



# How does environmental regulatory stringency shape ESG? Evidence from cross-listing

Rufei MA<sup>a</sup>, Yuhua CHEN<sup>a</sup>, Qiang JI<sup>b,c,\*</sup>, Pengxiang ZHAI<sup>d,\*</sup>

<sup>a</sup> School of Business, Macau University of Science and Technology, Taipa, Macao, 999078, China

<sup>b</sup> Institutes of Science and Development, Chinese Academy of Sciences, Beijing, 100190, China

<sup>c</sup> School of Public Policy and Management, University of Chinese Academy of Sciences, Beijing, 100049, China

<sup>d</sup> School of Economics and Management, Beijing University of Chemical Technology, Beijing, 100029, China

## Abstract

This paper investigates whether and how the regulatory environment shapes firm-level ESG performance. Using a sample of firms cross-listed in the Chinese mainland and the Hong Kong China stock markets, we find that a stricter regulatory framework brings better firm-level ESG performance. This positive impact on ESG performance is more profound in firms with higher degrees of reputational pressure, which supports the reputational bonding hypothesis. We also find that the Hong Kong China market demonstrates stronger ESG endorsement for cross-listed firms. In general, our findings highlight the importance of a stringent regulatory environment and justify regulatory modifications in regions that do not yet mandate ESG disclosure.

## Background

- ESG has become a core global agenda in sustainable development and green finance.
- Heterogeneity in ESG policies across countries leads to varying levels of ESG performance.
- Hong Kong China has mandated ESG disclosure, fostering a market with high shareholder engagement. In contrast, the Chinese mainland maintains a voluntary framework.
- Cross-listing between Chinese mainland and Hong Kong China provides a quasi-natural experiment due to distinct regulatory environments.

## Objectives

- To examine whether stricter regulatory environments improve firm-level ESG performance.
- To investigate the channel through which regulatory stringency influences ESG.
- To provide policy implications for enhancing ESG disclosure frameworks, especially in emerging markets.

## Methodology

- Data: The sample consists of Chinese firms listed exclusively on the mainland market and firms cross-listed on both the Chinese mainland and Hong Kong markets.
- Variables: ESG rating, dummy variable denoting cross-listed status, controls (e.g., size, age, ROA, leverage).
- Analysis: Regression analysis with year and industry fixed effects.
- Subgroup Analysis: Differentiated by environmental sensitivity, key pollution-monitoring status, and company transparency.
- Robustness: Alternative ESG ratings, treatment effect model, propensity score matching, and prerequisite validation.

## References

- Boubakri, N., El Ghouli, S., Wang, H., Guedhami, O., & Kwok, C. C. (2016). Cross-listing and corporate social responsibility. *Journal of Corporate Finance*, 41, 123-138.
- Coffee Jr, J. C. (1998). Future as history: The prospects for global convergence in corporate governance and its implications. *Nw. UL Rev.*, 93, 641.
- Coffee Jr, J. C. (2002). Racing towards the top: The impact of cross-listing and stock market competition on international corporate governance. *Colum. L. Rev.*, 102, 1757.
- Krueger, P., Sautner, Z., Tang, D. Y., & Zhong, R. (2024). The effects of mandatory ESG disclosure around the world. *Journal of Accounting Research*, 62(5), 1795-1847.
- Siegel, J. (2005). Can foreign firms bond themselves effectively by renting US securities laws?. *Journal of Financial Economics*, 75(2), 319-359.

## Results

- **Main Finding:** Cross-listed firms exhibit significantly higher ESG performance compared to non-cross-listed firms.

	1	2	3	4	5
<i>Crosslist</i>	0.783*** (0.036)	0.250*** (0.036)	0.229*** (0.036)	0.323*** (0.036)	0.304*** (0.036)
<i>Size<sub>t-1</sub></i>		0.250*** (0.005)	0.260*** (0.005)	0.248*** (0.005)	0.258*** (0.006)
<i>Age<sub>t-1</sub></i>		-0.108*** (0.007)	-0.103*** (0.007)	-0.114*** (0.007)	-0.109* (0.007)
<i>ROA<sub>t-1</sub></i>		4.873*** (0.132)	4.749*** (0.131)	5.199*** (0.133)	5.071*** (0.133)
<i>Lever<sub>t-1</sub></i>		-0.526*** (0.034)	-0.590** (0.035)	-0.635*** (0.035)	-0.690*** (0.036)
<i>EBITDA<sub>mar,t-1</sub></i>		-0.205*** (0.039)	-0.203*** (0.039)	-0.358*** (0.041)	-0.349*** (0.041)
Constant	4.063*** (0.006)	-1.148*** (0.110)	-1.370*** (0.114)	-1.043*** (0.110)	-1.253*** (0.114)
Industry FE	No	No	No	Yes	Yes
Year FE	No	No	Yes	No	Yes
Observations	33 579	33 579	33 579	33 579	33 579
Adjusted R <sup>2</sup>	0.011	0.163	0.168	0.179	0.184

Note: Heteroskedasticity-robust standard errors in parentheses, \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

- **Channel Analysis:** The positive effect of cross-listing is stronger for firms under higher reputational pressure. Coefficients are larger for firms in:
  - Environmentally sensitive industries.
  - Key pollution-monitoring units.
  - Firms with low information transparency.
- **Market Reaction:** Hong Kong China market reacts positively to ESG improvements. Chinese mainland market shows no significant reaction to ESG improvements.

## Conclusion

- Cross-listed firms (listed in both Hong Kong China and the Chinese mainland) exhibit significantly higher ESG performance than those listed only in the Chinese mainland market.
- Reputational bonding is a key mechanism: firms facing stronger reputational concerns are more motivated to enhance their ESG practices to build credibility.
- Hong Kong China market responds positively to ESG improvements, while Chinese mainland market shows no significant reaction, indicating investor preference differences.
- Findings support the importance of establishing stringent regulatory frameworks in promoting ESG performance, particularly in emerging markets.

## Contact

Supervisor: Prof. Rufei Ma,  
Email: rfma@must.edu.mo

Yuhua Chen, PhD in Management, Class of 2025,  
Email: chen\_yuhua\_chen@outlook.com