Research on Corporate Social Responsibility Choice Based on Big Data Analysis

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Abstract—This paper empirically examines how firms react to intense anti-corruption campaign with corporate social responsibility using econometric evidence. Using a sample of 20748 data of 3257 Chinese listed firms from 2010 to 2018 with manually collected provincial conviction and politician downfalls data, we empirically observe that firms located in areas with high anti-corruption intensity perform better in corporate social responsibility. Consistent with a political view, the relationship is weaker for firms that already own political connection resources. Our findings shed light on how firms choose their corporate social responsibility performance under anti-corruption pressure.

Keywords-Corporate social responsibility; anti-corruption campaign; big data analysis; empirical research

1. Introduction

Corruption has always been a global focus, especially in developing economies. Corruption is fatal to both social equity and economic development. There are various studies shows that corruption wastes social resources, thereby inhibits economic growth and employment and erodes trust in government (Shleifer and Vishny, 1993 [1]; Mauro, 1995 [2]; Rose-Ackerman, 2016 [3]). For firms, studies show that corruption induces firms to engage in rent-seeking activities and leads to overlook of social responsibility (Jensen, 2002 [4]; Ucar, 2020 [5]). These studies examine how corruption affect economy and firms' activities, but it is not clear how anti-corruption intensity impacts on corporate social responsibility(CSR) in condition of the institutional pressure. In the process of operation and development, firms need to establish good relationship with government to obtain resources and avoid political risks. Since government have always been encouraging firms to participate in social responsibility activities, CSR can be a inconspicuous way to win favor of government, especially under the institutional pressure of anti-corruption.

The purpose of this study is to investigate the effect of anti-corruption intensity on firms' performance of social responsibility activities from the perspective of political pressure using provincial-level data in China. China is one of the regions with serious corruption. With the localization, privatization and opening up in the process of transformation, the possibility of corruption has been greatly increased. At the end of 2012, under the leadership of President Xi, the Chinese government launched the largest nationwide anti-corruption campaign in the

history of the Communist Party of China. Therefore, it naturally provide us the setting to investigate the following questions: Will the anti-corruption movement reduces the negative effect of corruption on corporate social responsibility performance? Other than diminish corruption, what is the effect of anti-corruption on firms' social responsibility because of its political edge?

In this paper, we focus on how anti-corruption intensity impacts on corporate social responsibility performance in three aspects. As an important stakeholder of firms, every movement of the government will attract the attention of firms and lead to their responding actions (Du et al., 2016[6]; Chang et al., 2021[7]). Strategically, CSR is not only the altruistic impulse, but also a significant approach to maintain relationships with stakeholders and create value(Wood and Jones,2013[8]). Although the anti-corruption campaign does not naturally involve dimensions of social responsibility, as a nationwide revolution, it is expected to exert institutional pressure on firms, even if the pressure is indirect and informal (Cui and Jiang, 2012[9]), and impacts on firms' CSR strategy.

2.   Literature Review and Hypothesis Development

The anti-corruption campaigns around the world has attracted the attention of academics. Studies find that from the macroeconomic perspective, the campaign improves the administrative efficiency of the government, breaks the collusion between government and firms, improves the bank loan contracting efficiency and marketisation degree, and even promotes regional economic growth. For firms, the campaign increases the cost of rent-seeking and building political connection, weakens the rent-seeking motivation of enterprises, thus reduces the related hospitality expenses and financial fraud, and increases the investment in innovation, improves the innovation ability, the cash holding, the operating efficiency and value of firms.

In China, due to the particularity of the government regime and the complexity of the relationship between politics and commerce, there is an inextricable relationship between official corruption and corporate social responsibility. Previous studies find that corruption impacts corporate social responsibility in social and political ways. From the view of social environment, scholars find corrupt environment is egocentric and brings about the uncertainty in commercial environment, thus has a negative effect on firms' participation in social interest. Ucar and Staer (2020) [5] find that the social atmosphere regarding public interest is affected by local corruption, and firms are less likely to "do-good" in corrupt environment. Chantziaras et al. (2020) [10] find that in highly-corrupt social environment, pursuing opportunistic private gains to the detriment of the collective good is conceived of as normality, thus firms are less interested in allocating limited resources to CSR.

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pressure on firms, even if the pressure is indirect and informal(Cui and Jiang,2012[9]), and impacts on firms' CSR strategy.

The improvement of CSR performance plays an important role on delivering altruistic signals to government, financial market and the whole society, thus help build corporate ethics and accumulate moral capital, to win the favor of new government, avoid political risks and establish political relationship.

Under the institutional pressure of anti-corruption environment, in order to reduce political risks and build new political relationship, firms are likely to strategically send a subtle but positive signal to the government that express their law-abiding and concerns about people's livelihood, in a legal and inconspicuous way with better CSR performance.

Thus, the testable hypothesis is as follows.

H1: Anti-corruption intensity has a positive effect on corporate social responsibility performance.

As we stated earlier, in the anti-corruption campaign, the purpose of firms actively improving CSR performance is to send positive signals to seek political connections, while firms that already own political connection have little incentives to improve CSR. As the anti-corruption campaign only focuses on government officials rather than members in NPC or CPPCC, the original political connection through the appointment of members in NPC and CPPCC is not disappearing. Meanwhile, as an altruistic behavior that focuses on people's livelihood and serves the society, CSR performance can also help entrepreneurs gain social support and respect, so that they can be elected as NPC deputies or CPPCC members based on their reputation, thus further strengthening the political relationship between enterprises and new government leaders. Therefore, firms without executive political connection are more eager to establish political relationship through CSR performance.

H2: Conditional on anti-corruption intensity, firms with political connections are less likely to improve CSR performance.

3. Research Design

3.1 Sample and Data

Our sample selection starts with all listed firms in China's A-share markets from 2010 to 2018, excluding the firms in financial industry or with special treated (ST) signal. We use corporate social responsibility performance data from the social responsibility report evaluation database via HeXun. For anti-corruption intensity, the data is manually collected from the Procuratorial Yearbook of China and the annual report of the provincial People's Procuratorate. Other financial data are from CSMAR and WIND databases. Finally, we have 20,748 observations.

3.2 Major Variables

In this paper we measure the provincial anti-corruption efforts in two ways. We follow Fan et al. (2014)[12] and manually collected all of the high-ranking officials whom are arrested because of corruption, bribery, and malfeasance from the procuratorate websites, and define $ANTICORR_1$ equals 1 if there were high-ranking officials been arrested in the province in a

certain year. We define high-ranking officials as leading roles of province, top leaders of city, since officials in these positions has great influence in the area.

Meanwhile, following prior studies (Cole,2009[10]; Xu and Yano,2017[11]), we hand-collected the detailed data of the high-ranking officials been arrested, the number of criminals and convictions of corruption, bribery, and malfeasance, and define two variables as anti-corruption intensity. $ANTICORR_2$ equals the number of criminals per 10,000 officials in a certain area in a certain year, $ANTICORR_3$ equals total number of criminals in a certain area in a certain year.

Following prior studies (Ucar and Staer, 2020[5]), we define CSR as the grade of corporate social responsibility performance from HeXun database, and define PC equals 1 if the chairman of the board or the general managing director owns the membership in CPPCC or NPC of executives, and 0 otherwise.

We control firms' value (TOBINQ), profitability (ROA) for financial situation, and employee number (EM), duality of CEO and chairman (PT), director number (BN), proportion of independent director (DD), institutional ownership (IVPER), and business duration (AGE)for corporate governance situation. All data were collected from the CSMAR and WIND database.

Fig1. shows the number of criminals and convictions from 2010 to 2018, which was stable before 2012, and has increased sharply since 2012, peaked at 2014 and then declined rapidly. It is highly consistent with the trajectory of the large-scale anti-corruption campaign launched by President Xi.
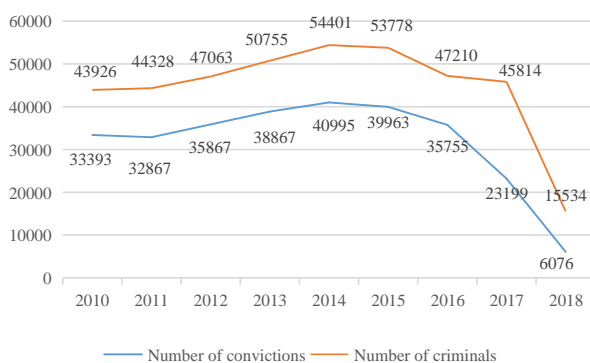

Figure 1 Number of criminals and convictions from 2010 to 2018

3.3 Empirical Model

To test the effect of anti-corruption intensity on corporate social responsibility performance, as well as the moderating effect of political connections, our regression models are as follows:

$$CSR = \alpha + \beta_1 \, ANTICORR + \beta_2 \, Controls + \varepsilon \qquad (1)$$

$$CSR = \alpha + \beta_1 ANTICORR + \beta_2 \, PC + \beta_3 \, ANTICORR * PC + \beta_4 \, Controls + \varepsilon \qquad (2)$$

4. Empirical Results

4.1 Descriptive Analysis

We report the summary statistics for the main variables in Table 1.

Table 1 Descriptive Analysis

Variables	N	Mean	STD	Min	Max
CSR	20,748	26.05	17.36	-19.75	92.09
$ANTICORR_1$	20,748	0.385	0.487	0	1
$ANTICORR_2$	20,748	24.71	11.69	0.377	69.46
$ANTICORR_3$	20,748	1,649	1,066	18	4,523
PC	20,748	0.219	0.413	0	1
TOBINQ	20,748	2.217	4.387	0.00249	349.0
ROA	20,748	0.0447	0.170	-1.558	20.79
BN	20,748	8.743	1.870	3	21
DD	20,748	0.374	0.0557	0	0.800
PT	20,748	0.251	0.434	0	1
EM	20,748	7,034	26,910	7	552,810
IVPER	20,748	2.492	6.154	0	75.05
AGE	20,748	16.48	5.624	1	51

4.2 Multi-regression Analysis

Table 2 presents the results of our regression with different measures of anti-corruption intensity ($ANTICORR_1$, $ANTICORR_2$, $ANTICORR_3$) and CSR performance (CSR) in column 2-1 to 2-3 respectively. $ANTICORR_1$ and $ANTICORR_2$ are significantly positively associated with CSR at 5% level, $ANTICORR_3$ is significantly positively associated with CSR at 1% level. The results suggest a positive impact of provincial anti-corruption intensity on local firms' corporate social responsibility performance.

Applying Model (2), we investigate the interaction effect between anti-corruption intensity and political connection on CSR performance. Table 3 presents that the coefficients of ANTICORR * PC are all significantly negative, suggesting that firms with political connections are less responsive to institution pressure of anti-corruption intensity on CSR performance. Our findings provide evidence for H2, and indicate that firms are likely to use CSR performance to obtain political resources, especially when they don't own political connections.

Table 2 Anti-corruption Intensity and Corporate Social Responsibility Performance

Variables	CSR		
	2-1	2-2	2-3
ANTICORR	0.000**	1.006***	0.033**[a]
	(2.00)	(4.82)	(2.35)

Variables	CSR		
TOBINQ	-0.146***	-0.147***	-0.147***
	(-5.28)	(-5.34)	(-5.34)
ROA	6.251***	6.265***	6.263***
	(10.77)	(10.80)	(10.79)
BN	0.689***	0.691***	0.692***
	(5.59)	(5.62)	(5.62)
DD	9.212***	9.208***	9.233***
	(3.06)	(3.06)	(3.06)
PT	-0.534	-0.533	-0.534
	(-1.53)	(-1.53)	(-1.53)
EM	-0.000***	-0.000***	-0.000***
	(-2.77)	(-2.74)	(-2.79)
IVPER	0.278***	0.278***	0.280***
	(14.13)	(14.29)	(14.19)
AGE	-1.085***	-1.184***	-1.052***
	(-22.60)	(-25.41)	(-19.75)
Constant	33.734***	35.538***	32.934***
	(15.68)	(17.19)	(14.73)
Observations	20,748	20,748	20,748
R-squared	0.102	0.103	0.103
Number of code	3,257	3,257	3,257
Code FE	YES	YES	YES
Year FE	YES	YES	YES

a. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3 Anti-corruption intensity, political connection and corporate social responsibility performance

Variables	CSR		
CSR	3-1	3-2	3-3
ANTICORR	0.000	1.085***	0.026*[a]
	(1.50)	(4.63)	(1.76)
PC	3.483***	2.360***	3.832***
	(4.53)	(5.18)	(4.09)
ANTICORR * PC	-0.001**	-0.806*	-0.064**
	(-2.09)	(-1.76)	(-2.06)
Controls	YES	YES	YES

Variables	CSR		
Constant	32.479***	33.981***	32.056***
	(14.99)	(16.27)	(14.28)
Observations	20,748	20,748	20,748
R-squared	0.104	0.105	0.104
Number of code	3,257	3,257	3,257
Code FE	YES	YES	YES
Year FE	YES	YES	YES

a. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

5.   Conclusion

This study contributes to the growing literature on corporate social responsibility performance by examining the impact of institutional pressure arising from Chinese anti-corruption campaign, as well as the influence of political connection on such an impact. Using a sample of Chinese listed firms from 2010 to 2018, we obtain the following original findings. First, using manually collected Chinese provincial corrupt convictions and criminals data, we find a significantly positive association between anti-corruption intensity and corporate social performance, indicating that firms actively improve CSR performance to send positive messages under the institutional pressure of anti-corruption. Second, we document that the association is weaker when the firm already owns political connection, showing that firms without political connection are more eager to obtain political resources using CSR performance. Our findings are generalizable to other transitional or developing countries with weak legal institutions, low corporate social participation, or widespread corruption, providing a reference for anti-corruption measures in other developing countries.

References

[1]   Shleifer, A. and Vishny, R. W., "Corruption," The quarterly journal of economics, 108, pp. 599-617, (1993).

[2]   Mauro, P., "Corruption and growth," The quarterly journal of economics, 110, pp. 681-712, (1995).

[3]   Rose-Ackerman, S. and Palifka, B. J., Corruption and government: Causes, consequences, and reform: Cambridge university press, 2016

[4]   Jensen, G., "Institutional anomie and societal variations in crime: A critical appraisal," International Journal of Sociology and Social Policy, (2002)

[5]   Ucar, E. and Staer, A., "Local corruption and corporate social responsibility," Journal of Business Research, 116, pp. 266-282, (2020).

[6]   Du, J., Bai, T. and Chen, S., "Integrating corporate social and corporate political strategies: Performance implications and institutional contingencies in China," Journal of Business Research, 98, pp. 299-316, (2019).

[7]   Chang, Y., He, W. and Wang, J., "Government Initiated Corporate Social Responsibility Activities: Evidence from a Poverty Alleviation Campaign in China," Journal of Business Ethics, 173, pp. 661-685, (2021).

[8]   Wood, D. J. and Jones, R. E., "Stakeholder mismatching: A theoretical problem in empirical research on corporate social performance," The International Journal of Organizational Analysis, (1995).

[9]   Cui, L. and Jiang, F., "State ownership effect on firms' FDI ownership decisions under institutional pressure: A study of Chinese outward-investing firms," Journal of international business studies, 43, pp. 264-284, (2012).

[10]   Cole, M. A., Elliott, R. J. and Zhang, J., "Corruption, governance and FDI location in China: A province-level analysis," The Journal of Development Studies, 45, pp. 1494-1512, (2009).

[11]   Chantziaras, A., Dedoulis, E., Grougiou, V., and Leventis, S., "The impact of religiosity and corruption on CSR reporting: The case of U.S. banks," Journal of Business Research, 109, pp. 362-374, (2020).

[12]   Xu, G. and Yano, G., "How does anti-corruption affect corporate innovation? Evidence from recent anti-corruption efforts in China," Journal of comparative Economics, 45, pp. 498-519, (2017).

[13]   Fan, J. P., Wong, T. J. and Zhang, T., "Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms," Journal of financial economics, 84, pp. 330-357, (2007).