Shirking under Political Connections: Evidence on Corporate Environmental Performance from the Low-carbon City Program in China

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Abstract

With China's commitment to the "double carbon" goals, an increasing variety of environmental policies have emerged. Unlike many compulsory policies studied previously, the LCCP is a relatively voluntary policy with weak enforcement.

This study applies a staggered difference-in-differences (DID) approach based on a policy shock, the **low-carbon city pilot (LCCP)** policy, to examine how firms respond regarding **environmental performance** in the presence of **political connections**.

The study shows that firms with central- and provincial-level political connections underperform compared to non-connected firms after the LCCP implementation, especially in highly polluting industries. Further analysis reveals that firms with access to green subsidies tend to hold more cash rather than invest in green innovations, potentially distorting resource allocation and policy effectiveness.

Introduction

Environmental laws have witnessed a 38-fold increase since 1972, and insufficient enforcement remains a major challenge to mitigating climate change. Meanwhile, some **environmental policies** have also led to unintended consequences, such as unethical strategic corporate responses, including emissions outsourcing or shifting (Dai et al., 2021; Bartram et al., 2022).

Moreover, **firms' political connections** moderate the effectiveness of these policies. Research on the role of political connections in corporate environmental performance under environmental policies reveal multiple channels and produce mixed results. **Exploiting the staggered implementation of the LCCP across different areas of China**, this study applies a difference-in-difference (DID) approach to a sample of Chinese listed firms from 2008 to 2017.

This study **contributes** to the literature in three important ways. **First**, it adds to the research on how political connections shape corporate responses to government environmental policies. **Second**, the study contributes to the literature on the assessment of environmental policy effectiveness, which offers a potential solution to the puzzle of mixed results regarding the corporate outcomes of environmental policies in previous studies. **Third**, the study contributes to the research on the resource misallocation problem associated with political connections (Piotroski and Zhang, 2014; Fang et al., 2023).

Institutional Background, Literature & Hypotheses

Given the weak incentives and constraints of the LCCP, the study expects it to be easily exploited by political connections, whose "helping hand" can shield connected firms from local government monitoring.

Given the political hierarchy ranking system in China, connections with higher-ranking institutions typically have higher status and greater influence (e.g., Cartier, 2016). Therefore, the study expects the effect on connected firms to be amplified when firms have connections at higher levels.

Subsidy programs have shown higher effectiveness and stimulated more innovation following anticorruption efforts. Therefore, while the LCCP aims to support green innovation (Li et al., 2024), the study expects that political connections will lead to resource misallocation and inhibit the efficient use of these resources.

This study proposes that: **Hypothesis 1.** Politically connected firms show poorer environmental performance following the launch of LCCP.
Hypothesis 2. The effect on connected firms is stronger when they are connected with higher-level political institutions.
Hypothesis 3. Politically connected firms receive more government subsidies than other firms following the LCCP; however, they do not increase their efforts in green innovation.

Research Design

This study uses a staggered difference-in-differences (DID) model and the specific model was set:

$$Y_{i,t} = \beta LCCP_{i,t} + \gamma' X + \theta_t + \theta_j + \theta_s$$

$$Y_{i,t} = \beta_1 LCCP_{i,t} \times Connections_{i,t} + \beta_2 LCCP_{i,t} + \beta_3 Connections_{i,t} + \gamma' X + \theta_t + \theta_j + \theta_s$$

Empirical Analyses

After the implementation of the LCCP, firms' environmental scores decreased by 0.423 relative to the mean environmental score, at the 1% significance level, which supports **Hypothesis 1.**

The regression results indicate that when affected firms have one additional director at the central (provincial) level, the environmental score decreases by 0.523 and 0.146 after the LCCP implementation, and the effect is statistically significant at the 1% and 5% levels. Thus supporting **Hypothesis 2**.

Connected firms receiving greater government assistance increase their cash holdings but do not increase their R&D expenditure or green patent output, which supports **Hypothesis 3**.

Table 1. LCCP and political connections on firms' environmental performance

	(1) Env score All	(2) Env All	(3) Env score All	(4) Env All	(5) Env score High pollution	(6) Env score Low pollution
LCCP	−0.411**	−0.423**	0.149	0.144	0.052	0.147
	(0.166)	(0.163)	(0.173)	(0.165)	(0.449)	(0.170)
Central level directors			0.502***			
			(0.103)			
LCCP × central level			-0.523***			
			(0.093)			
Province level directors			0.074			
			(0.075)			
LCCP × province level			−0.146**			
			(0.072)			
City level directors			−0.037			
			(0.088)			
LCCP × City level			0.003			
			(0.097)			
Size		1.049***	0.967***	0.976***	1.135***	0.880***
		(0.108)	(0.107)	(0.107)	(0.263)	(0.123)
Leverage		−0.103	−0.044	−0.065	0.046	−0.106
		(0.338)	(0.337)	(0.336)	(0.795)	(0.366)
PPE		0.267	0.192	0.188	0.005	0.759
		(0.477)	(0.478)	(0.479)	(0.945)	(0.570)
ROA		1.317*	1.312*	1.339*	3.181*	0.454
		(0.765)	(0.764)	(0.767)	(1.727)	(0.800)
GDP per capita		0.028**	0.026**	0.026**	0.072*	0.011
		(0.012)	(0.012)	(0.012)	(0.040)	(0.013)
Q		0.140***	0.125***	0.126***	0.180**	0.089***
		(0.024)	(0.023)	(0.023)	(0.071)	(0.024)
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
City FE	Y	Y	Y	Y	Y	Y
N	20251	20251	20251	20251	5595	14597
R^2	0.566	0.570	0.573	0.573	0.581	0.576

Conclusions and Policy Implications

The study comprehensively examines the effects of the LCCP implementation on firms' environmental performance in relation to political connections, which presents evidence that political connections can unexpectedly inhibit corporate environmental performance following the implementation of the LCCP. Additionally, connected firms benefit more from government support, such as subsidies and long-term debt, but fail to utilize these resources effectively.

This provides the following policy implications: **First**, it is neither fair nor market-efficient for connected and non-connected firms to compete under identical constraints. Differentiated policies should be applied to different types of firms accordingly. **Second**, anticorruption campaigns, such as Rule 18, are essential. Moreover, if policies are consistently designed to favor non-connected firms and limit the influence of political connections, the value of these connections will diminish over time.

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References

1. Bartram, S. M., Hou, K., and Kim, S. (2022). Real effects of climate policy: Financial constraints and spillovers. *Journal of Financial Economics* 143(2), 668-696.
2. Dahlmann, F., Branucki, L., and Brammer, S. (2019). Managing carbon aspirations: The influence of corporate climate change targets on environmental performance, *Journal of Business Ethics* 158, 1-24.
3. Fang, L., Lerner, J., Wu, C., and Zhang, Q. (2023). Anticorruption, government subsidies, and innovation: Evidence from China. *Management Science* 69(8), 4363-4388.
4. Qian, W., and Chen, X. (2021). Corporate environmental disclosure and political connection in regulatory and leadership changes: The case of China. *British Accounting Review* 53(1), 100935.
5. Schoenherr, D. (2019). Political connections and allocative distortions. *Journal of Finance* 74(2), 543-586.
6. Wen, H., Chen, S., and L, C. (2023). Impact of low-carbon city construction on financing, investment, and total factor productivity of energy-intensive enterprises. *The Energy Journal* 44(2), 79-102.
7. Zeng, S., Jin, G., Tan, K., and Liu, X. (2023). Can low-carbon city construction reduce carbon intensity? Empirical evidence from low-carbon city pilot policy in China. *Journal of Environmental Management* 332, 117363.