the credibility wedge is intended to supply.

3. Theoretical foundations

The argument draws on four families of theory, set out in Table 1. Each addresses a different part of the problem and each yields a distinct prediction about when disclosure will and will not revise investor beliefs. The disclosure-theoretic and cheap-talk models are listed separately in the table because they bear on the preparer layer through different mechanisms, but they belong to a single tradition.

Table 1
Theoretical traditions and their predictions about the credibility wedge

Tradition	Core mechanism	Locus in the architecture	Prediction about the credibility wedge
Costly state verification (Townsend, 1979; Watts & Zimmerman, 1983)	Verification is costly and therefore selective; contracts verify only in some states	Assurer	The wedge is decreasing in assurance level and scope, and the informational value of the regime is bounded by its verification technology, not its reporting breadth
Signalling and voluntary disclosure (Dye, 1985; Grossman, 1981; Milgrom, 1981; Spence, 1973; Verrecchia, 2001)	Separation requires the signal to be differentially costly across sender types	Preparer	Disclosure quantity separates types weakly; the assurance decision and its level are the informative signal
Cheap talk (Crawford & Sobel, 1982)	Costless unverifiable messages transmit information only partially when interests diverge	Preparer	Unassured narrative disclosure is largely uninformative; the wedge approaches the full quantity disclosed
Ambiguity and asset pricing (Avramov et al., 2022; Ellsberg, 1961; Epstein & Schneider, 2008)	Investors unable to identify the applicable distribution behave pessimistically and demand a premium	Rater and investor	Rating divergence enters prices as an ambiguity premium rather than as attenuating measurement error
Institutional theory and legitimacy (Deegan, 2002; DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Suchman, 1995)	Structures adopted for legitimacy are decoupled from operations where capacity is lacking	Preparer and assurer	Assurance mandated ahead of professional capacity is satisfied ceremonially; the wedge persists despite formal compliance

3.1. Costly state verification and the economics of attestation

Townsend (1979) established that when a state of the world is observable to one party and verifiable by the other only at a cost, the optimal contract involves verification in some states and not others. The framework maps directly onto sustainability assurance. Verification is costly, the cost is increasing in the assurance level and in the breadth of scope, and it is therefore rational for a regime designer to verify selectively. What follows, and what is under-appreciated in disclosure policy, is that the informational value of a disclosure regime is bounded above by the credibility of its verification technology, not by the breadth of its reporting requirements. Extending scope without extending verification moves the regime along a dimension that does not bind.

3.2. Signalling and the cost condition

Signalling models require that the signal be differentially costly for high- and low-type senders (Spence, 1973). Sustainability disclosure satisfies this condition only weakly. Producing a report is roughly equally costly for a firm with strong and weak underlying performance, which is why disclosure quantity is a poor proxy for performance and why the environmental-disclosure literature has struggled to resolve whether the relation between disclosure and performance is positive, as voluntary-disclosure theory predicts (Clarkson et al., 2008), or negative, as legitimacy theory predicts (Cho & Patten, 2007; Patten, 2002). Assurance is a better candidate signal, because its cost is plausibly increasing in the messiness of the firm's underlying data. This yields a testable implication that has attracted less attention than it deserves: the informative signal is the assurance decision and its level, not the disclosure itself.

3.3. Ambiguity and asset pricing

The distinction between risk and ambiguity (Ellsberg, 1961) is central to what rating divergence does to prices. Under risk, investors know the distribution; under ambiguity, they do not know which distribution applies. Epstein and Schneider (2008) show that ambiguity-averse investors respond to poor information quality by behaving as if the worst plausible signal interpretation were correct, which generates a premium and asymmetric reactions to good and bad news. Applied here, this implies that rating divergence should not be modelled as classical measurement error, which would attenuate estimated coefficients towards zero, but as ambiguity, which generates a positive premium and predicts a systematically different set of empirical signatures. Avramov et al. (2022) formalise sustainable investing under ESG rating uncertainty and derive exactly this: rating uncertainty reduces the demand for ESG assets and raises required returns. The empirical literature on liquidity and adverse selection provides the complementary microstructure channel (Amihud & Mendelson, 1986; Easley & O'Hara, 2004; Glosten & Milgrom, 1985; Kyle, 1985), and Lambert et al. (2007) supply the link from information precision to the cost of capital in a setting with many firms. The empirical asset-pricing evidence on carbon exposure is consistent with a premium of this sort, although the interpretation of it is contested. Bolton and Kacperczyk (2021, 2023) document a carbon premium in United States and global samples, while Aswani et al. (2024) show that the result is sensitive to whether emissions are disclosed or vendor-estimated, which is itself a credibility finding of the first order. Earlier work on the value relevance of emissions disclosure reaches broadly compatible conclusions (Griffin et al., 2017; Matsumura et al., 2014).

3.4. Institutional theory and ceremonial verification

Organisations adopt structures that confer legitimacy irrespective of whether those structures improve technical performance, and they decouple the adopted structure from operations where the two conflict (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Suchman, 1995). Applied to assurance, this predicts a specific pathology. Where an assurance requirement is imposed on a market that lacks the professional capacity to satisfy it substantively, the requirement will be satisfied formally: engagements will be scoped narrowly, providers will be selected for cost and pliability, and the attestation will be issued. The disclosure will carry an assurance statement and investors will be no better informed. This is not a marginal concern in a regime that expands assurance obligations on a fixed timetable, and it is the

mechanism behind several of the propositions developed below. Deegan (2002) and the legitimacy tradition more broadly supply the disclosure-side analogue.

3.5. Synthesis: three conditions for belief revision

Taken together, these traditions suggest that a disclosure will update an investor's beliefs only if three conditions are simultaneously satisfied. The disclosure must be relevant, i.e. it must be related to a financially material exposure (Khan et al., 2016). It must be trustworthy, in that the correspondence between the statement and the underlying record has been verified by an independent party with something at stake. And it must be commensurable, in the sense that it can be compared against the same quantity reported by other firms without the comparison being dominated by methodological differences. Regulatory attention has concentrated overwhelmingly on the first condition and, to a lesser extent, on the second. The third has been left to a commercial ratings industry with no obligation to supply it. The credibility wedge is what results when the second and third conditions fail while the first is satisfied.

Table 1 Theoretical traditions and their predictions about the credibility wedge

4. Methods

4.1. Design and positioning

This is a conceptual paper in the sense of Gilson and Goldberg (2015) and Jaakkola (2020), and specifically a theory-synthesis article: it draws together literatures that have developed separately in order to construct a framework and a set of propositions, rather than to estimate a parameter. The design was chosen because the object of interest, the credibility wedge, is not measured in the existing literature and therefore cannot be synthesised meta-analytically. Where the target constructs are heterogeneous and the contribution is conceptual organisation rather than effect-size estimation, integrative and theory-synthesis designs are the appropriate instruments (Snyder, 2019; Torraco, 2005; Whetten, 1989). The paper does not claim to be a systematic review and does not follow PRISMA. It does, however, use a documented and reproducible protocol to identify the literature it synthesises, in the spirit of Tranfield et al. (2003), Webster and Watson (2002) and the reporting conventions set out in Paul et al. (2021).

4.2. Identification of the literature

Literature was identified in Scopus and the Web of Science Core Collection only. Google Scholar and other aggregators were deliberately excluded, because the object was a defined and reproducible corpus of peer-reviewed work in indexed outlets rather than exhaustive coverage. Three search families were run, corresponding to the three layers of the architecture, and combined with citation tracking from five anchor works (Berg et al., 2022; Christensen et al., 2021; Gillan et al., 2021; Krueger et al., 2024; Simnett et al., 2009). Table 2 records the protocol.

Table 2
Literature identification and synthesis protocol

Element	Specification
Databases	Scopus; Web of Science Core Collection (SCI-EXPANDED, SSCI, ESCI). No other database used.
Window	January 2000 to May 2026, plus foundational theory works of any date identified through citation tracking.
Family A – disclosure and markets	(“ESG disclosure” OR “sustainability reporting” OR “non-financial disclosure” OR “CSR reporting”) AND (“cost of capital” OR “liquidity” OR “investor” OR “asset pricing” OR “analyst forecast”)
Family B – verification	(“sustainability assurance” OR “CSR assurance” OR “ESG assurance” OR “non-financial assurance” OR “limited assurance” OR “reasonable assurance”) AND (“credibility” OR “reliability” OR “investor” OR “cost of capital” OR “disclosure quality”)
Family C – aggregation	(“ESG rating” OR “ESG score” OR “sustainability rating”) AND (“divergence” OR “disagreement” OR “uncertainty” OR “noise” OR “comparability”)
Document types	Article and review, in English, in journals indexed in both databases. Conference papers, book chapters and editorials excluded.
Inclusion	Contributes theory or evidence on at least one link in the preparer–assurer–rater–investor chain; construct of interest separable from ESG performance.
Exclusion	Disclosure construct indistinguishable from a performance rating; dependent variable is accounting performance rather than an investor or market outcome; design does not permit inference on direction of association; substantive overlap with a retained study.
Regulatory sources	Primary instruments retrieved directly from the IFRS Foundation, the Official Journal of the European Union, the United States Securities and Exchange Commission and the Securities and Exchange Board of India, and verified against professional technical summaries where instrument text was not final.
Synthesis	Retained studies coded on five dimensions: architectural layer addressed; construct operationalisation; identification strategy; institutional setting; direction and strength of finding. Interpretive weight assigned by identification strength, with quasi-experimental and event-study designs weighted above cross-sectional association.

Table 2. Literature identification and synthesis protocol

4.3. Treatment of conflicting findings

Conflict

ing findings were not reconciled into an average. They were interpreted against the coding dimensions, on the argument developed in Section 3 that apparent inconsistency in this literature is substantially an artefact of pooling observations drawn from different regions of the parameter space. A study of an

unassured voluntary disclosure regime and a study of an assured mandatory one are not estimating the same quantity, and averaging them produces a number that describes neither.

5. The credibility architecture in 2026

The period from 2021 to 2023 suggested that global disclosure requirements were converging. By 2026 they plainly are not, and the divergence runs along the credibility dimension rather than along the scope dimension alone. Four developments define the current position.

First, adoption of the IFRS Sustainability Disclosure Standards has been substantial in breadth. Twenty-eight jurisdictions had adopted IFRS S1 and IFRS S2 voluntarily or mandatorily as at April 2026, with twelve more intending to follow (S&P Global Sustainable¹, 2026). The standards themselves, however, impose no assurance requirement; assurance is left to the adopting jurisdiction (IFRS Foundation, 2023). Breadth of adoption and depth of verification are therefore separable, and in practice they have separated. The standards themselves consolidate the architecture established by the Task Force on Climate-related Financial Disclosures (2017), whose four-pillar structure of governance, strategy, risk management and metrics they retain.

Second, the European Union has retained double materiality but sharply narrowed the population subject to it. The Omnibus directive, published in the Official Journal on 26 February 2026 and in force from 18 March 2026, restricts mandatory reporting under the European Sustainability Reporting Standards to undertakings exceeding 1,000 employees and EUR 450 million in net turnover, a threshold that removes a large majority of the previously in-scope population, with the revised scope applying to financial years beginning on or after 1 January 2027 (European Financial Reporting Advisory Group, 2025; PricewaterhouseCoopers, 2026). Limited assurance is still a must for those still in scope. The EU has opted for depth over breadth: a smaller reported population, checked, albeit to a limited standard.

Third, the United States has gone in the other direction on both counts. The U.S. Securities and Exchange Commission proposed the rescission of its climate-related disclosure rules in May 2026 (Securities and Exchange Commission, 2026). But the rules were adopted in March 2024 and stayed in April, never going into effect, so the counterfactual against which rescission should be judged is not a working mandate, but an announced one. This is important for research purposes: the United States provides an announcement effect and a withdrawal effect without an intervening compliance period.

Fourth, India has adopted the most stringent verification standard of any major market, but with the least developed professional infrastructure. BRSR Core requires reasonable assurance (rather than limited assurance) and is phased by market-capitalisation rank from the top 150 listed entities in FY 2023–24 to the top 1,000 by FY 2026–27, with subsequent easing measures allowing assessment as an alternative to assurance for some entities and altering the value-chain timetable (Securities and Exchange Board of India, 2023, 2024).

The combination is unusual and, as Section 10 argues, analytically valuable. The Indian evidence base is meanwhile thin and almost entirely cross-sectional: Malik and Kashiramka (2024) report associations between ESG disclosure and both firm performance and the cost of debt, and Behl et al. (2022) apply cross-lagged panel analysis to the energy sector, but neither design exploits the assurance discontinuity that the glide path creates. Cross-country work establishes that country-level institutional characteristics dominate firm-level ones in explaining disclosure behaviour (Baldini et al., 2018; Ioannou & Serafeim, 2012), which is a reason to expect the Indian setting to behave differently from the European one rather than to extrapolate between them.

Table 3: **Comparative credibility architecture of four ESG disclosure regimes, as at mid-2026**

Table 3
Comparative credibility architecture of four ESG disclosure regimes, as at mid-2026

Dimension	European Union (post-Omnibus)	ISSB-adopting jurisdictions	United States (proposed rescission)	India (BRSR Core)
Instrument	CSRD as amended by the Omnibus directive; ESRS	IFRS S1 and IFRS S2 as adopted locally	Rescission of the 2024 climate rules	SEBI LODR Regulation 34(2)(f); BRSR and BRSR Core
Materiality basis	Double materiality	Financial materiality (investor focus)	Financial materiality	Financial materiality with responsible-business principles
Population in scope	Undertakings above 1,000 employees and EUR 450m turnover, from FY 2027	Varies by jurisdiction; commonly listed and large public-interest entities	None once rescinded; principles-based obligations revert	Top 1,000 listed entities by market capitalisation
Assurance level	Limited assurance mandatory	Not specified by the standards; left to jurisdictions	Not applicable	Reasonable assurance or permitted assessment, phased by market-cap rank
Assurance provider	Statutory auditor or independent assurance services provider	Jurisdiction-dependent	Not applicable	Statutory auditor or SEBI-recognised assessment or assurance provider, subject to independence conditions
Comparability mechanism	Prescriptive datapoints in ESRS	Common global baseline across adopters	None	Prescribed KPI set with PPP-adjusted intensity ratios
Position in the typology (Fig. 3)	Quadrant II – verified but noisy	Quadrant III – coherent but unverified	Quadrant IV – credibility vacuum	Migrating from IV toward I along the assurance glide path

Two observations follow from Table 3 that are not visible when regimes are compared on reporting scope alone. The first is that no major regime currently occupies the high-assurance, high-comparability quadrant. The second is that the four regimes fail in different ways, which means that evidence generated in one is a poor guide to what will happen in another. A cost-of-capital effect estimated on European data under limited assurance does not transfer to an Indian setting under reasonable assurance, and neither transfers to a voluntary ISSB-aligned setting with no assurance at all.

6. A three-layer model of credibility production

Sustainability information reaches an investor through a pipeline with three institutional layers, each of which transforms the information and each of which can degrade it. Figure 1 sets out the architecture and the failure mode associated with each layer.

Figure 1 The three-layer credibility architecture of ESG disclosure. Each layer transforms the information it receives and introduces a characteristic failure mode. The credibility wedge is the residual reliability gap that survives all three layers and is carried into prices.

6.1. Layer one: the preparer

The preparer selects what to measure, sets the reporting boundary and chooses the methodology. The failure modes at this level are well understood: selective exposure to positive signals, boundary setting that excludes problematic operations, and impression management via narrative framing. According to Marquis et al. (2016), selective disclosure is a function of the intensity of external scrutiny and local normative environments, rather than underlying performance. As Kim and Lyon (2015) demonstrate, the distortion is two-sided: firms over- and under-state in different settings. The measurement error is hence not classical and cannot be taken to average out. Organisational drivers are offered by Delmas and Burbano (2011) and Lyon and Montgomery (2015), while greenwashing in ESG disclosure is documented by Yu et al. (2020). Patten (2002) and Cho and Patten (2007) demonstrate the legitimacy-driven inverse relation between environmental performance and environmental disclosure. Thus, the quantity of disclosure is an unreliable proxy for performance.

6.2. Layer two: the assurer

The assurer tests if reported metrics correspond to underlying evidence. Three failure modes are in play here. The first is the limited-assurance ceiling: a negative-form conclusion on a limited scope is a weak claim and users appear to have difficulty differentiating it from a reasonable-assurance opinion. The second is provider non-independence, which the Indian framework explicitly addresses by not allowing assurance providers to sell consulting services to the same entity (Securities and Exchange Board of India, 2024), which indicates that the risk is considered material by the regulators themselves. The third is scope restriction, in which the assured perimeter is drawn so as to exclude precisely those metrics that are most difficult to substantiate. Cohen and Simnett (2015) and Casey and Grenier (2015) describe the research agenda around these failures; the empirical work that exists shows that assurance

improves quality where it is substantive (Ballou et al., 2018; Moroney et al., 2012) but is adopted for isomorphic reasons where it is not (Martínez-Ferrero & García-Sánchez, 2017).

6.3. Layer three: the rater

The rater aggregates verified and unverified disclosures, imputed data and third-party data into an ordinal score. Berg et al. (2022) decompose divergence into scope, measurement and weight, with measurement winning. The problem is compounded by opaque imputation: if a firm has not reported an item, providers estimate it, and the estimation rules are proprietary. For example, Billio et al. (2021) show that the resulting disagreement is large enough to impact portfolio construction and performance attribution, and Dimson et al. (2020) describe the practical implications for asset owners. Aswani et al. (2024) show that asset-pricing results in this literature can depend on whether emissions figures used are firm-disclosed or vendor-estimated, thus rendering the imputation layer an empirical problem and not just a methodological caveat. The key point for the argument developed here is that Christensen et al. (2022) find a positive relation between disclosure quantity and rating disagreement. So the third layer can turn an increase in disclosure into an increase in ambiguity.

Table 4: **Layers of the credibility architecture, failure modes and regulatory levers**

Table 4 Layers of the credibility architecture, failure modes and regulatory levers				
Layer	Function	Primary failure mode	Representative evidence	Regulatory lever
Preparer	Measurement, boundary setting, methodology selection, narrative framing	Selective disclosure; boundary manipulation; impression management; bidirectional misstatement	Bingler et al. (2022); Kim and Lyon (2015); Marquis et al. (2016); Michelon et al. (2015); Yu et al. (2020)	Prescriptive datapoints; standardised methodology; defined reporting boundary
Assurer	Verification of reported metrics against underlying evidence	Limited-assurance ceiling; provider non-independence; scope restriction; ceremonial compliance	Ballou et al. (2018); Casey and Grenier (2015); Martínez-Ferrero and García-Sánchez (2017); Moroney et al. (2012); Simnett et al. (2009)	Mandated assurance level; provider qualification and independence rules; prescribed assured perimeter
Rater	Aggregation of disclosed, imputed and third-party data into comparable ordinal scores	Scope, measurement and weight divergence; opaque imputation; unstable back-filled histories	Avramov et al. (2022); Berg et al. (2022); Billio et al. (2021); Chatterji et al. (2016); Christensen et al. (2022); Kimbrough et al. (2024)	Rating-agency methodology disclosure and supervision; separation of scores from imputation

7. The credibility wedge

7.1. Definition

We define the credibility wedge for firm i in period t as the difference between the quantity of sustainability information the firm discloses, and the quantity investors consider credible to revise their beliefs. Formally, let D be the disclosure quantity, and let $p \in [0, 1]$ be the reliability weight used by investors. The wedge $W = D(1 - p)$ is the disclosed quantity that does not enter into beliefs. The construct is deliberately specified as a gap, not a level, because the policy question is not how much firms disclose or how much investors believe but how big that difference is and what drives the difference.

Three important characteristics of the definition are: In the first place, the wedge is increasing in D with fixed p , formalising the claim that increasing the scope of disclosure in a low-credibility environment increases the wedge, not the information set. Second, p is set at the second and third layers of the architecture and is almost beyond the control of the preparer. This is the reason why voluntary firm-level strategies have little effect against it. Third, the wedge is investor-specific: sophisticated investors who can process raw filings use a higher p than investors who use third-party scores, creating the cross-sectional predictions in Section 8.

7.2. Antecedents

The wedge is characterised by four regime-design features. The assurance level has a direct impact on p via the verification channel. Standard specificity, i.e. the degree to which a standard prescribes data points and methodology rather than topics, works through p via commensurability, as prescriptive standards reduce the methodological leeway over which raters differ. The degree of enforcement shapes whether the assurance requirement is met in a substantive or ceremonial manner and the closest empirical analogue is provided by Krueger et al. (2024) who show that liquidity effects are concentrated where mandates are government-enforced and not comply-or-explain. The scope of the mandate operates on D directly and, through the Christensen et al. (2022) mechanism, on p negatively.

7.3. Measurement

The wedge is not directly observable, but each of its components admits measurement. Table 5 sets out candidate operationalisations. The proposal is not that any single measure captures the construct, but that the three dimensions can be measured separately and combined, and that convergence across the three would constitute evidence of construct validity.

Table 5
Dimensions of the credibility wedge and candidate operationalization's

Dimension	Definition	Candidate measures	Expected sign on the wedge
Verification deficit	The share of disclosed material metrics not covered by an independent attestation at reasonable-assurance level	Ratio of assured to disclosed material KPIs; indicator for reasonable versus limited assurance; assurance provider type; scope exclusions named in the assurance statement	Positive
Aggregation dispersion	The extent to which rating providers disagree about the same firm-year	Standard deviation of standardised scores across providers; pairwise rank correlation; Berg et al. (2022) scope, measurement and weight decomposition applied at firm level	Positive
Commensurability deficit	The extent to which a firm's reported metrics are not comparable with peers' owing to methodological latitude	Count of firm-specific methodological elections disclosed; boundary-coverage ratio; deviation of reporting boundary from consolidated financial boundary; textual specificity scores	Positive
Investor-side processing capacity	The capacity of the marginal investor to substitute own analysis for third-party scores	Institutional ownership share; dedicated versus transient ownership; analyst coverage; PRI signatory share of the register	Negative

Table 5: Dimensions of the credibility wedge and candidate operationalisations

8. An integrative framework and propositions

Figure 2 presents the framework. Regime design determines the credibility wedge; the wedge determines the extent and character of investor belief revision; belief revision determines market outcomes; and market outcomes feed back into the incentives of preparers and assurers. Five variables moderate the two central paths.

Figure 2

An integrative framework of credibility transmission in ESG disclosure regimes. Solid arrows denote direct effects, dashed arrows moderating effects and the dotted arrow the feedback loop from market outcomes to preparer and assurer incentives. Proposition numbers are mapped to the paths they specify.

8.1. From regime design to the wedge

The first four propositions concern the antecedents. The central and least intuitive is P2, which states the condition under which expanding a disclosure mandate is informationally counterproductive.

P1. The credibility wedge is decreasing in the level of assurance mandated, and the reduction is discontinuously larger at the transition from limited to reasonable assurance than at the transition from no assurance to limited assurance.

P2. Holding assurance level and standard specificity constant, an expansion in the scope of a disclosure mandate increases the credibility wedge. Where the pre-expansion wedge is already large, the net effect of expansion on the information available to investors is non-positive.

P3. The credibility wedge is decreasing in standard specificity, defined as the ratio of prescribed data points to reported topics, because methodological latitude is the substrate on which rater divergence operates.

P4. If a market is required to provide assurance but lacks the capacity for professional verification to substantively meet that requirement, compliance is ceremonial, and the wedge does not fall despite formal satisfaction of the requirement.

8.2. From the wedge to belief revision

“The second set is about the mechanism through which the wedge affects investors. The central claim is P6, which distinguishes ambiguity from noise and thus yields a set of empirical signatures distinct from those implied by classical measurement error.

P5. The credibility wedge reduces investors’ posterior beliefs about a firm’s sustainability exposures, and the marginal effect of an additional disclosure on posterior precision is decreasing in the wedge.

P6. The wedge is an ambiguity premium, not classical measurement error, in asset prices. Hence, its empirical signatures are a positive, rather than an attenuating, effect on required returns, asymmetric responses to favorable versus unfavorable news, and reduced portfolio weights on affected securities.

P7. The wedge–investor response relationship is asymmetric across news direction: for large wedges, unfavorable sustainability news is incorporated more completely than favorable news, because ambiguity-averse investors resolve interpretive uncertainty pessimistically.

8.3. From belief revision to market outcomes

P8. The relationship between sustainability disclosure and the cost of capital depends on the wedge, not the quantity of disclosure. In a low-wedge environment, the association is negative and material. In a high-wedge environment, it is statistically indistinguishable from zero. The coefficient from pooling the two regimes is an attenuated coefficient that describes neither.

8.4. Moderators

- P9. The impact of an assurance mandate on the wedge is moderated by verification capacity, measured as the depth of the qualified assurance market relative to the size of the reporting population. Where capacity is thin, the effect of the mandate on the wedge is reduced to zero.
- P10. Rating transparency, meaning the extent to which providers disclose methodology, imputation rules and revision histories, moderates the effect of the wedge on the ambiguity premium. Transparency converts ambiguity into risk and thereby reduces the premium without necessarily reducing disagreement.
- P11. Investor sophistication moderates the effect of the wedge on belief revision. The effect of the wedge is concentrated among investors dependent on third-party scores and is weaker among investors with the capacity to process primary disclosures directly.
- P12. Financial-materiality alignment moderates every path in the framework. Where the disclosed set is aligned with financially material exposures for the industry, the wedge has a larger effect on prices, because the information at stake is the information that would otherwise be priced.

Table 6: **Summary of propositions**

Table 6
Summary of propositions

P1	Proposition	Path in Fig. 2	Principal supporting literature
	Wedge decreasing in assurance level, with a discontinuity at limited-to-reasonable	Regime → wedge	Ballou et al. (2018); Carey et al. (2021); Moroney et al. (2012); Pflugrath et al. (2011)
P2	Scope expansion increases the wedge; net effect non-positive where the wedge is large	Regime → wedge	Christensen et al. (2022); Kimbrough et al. (2024)
P3	Wedge decreasing in standard specificity	Regime → wedge	Berg et al. (2022); Chatterji et al. (2016)
P4	Ceremonial compliance where verification capacity is insufficient	Regime → wedge	DiMaggio and Powell (1983); Martínez-Ferrero and García-Sánchez (2017); Meyer and Rowan (1977)
P5	Posterior precision decreasing in the wedge; diminishing marginal informativeness	Wedge → beliefs	Lambert et al. (2007); Verrecchia (2001)
P6	Wedge priced as ambiguity, not as classical measurement error	Wedge → beliefs	Avramov et al. (2022); Ellsberg (1961); Epstein and Schneider (2008); Gibson Brandon et al. (2021)
P7	Asymmetric incorporation of unfavourable versus favourable news	Wedge → beliefs	Epstein and Schneider (2008); Serafeim and Yoon (2022, 2023)
P8	Cost-of-capital association conditional on the wedge, not on quantity	Beliefs → outcomes	Christensen et al. (2021); Dhaliwal, Li, et al. (2011); El Ghouli et al. (2011); Krueger et al. (2024)
P9	Verification capacity moderates the mandate–wedge relation	Moderator	Casey and Grenier (2015); Simnett et al. (2009)
P10	Rating transparency converts ambiguity into risk	Moderator	Berg et al. (2022); Billio et al. (2021); Rubino et al. (2026)
P11	Investor sophistication attenuates the wedge's effect	Moderator	Amel-Zadeh and Serafeim (2018); Dyck et al. (2019); Krueger et al. (2020)
P12	Financial-materiality alignment amplifies all paths	Moderator	Grewal et al. (2019); Khan et al. (2016); Serafeim and Yoon (2022)

8.5. Scope conditions

Three boundaries on the framework should be stated. First, it addresses the informational channel from disclosure to price and is silent on the stewardship channel, through which investors influence corporate behaviour by voice rather than by exit. That channel is real and is separately evidenced (Azar et al., 2021; Dimson et al., 2015; Dyck et al., 2019), and Broccardo et al. (2022) show formally that voice generally

dominates exit where investors are partially socially responsible. Credibility plausibly conditions stewardship as well, since an engagement premised on unverified data is weakly founded, but modelling that path would require a different apparatus than the one developed here.

Second, the framework predicts market outcomes rather than real outcomes. Whether repricing changes what firms actually do is a separate question on which the evidence is mixed: mandated carbon disclosure has been associated with subsequent emission reductions in some settings (Downar et al., 2021; Tomar, 2023) and with limited real effects in others (Fiechter et al., 2022), while reporting-standard adoption shows an association with carbon mitigation internationally (Luo & Tang, 2023). Earlier work associating sustainability practices with access to finance and with organisational performance (Cheng et al., 2014; Eccles et al., 2014) predates most of the identification advances in this literature and should be read with that in mind. The framework locates itself upstream of this debate: if the wedge is large, the real-effects question does not arise, because the price signal that would drive real effects is not being generated.

Third, the framework treats the rating industry's structure as exogenous. Provider consolidation, the entry of index providers into rating, and the commercial incentive to differentiate methodologies are plausibly endogenous to the regulatory environment, and a fuller treatment would model layer three as a strategic actor rather than a transformation.

9. A typology of credibility regimes

The two structural determinants of the wedge, assurance strength and rating convergence, are conceptually independent and can be crossed. Figure 3 presents the resulting typology and locates the four regimes of Section 5 within it.

Figure 3A typology of credibility regimes. The vertical axis shows the strength of the requirement for verification, and the horizontal axis shows the degree of agreement among rating providers. The four regimes described in Section 5 are shown in italics.

The typology entails two implications for the reading of the empirical literature. The first is quadrant III, the least discussed and perhaps most dangerous. In cases where raters agree on inputs that are not verified, investors get a consistent signal with no independent basis, and the coherence itself creates false confidence. In such cases, however, the measurement error is correlated across providers rather than idiosyncratic, so that averaging across raters, the standard practitioner remedy for divergence, is of no help. Quadrant II, where data are verified but scores diverge, looks worse on the most commonly reported divergence metric, but is better from an informational perspective.

The second implication concerns the interpretation of null results. Many papers find no or weak relation between ESG disclosure and market outcomes. The typology indicates that these nulls may be regime artefacts and not evidence against the underlying mechanism. A study conducted in quadrant IV should find nothing, and finding nothing there is uninformative about what would be found in quadrant I. This is

a specific instance of the more general point in Christensen et al. (2021) about the sensitivity of this literature to setting and design.

10. Research agenda

The framework is intended to be estimable, and this section specifies how. Two features of the 2026 landscape make the agenda unusually tractable. The first is regulatory divergence itself: for the first time, comparable issuers face sharply different verification obligations for reasons largely exogenous to their own characteristics. The second is the Indian glide path. Because BRSR Core assurance obligations attach to market-capitalisation rank with sharp cut-offs at the top 150, 250, 500 and 1,000 (Securities and Exchange Board of India, 2023), firms immediately above and below a threshold are comparable in observables but differ in the verification status of their disclosures. This is a regression discontinuity design in a domain where credible identification has been scarce, and it addresses the endogeneity concern that has limited inference in the assurance literature, namely that firms self-select into assurance on characteristics correlated with the outcome.

Table 7 sets out eight estimable models. Each identifies the dependent variable, the focal regressor, the identification strategy and the propositions tested.

Table 7
Estimable models, identification strategies and propositions tested

M1	Question	Dependent variable	Focal regressor and identification	Tests
	Does mandated assurance reduce the cost of equity?	Implied cost of equity capital (PEG, Easton, or Gebhardt et al. estimator)	Indicator for BRSR Core assurance obligation; sharp RDD on market-capitalisation rank at the 150, 250, 500 and 1,000 cut-offs, bandwidth selected by MSE-optimal procedure	P1, P8
M2	Does the assurance mandate reduce rating disagreement?	Cross-provider standard deviation of standardised ESG scores	Same RDD; placebo tests at non-threshold ranks	P1, P3
M3	Is scope expansion informationally counterproductive?	Cross-provider disagreement; bid-ask spread	Difference-in-differences around the EU Omnibus scope narrowing, comparing undertakings that exited scope with those that remained, using the 1,000-employee and EUR 450m thresholds	P2
M4	Is the wedge priced as ambiguity or as noise?	Realised and implied excess returns; option-implied skew	Sort on the aggregation-dispersion measure; test for a positive premium and asymmetric news response rather than coefficient attenuation	P6, P7
M5	Does verification capacity moderate the mandate?	Cost of equity; disagreement	Interaction of the assurance indicator with a state- or country-level measure of qualified assurance-market depth per listed entity	P9
M6	Does the rescission announcement move prices?	Cumulative abnormal returns; changes in institutional ownership	Event study around the May 2026 proposal, cross-sectionally on pre-announcement voluntary assurance status and climate exposure (Sautner et al., 2023)	P6, P8
M7	Does investor sophistication attenuate the effect?	Firm-level cost of capital	Triple interaction of the wedge with dedicated institutional ownership and analyst coverage	P11
M8	Does materiality alignment amplify the paths?	Market reaction to sustainability news	Interaction of the wedge with an industry-level financial-materiality classification following Khan et al. (2016)	P12

Table 7: **Estimable models, identification strategies and propositions tested**

Three measurement priorities follow. First, the field needs a validated measure of the verification deficit that goes beyond a binary assurance indicator; the ratio of assured to disclosed material metrics, weighted by materiality, is the natural candidate and is constructible from assurance statements.

Second, the aggregation-dispersion measure should be decomposed following Berg et al. (2022) rather than used as a scalar, because scope divergence and measurement divergence have different policy remedies. Third, the commensurability deficit is currently unmeasured and would benefit from textual methods of the kind Bingler et al. (2022) apply to climate disclosure.

11. Implications

11.1. For regulators

The framework implies a sequencing rule. Verification and comparability infrastructure should be built before disclosure scope is widened, not after, because scope expansion into a low-credibility environment raises reporting cost without raising the information available to investors and may reduce it through the disclosure–disagreement mechanism. This inverts the sequence most jurisdictions have followed. It also suggests that the European decision to narrow scope while retaining assurance, though driven by burden-reduction politics rather than by information economics, is closer to the informationally efficient ordering than it is usually given credit for. The corollary for jurisdictions adopting IFRS S1 and S2 without an accompanying assurance requirement is less comfortable: breadth of adoption without depth of verification places them in quadrant III, where correlated error is the characteristic risk.

A second implication concerns the ratings industry. Layer three is the only layer of the architecture that is largely unregulated in most jurisdictions, and it is the layer at which the largest single component of the wedge is generated. Requiring methodology, imputation-rule and revision-history disclosure would, on P10, convert ambiguity into risk and reduce the premium even if it did not reduce disagreement itself. That is a lower-cost intervention than most of what is currently contemplated on the reporting side.

11.2. For assurance providers

The discontinuity posited in P1 implies that the market for limited assurance may be delivering considerably less user value than its volume suggests, and that the professional and commercial returns to building reasonable-assurance capability are larger than current pricing reflects. The independence conditions imposed in the Indian framework are also instructive, since they treat the consulting-assurance conflict as a first-order threat rather than a residual one.

11.3. For investors and issuers

For investors, P11 implies that the returns to internal ESG analytical capability are increasing in the wedge, and are therefore highest precisely in the markets where third-party data are weakest. For issuers in emerging markets, the framework suggests that the marginal rupee is better spent on the verifiability of a small set of material metrics than on the breadth of the report, since breadth without verification loads onto D without raising p .

11.4. For the sustainable development agenda

Three implications follow for the 2030 Agenda. The first concerns measurement. The global indicator for target 12.6 counts sustainability reports, and on the argument developed here a count of reports is close to uninformative about whether sustainability information is entering investment decisions. A credibility-weighted complement is constructible from public sources: the share of reported material metrics that carry assurance, the level of that assurance, and the dispersion of third-party scores across the reporting population. Reporting such a measure alongside the existing count would align SDG monitoring with the measurement-development and statistical-capacity objectives of target 17.19, and would remove the perverse incentive that a volume indicator creates for jurisdictions to widen reporting scope in preference to building verification capacity.

Second, the sequencing rule set out in Section 11.1 has a distributional consequence that bears directly on SDG 17. Verification capacity is the binding constraint precisely in those markets where compliance resources are scarcest, and a mandate that outruns that capacity transfers cost to issuers without transferring information to investors in return. Capacity-building for assurance professions and national standard-setters, in the spirit of target 17.9, is therefore not a peripheral matter of technical assistance but a precondition for disclosure regimes in emerging markets to function as intended. India, holding the most demanding assurance standard of any major market alongside the least developed professional infrastructure to deliver it, is the clearest instance.

Third, the credibility wedge bears on the institutional targets of SDG 16. Effective, accountable and transparent institutions, in the sense of target 16.6, are ordinarily discussed in relation to states, but the rating layer of the architecture developed here is an unregulated private institution that determines much of what the market learns about corporate sustainability conduct. Requiring disclosure of methodology, imputation rules and revision histories at that layer is a low-cost intervention with direct sustainable development relevance, and on P10 it reduces the ambiguity premium even where disagreement itself persists. Taken together, the three implications reframe what disclosure policy contributes to sustainable development. The objective is not more reporting but reporting that investors, regulators and statistical agencies can rely upon, because only credible information redirects capital towards the environmental and social outcomes the Goals specify.

12. Limitations

Four limitations qualify the argument. First, the credibility wedge is a construct that has not yet been measured, and the operationalisations in Table 5 are proposals rather than validated instruments; the framework's empirical content depends on that validation. Second, the corpus is restricted to Scopus- and Web of Science-indexed, English-language outlets, which under-represents scholarship on Chinese, Japanese and Latin American markets published elsewhere, and the rating-divergence literature in particular has a substantial Chinese component that this restriction only partly captures. Third, publication bias is likely material: null results on the disclosure-to-cost-of-capital relation are less likely to

be published, which if anything strengthens the paper's argument that reported effects are regime-conditional, but leaves the direction of the bias in the underlying evidence unresolved. Fourth, the regulatory position described in Section 5 is unusually fluid. The United States rescission was at proposal stage with the comment period closing in August 2026 and no final action taken; the EU amendments require national transposition; and the Indian glide path continues to be adjusted. Readers should verify the current position before relying on Table 3 for anything other than the structure of the comparison.

13. Conclusion

The policy conversation about sustainability disclosure has been conducted almost entirely in the currency of scope: who must report, on what topics, from when. This paper has argued that scope is the wrong margin. What determines whether disclosure supports sustainable capital markets is whether investors can believe what they are told, and that is settled at two institutional layers over which the reporting entity has little control and to which regulators have devoted comparatively little attention. The credibility wedge is the name given to the resulting gap and is placed into a three-layer architecture in which each layer has a distinct failure mode.

The claim has an uncomfortable corollary as to the direction of travel in 2026. The fastest-growing regime, ISSB adoption, puts verification entirely on adopters; the most narrowly scoped regime, the European Union, has done so for reasons unrelated to information quality, while keeping the assurance requirement that matters most; and the regime that is dropping out, the United States, was never in operation at all. Only India has committed to a verification standard ahead of the international consensus, and it has done so in the market where professional capacity to deliver it is thinnest. Whether that commitment produces substantive verification or ceremonial compliance is, on the argument developed here, the single most informative empirical question available in this field, and the glide path's sharp cut-offs make it answerable.

The argument carries one further message for the sustainable development agenda, which the disclosure debate has largely left implicit. Corporate reporting is counted, under target 12.6, as a measure of progress in its own right. On the account developed here that count measures the wrong quantity. Progress consists in disclosure that has been verified and rendered comparable, because only such disclosure moves capital, and building the institutions that verify and compare is therefore the substantive sustainability intervention rather than an administrative accompaniment to it. Counting reports is not the same as measuring information.

Declarations

Ethics Approval

Not Applicable. This conceptual study did not involve human participants, surveys, questionnaires, interviews, experiments, or the collection of personal data. The manuscript is based on published

literature and publicly available secondary sources; therefore, ethics approval was not required.

Consent to Participate

Not applicable. This study did not involve human participants, interviews, surveys, experiments, or the collection of personal data. Therefore, informed consent to participate was not required.

Consent for Publication

Not applicable. This manuscript does not contain any individual person's data in any form (images, videos, identifiable personal details).

Data Availability Statement

Not applicable. This is a conceptual, theory-synthesis article. No datasets were generated or analysed during the study. All material on which the argument draws consists of published, peer-reviewed literature and publicly available regulatory and standard-setting documents, each of which is cited in full in the reference list.

Conflict of Interest / Competing Interests Statement

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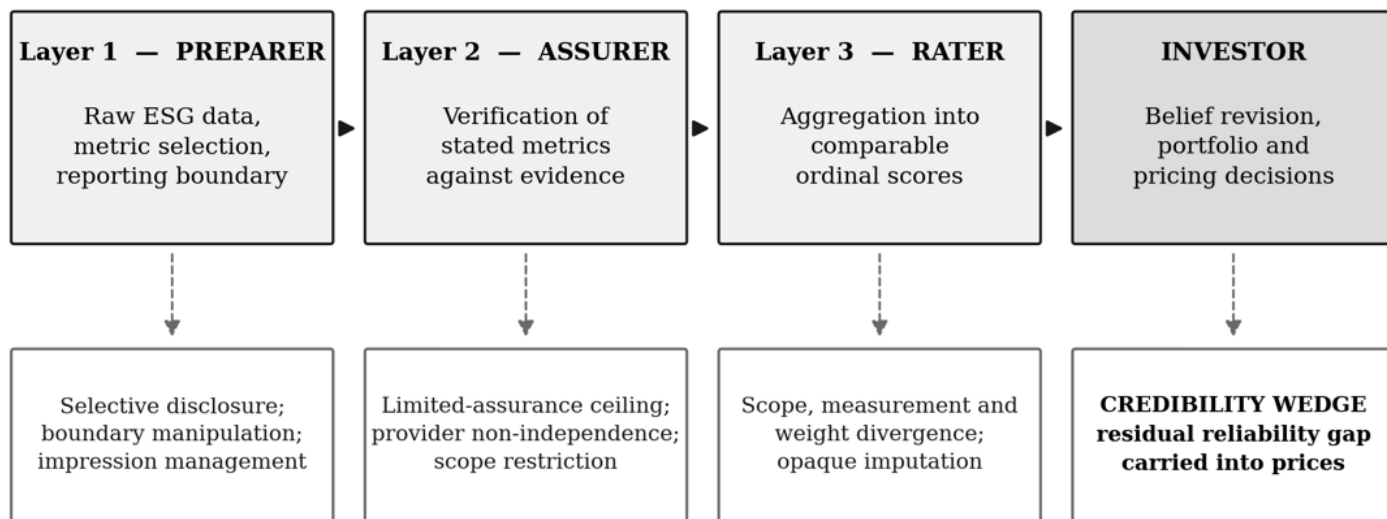
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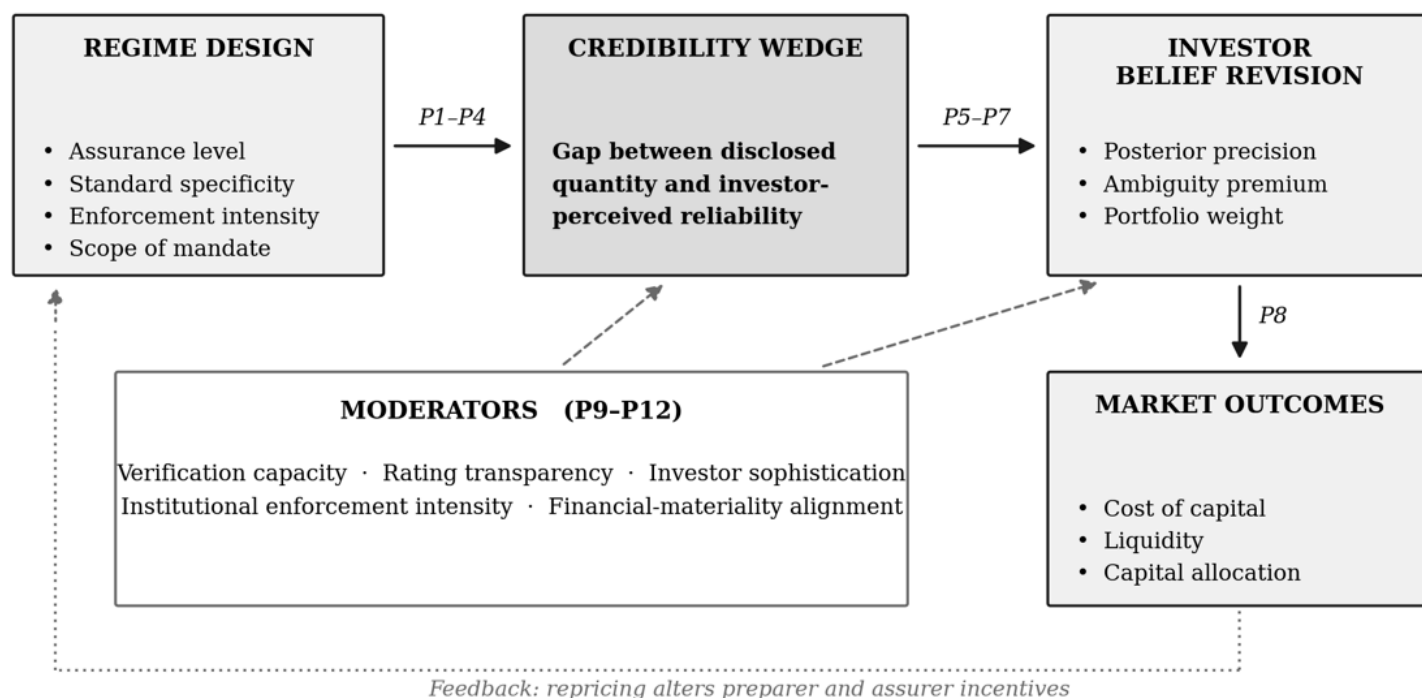
Figures



Attenuation points at each layer

Figure 1

The three-layer credibility architecture of ESG disclosure. Each layer transforms the information it receives and introduces a characteristic failure mode. The credibility wedge is the residual reliability gap that survives all three layers and is carried into prices.



Solid arrows: direct effects. Dashed: moderating effects. Dotted: feedback loop.

Figure 2

An integrative framework of credibility transmission in ESG disclosure regimes. Solid arrows denote direct effects, dashed arrows denote moderating effects and the dotted arrow denotes the feedback loop from market outcomes to preparer and assurer incentives. Proposition numbers are mapped to the paths they specify.

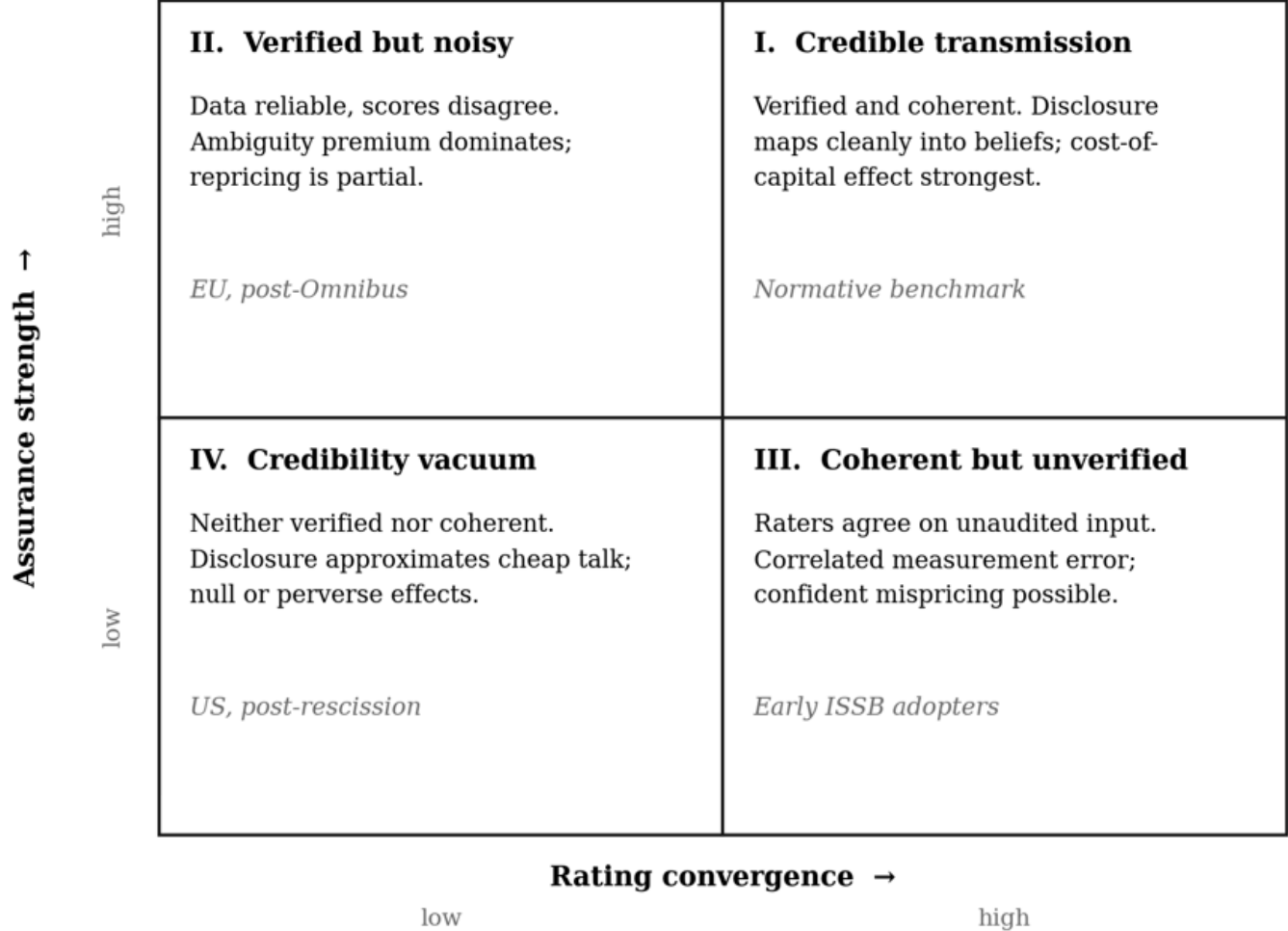


Figure 3

A typology of credibility regimes. The vertical axis shows the strength of the requirement for verification, and the horizontal axis shows the degree of agreement among rating providers. The four regimes described in Section 5 are shown in italics.