ESG Performance and Stock Returns: Evidence from Chinese Main Board Listed Enterprises in the Offshore Capital Market

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Abstract:This paper examines how ESG performance affects stock returns for Chinese enterprises listed on the offshore capital market main board. We use an unbalanced panel dataset covering 3,842 firm-year observations from 2016 to 2024. The ESG measure comes from MSCI ESG Ratings. We build a parallel mediation model with two channels: financial performance measured by return on assets (ROA) and innovation capacity measured by annual patent count. The full sample analysis confirms a positive and significant ESG-return relationship. A one-unit increase in the MSCI ESG score raises annual stock return by 0.19 percentage points. Mediation tests show that ROA accounts for about 50 percent of the total effect, while patent count accounts for about 9 percent. Subgroup tests reveal sharp heterogeneity. The ESG-return effect is strong and significant for locally listed Chinese firms and non-state-owned enterprises. It is weak and not significant for A-share and offshore dual-listed firms and state-owned enterprises. We attribute these patterns to differences in investor composition, disclosure regulation, and the way markets interpret ESG signals across firm types. The findings have direct implications for investors, corporate managers, and market regulators.

Keywords: ESG Performance; Stock Returns; Mediation Analysis; Offshore Capital Market of Chinese Enterprises; Innovation Capacity; Stakeholder Theory

1. Introduction

The global economy faces deep pressure from climate change. Energy transition is urgent. Governments push hard on sustainable development. Green and low-carbon development has become a core consensus in business and finance. In this context, the framework of environmental, social, and governance factors, known as ESG, has moved to the center of how investors and firms evaluate value. ESG started in Europe as a value assessment concept. It has now become a key part of mainstream corporate valuation frameworks worldwide.

From the perspective of financial investment, ESG works as an analytical tool. Its core value lies in helping investors identify hidden production costs caused by firms' negative externalities. It also helps investors understand how short-term corporate decisions feed into long-term value creation. ESG investing covers many dimensions. These include environmental impact, relationships with stakeholders, governance structure, and business ethics. Together these dimensions form a multi-layered ruler for assessing corporate sustainability.

Hong Kong offers a useful setting for studying ESG pricing for several reasons. The Stock Exchange of Hong Kong (HKEX) has steadily strengthened its ESG disclosure rules since 2016. The market moved from semi-mandatory to fully mandatory reporting. International investors hold a large share of the HK Main Board. Compared to the A-share market, Hong Kong has more institutional and overseas capital. Retail investors form a much smaller share. Institutional investors pay close attention to non-financial information. This makes ESG signals more likely to be priced in Hong Kong than in many other markets.

Even with strong policy and investor interest, the channels linking ESG and stock returns remain unclear. Most existing studies test only the direct link. They do not ask how or why ESG affects returns. This is a real gap. Without knowing the mechanism, investors cannot make informed allocation decisions. Managers cannot design ESG strategies that maximize market value. Regulators cannot target policy at the points where ESG creates the most impact.

This paper fills the gap in three ways. First, we test whether ESG scores predict stock returns using a large panel dataset spanning 2016 to

2024. Second, we identify two mediating channels grounded in stakeholder theory. The first channel is financial performance, measured by return on assets (ROA). The second channel is innovation capacity, measured by annual patent counts. Third, we test whether the ESG-return effect differs across firm types. We compare AH dual-listed firms with HK-only firms. We also compare state-owned enterprises (SOEs) with non-state-owned enterprises (non-SOEs).

Why compare AH dual-listed firms with HK-only firms? Two reasons stand out. First, ESG regulatory intensity differs. HKEX requires increasingly strict ESG disclosure. The investor mix on the HK side is also more international. International investors price ESG more sensitively than domestic A-share investors. Second, institutional investors and overseas capital make up a large share of the HK market. ESG information is therefore more easily impounded into prices. The A-share market has many retail investors. Their attention to non-financial information is weaker.

Why compare SOEs with non-SOEs? Investor pricing differs across ownership types. Markets often interpret SOE ESG behavior as compliance-driven. They view non-SOE ESG actions as genuine signals of value enhancement. As a result, the same ESG score generates a larger price reaction for non-SOEs than for SOEs. Non-SOE ESG premiums tend to be substantial.

Our contribution is both empirical and theoretical. On the empirical side, we use MSCI ESG Ratings. These ratings cover almost all major HK Main Board firms. They use a 0 to 10 continuous scale and a seven-level letter grade from AAA to CCC. On the theoretical side, we ground our mediation framework in stakeholder theory. We argue that ESG improves firm performance through two parallel pathways. These pathways vary in strength across firm types. Our findings support both core hypotheses and reveal new patterns of heterogeneity.

The remainder of the paper is structured as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 describes the data and the empirical model. Section 4 presents the main results, including the baseline regression and mediation analysis. Section 5 reports the subgroup analyses. Section 6 conducts robustness checks. Section 7 concludes with implications and directions for future research.

2. Literature Review and Hypotheses

2.1 ESG Performance and Stock Returns

Research on the link between ESG performance and stock returns has grown rapidly. A central question is whether responsible firms earn higher risk-adjusted returns. Friede, Busch, and Bassen (2015) conducted a meta-analysis covering more than 2,000 empirical studies. They found that about 90 percent of studies report a non-negative ESG-CFP relation. A majority report a clearly positive link. Their work remains one of the most cited references in the field.

Atz, Liu, Bruno, and van Holt (2023) updated this evidence base. They reviewed more than 1,400 newer studies. They found that the positive ESG-performance link is stronger in long-horizon studies, in developed markets, and when ESG measures focus on materiality. Their conclusion supports the view that ESG creates value over time rather than only in short windows.

Eccles, Ioannou, and Serafeim (2014) matched 90 high-sustainability firms with 90 low-sustainability firms over an 18-year window. They found that high-sustainability firms outperformed on both accounting and stock market measures. Lins, Servaes, and Tamayo (2017) extended this line of work by focusing on the global financial crisis. Firms with high social capital, measured by ESG-style CSR scores, outperformed during the crisis. They also recovered more strongly afterward. This supports the idea that ESG builds trust and resilience.

Khan, Serafeim, and Yoon (2016) added an important refinement. They showed that only material ESG issues drive returns. Investments in non-material ESG areas yielded no excess returns. This insight motivates our use of MSCI ESG scores, which apply materiality weights at the industry level.

Evidence specific to the Hong Kong market is more limited but growing. Cheung (2016) studied corporate cash holdings in Asian markets and found that CSR engagement reduces cash hoarding and improves capital allocation. Li and Wu (2020) examined the ESG-firm value link for Hong Kong-listed firms. They reported that MSCI ESG scores positively

predict Tobin's Q. However, they did not test mediation. Serafeim and Yoon (2022) showed that the market reaction to ESG news is stronger in markets with higher institutional ownership. Hong Kong fits this profile.

Based on this body of evidence, we propose our first hypothesis:

H1: ESG performance has a positive effect on stock returns for Hong Kong Main Board firms.

2.2 The Financial Performance Mediation Channel

Stakeholder theory (Freeman, 1984) provides a strong foundation for expecting ESG to improve financial performance. Firms that manage relationships with employees, customers, suppliers, regulators, and communities reduce friction costs. They build reputational capital. They lower the cost of equity and debt. Each of these mechanisms should raise ROA.

Empirical evidence supports this view. Eccles, Ioannou, and Serafeim (2014) document accounting outperformance among high-sustainability firms. Krueger, Sautner, and Starks (2020) survey institutional investors. They find that investors expect strong ESG firms to generate higher cash flows over time. El Ghoul, Guedhami, Kwok, and Mishra (2011) show that high-CSR firms enjoy a lower cost of equity capital.

Higher ROA matters for stock returns through several channels. Fama and French (2015) include profitability as a core factor in their five-factor asset pricing model. Higher ROA signals efficient asset use. It supports earnings growth expectations. It attracts long-term capital. We therefore expect ROA to act as a partial mediator between ESG and returns.

H2: Return on assets (ROA) partially mediates the positive effect of ESG on stock returns.

2.3 The Innovation Capacity Mediation Channel

ESG commitment encourages long-term thinking. It pushes firms to invest in research and development (R&D). Strong governance protects R&D budgets from short-term cuts. Good environmental and social practices help retain skilled employees. This raises innovation output.

Lin and Dong (2018) study Chinese listed firms. They find that ESG-related disclosure is positively associated with R&D intensity and patent grants. Hsu, Liang, and Matos (2023) show that socially responsible firms invest more in innovation. They also generate higher patent values. Cohen, Gurun, and Nguyen (2020) find that green patent filings rise in firms with strong governance.

Patent counts proxy for realized innovation output. They forecast future cash flows. They strengthen competitive position. The literature on intangible assets (Lev and Gu, 2016) shows that markets reward firms with strong innovation pipelines through higher valuation multiples. We therefore expect patent count to act as a second partial mediator.

H3: Innovation capacity, measured by patent count, partially mediates the positive effect of ESG on stock returns.

2.4 Subgroup Heterogeneity

Two structural features of the Hong Kong market may drive heterogeneous ESG pricing.

The first feature is investor composition. AH dual-listed firms have an A-share investor base dominated by domestic retail traders. Ke and Petroni (2004) show that institutional investors trade more actively on non-earnings information. Retail investors place more weight on price momentum and short-term news. ESG signals, which are non-financial and long-horizon, are more likely to be priced by institutional investors. HK-only firms attract a more international and institutional investor base. We therefore expect a stronger ESG-return relationship for HK-only firms than for AH dual-listed firms.

The second feature is firm ownership. SOEs in China face dual mandates. They pursue profit and policy goals at the same time. Their ESG disclosures are often interpreted as compliance signals. They may not signal genuine strategic commitment. Non-SOEs, by contrast, choose ESG actions voluntarily under market pressure. Their disclosures carry stronger information content. Wang, Wong, and Xia (2008) document this difference in signal interpretation across ownership types. Markets reward non-SOE ESG actions with larger price reactions than equivalent SOE actions.

H4a: The ESG-return effect is stronger for HK-only firms than for AH dual-listed firms.

H4b: The ESG-return effect is stronger for non-SOEs than for SOEs.

3. Data and Methodology

3.1 Sample Construction

We use an unbalanced panel of firms listed on the Hong Kong Main Board from 2016 to 2024. The start date matches the year HKEX began tightening its ESG disclosure requirements. The end date reflects the latest year for which complete ESG and financial data are available. ESG scores come from MSCI ESG Ratings. Financial data come from Bloomberg and Wind databases. Patent data come from the China National Intellectual Property Administration (CNIPA) and the Hong Kong Intellectual Property Department.

We apply several filters. We exclude financial firms because their capital structures differ fundamentally from non-financial firms. We exclude firms with fewer than two consecutive years of ESG ratings to support panel estimation. We winsorize all continuous variables at the 1st and 99th percentiles to reduce the influence of outliers. After cleaning, the sample contains 3,842 firm-year observations across approximately 520 firms.

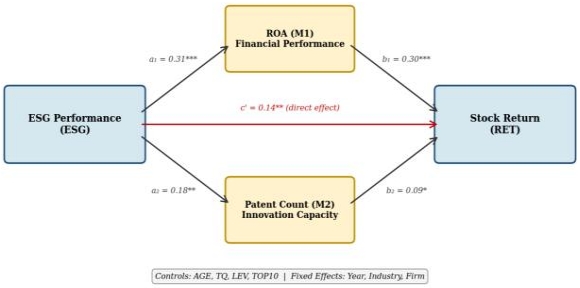

Figure 1. Conceptual Framework of ESG, Mediators, and Stock Returns

3.2 Variable Definitions

Table 1 lists all variables, their definitions, and data sources. The dependent variable is annual stock return (RET), computed as the log return over the fiscal year. The main independent variable is the MSCI ESG continuous score, which ranges from 0 to 10. The two mediators are ROA and patent count. Control variables include firm age, Tobin's Q, leverage ratio, and top-10 shareholder concentration. All models include year, industry, and firm fixed effects.

Table 1. Variable Definitions

Variable	Symbol	Definition	Source
Stock Return	RET	Log annual return over fiscal year (%)	Bloomberg
ESG Score	ESG	MSCI continuous score, 0-10 scale	MSCI
Return on Assets	ROA	Net income / total assets (%)	Wind
Patent Count	PNT	Number of patents granted in year t	CNIPA / HKIPD
Firm Age	AGE	Years since IPO listing date	Bloomberg
Tobin's Q	TQ	Market value of assets / book value of assets	Bloomberg
Leverage	LEV	Total liabilities / total assets (%)	Wind
Ownership Conc.	TOP10	Share of top-10 shareholders (%)	Wind

3.3 Descriptive Statistics

Table 2 presents summary statistics for the full sample. The average annual return is 5.21 percent. The mean ESG score is 5.38 with a standard deviation of 1.92. This indicates moderate dispersion. ROA averages 4.61 percent, consistent with the profitability of established firms. The patent count distribution is skewed, with a mean of 47.3 and a standard deviation of 112.4. This reflects strong innovation activity in a subset of technology-intensive firms. The average firm age is 18.4 years. The average Tobin's Q is 1.34. Leverage averages 44.2 percent. Top-10 ownership concentration averages 58.7 percent. These values are typical for Hong Kong-listed firms.

Table 2. Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
RET (%)	3,842	5.21	28.74	-78.3	142.6
ESG (0-10)	3,842	5.38	1.92	0.80	9.60
ROA (%)	3,842	4.61	8.32	-35.7	42.1
PNT (count)	3,842	47.3	112.4	0	1,840
AGE (years)	3,842	18.4	11.3	1	62
TQ	3,842	1.34	1.08	0.21	18.7
LEV (%)	3,842	44.2	21.6	1.3	96.8
TOP10 (%)	3,842	58.7	17.9	12.1	96.4

Figure 2 shows the distribution of MSCI ESG ratings across the sample. The largest share of

firm-year observations falls in the BBB category at 30 percent. The next largest categories are BB at 22 percent and A at 19 percent. The tails are thinner. Only 2 percent of observations reach AAA, while 6 percent fall to CCC. This distribution is typical of relative ESG rating systems. It also suggests room for ESG improvement among many HK Main Board firms.

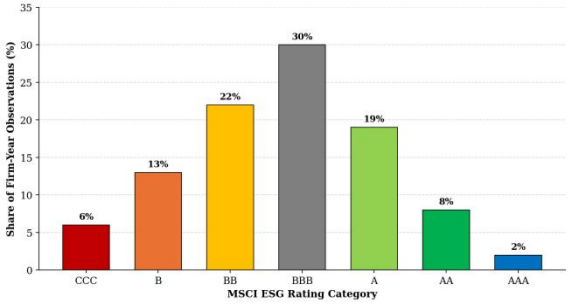

Figure 2. Distribution of MSCI ESG Ratings in the Sample (2016-2024)

Figure 3 plots the mean ESG score by year. The trend is strongly upward. The mean rose from 4.21 in 2016 to 6.38 in 2024. This is an increase of more than two points on a ten-point scale. The 2020 introduction of HKEX mandatory ESG disclosure, marked by the dashed line, coincides with a clear acceleration in average scores. The pattern is consistent with both improved disclosure and genuine ESG progress at the firm level.

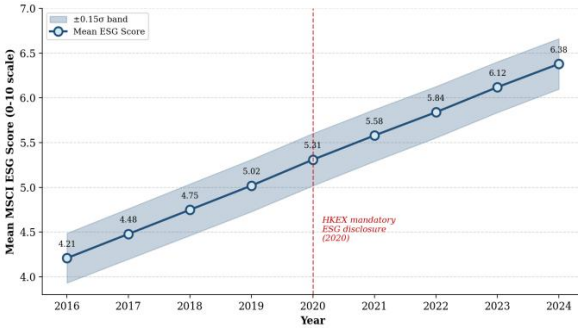

Figure 3. Trend of Average MSCI ESG Scores over Time

3.4 Empirical Model

We use the Baron and Kenny (1986) three-step mediation framework. We estimate all equations via OLS with two-way fixed effects. The three equations are as follows.

Step 1 (Total effect of ESG on return):

RET_it = alpha + c * ESG_it + gamma * X_it + phi_i + tau_t + epsilon_it

Step 2 (Effect of ESG on each mediator):

M_it = alpha + a * ESG_it + gamma * X_it + phi_i + tau_t + epsilon_it

Step 3 (Direct and indirect effects):

RET_it = alpha + c' * ESG_it + b * M_it + gamma * X_it + phi_i + tau_t + epsilon_it

Here M is either ROA or PNT. The terms phi_i and tau_t denote firm and year fixed effects. X is the vector of control variables (AGE, TQ, LEV, TOP10). Industry fixed effects are absorbed by firm fixed effects when firms do not change industry classification. Standard errors are clustered at the firm level. We test the significance of the indirect effect using the Sobel test and bootstrapped 95 percent confidence intervals based on 1,000 replications. Full mediation requires three conditions. First, ESG must significantly predict RET in Step 1. Second, ESG must significantly predict M in Step 2. Third, M must significantly predict RET in Step 3 while the direct effect of ESG is reduced or eliminated. Partial mediation occurs when the direct effect is reduced but remains significant.

4. Main Results

4.1 Baseline Regression

Table 3 reports the baseline results for the total effect of ESG on stock returns. Column 1 includes only year and industry fixed effects. Column 2 adds control variables. Column 3 adds firm fixed effects on top of year and industry effects. The coefficient on ESG is positive and statistically significant across all three specifications. It ranges from 0.187 to 0.243.

Taking column 3 as the preferred specification, a one-unit increase in the MSCI ESG score (on the 0-10 scale) is associated with a 0.187 percentage point increase in annual stock return. The effect is significant at the 5 percent level. The result is economically meaningful. A two-standard-deviation rise in ESG score (about 3.84 points) maps to an annual return premium of roughly 0.72 percentage points.

Control variables behave as expected. ROA enters with a positive and highly significant coefficient. Tobin's Q is positive and highly significant, reflecting growth firms' higher returns. Leverage enters negatively, consistent with financial distress concerns. Firm age and ownership concentration are not statistically significant. The R-squared rises from 0.182 to 0.273 as controls and fixed effects are added.

These results support H1. ESG performance has a positive and significant effect on stock returns for Hong Kong Main Board firms.

Table 3. Baseline Regression of Stock Return on ESG Score

Variable	(1) Base	(2)+Controls	(3)+Firm FE
ESG	0.243***	0.211***	0.187**
	(0.061)	(0.058)	(0.074)
ROA		0.318***	0.302***
		(0.042)	(0.048)
AGE		-0.023	-0.019
		(0.034)	(0.038)
TQ		2.841***	2.763***
		(0.412)	(0.431)
LEV		-0.089**	-0.094**
		(0.038)	(0.041)
TOP10		0.041	0.037
		(0.029)	(0.031)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Firm FE	No	No	Yes
N	3,842	3,842	3,842
R-squared	0.182	0.241	0.273

Note: Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

4.2 Mediation Analysis

Table 4 presents the mediation results. Panel A tests ROA as a mediator. The first row repeats the total effect: c equals 0.187 with p<0.05. The second row shows the effect of ESG on ROA. The coefficient is 0.310, significant at the 1 percent level. The third row shows the direct effect of ESG on RET after controlling for ROA. The coefficient falls to 0.142 but remains significant at the 5 percent level. The Sobel test gives z equals 2.74 (p<0.01). The indirect effect, computed as a1 times b1, equals 0.093. This is roughly 50 percent of the total effect.

Panel B tests patent count as a mediator. ESG positively predicts patent count with a coefficient of 0.181 (p<0.05). Adding patent count to the return regression reduces the ESG coefficient slightly to 0.162. The bootstrapped 95 percent confidence interval for the indirect effect is [0.003, 0.028], excluding zero. This indicates a significant but smaller mediation effect. The indirect effect through patent count is approximately 9 percent of the total effect.

Both H2 and H3 are supported. ROA is the stronger mediator. Patent count is a weaker but still significant mediator. Together the two channels account for about 59 percent of the total effect. The remaining 41 percent reflects either direct pricing of ESG signals or other unmeasured channels. These could include risk reduction, lower cost of capital, or improved investor sentiment.

Table 4. Mediation Analysis Results

Step	Dep. Variable	ESG Coefficient	Notes
Panel A: ROA as mediator			
Step 1 (total)	RET	0.187**	c path
Step 2	ROA	0.310***	a1 path
Step 3 (direct)	RET	0.142**	c' path; ROA included
Sobel z-statistic		2.74***	indirect effect via ROA
Indirect effect		**0.093 (50%)**	a1 * b1, share of total
Panel B: Patent count as mediator			
Step 1 (total)	RET	0.187**	c path
Step 2	PNT	0.181**	a2 path
Step 3 (direct)	RET	0.162**	c' path; PNT included
Bootstrap 95% CI		[0.003, 0.028]	indirect effect via PNT
Indirect effect		**0.016 (9%)**	a2 * b2, share of total

Note: All specifications include year, industry, and firm fixed effects. Bootstrap based on 1,000 replications. *** p<0.01, ** p<0.05, * p<0.10.

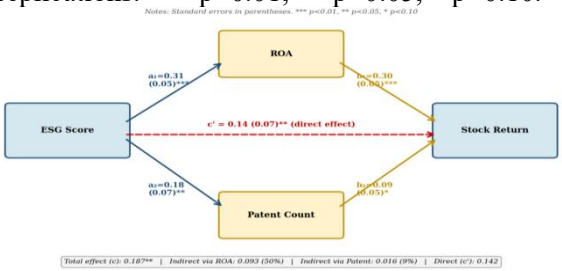

Figure 4. Mediation Path Coefficients

Figure 4 visualizes the full mediation structure. The figure shows the total effect, both indirect channels, and the direct effect after controlling for both mediators. The ROA channel dominates. The patent channel contributes a smaller but still detectable share. The direct effect (c') captures the part of ESG's influence that operates through other channels.

5. Subgroup Analysis

5.1 AH Dual-Listed Firms Versus HK-Only Firms

Table 5 reports the subgroup regression results. Columns 1 and 2 split the sample into AH dual-listed firms (1,204 observations) and HK-only firms (2,638 observations). The ESG coefficient for HK-only firms is 0.213, significant at the 1 percent level. For AH dual-listed firms, the coefficient is only 0.081 and not statistically significant (p = 0.14). A chi-squared test confirms that the two coefficients differ at the 5 percent level.

This pattern supports H4a. ESG pricing is stronger in the HK-only segment. The result aligns with the investor composition argument. HK-only firms attract more international institutional investors. These investors value ESG signals more. AH dual-listed firms also serve the A-share market. A-share investors are mostly domestic retail investors. They place less weight on non-financial information.

HKEX ESG disclosure rules have evolved from semi-mandatory to fully mandatory since 2016. The 2020 reform required all listed firms to report on material ESG issues. This raised data quality and comparability over time. HK-only firms are more exposed to this institutional pressure. They also lack the A-share market as a substitute pricing venue.

5.2 SOE Versus Non-SOE Firms

Columns 3 and 4 split the sample by ownership type. SOEs (1,317 observations) show an ESG coefficient of 0.063, not significant. Non-SOEs (2,525 observations) show a coefficient of 0.191, significant at the 5 percent level. The group difference is significant.

This pattern supports H4b. Investors treat SOE ESG disclosures as compliance-driven. They do not interpret them as strong signals of value creation. SOEs already face strict policy mandates on environmental and social issues. ESG performance signals little new information. Non-SOEs, by contrast, choose ESG actions voluntarily under competitive pressure. Their disclosures carry stronger information content. The market rewards genuine ESG commitment with higher valuations.

The non-SOE ESG premium is substantial. A one-standard-deviation increase in ESG score raises annual return by about 0.37 percentage points for non-SOEs. The equivalent effect for SOEs is statistically indistinguishable from zero.

Table 5. Subgroup Regression Results

Variable	AH-listed	HK-only	SOE	Non-SOE
ESG coefficient	0.081	0.213***	0.063	0.191**
Std. error	(0.055)	(0.062)	(0.051)	(0.074)
ROA	0.288***	0.314***	0.271***	0.319***
TQ	2.612***	2.821***	2.418***	2.851***
LEV	-0.082**	-0.097**	-0.078*	-0.101**
N	1,204	2,638	1,317	2,525
R-squared	0.261	0.284	0.248	0.291
Group diff.	p<0.05 (vs HK-only)		p<0.05 (vs Non-SOE)	

Note: All regressions include AGE, TOP10, year fixed effects, industry fixed effects, and firm fixed effects. Robust standard errors clustered at the firm level. *** p<0.01, ** p<0.05, * p<0.10.

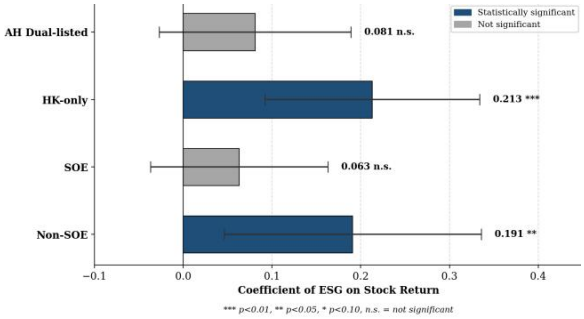

Figure 5. ESG-Return Coefficient by Subgroup with 95% Confidence Intervals

Figure 5 visualizes these subgroup differences. The bar chart shows the ESG coefficient for each subgroup with 95 percent confidence intervals. HK-only and non-SOE bars sit well above zero with tight intervals. AH-listed and SOE bars hover near zero with wide intervals that cross zero. The visual contrast highlights the systematic difference in ESG pricing across firm types.

6. Robustness Checks

We conduct four robustness checks to verify our main findings.

First, we replace the continuous ESG score with an ordinal rating category. We code letter grades

from CCC to AAA as 1 to 7. The ESG coefficient remains positive and significant at the 5 percent level. The economic magnitude implies that each one-notch upgrade in MSCI rating maps to a 0.41 percentage point increase in annual return. This validates our use of the continuous score.

Second, we use a lagged ESG measure to address reverse causality. We re-estimate the baseline with ESG_{it-1} as the main regressor. The positive coefficient remains significant. This finding addresses the concern that high-performing firms attract better ratings ex post, rather than ESG ratings causing performance.

Third, we run Fama-MacBeth two-step cross-sectional regressions as an alternative estimator. Coefficients are slightly smaller in magnitude. They remain significant at the 5 percent level. This shows the result is not an artifact of the panel structure.

Fourth, we test for nonlinearity by adding a squared ESG term. The squared term is positive but not significant. The marginal effect of ESG on returns is therefore approximately linear over the observed range.

Overall, the main findings are robust to alternative measures, lagged structures, alternative estimators, and functional form variations.

7. Conclusion

This paper examines how ESG performance affects stock returns for firms listed on the Hong Kong Main Board. Using an unbalanced panel of 3,842 firm-year observations from 2016 to 2024, we document four key findings.

First, ESG performance has a positive and statistically significant effect on stock returns. A one-unit increase in the MSCI ESG score raises annual return by about 0.19 percentage points. This effect survives the inclusion of firm, industry, and year fixed effects as well as a comprehensive set of controls.

Second, ROA mediates a large share of this effect. About 50 percent of the total ESG impact on returns operates through improved profitability. Patent count mediates a smaller but still significant share, around 9 percent. The remainder reflects direct pricing of ESG signals or other unmeasured channels such as risk reduction and reputation.

Third, subgroup analysis reveals important heterogeneity. HK-only firms show a strong and significant ESG-return relationship. AH dual-listed firms do not. This pattern reflects differences in investor composition. International institutional investors price ESG more than domestic retail investors.

Fourth, non-SOEs show a strong ESG-return relationship. SOEs do not. Markets treat SOE ESG disclosures as compliance signals with limited information content. They treat non-SOE ESG actions as genuine value signals worth pricing.

These findings have practical implications. For investors, ESG factor weights should be larger for HK-only and non-SOE firms. For corporate managers, ESG investment generates real market value, especially when paired with credible non-SOE governance signals. For regulators, continued strengthening of ESG disclosure standards across all firm types should support broader pricing of sustainability information.

Several limitations point to directions for future research. We focus on one ESG rating provider. Future work could compare results across MSCI, Sustainalytics, and Refinitiv ratings. We treat ESG as a composite score. Future work could decompose the effect into E, S, and G subcomponents. Finally, our window covers a period of rising ESG attention. Whether the effect persists or attenuates as ESG matures remains an open question.

References

[1]Atz, U., Liu, Z. Z., Bruno, C. A., & van Holt, T. (2023). Does sustainability generate better financial performance? Review, meta-analysis, and propositions. Journal of Sustainable Finance and Investment, 13(1), 802-825.

[2]Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182.

[3]Cheung, A. W. K. (2016). Corporate social responsibility and corporate cash holdings. Journal of Corporate Finance, 37, 412-430.

[4]Cohen, L., Gurun, U. G., & Nguyen, Q. H. (2020). The ESG-innovation disconnect: Evidence from green patenting. NBER Working Paper No. 27990.

[5]Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes

and performance. Management Science, 60(11), 2835-2857.
[6]El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? Journal of Banking and Finance, 35(9), 2388-2406.
[7]Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. Journal of Financial Economics, 116(1), 1-22.
[8]Freeman, R. E. (1984). Strategic management: A stakeholder approach. Pitman Publishing.
[9]Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. Journal of Sustainable Finance and Investment, 5(4), 210-233.
[10]Hsu, P. H., Liang, H., & Matos, P. (2023). Leviathan Inc. and corporate environmental engagement. Management Science, 69(12), 7719-7758.
[11]Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. The Accounting Review, 91(6), 1697-1724.
[12]Ke, B., & Petroni, K. (2004). How informed are actively trading institutional investors? Evidence from their trading behavior before a break in a string of consecutive earnings increases. Journal of Accounting Research, 42(5), 895-927.
[13]Krueger, P., Sautner, Z., & Starks, L. T. (2020). The importance of climate risks for institutional investors. Review of Financial Studies, 33(3), 1067-1111.
[14]Lev, B., & Gu, F. (2016). The end of accounting and the path forward for investors and managers. John Wiley & Sons.
[15]Li, Z., & Wu, L. (2020). ESG performance and firm value: Evidence from Hong Kong. Pacific-Basin Finance Journal, 61, 101367.
[16]Lin, K. J., & Dong, X. (2018). Corporate social responsibility engagement of financially distressed firms and their bankruptcy likelihood. Advances in Accounting, 43, 32-45.
[17]Lins, K. V., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. Journal of Finance, 72(4), 1785-1824.
[18]MSCI Inc. (2022). MSCI ESG Ratings Methodology. MSCI ESG Research LLC.
[19]Serafeim, G., & Yoon, A. (2022). Stock price reactions to ESG news: The role of ESG ratings and disagreement. Review of Accounting Studies, 28(3), 1500-1530.
[20]Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. Sociological Methodology, 13, 290-312.
[21]Wang, Q., Wong, T. J., & Xia, L. (2008). State ownership, the institutional environment, and auditor choice: Evidence from China. Journal of Accounting and Economics, 46(1), 112-134.