The Transformation of Investment Banking under the Environmental, Social, and Governance (ESG) Concept: A Comparative Study between Chinese and Foreign Investment Banks

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ABSTRACT

Environmental, Social, and Governance (ESG) disclosure has become increasingly important in capital markets, yet its profitability implications for investment banks remain underexplored, particularly in comparative settings. This study examines the dynamic and asymmetric relationship between ESG disclosure and financial performance using an unbalanced panel of 24 investment banking institutions, comprising 12 Chinese and 12 foreign banks, over 2015–2025. ESG disclosure is measured by a report-based ESG Disclosure Index (EDI), while profitability is represented by Return on Assets (ROA). The retained panel contains 252 institution-year observations, with 228 observations used in the dynamic estimations. Fisher-ADF and Fisher-PP panel unit-root tests are first applied to assess stationarity. The analysis then employs Dynamic Fixed Effects (DFE) panel ARDL(1,1) and NARDL(1,1) models, together with Wald tests and robustness checks. The ARDL results show a significant positive model-implied long-run EDI effect of 0.0269 ($p < 0.001$). The contemporaneous EDI coefficient is positive but insignificant ($\beta = 0.0091$, $p = 0.118$), whereas the one-year-lagged coefficient is positive and significant ($\beta = 0.0126$, $p = 0.002$), indicating a delayed short-run association. The NARDL results reveal significant long-run asymmetry: cumulative disclosure improvements have a positive effect of 0.0219 ($p = 0.013$), while cumulative deterioration has a larger negative effect of -0.0320 ($p < 0.001$). The long-run symmetry Wald test rejects equality ($\chi^2 = 10.903$, $p < 0.001$). However, the cross-group Wald test finds no significant difference between Chinese and foreign long-run EDI effects ($\chi^2 = 0.164$, $p = 0.686$). These findings indicate that ESG disclosure is financially relevant mainly through delayed and long-run channels and that preventing deterioration in disclosure quality may be especially important for investment banks.

Keywords: ESG disclosure, Investment banking, ESG Disclosure Index (EDI), ARDL-NARDL, Financial performance

INTRODUCTION

Environmental, Social, and Governance (ESG) information has become part of the information set used in investment assessment, risk management, corporate decision-making, and capital-market activity. The expansion of sustainable investment and sustainable debt markets has occurred alongside the development of formal disclosure frameworks designed to make sustainability information more consistent and comparable (Organisation for Economic Co-operation and Development [OECD], 2020; Global Sustainable Investment Alliance [GSIA], 2025; Climate Bonds Initiative, 2025).

The Task Force on Climate-related Financial Disclosures organized climate-related reporting around governance, strategy, risk management, and metrics and targets, while the International Sustainability

Standards Board later issued IFRS S1 and IFRS S2 as global sustainability-disclosure standards (Financial Stability Board [FSB], 2017; International Sustainability Standards Board [ISSB], 2023).

This development is particularly relevant to investment banking. Investment banks influence capital allocation through securities underwriting, equity and debt financing, mergers and acquisitions, financial advisory services, trading, research, and other capital-market activities. ESG considerations can therefore affect not only an institution's internal governance and risk management but also the information transmitted to investors, clients, regulators, and counterparties. A global survey of investment professionals by Amel-Zadeh and Serafeim (2018) found that investment relevance, client demand, and product strategy were among the major reasons for using ESG information, although comparability, reliability, quantifiability, and timeliness remained important barriers.

A broad empirical literature links sustainability practices and disclosure to financial outcomes, but the findings are not mechanically uniform. Friede et al. (2015) synthesize more than 2,000 empirical studies and report that ESG-financial performance evidence is broadly economically relevant, while Eccles et al. (2014) show that firms with more developed sustainability policies exhibit distinct organizational processes and stronger long-horizon outcomes. At the same time, the financial importance of ESG depends on materiality and implementation context. Khan et al. (2016) show that performance on material sustainability issues is more strongly associated with subsequent performance than activity on immaterial issues, and Fatemi et al. (2018) emphasize the role of disclosure in the relationship between ESG performance and firm value.

The banking literature also provides evidence that ESG can matter for profitability, risk, and stability. Buallay (2019), Azmi et al. (2021), Chiaramonte et al. (2022), El Khoury et al. (2023), and Pham et al. (2025) examine different banking samples and report relationships that vary with region, dimension, and model specification. These results suggest that average contemporaneous regressions may obscure timing and nonlinearities. More recent dynamic approaches are especially useful when ESG-related costs and benefits may emerge with a delay or when positive and negative changes have different consequences. Kaya and Ertuğrul (2025), for example, use nonlinear dynamic methods to investigate asymmetric relationships between ESG integration and bank profitability.

Several theoretical perspectives motivate the present design. Stakeholder theory emphasizes the importance of relationships with owners, clients, employees, regulators, investors, and wider society (Freeman, 1984). Agency and signaling theories imply that credible disclosure can reduce information asymmetry, strengthen monitoring, and transmit information about management quality and risk (Jensen & Meckling, 1976; Spence, 1973). A long-term value perspective suggests that governance, risk-management, reputation, and stakeholder benefits may accumulate gradually rather than appearing fully in current-period earnings (Porter & Kramer, 2011). Prospect theory provides a rationale for testing asymmetry because adverse changes can generate stronger responses than comparable favorable changes (Kahneman & Tversky, 1979). Institutional theory, meanwhile, highlights the possibility that regulatory and market settings shape how ESG practices are adopted and interpreted (DiMaggio & Powell, 1983).

The regulatory context also supports a comparative design. China has continued to formalize sustainability disclosure through national and exchange-level rules, including the Basic Guidelines for Corporate Sustainability Disclosure (Trial) and Shanghai Stock Exchange sustainability-reporting guidance (Ministry of Finance of the People's Republic of China, 2024; Shanghai Stock Exchange, 2024). In the United States, the Securities and Exchange Commission adopted climate-disclosure rules in 2024 and later proposed rescinding them in 2026, illustrating that the regulatory environment surrounding ESG reporting remains changeable (U.S. Securities and Exchange Commission [SEC], 2024, 2026). These developments make it important to distinguish empirical results from fixed assumptions about a single regulatory regime.

Three research gaps motivate this article. First, much ESG research focuses on non-financial corporations, commercial banks, or broad financial-sector samples rather than investment banking institutions as a distinct group. Second, relatively few studies separate same-year, lagged, and model-implied long-run relationships while also testing whether disclosure improvements and deterioration have asymmetric consequences. Third,

direct empirical comparisons between Chinese and foreign investment banks remain limited. The present study addresses these gaps with a 24-institution panel covering 2015–2025, a report-based ESG Disclosure Index (EDI), and DFE panel ARDL/NARDL specifications. The analysis is intentionally framed as evidence of dynamic association rather than proof that ESG disclosure alone causes changes in profitability.

Research hypotheses

H1: ESG disclosure has a significant positive long-run association with investment-bank performance.

H2: ESG disclosure has a significant short-run association with investment-bank performance.

H3: Positive and negative ESG disclosure changes have asymmetric effects on investment-bank performance.

H4: The long-run association between ESG disclosure and investment-bank financial performance differs significantly between Chinese and foreign investment banks.

METHODOLOGY

Sample and data

The empirical design uses an unbalanced institution-year panel covering 24 investment-banking institutions—12 Chinese and 12 foreign—between 2015 and 2025. The retained full panel contains 252 institution-year observations, including 122 observations for Chinese institutions and 130 for foreign institutions. Because the dynamic ARDL and NARDL specifications require a consecutive prior-year observation, 228 observations remain for the dynamic estimations. Annual data are used because the principal financial and ESG information is drawn from annual reports, ESG or sustainability reports, corporate-governance reports, and financial statements. Missing source reports are retained as missing observations rather than being artificially imputed.

Table 1: Sample Coverage

Sample group	Institutions	Observations	Coverage
Chinese Investment Banks	12	122	2015-2025
Foreign Investment Banks	12	130	2015-2025
Full panel	24	252	2015-2025

Variables and construction of the ESG Disclosure Index

Financial performance is represented by Return on Assets (ROA). The key explanatory measure is the ESG Disclosure Index (EDI), constructed from environmental (E), social (S), and governance (G) information contained in public corporate reports. Each disclosure dimension is coded on a 0–100 scale. The aggregate index is calculated as $EDI_{it} = (E_{it} + S_{it} + G_{it}) / 3$, giving equal nominal weight to the three disclosure dimensions. EDI should therefore be interpreted as a public-report disclosure proxy, not as a licensed commercial ESG rating or a direct measure of underlying ESG performance. SIZE, LEV, GROWTH, and annual real GDP growth are included as controls; GDP information is taken from the World Bank's World Development Indicators.

Table 2: Variable Definitions and Data Sources

Variable	Definition / Construction	Main Data Source
ROA	Net income divided by average current- and prior-year total assets; expressed as a percentage	Issuer financial statements and annual reports
EDI	Arithmetic mean of E, S and G disclosure components; 0–100 scale	Annual reports and retained ESG/sustainability disclosure texts
E	Environmental disclosure component	Annual reports and ESG/sustainability reports
S	Social disclosure component	Annual reports and ESG/sustainability reports
G	Governance disclosure component	Annual reports and ESG/sustainability reports
SIZE	Natural logarithm of total assets	Financial statements
LEV	Total liabilities divided by total assets	Financial statements
GROWTH	Annual revenue growth	Financial statements
GDP	Annual real GDP growth	World Bank, World Development Indicators (WDI)
ΔEDI	EDI_it - EDI_i,t-1	Derived from the cleaned panel
Positive EDI change	max(ΔEDI, 0)	Derived variable
Negative EDI change magnitude	max(-ΔEDI, 0)	Derived variable
(EDI+)	Cumulative positive EDI changes	Derived NARDL variable
(EDI-)	Cumulative magnitude of negative EDI changes	Derived NARDL variable

For the nonlinear specification, annual EDI changes are calculated only when a consecutive prior-year observation exists for the same institution. Positive changes are defined as max(ΔEDI, 0), while the negative component is coded as the non-negative magnitude max(-ΔEDI, 0). The corresponding cumulative positive and negative partial sums are accumulated only within uninterrupted institution-year sequences; a gap starts a new segment. Under this coding, a negative coefficient on the negative partial-sum magnitude indicates that greater cumulative deterioration in disclosure is associated with lower ROA.

Econometric strategy

The empirical procedure begins with Fisher-type Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) panel unit-root tests. These tests combine institution-level evidence to determine whether the series are stationary in levels or after first differencing and, critically, whether any variable is integrated of order two. The procedures follow the unit-root foundations of Dickey and Fuller (1979) and Phillips and Perron (1988), with Fisher-type panel testing based on Maddala and Wu (1999) and Choi (2001).

The baseline dynamic relationship is estimated with a Dynamic Fixed Effects (DFE) panel ARDL(1,1) specification. The model includes lagged ROA, current EDI, one-year-lagged EDI, and contemporaneous SIZE, LEV, GROWTH, and GDP growth. Institution fixed effects absorb time-invariant institutional heterogeneity, fiscal-year fixed effects absorb common year shocks, and inference uses robust standard errors clustered at the institution level. The model-implied long-run EDI multiplier is calculated from the current and lagged EDI coefficients and the coefficient on lagged ROA. ARDL methods are designed to distinguish short-run adjustment from longer-run relationships in dynamic specifications (Pesaran et al., 2001), while the panel literature provides alternative estimators for heterogeneous dynamic panels (Pesaran et al., 1999).

To examine asymmetry, the linear specification is extended to a DFE panel NARDL(1,1) model following Shin et al. (2014). The single EDI measure is replaced by cumulative positive and negative EDI partial sums and their lags. This permits disclosure improvements to carry different coefficients from disclosure deterioration. Wald tests evaluate the significance of the positive and negative model-implied long-run effects and test whether the signed long-run coefficients are equal. A contemporaneous symmetry restriction is also reported.

H4 is evaluated with a pooled, fully interacted DFE-ARDL model. A foreign-bank indicator is interacted with lagged ROA, current and lagged EDI, and selected controls, while group-specific GDP information, institution fixed effects, fiscal-year fixed effects, and institution-clustered inference are retained. The Chinese and foreign long-run EDI effects are calculated from the interacted dynamic coefficients, and a one-degree-of-freedom Wald test evaluates whether the two long-run multipliers differ significantly. Robustness checks include 1% winsorization, component-level E/S/G models, separate Chinese and foreign estimations, and leave-one-institution-out re-estimation.

RESULTS

Descriptive statistics

The retained sample displays meaningful cross-group heterogeneity. Chinese investment banks have a higher mean ROA (1.624%) than foreign institutions (0.550%) and a higher average EDI score (25.611 versus 21.582). The composition of disclosure differs considerably: the Chinese sample has a substantially higher mean governance score, while the foreign sample has higher environmental and social disclosure scores.

Foreign institutions also display greater dispersion in EDI and SIZE. These descriptive differences motivate, but do not themselves establish, different ESG-performance relationships across the two groups.

Table 3: Descriptive Statistics by Sample Group

Variable	Group	N	Mean	SD	Median
ROA (%)	Chinese	122	1.624	0.833	1.573
ESG Disclosure Index	Chinese	122	25.611	4.266	26.236
Environmental Disclosure	Chinese	122	1.336	1.915	0.382
Social Disclosure	Chinese	122	0.430	0.585	0.257
Governance Disclosure	Chinese	122	75.068	12.609	75.984
SIZE	Chinese	122	26.802	0.634	26.844
LEV	Chinese	122	0.785	0.037	0.790
GROWTH	Chinese	122	0.133	0.400	0.086
GDP Growth (%)	Chinese	122	5.649	1.773	6.067
ROA (%)	Foreign	130	0.550	0.491	0.484
ESG Disclosure Index	Foreign	130	21.582	8.328	18.944
Environmental Disclosure	Foreign	130	13.713	19.889	6.268
Social Disclosure	Foreign	130	6.124	6.246	3.906
Governance Disclosure	Foreign	130	44.909	7.834	44.405
SIZE	Foreign	130	21.348	7.062	27.409
LEV	Foreign	130	0.924	0.022	0.921
GROWTH	Foreign	130	0.087	0.531	0.026
GDP Growth (%)	Foreign	130	1.977	2.644	2.214

Panel unit-root tests

The Fisher-ADF and Fisher-PP results are compatible with a mixture of I(0) and I(1) variables. ROA, EDI, social disclosure, governance disclosure, GROWTH, and GDP growth are stationary at level under the reported classification. Environmental disclosure and SIZE become stationary after first differencing. LEV

produces mixed level evidence because the ADF test does not reject the unit-root null while the PP test does; after first differencing both tests reject strongly. Importantly, no variable is classified as I(2), which supports the parsimonious dynamic specifications used in the subsequent analysis.

Table 4: Fisher-ADF and Fisher-PP Panel Unit-Root Tests

Variable	ADF level p	PP level p	ADF Δ p	PP Δ p	Order
ROA (%)	<0.001	<0.001	<0.001	<0.001	I (0)
ESG Disclosure Index	0.027	0.002	<0.001	<0.001	I (0)
Environmental Disclosure	0.549	0.615	<0.001	<0.001	I (1)
Social Disclosure	0.002	<0.001	<0.001	<0.001	I (0)
Governance Disclosure	0.042	0.002	<0.001	<0.001	I (0)
SIZE	1.000	0.529	<0.001	<0.001	I (1)
LEV	0.142	<0.001	<0.001	<0.001	I (0)/I (1)
GROWTH	<0.001	<0.001	<0.001	<0.001	I (0)
GDP Growth (%)	<0.001	<0.001	<0.001	<0.001	I (0)

ARDL results

The DFE panel ARDL(1,1) estimates indicate persistence in profitability: lagged ROA is positive and statistically significant (β = 0.1914, p = 0.007). The contemporaneous EDI coefficient is positive but not statistically significant (β = 0.0091, p = 0.118). In contrast, one-year-lagged EDI is positive and significant (β = 0.0126, p = 0.002), indicating that the observed financial association emerges with a delay rather than in the same year. GROWTH is also positive and significant, whereas SIZE, LEV, and GDP growth are not statistically significant in the baseline dynamic specification.

Table 5: DFE Panel ARDL(1,1) Results

Variable	Coefficient / Estimate	SE	p-value	95% CI
Lagged ROA	0.1914***	(0.0713)	0.007	[0.0517, 0.3311]
Current ESG Disclosure Index	0.0091	(0.0058)	0.118	[-0.0023, 0.0206]
Lagged ESG Disclosure Index	0.0126***	(0.0041)	0.002	[0.0045, 0.0207]

Variable	Coefficient / Estimate	SE	p-value	95% CI
SIZE	0.0962	(0.2452)	0.695	[-0.3844, 0.5769]
LEV	-0.3058	(1.8545)	0.869	[-3.9406, 3.3291]
GROWTH	0.2133**	(0.0829)	0.010	[0.0508, 0.3758]
GDP Growth (%)	0.0029	(0.0113)	0.795	[-0.0193, 0.0252]
Long-run EDI multiplier	0.0269***	(0.0080)	<0.001	[0.0112, 0.0426]

The model-implied long-run EDI effect is 0.0269 ($p < 0.001$), with a 95% confidence interval of [0.0112, 0.0426]. The entire interval is positive, and the separate Wald restriction on the long-run effect is also significant ($\chi^2 = 9.327$, $p = 0.002$). H1 is therefore supported. H2 receives qualified support because the same-year coefficient is insignificant but the one-year-lagged coefficient is significant. The result is best interpreted as a delayed short-run dynamic association rather than an immediate contemporaneous effect.

NARDL results and asymmetry

The NARDL model distinguishes cumulative disclosure improvement from cumulative deterioration. The contemporaneous positive partial-sum coefficient is not significant, while its one-year-lagged coefficient is positive and significant. For the deterioration component, both the contemporaneous and lagged coefficients are negative and significant. Because the negative partial sum is coded as the positive magnitude of a decline, these negative coefficients mean that larger accumulated reductions in ESG disclosure are associated with lower ROA.

Table 6: DFE Panel NARDL(1,1) and Long-run Effects

Term	Coefficient / Estimate	SE	p-value	95% CI
Lagged ROA	0.1884**	(0.0766)	0.014	[0.0384, 0.3385]
Positive EDI partial sum	0.0045	(0.0080)	0.575	[-0.0113, 0.0203]
Negative EDI partial sum (magnitude)	-0.0147**	(0.0070)	0.035	[-0.0284, -0.0011]
Lagged positive EDI partial sum	0.0133**	(0.0053)	0.012	[0.0029, 0.0236]
Lagged negative EDI partial sum (magnitude)	-0.0113**	(0.0054)	0.036	[-0.0218, -0.0007]
Long-run positive EDI partial sum	0.0219**	(0.0088)	0.013	[0.0047, 0.0391]

Term	Coefficient / Estimate	SE	p-value	95% CI
Long-run negative EDI partial sum (magnitude)	-0.0320***	(0.0083)	<0.001	[-0.0482, -0.0158]

The model-implied long-run response to cumulative disclosure improvement is 0.0219 (p = 0.013), whereas the long-run response associated with cumulative deterioration is -0.0320 (p < 0.001). The absolute magnitude of the adverse effect exceeds the beneficial effect. The long-run symmetry Wald test rejects equality of the signed effects (χ^2 = 10.903, p < 0.001), while the contemporaneous symmetry test is not statistically significant (χ^2 = 2.552, p = 0.110). The strongest evidence of asymmetry is therefore long-run rather than immediate, and H3 is supported at the long-run level.

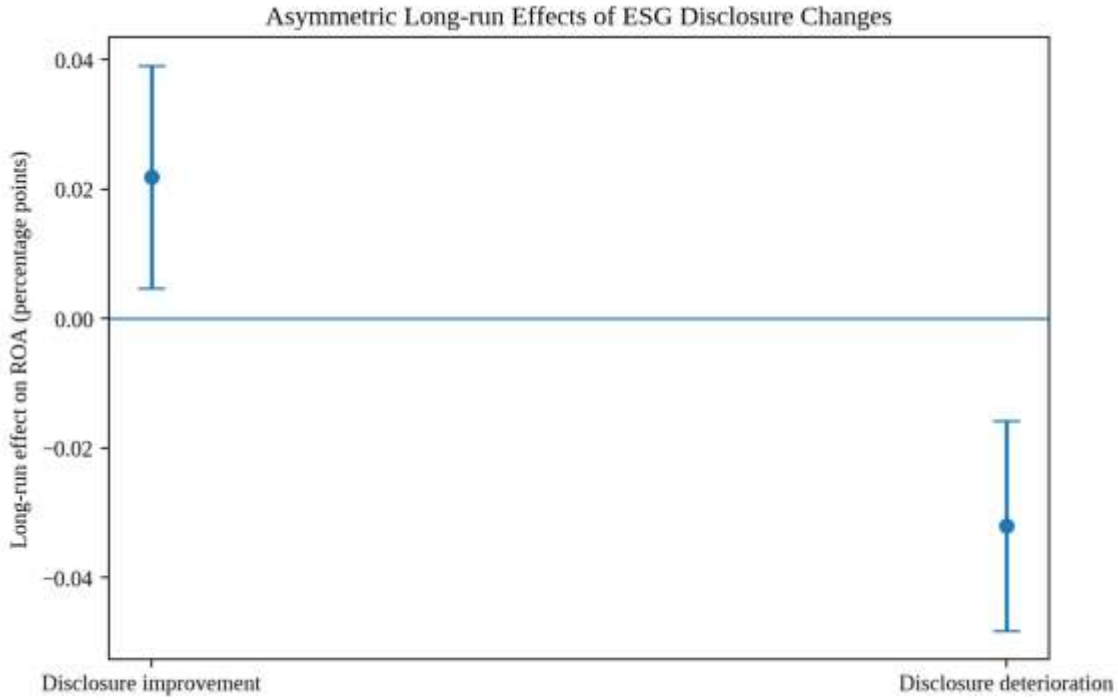

Figure 1: Asymmetric Long-run Effects of ESG Disclosure Changes

Robustness and Chinese-foreign comparison

Robustness analysis generally reinforces the positive long-run result. After 1% winsorization, the long-run EDI effect remains positive and significant (0.0212, p = 0.015). Leave-one-institution-out estimates remain positive across all 24 re-estimated models, with a range of 0.0232 to 0.0315. Component-level models indicate positive and significant long-run effects for environmental disclosure (0.0086, p = 0.026) and governance disclosure (0.0139, p < 0.001), while the social-disclosure coefficient is positive but statistically insignificant (0.0112, p = 0.264). These component regressions are not interpreted as a formal ranking because the dimensions are correlated and are estimated separately.

The separate Chinese and foreign ARDL estimates are both positive but differ in statistical precision. In the robustness table, the Chinese long-run estimate is 0.0244 (p = 0.105), whereas the foreign estimate is 0.0179 (p = 0.006). For the formal H4 test, the pooled interacted model produces corresponding long-run estimates of 0.0244 (p = 0.098) and 0.0179 (p = 0.005). Their estimated difference is 0.0065, but the cross-group equality Wald test is not significant (χ^2 = 0.164, p = 0.686), and the 95% confidence interval for the difference [-0.0249, 0.0379] includes zero. H4 is therefore not supported.

Table 7: Robustness and Cross-group Comparison

Specification / Restriction	Estimate	p-value	95% CI / Range	N / Test
Full-sample ARDL long-run EDI	0.0269	<0.001	[0.0112, 0.0426]	228
1% winsorized long-run EDI	0.0212	0.015	[0.0042, 0.0382]	228
Chinese subgroup ARDL	0.0244	0.105	[-0.0051, 0.0538]	110
Foreign subgroup ARDL	0.0179	0.006	[0.0053, 0.0305]	118
Leave-one-out range	0.0268	—	[0.0232, 0.0315]	24 models
Formal Chinese minus foreign effect	0.0065	0.686	[-0.0249, 0.0379]	Wald χ^2=0.164

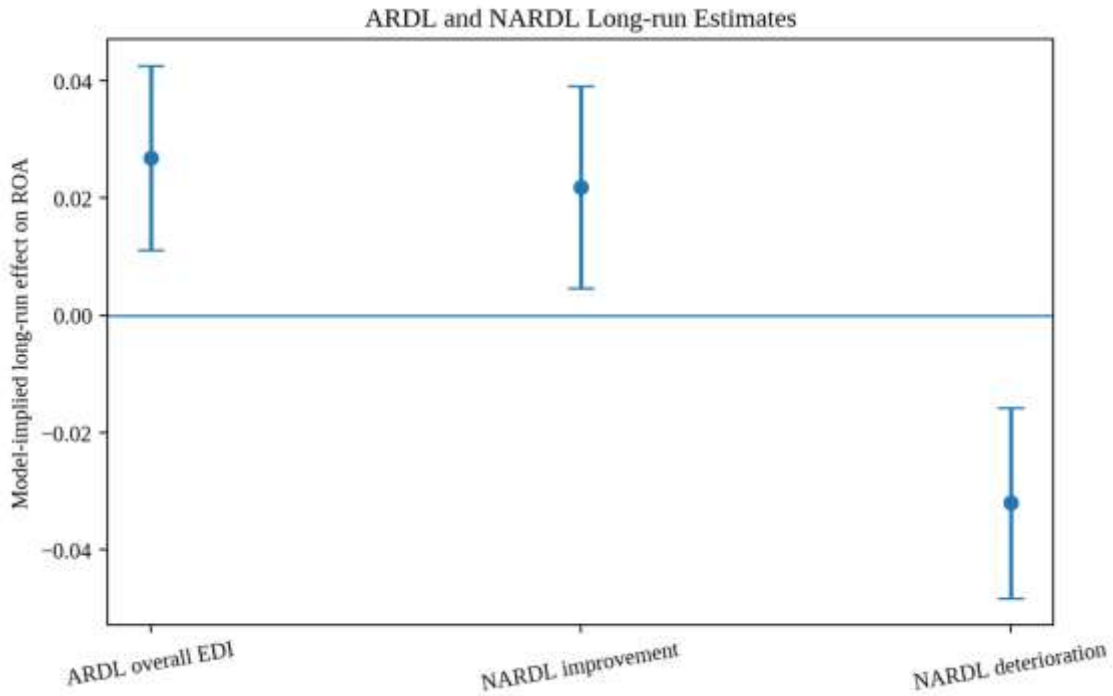

Figure 2: ARDL and NARDL Long-run Estimates

Table 8: Hypothesis Testing Summary

Hypothesis	Main Evidence	Conclusion
H1: ESG disclosure has a significant positive long-run association with investment-bank performance.	ARDL long-run EDI = 0.0269, p < 0.001	Supported
H2: ESG disclosure has a significant short-run	Current EDI: β = 0.0091, p =	Qualified

Hypothesis	Main Evidence	Conclusion
association with investment-bank performance.	0.118; Lagged EDI: $\beta = 0.0126$, $p = 0.002$	Support
H3: Positive and negative ESG disclosure changes have asymmetric effects on investment-bank performance.	Long-run symmetry Wald $\chi^2 = 10.903$, $p < 0.001$	Supported
H4: The long-run association between ESG disclosure and investment-bank financial performance differs significantly between Chinese and foreign investment banks.	Cross-group equality Wald $\chi^2 = 0.164$, $p = 0.686$	Not Supported

DISCUSSION

The results show that ESG disclosure is associated with investment-bank profitability through a dynamic rather than purely contemporaneous pattern. The insignificant current EDI coefficient and significant lagged and long-run effects suggest that the financial relevance of disclosure may emerge gradually. This interpretation is consistent with the possibility that ESG transformation requires immediate expenditures on data systems, governance, compliance, risk-management procedures, staff capabilities, and sustainable-finance activities, while the corresponding benefits may take time to become visible in profitability. A second possibility is a market-recognition lag: investors, clients, and other stakeholders may require repeated and consistent disclosure before treating it as a credible signal of institutional quality. These explanations are consistent with long-term value creation and signaling perspectives (Porter & Kramer, 2011; Spence, 1973), but the empirical design does not separately identify these mechanisms as causal channels.

The nonlinear results add a second important insight. Deterioration in ESG disclosure has a larger absolute long-run association with ROA than the beneficial association arising from improvement. This pattern is compatible with the downside dimension emphasized by prospect theory, under which adverse changes may be weighted more heavily than comparable gains (Kahneman & Tversky, 1979). It is also consistent with evidence that negative sustainability events can impose meaningful reputation and market costs and that stakeholder trust can have economic value during periods of stress (Krüger, 2015; Lins et al., 2017). For investment banks, deterioration in disclosure may raise concerns about governance, regulatory exposure, risk controls, client relationships, and institutional credibility. The statistically insignificant contemporaneous symmetry test, however, indicates that the asymmetry is most clearly a cumulative long-run phenomenon rather than an immediate same-year difference.

The Chinese-foreign comparison requires careful interpretation. Descriptive statistics show substantial differences in profitability, disclosure composition, leverage, size dispersion, and macroeconomic context, and the subgroup models differ in statistical precision. Nevertheless, the formal cross-group equality test does not reject equality of the model-implied long-run EDI effects. Institutional context therefore remains relevant for understanding how disclosure is produced and interpreted, but the evidence does not support the stronger claim that the underlying long-run EDI-profitability association is statistically different between the two groups. This distinction is important because comparing whether one subgroup coefficient is significant and another is not is not equivalent to a formal test of whether the coefficients differ.

The findings also have practical implications. Investment banks should treat ESG disclosure as a long-term governance and strategic process rather than only an annual reporting exercise. Maintaining disclosure quality and continuity may be particularly important because the estimated adverse long-run association

from deterioration exceeds the beneficial association from improvement. Internal ESG data collection, disclosure controls, governance accountability, and monitoring of environmental, social, governance, regulatory, and reputational risks can therefore be viewed as part of maintaining institutional credibility. Regulators and securities-market authorities can improve the usefulness of ESG information by encouraging clear definitions, consistent indicators, continuity across years, and comparability across institutions. Investors and analysts, in turn, should evaluate the direction and persistence of ESG disclosure over multiple periods rather than relying only on a contemporaneous score.

The results should not be interpreted as establishing a fixed structural law. EDI measures the extent of public-report disclosure rather than underlying ESG performance itself, the panel covers a maximum of 11 annual observations per institution, and the models identify dynamic associations rather than experimental causal effects. The post-sample regulatory environment also continues to change, as illustrated by the SEC's 2026 proposal to rescind its 2024 climate-disclosure rules. These considerations support a cautious interpretation of the estimates and motivate longer samples, alternative ESG measures, additional countries, and stronger causal designs in future research.

CONCLUSION

This study examines the relationship between ESG disclosure and investment-bank profitability using an unbalanced 2015–2025 panel of 24 Chinese and foreign investment banking institutions. A report-based ESG Disclosure Index is linked to ROA through DFE panel ARDL and NARDL models after Fisher-ADF and Fisher-PP stationarity testing. The principal results are consistent across the main specifications: EDI has a significant positive model-implied long-run association with ROA; the short-run relationship is delayed rather than contemporaneous; and cumulative deterioration in ESG disclosure has a stronger adverse long-run association with profitability than the beneficial association generated by disclosure improvement.

The formal Chinese-foreign equality test does not establish a statistically significant difference between the two groups' long-run EDI effects. Accordingly, the evidence supports H1, provides qualified support for H2, supports H3 at the long-run level, and does not support H4. The study therefore contributes to the ESG-investment banking literature by showing that timing and direction matter: evaluating only a same-year average effect can obscure both delayed financial relevance and the stronger downside association of disclosure deterioration.

The findings imply that investment banks should manage ESG disclosure as a continuous strategic and governance process, regulators should promote transparent and comparable reporting frameworks, and investors should evaluate disclosure dynamically across multiple years. Several limitations remain. EDI is a report-derived disclosure proxy rather than a commercial rating or direct outcome measure; the time dimension is short; ROA does not capture every dimension of investment-bank performance; and the sample does not represent every national financial system. Future research could extend the time period, compare report-based EDI with external ratings, examine alternative outcomes such as ROE, valuation, risk, cost of capital, underwriting performance, or sustainable-finance revenue, and use broader cross-country samples and stronger identification strategies.

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Ethical Approval

Not applicable. This study uses publicly available institutional and macroeconomic data and does not involve human participants or animals.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability

The data used in this study were compiled from publicly available annual reports, ESG/sustainability reports, financial statements, and the World Bank's World Development Indicators. Source documents are publicly accessible through the respective institutions. The constructed EDI and cleaned analytical data are available from the corresponding author upon reasonable request, subject to applicable source and licensing restrictions.

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