

ESG Ratings and Financial Markets: Evidence, Measurement Noise and Misinterpretations*

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This essay examines the measurement limitations that arise when ESG ratings are interpreted as financial information. It argues that composite ESG scores should not be treated as stable risk factors, but rather as information signals shaped by provider-specific methodologies, data sources, disclosure practices and aggregation choices. This essay discusses the separation between disclosure and actual ESG outcomes, the model risk created by rating divergence, and the frequent misinterpretation of the green premium and ESG performance. From a banking perspective, the implication is not to discard ESG information, but rather to use external ESG data with discipline. Without financial materiality, data quality controls, exposure-based assessments and internal governance, ESG cannot serve as a defensible input in financial decision-making.

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1. Introduction: Why is ESG confusing in finance?

ESG¹ (Environmental, Social, and Governance) refers to the set of environmental, social and governance considerations relating to firms' environmental impact, social conduct and governance practices, which investors and lenders increasingly incorporate into risk assessment and decision-making. In market practice, the term "ESG firm" usually refers to a company that receives a favourable assessment in an ESG rating system or displays performance that can be evaluated in terms of sustainability-related dimensions. Over the past decade, ESG considerations have become integral to financial decision-making. ESG data and ESG risk information are increasingly used in corporate valuation, portfolio allocation, banking risk

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¹ The term ESG (Environmental, Social and Governance) is used in this essay not as a normative framework, but as an umbrella term for the heterogeneous metrics and ratings used in market practice, including ESG ratings, ESG scores and disclosure-based indicators. Where the term refers to a different meaning, such as actual performance or commitment, this is stated explicitly.

management and supervisory frameworks, often as if they were well-defined, stable information signals. This practice raises a fundamental financial question: What type of information do ESG measures actually contain, and how are they incorporated into prices and risk decisions? While the Hungarian literature has addressed the institutional and regulatory dimensions of ESG integration, the link between signal quality and pricing mechanisms has received less attention. This issue is especially important when ESG and climate metrics are used for financial or risk management purposes.

A classical insight of financial economics is that publicly available information does not, by itself, guarantee persistent excess returns, as such information is incorporated into prices (*Fama 1970; Grossman and Stiglitz 1980*). However, this principle applies only when the information is well-defined, consistently interpretable and uniformly processed. In the case of ESG, precisely these conditions are violated: ESG assessments of the same firms may differ substantially across providers, while the measurement decisions underlying the scores often remain opaque (*Berg et al. 2022; Christensen et al. 2022*). Among these measurement choices, the definition of scope is particularly important: omitting indirect emissions, especially Scope 3² emissions, can materially distort sector rankings and exposure assessments (*Szendrey – Dombi 2023*).

In the Hungarian literature, the dilemma of measurability and comparability has already appeared in discussions of the numerical evaluation of ESG reports and critiques of the oversupply of ESG tools and frameworks (*Hajdu et al. 2023*). This is also reflected in empirical findings showing no direct effect of ESG ratings on financial indicators and accounting valuation (*Reizingerné Ducsay – Hajdu 2024*). Hungarian empirical evidence does not robustly support the view that ESG screening generates persistent excess returns or resilience during crises, and several results explicitly highlight specification sensitivity (*Szepesi 2020*). This is complemented by central bank evidence on climate risk measurement: missing data, heterogeneous data sources, the absence of unified methodologies and the limitations of rating systems all make it difficult to assess the climate exposure of financial assets in a comparable manner (*Kolozsi et al. 2022*).

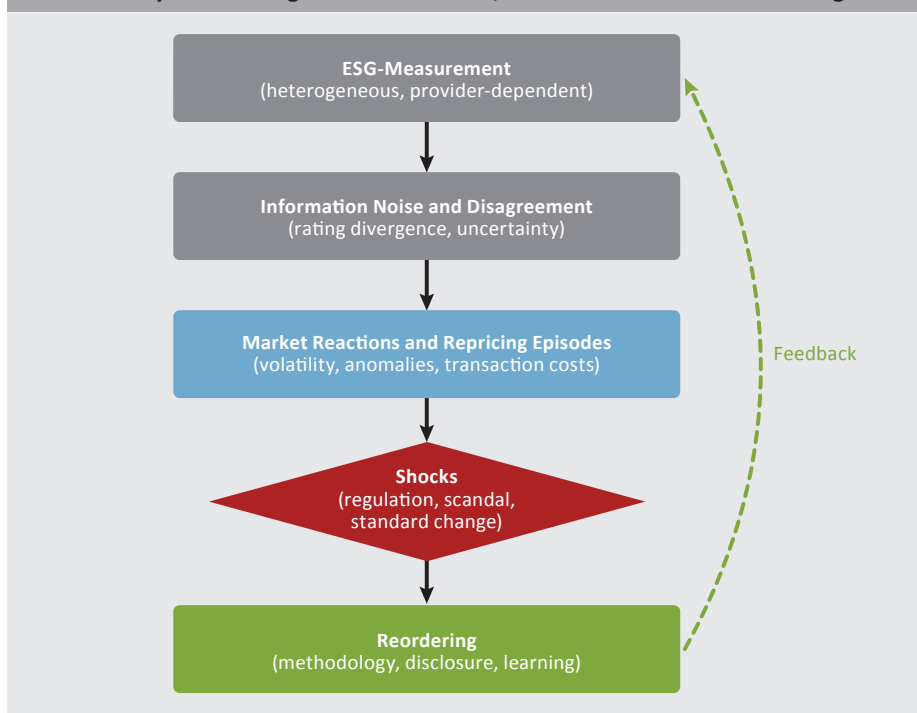
² Scope 1 emissions refer to direct greenhouse gas emissions from a company's own operations. Scope 2 emissions include indirect emissions associated with purchased energy, such as electricity, heat, or steam. Scope 3 emissions refer to other indirect emissions generated along the company's value chain, including supplier emissions, transport, business travel, and the use and life cycle of products. Scope 3 measurement is particularly data- and methodology-intensive, and is therefore often incomplete or based on estimates.

This essay approaches the debate from the perspective of signal quality. It treats the internal heterogeneity of ESG measures, rating divergence and specification sensitivity as the main explanatory channels. Internal heterogeneity means that the label “ESG” may conceal different indicator choices, scopes and weighting schemes, so that measures carrying the same name do not necessarily capture the same underlying construct. Rating divergence is a measurable consequence of these differences: the same firm may receive materially different assessments from different providers. Specification sensitivity means that empirical conclusions depend on the ESG dimension, data source, time horizon and control variables chosen by the researcher. The purpose is not to introduce a new theoretical framework, but rather to show how measurement disorder translates into financial and prudential consequences.

The central premise of this essay is that ESG is not a unified financial factor, but a noisy information signal (*Black 1986*) that enters financial decision-making through different interpretations and processing rules. In this sense, noise, is not merely a statistical measurement error: it is a form of structural uncertainty that may trigger different responses across different layers of the financial system. Therefore, an ESG signal may distort not only individual investment decisions, but also generate instability at the aggregate level. The structural nature of this noise is reflected in the fact that exposure measurement is sensitive to decisions about scope and indicator selection, which can lead to unstable classifications and divergent conclusions in practice (*Szendrey – Dombi 2023*).

Consequently, understanding the financial effects of ESG requires moving beyond the treatment of ESG as a single quality measure. Market reactions to ESG may reflect several distinct pricing mechanisms, including demand shifts driven by investor preferences, changes in perceived risk and temporary repricing episodes associated with new information (*Pástor et al. 2021; Pedersen et al. 2021*). Sustainability preferences may also directly influence investment decisions. Hungarian survey evidence suggests that some investors are willing to sacrifice part of their return for sustainable investments, but this points to a preference-based demand channel rather than a stable ESG premium (*Nagy – Steiner 2025*).

This essay aims to show how measurement heterogeneity and information noise become problems for financial markets and banking risk management. The focus is on the internal structure of ESG measures, the divergence between ratings and the process through which a noisy ESG signal may lead to financial consequences through market reactions, repricing episodes and the reassessment of risks. *Figure 1* summarises this interpretive framework.

Figure 1**ESG as a noisy financial signal: measurement, market reaction and reordering**

2. What do we measure when measuring ESG?

One fundamental feature of ESG measurement is that it does not capture a single, clearly defined financial characteristic but combines different concepts and objectives under a common label. As a result, the informational content of ESG indicators becomes fragmented at the measurement level. The structural patterns of the ESG-finance empirical literature between 2015 and 2025 also suggest that a substantial part of the findings depends on the measurement construct, identification strategy and outcome under investigation; therefore, ESG should be treated as a noisy information signal rather than a stable factor (*Gasteiger 2026*). Thus, many financial misinterpretations arise not from market irrationality but from ignoring the fault lines of measurement. The measurement problem becomes financially relevant along four main fault lines: (1) the separation between disclosure and actual outcomes; (2) the loss of information caused by aggregation; (3) methodological instability over time and (4) the misinterpretation of the financial channel. These are discussed in the following four subsections.

2.1. Disclosure and actual outcomes: communication versus performance

The first and most important fault line lies between the disclosure and actual outcomes. Disclosure-based approaches primarily measure corporate communication, policies and commitments, whereas outcome-based approaches focus on actual environmental and social performance and its financial relevance. There is no automatic correspondence between the two dimensions: more extensive disclosure does not necessarily imply better outcomes, but it can materially influence the judgement of external evaluators and, through this channel, ESG ratings as well (*Khan et al. 2016; Christensen et al. 2022*). From a financial perspective, this means that the measured signal often contains reputational and narrative elements rather than actual risk information. Evidence from the content analysis of Hungarian disclosures also suggests that selective corporate reporting may contribute to the divergence between disclosure-based ESG measurements and actual performance (*Lippai-Makra et al. 2024*). The gap between disclosure and actual outcomes matters not only because of neutral measurement errors. Firms may have incentives to present their sustainability performance in a more favourable narrative than their actual environmental or social performance would justify. In such cases, the measurement problem is not merely symmetric noise but a systematic bias. Disclosure-based ESG indicators may overestimate reputational communication while underestimating actual risk and environmental outcomes. Therefore, greenwashing is not only a communication or ethical issue but also a data quality and model risk problem.

2.2. Aggregation: information compression or information loss

The second fault line concerns the aggregation. Composite ESG scores are convenient, because they compress environmental, social and governance dimensions into a single number, but this necessarily entails a loss of information. ESG rating providers work with different scopes, apply different measurement procedures and assign different weights to individual dimensions. As a result, “ESG” often becomes more of a provider identifier than a stable firm-level characteristic of the firm.

Empirical evidence shows that the primary source of rating divergence is heterogeneity in measurement and scope rather than differences in weighting (*Berg et al. 2022*), which makes ESG more of a measurement construct than a stable corporate attribute. The concept of scope requires clarification. In the context of ESG ratings, it refers to the topics, indicators and data sources included by the rating provider. This must be distinguished from Scope 1, Scope 2, and Scope 3 classifications used in emissions accounting. Including indirect emissions, especially Scope 3, can substantially reorder sectoral exposure rankings, illustrating that aggregate ESG scores are often the result of methodological choices (*Szendrey – Dombi 2023*).

2.3. Temporality and methodological instability

The third fault line is temporal instability. ESG scores do not exclusively reflect changes in firm behaviour but also changes in measurement methodology. If a provider changes its definitions, data sources or weighting scheme, the time series breaks, and an apparent improvement or deterioration may partly be the result of redefinition. At the research level, this creates a reproducibility problem, while at the practical level, it generates model risk: the same decision rule may produce a different risk profile when applied to different inputs (*Christensen et al. 2022; Gibson Brandon et al. 2021*).

2.4. Misinterpreting the financial channel

The fourth fault line concerns the interpretation of financial channels. The financial relevance of sustainability typically appears through risk and the cost of capital, not as a direct promise of higher return. There is empirical evidence for the cost-of-capital channel, but these findings are strongly context-dependent and model sensitive (*El Ghouli et al. 2011*). Similarly, for theoretical and empirical arguments concerning the risk channel, the key question is which ESG dimension is being measured and which tail states or adverse conditions the analysis is sensitive to (*Albuquerque et al. 2019*). A substantial part of financial misinterpretation arises because these channels are not clearly delineated.

Table 1 Key fault lines in ESG measurement and their financial implications			
Dimension	What does it measure?	Typical measurement error	Financial implication
Disclosure	Corporate communication, policies, commitments	Selective reporting and greenwashing	Overrepresentation of the reputational channel; distorted risk signal
Outcome	Actual environmental and social performance	Incomplete, estimated or non-comparable data	Delayed pricing; uncertain risk impact (cost of capital, downside risk)
Aggregation	Composite score condensed into a single metric	Information loss due to compression; arbitrary weighting	Model risk; divergent portfolios under the same “ESG” label
Time dimension	Changes over time	Definition and methodology shifts; structural breaks	Spurious trends; unstable backtesting and stress-test results

2.5. Aggregability and heterogeneity

One recurring question in the ESG literature is the extent to which empirical findings can be aggregated. Although meta-analyses³ synthesise large numbers of studies, one of their most important lessons is that the robustness of observed relationships is fundamentally a matter of methodological discipline. Under heterogeneous measurement, the average “ESG effect” can easily become misleading, because heterogeneity is not noise but information about the mixture of different channels and mechanisms (*Friede et al. 2015; Busch – Friede 2018*).

Finally, ESG is often embedded in the broader narrative of intangible firm-level factors that markets may not immediately price. Evidence on the relationship between employee satisfaction and stock prices, for example, suggests that some non-financial factors may affect prices only after a delay (*Edmans 2011*). Therefore, disclosure-centred ESG measurement may easily conflate reputational narratives with actual risk transmission channels. *Table 1* summarises the main fault lines in ESG measurement and their financial implications.

3. Rating divergence, information noise and reallocation

Rating divergence refers to differences across providers in the ESG ratings assigned to the same firm and represents an independent dimension of financial uncertainty. When different ESG rating providers assign materially different assessments to the same firm, the informational basis for investor decision-making becomes fragmented. This uncertainty is not neutral; divergent ESG signals may lead to different risk interpretations and decision rules, even when firm fundamentals are unchanged.

The financial relevance of rating divergence is two-fold. First, it creates informational instability, because the same firm appears as a different signal to different investors and institutions. Second, it creates model risk: the same investment or risk management rule can produce different portfolio compositions and exposures when applied to different provider inputs. This is especially problematic when ESG metrics are linked to exclusion rules, limits, portfolio screening or internal decision rules. In banking and supervisory settings, the implication is that an aggregate ESG score cannot serve as a stand-alone decision basis. On the contrary, external ESG data and ratings can only be used under documented controls for data sources, methodology, data quality and model risk. *Figure 2* illustrates the financial consequences of rating divergence, showing how different ESG provider assessments may lead to

³ Meta-analysis refers to a quantitative synthesis that summarises the results of several independent empirical studies within a unified statistical framework, while accounting for heterogeneity and the possibility of publication bias.

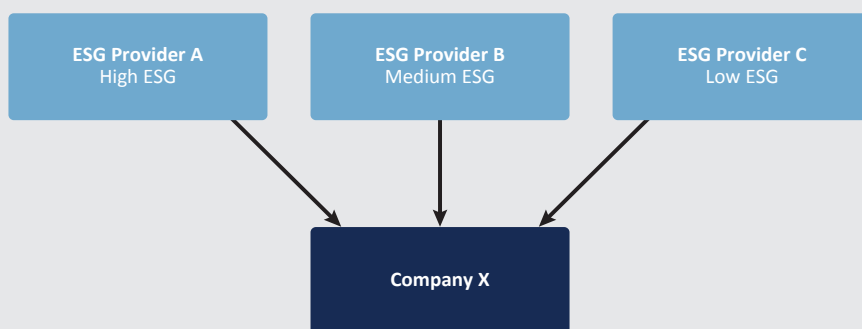
different portfolio decisions and risk interpretations, even when the underlying firm fundamentals are the same.

At this point, the chain from mismeasurement through noise and shocks to reallocation becomes more tangible. Under flawed or heterogeneous measurements, markets partly react to noise. Regulatory signals, sectoral controversies, litigation risks, emissions incidents and changes in reporting standards can be treated as shocks that suddenly alter the interpretation of the ESG signal. In the subsequent reallocation process, providers may change their methodologies, firms may adjust their disclosure practices and investors may adapt their exposure to their revised interpretation of risk. This dynamic is closer to the logic of noisy trading than to a stable factor-like pricing mechanism (*Black 1986; Barberis et al. 1998*).

In this context, financial theory is not a critique of ESG application, but rather its disciplining framework. The efficient market hypothesis reminds us that an average public signal does not automatically imply a stable financial advantage (*Fama 1970*). The theory of informational markets, in turn, emphasises that when information is costly and the signal is noisy, prices will not be perfect; however, this is not a market failure but an equilibrium outcome (*Grossman–Stiglitz 1980*). Consequently, the first rule of ESG application is that signal uncertainty must be measured and controlled in the same way as any other risk proxy; risk controls cannot be replaced by narrative expectations (*Sharpe 1964; Fama – French 1993*).

Figure 2

Provider rating divergence as financial uncertainty



Divergent ESG signal → divergent portfolio decision → divergent risk

4. What does the international evidence show without overinterpretation?

The international literature on the financial effects of ESG is extensive, but difficult to interpret because the signal under investigation is unstable. Empirical findings are not lacking; however, they are highly context-dependent and sensitive to measurement constructs, sample selection and the controls applied. A substantial part of the seemingly contradictory evidence does not stem from weak data but from the mixing of different financial channels.

Several studies have found associations between specific environmental and social dimensions and lower risk, particularly under adverse market conditions. These findings suggest that certain ESG characteristics may play a protective role during stressful periods. However, the effect is not universal and depends strongly on which dimension is measured and over what time horizon (*Albuquerque et al. 2019*). Similarly, empirical evidence exists for the cost-of-capital channel, but the findings are sensitive to measurement definitions and model specifications, which calls for caution when drawing general conclusions (*El Ghouli et al. 2011*).

The literature examining the relationship between corporate disclosure and firm value also documents empirical associations, but these do not imply that the composite ESG score constitutes a financial channel. The effect of environmental, social and governance disclosure is typically conditional, industry- and firm-specific and can easily turn into narrative dominance when measurement is weak or based on dimensions that are not financially material (*Brooks – Oikonomou 2018; Christensen et al. 2022*).

The ownership and corporate behaviour channels are also relevant but highly heterogeneous. Institutional investors and active ownership tools can influence corporate decisions, but the outcomes depend heavily on who acts, when they act and with what incentives. Therefore, the financial effects of ownership pressure are not mechanical, but rather context-dependent, and often appear through the channel of transitional repricing (*Dyck et al. 2019; Heinkel et al. 2001; Pástor et al. 2021*).

At the level of asset classes and investment products, green bonds and the green premium⁴ illustrate the role of preference-based demand. Empirical findings suggest that investor preferences can create price differentials, but their magnitude and stability are not universal and may vary over time (*Baker et al. 2018; Zerbib 2019*). In the case of sustainable investment funds, performance depends strongly

⁴ The green premium, or greenium, refers to the possibility that green-labelled bonds trade at lower yields, and therefore higher prices, than otherwise comparable conventional bonds with similar risk characteristics. This reflects preference-based demand rather than an automatic risk premium or performance advantage.

on the style, costs and selection rules. Consequently, the relationship between sustainability labels and past performance is often more a question of benchmarks and selection than of an independent “ESG effect” (Bauer *et al.* 2005; Renneboog *et al.* 2008).

The expansion of ESG-labelled investment products affects capital market structures. However, it is important to distinguish demand-based pricing from a performance promise. Capital flows and product design can generate short- and medium-term price effects, while in the absence of proper risk adjustment, the narrative can easily run ahead of the evidence. ESG-linked funds, for example, may concentrate investor demand, thereby altering the liquidity and risk environment, but this does not imply an automatic financial advantage (Geczy *et al.* 2021; Barber *et al.* 2021). Rating divergence is therefore not merely a data-quality problem: it is also an independent dimension of uncertainty with pricing consequences, which may operate as a noisy signal and trigger unstable reallocations in portfolios and risk interpretations.

Finally, ESG is not only an environmental issue as it is also linked to social norms and preferences. Certain norms and investor expectations may persistently exclude industries, with implications for pricing and liquidity (Hong – Kacperczyk 2009). Institutional investors’ approaches to climate risk are typically built around risk and reputational narratives, rather than explicit promises of a modelled return premium (Krueger *et al.* 2020; Pedersen *et al.* 2021). The purpose of this section is not to judge whether an ESG effect exists, but rather to demonstrate that positive and negative findings can be traced back to identifiable differences in measurement and financial channels.

5. Three pitfalls in the financial use of ESG

Recurring interpretation errors surround the financial aspects of ESG. These errors do not arise primarily from a lack of data, but rather from a lack of conceptual and methodological discipline. These misinterpretations have in common that they treat ESG as a financial object whose meaning is stable and identical across contexts, even though the underlying signal is heterogeneous and temporally unstable. However, it is important to emphasise that the critique primarily concerns the mechanical financial use of aggregate ESG ratings and ESG scores, not a general denial of the economic relevance of ESG factors.

5.1. First misinterpretation: treating ESG as a factor

The first and perhaps most common misinterpretation is treating ESG as a factor. In this interpretation, ESG appears as a stable risk exposure, although the measurement itself contains a mixture of preference-based, informational and

narrative elements. Equilibrium models show that the pricing effect of sustainable preferences is time-varying and strongly dependent on the investor composition. Consequently, the financial content of ESG-related claims cannot be treated as stable, especially when standard risk factors and portfolio styles are not controlled for (*Sharpe 1964; Fama – French 1993; Pástor et al. 2021; Pedersen et al. 2021*).

5.2. Second misinterpretation: treating the ESG score as truth

The second misinterpretation arises from treating the composite ESG score as objective truth and then being surprised when empirical results are not reproducible. Divergence across raters and differences driven by disclosure are sufficient to generate different answers to the same research questions. In this sense, rating divergence is not merely noise, but measurable uncertainty that constitutes model risk for financial decision-making (*Berg et al. 2022; Christensen et al. 2022*). Therefore, a substantial part of the reproducibility problem is not an empirical failure, but rather a measurement consequence.

5.3. Third misinterpretation: interpreting price differentials automatically as performance

The third misinterpretation concerns the misreading of price differentials observed in the investment products market. Demand for green bonds or sustainable investment funds can generate price differentials, but these should not automatically be interpreted as promises of financial performance. Such differentials often reflect preference-based demand, institutional constraints, and sampling and measurement features. When sentiment cycles are added to this, excessive narrative expectations and subsequent corrections become almost inevitable (*Baker et al. 2018; Zerbib 2019; Barberis et al. 1998; Black 1986*). The measurable willingness of domestic investors to sacrifice returns also indicates that price differentials are often driven by preference-based demand, rather than by a stable risk premium (*Nagy – Steiner 2025*).

To impose discipline on ESG-related financial claims, three questions should be considered before every analysis. First, which ESG dimension is being measured: disclosure or actual outcome, and according to which materiality principle (*Khan et al. 2016*)? Second, how large is rating divergence and how does it change over time, particularly in relation to methodological breaks (*Berg et al. 2022; Christensen et al. 2022*)? Third, against which risk benchmark are the results interpreted, and are standard risk factors controlled for (*Sharpe 1964; Fama – French 1993*)? Without answering these questions, ESG-related claims can only be interpreted as financial evidence in a limited sense and may easily become narrative claims. *Table 2* summarises the misinterpretations identified in this section.

Table 2 Common ESG misinterpretations and their financial misreadings		
Misinterpretation	What actually happens	Why it is misleading
ESG as a risk factor	Multiple, overlapping transmission channels	Not a stable risk exposure
ESG score as objective truth	Measurement-dependent signal	Model risk
Greenium = superior performance	Preference-driven pricing	Not a financial performance premium

6. ESG in banking risk management: from rating noise to an exposure-based prudential framework

Banking ESG risk management does not mechanically use aggregate ESG scores. The starting point of banking and supervisory logic is not the composite ESG rating assigned to a firm by an external provider, but rather the financially material risk channels through which ESG factors affect clients, exposures, collateral, portfolios, business models and capital positions. Therefore, the measurement problems of composite ESG ratings do not provide a stand-alone risk management model in a banking context. Rather, they warn that external ESG data, client disclosures, provider inputs and estimates can be used responsibly only under data quality, methodological and internal control safeguards.

This direction is consistent with the recent international, European and Hungarian prudential frameworks. The Basel Committee on Banking Supervision’s principles for climate-related financial risks provide an international prudential reference point for the management and supervision of climate risks in banks (*BCBS 2022*). The European Banking Authority’s 2025 guideline sets minimum standards and reference methods for the identification, measurement, management and monitoring of ESG risks, and requires the assessment of short-, medium- and long-term effects (*EBA 2025*). In Hungary, Recommendation 2/2026 of the Magyar Nemzeti Bank (central bank of Hungary, MNB) adapts this framework to the domestic credit institution environment and – compared to the earlier green banking recommendation – incorporates not only environmental but also social and governance risks into banking risk management (*MNB 2026*). MNB Recommendation 7/2025 defines a minimum ESG information questionnaire to be applied in the assumption, measurement, management and control of credit risk, with the aim of standardising the collection of ESG information (*MNB 2025*). *Gyura et al. (2023)* present the broader institutional context of domestic supervisory and green finance developments.

The first condition for a prudentially defensible banking application is the assessment of financial materiality. Not all ESG data and factors carry the same financial relevance. For a bank, the decisive question is the channel through which a given environmental, social or governance factor affects credit risk, market risk, liquidity risk, operational or reputational risk, business-model risk, concentration risk or the value of collateral. This logic differs sharply from the simplified practice of attempting to derive direct banking risk conclusions from aggregate ESG scores (EBA 2025; MNB 2026).

The second condition is the data quality and exposure-based assessment. Banking ESG risk management can support decision-making only if the institution knows what data it uses, where the data come from, which methodology produced them, what deficiencies they contain, and what estimates they rely on. The relevant unit is not the abstract ESG label but the specific borrower, asset, collateral, sector, transaction and portfolio. External ESG data are therefore not neutral facts: they are the outcomes of methodological choices, coverage limitations, estimates and provider procedures (EBA 2025; MNB 2025).

The third condition is forward-looking, portfolio- and scenario-sensitive risk management. The time horizon for ESG risks may differ from that for traditional short-term financial risks. Transition risks may materialise through regulatory, technological and market changes, while physical risks may create vulnerabilities at the geographical, asset and collateral levels. Evidence from the Hungarian banking system also indicates that the impact of a carbon-price shock may differ across sectors and bank portfolios, which means that the assessment of transition risks requires a sectoral and exposure-based approach (Várgedő 2022). The banking implication is clear: ESG risk management is not the mechanical application of scores, but rather a matter of data, processes and controls (BCBS 2022; EBA 2025).

Therefore, the banking relevance of rating divergence is secondary, but not irrelevant. This is important, because banking ESG risk management should be based on aggregate ratings, but it makes the measurement uncertainty of external ESG information visible. In the banking context, this does not imply that the average of several ratings should be used automatically. This implies that the source, methodology, limitations and decision role of external ESG inputs must be documented. The same applies to greenwashing: if corporate communication presents a more favourable sustainability picture than actual performance would justify, measurement error becomes a systematic bias.

Therefore, a prudentially defensible integration of ESG into banking does not rest on the search for a single indicator. A defensible practice connects several questions: whether the ESG factor is financially material; into which risk category

it is transmitted; what client, asset, collateral or portfolio-level data support it; over what time horizon it may materialise; what methodological uncertainty is attached to it; and what internal control ensures that external data do not become an unaudited black box. *Table 3* summarises this approach.

Table 3 Prudential logic of banking ESG risk management and the role of measurement risk		
Banking element	Prudential logic	Link to the measurement problem
Materiality assessment	Identifying the financial relevance of ESG risks	Not every ESG signal is material
ESG data collection	Collecting client-, asset- and portfolio-level information	Data quality and data gaps must be explicitly addressed
Exposure-based assessment	Assessing clients, collateral, sectors and business models	A composite score cannot substitute for the underlying risk channel
Sectoral and portfolio analysis	Identifying concentrations, transition exposures and physical exposures	Measurement scope may distort rankings
Scenario analysis	Assessing short-, medium- and long-term vulnerabilities	Model assumptions need to be documented
Internal control	Defining the role of the first, second and third lines of defence	External ESG inputs must not become an unaudited black box

Therefore, the banking and supervisory implications are twofold. The measurement noise embedded in ESG ratings does not imply that ESG risks are irrelevant. Quite the opposite: precisely because of measurement uncertainty, ESG data can only be used together with financial-materiality assessment, exposure-based evaluation, data-quality controls and a documented internal allocation of responsibilities. The lesson is not to discard ESG, but rather to use ESG data with discipline.

7. Conclusions

The financial relevance of ESG is not a myth, but it is also not an automatic promise of performance. The central claim of this essay is that the composite ESG score is not a stable risk factor, but rather a noisy, construct-dependent information signal. This does not deny the importance of ESG risk; instead, it means that the financial use of ESG data is defensible only with measurement discipline.

This essay identified three main misreadings. First, ESG is often treated as a stable factor, even though the underlying signal mixes preference-based, informational and risk channels. Second, the composite ESG score is frequently used as an objective truth, although rating divergence and methodological instability create model risk. Third, the green premium and price differentials associated with the ESG label are often interpreted as performance advantages, although in many cases they reflect preference-based demand or transitional repricing.

From a banking perspective, the lesson is that ESG ratings do not provide a direct prudential basis for decision-making. On the contrary, external ESG data, client disclosures, estimates and provider inputs can only be used together with financial-materiality assessment, exposure-based evaluation, data-quality controls and a documented internal allocation of responsibilities. Recent European and domestic regulatory developments point in the same direction: ESG risk management is not a matter of score use: it is a matter of data, processes, and controls.

Therefore, several basic questions must always be clarified before making ESG-related financial claims: what is being measured, from which data source, through which financial channel, over what time horizon, against which benchmark and with how much measurement uncertainty. Without these questions, ESG can easily become a narrative label. However, it can serve as a useful financial information signal, but only within a limited, transparent and disciplined interpretive framework.

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