sustainability

MDPI

Article

The Impact of Government Participation in Ecological Championship on Heavily-Polluting Corporate Earnings Management: Evidence from China's National Civilized City Award

Jun Du [1,2], Xinhui Dai [1] and Bo Yan [1,2,*]

[1] College of Management, Guangdong Ocean University, Zhanjiang 524088, China; dujun58@126.com (J.D.); dai_xinhui2021@126.com (X.D.)
[2] Guangdong Academy of Coastal Economic Belt Development, Zhanjiang 524088, China
* Correspondence: yanbo@gdou.edu.cn; Tel.: +86-13652867827

Abstract: This study investigates the response of heavy-polluting firms to the political costs associated with local government participation in the ecological championship, with a specific focus on China's National Civilized City Award. Employing the fourth national civilized city selection as a quasi-natural experiment, the results reveal that heavy-polluting firms in cities with the prestigious National Civilized City Award title engage in income-decreasing earnings management to respond to rising political costs resulting from the National Civilized City Award campaign. Our findings are robust across various sensitivity analyses. Furthermore, we identify that the impact of the National Civilized City Award campaign on corporate earnings management is particularly pronounced among sub-samples characterized by non-state ownership, high visibility, and strong incentives for promoting local officials. Our study further elucidates that the increased political costs faced by heavy-polluting firms can be attributed to the local government's efforts to subject them to more stringent environmental enforcement to pursuing the honor of National Civilized City Award. This study contributes to the existing literature on the political cost hypothesis and provides a new perspective for understanding the impact of environmental regulation on corporate.

Keywords: ecological championship; civilized city; environmental regulation; earnings management; political cost hypothesis

Citation: Du, J.; Dai, X.; Yan, B. The Impact of Government Participation in Ecological Championship on Heavily-Polluting Corporate Earnings Management: Evidence from China's National Civilized City Award. *Sustainability* **2023**, *15*, 16113. https://doi.org/10.3390/su152216113

Academic Editors: Antonio Prencipe and Danilo Boffa

Received: 13 October 2023
Revised: 12 November 2023
Accepted: 16 November 2023
Published: 20 November 2023

1. Introduction

China's administrative system has continually maintained the traits of political centralization and monetary decentralization at the neighborhood level, and monetary increase is the predominant indicator for evaluating political overall performance [1]. Consequently, local governments often distribute resources to profitable companies and relax environmental regulations to attract investors [2,3]. Incentive distortions cause local administrators to concentrate exclusively on short-term GDP growth, disregarding long-term sustainable development. Incentive distortions lead to local officials focusing only on short-term GDP growth while neglecting long-term sustainable development. The GDP-oriented performance assessment standards and giant financial improvement mannequin have helped China acquire a collection of miracles in city financial improvement and populace growth. However, they have also led to increasingly acute contradictions between economic development and the ecological environment. Especially in urban areas with high population density and substantial resource consumption, frequent environmental deterioration, inadequate infrastructure development, and low efficiency in pollution prevention and control measures have been observed.

Guiding the aggressive conduct amongst neighborhood governments and incentivizing them to prioritize environmental protection in economic development has emerged

as a central challenge for the government. The central authorities in China have taken proactive steps to design a range of incentive mechanisms aimed at motivating local governments to effectively implement the directives and policy objectives set by higher levels of government. One notable initiative in this regard is the National Civilized City Award (NCCA) campaign (The National Civilized City Award is abbreviated later as NCCA), which seeks to encourage local governments to consciously cultivate a socially sustainable development model characterized by civility, harmony, environmental consciousness, and sustainability. It is an honorary incentive aimed at acknowledging cities for their incredible performance in city governance, in distinction to competitions fully targeted on GDP growth or command-and-control techniques to environmental rules [1,4].

The existing literature has provided evidence supporting the tremendous results of the NCCA campaign on urban environmental improvement. However, no study has explored in NCCA events the opportunistic conduct of heavily-polluting firms that worsen city pollution. We intend to tackle this hole by investigating the heavily-polluting firms' earnings management activities, which can also even involve fraudulent practices [5], as a response to political costs springing up from the local authorities participation in the NCCA campaign. Political costs arise as a result of political actions that are adverse to the interests of a corporation. The political costs encompass the potential wealth transfer that enterprises encounter due to factors such as industry regulation, tax obstacles, and other political activities [6,7]. The political costs incurred by heavily-polluting firms are a direct result of the NCCA campaign. Local governments engage in the NCCA campaign, which serves as a macro-level external environmental factor that influences the operations of heavily-polluting firms. This influence is mostly exerted through the imposition of political costs. In response, heavily-polluting firms strategically manipulate their earnings to reduce their level, aiming to minimize the likelihood of being subjected to regulatory oversight [6,7].

The NCCA campaign leads to political costs on heavily-polluting firms, as they are significant emitters of urban pollution. First, for local officials, environmental pollution can lead to punishment by the central government. In contrast, actively improving environmental quality to obtain the honor of NCCA can increase the probability of promotion [8], which is of great significance to their careers. As a result, local officials are incentivized to bolster environmental supervision and law enforcement for heavily-polluting firms operating within their jurisdiction. For the heavily-polluting firms, managing income to a possible decrease degree is really helpful for decreasing their political visibility and as a result lowering the opportunity of being regulated [9,10].

In accordance with prior research [8], we focus on the 4th NCCA campaign. After a comprehensive evaluation by the Chinese Central Civilization Commission, 34 cities were honored in 2015 for their achievements in political, economic, cultural, social, and ecological aspects. These designated Civilized Cities demonstrate a stronger commitment to environmental protection and pollution control. Consequently, heavy-polluting firms in NCCA-awarded cities face higher political costs compared to their counterparts in other cities. This unique setting provides an excellent quasi-natural experiment to explore the causal link between local government participation in ecological initiatives and corporate earnings management. Our panel comprises 4822 firm-years from 2009 to 2017, employing a difference-in-difference (DID) framework. This framework considers heavy-polluting firms in NCCA-awarded cities as the treatment group and their counterparts in other cities as the control group. With city, firm, and industry $\times$ year fixed effects, we control for unobservable factors at the industry and time levels. Our findings reveal that heavy-polluting firms in NCCA-awarded cities engage in more income-decreasing earnings management during the NCCA event.

This paper contributes to two strands of literature. Firstly, academia has long been concerned with the topic of earnings management. Although environmental issues have gained in importance recently and businesses are now subject to stricter environmental regulations and environmental policies than ever before, no one has yet examined the earnings

management strategies brought on by the political costs associated with environmental regulations. This paper adds new information to the political cost hypothesis by examining the profits management practices of heavily-polluting firms in response to the political costs brought on by local government involvement in the NCCA campaign.

Secondly, our paper adds to understanding the actual consequences of local government participation in the NCCA campaign. The positive impact of the NCCA campaign on improving the environment has been extensively studied [8,11,12]. However, as far as we are aware, no research has looked at how the NCCA campaign affected corporate earnings management practices. Our research thus adds to this body of literature.

This paper is set up as follows. The institutional background of the NCCA campaign, local government-business connections, and the development of hypotheses are presented in Section 2. Section 3 provides an overview of the data sources, main variables, and procedures used. In Section 4, we present the key empirical findings. The heterogeneity analysis and channel testing are reported in Section 5 and the conclusion is presented in Section 6.

2. Literature Review, Institutional Background and Hypothesis Development

2.1. Literature Review

This paper is connected to two distinct strands of literature. This study provides a comprehensive evaluation of the existing literature pertaining to the impact of local government involvement in the NCCA campaign.

Previous studies have primarily focused on command and control environmental policies, such as environmental inspections, and market-based incentives such as China's low-carbon city pilot program and carbon emissions trading [13]. However, limited attention has been given to the impacts of the NCCA campaign, an incentive policy implemented by the central government and targeted at local governments. Li et al. (2022) found a positive correlation between civilized city policies and enhanced energy efficiency, supporting the beneficial effects on sustainable development [14]. Li and Wen (2023) discovered that these policies positively impact urban green total factor carbon efficiency through reinforced environmental regulations, corporate innovation, and public engagement [1]. Liu et al. (2023) observed a notable correlation between the designation of cities as civilized and improvements in urban air pollution [12]. In addition, some studies have revealed that gaining the designation of civilized city greatly boosts the advancement chances of local officials [8].

Despite this, the existing literature on the impact of the NCCA campaign on local firms is scarce. Zhang et al. (2021) concluded that local government participation strengthens incentives for intervention in local firms, enhancing environmental but impairing financial performance in the short term [8]. Notably, no study has explored how local government engagement in the NCCA campaign influences firms' accounting decisions. This paper introduces a relatively novel perspective for future research on the impact of the NCCA campaign on firms' opportunistic behavior, particularly in terms of earnings management activities.

This paper contributes to the literature on factors influencing earnings management in organizations. Earnings management involves managers using discretion in financial reporting to manipulate financial statements, either to mislead stakeholders about the firm's economic performance or to influence contractual outcomes relying on reported accounting figures [15]. Higher absolute levels of earnings management are driven by incentives such as capital market expectations, contractual considerations, and the desire to avoid political costs [15]. Managers, aiming to meet capital market expectations, may increase earnings when a firm's performance falls short of analysts' predictions [16,17]. During events such as initial public offerings, additional issues, and rights offerings, managers might provide false financial information to investors [18,19]. Contractual incentives arise when accounting numbers regulate relationships such as management's compensation and debt contracts, leading managers to manipulate earnings to maximize personal benefits [20,21].

For example, during executive turnover, former executives may increase reported earnings to protect their interests and reputation [22]. Conversely, succeeding executives might engage in negative earnings management to enhance future performance [23]. Firms at risk of defaulting on debt contracts may make accounting choices to increase revenues and circumvent debt constraints [24].

Furthermore, one crucial incentive leads to earning management are political cost. Political costs refer to the increased costs that the private sector may face due to industry regulation, tax barriers, and other political activities, representing a transfer of wealth imposed by the government [6]. According to the political cost hypothesis, companies strategically manipulate accounting decisions to show reduced profits when anticipating potential negative consequences from political factors [6,7]. Firms manipulate earnings to minimize the net cost of potential regulatory outcomes under uncertain changing regulations and external conditions. For instance, high-revenue firms facing more income tax and regulations may adjust accounting policies and reduce closing inventory to avoid higher taxes and stricter regulation [10,25,26]. Corporations generating profits through troop fatalities face increased political costs, leading to earnings management. Boland and Godsell (2020) examined the correlation between political costs and profitability management for defense corporations, finding that local defense companies engage in diminishing returns earnings management to mitigate potential negative consequences [27].

Environmental pollution poses the primary source of political costs for heavy-polluting firms. These firms, pressured to address pollution issues, face reduced revenues during periods of scrutiny and criticism, as seen in the US chemical sector in 1979 [28]. Heavy-polluting firms engage in declining revenue earnings management to mitigate potential political costs arising from environmental regulations and public pressure [29,30].

While environmental issues have become increasingly significant in recent times, and companies are subject to more stringent environmental regulations and policies than ever before, there is still relatively limited research on the profit management strategies resulting from the political costs associated with environmental regulations. This paper diverges from prior research by centering its attention on the influence of local government involvement in the NCCA champion, a policy implemented by the central government to incentivize local governments, on the costs of local heavy-polluting firms. By examining the relationship between local government participation in the NCCA champion and the accounting decisions of local heavy-polluting firms, this paper provides a new perspective on government environmental regulation for studies related to political costs.

2.2. Institutional Background

2.2.1. National Civilized City Award Campaign

In the realm of China's rapid economic growth, a clash between social progress and environmental concerns arises, fueled by GDP-centric evaluations and an outdated economic model. Local authorities started pursuing civilized production based on the strategic goal of building a peaceful society proposed by the 16th CPC Central Committee's fourth plenary session. This sets the stage for the National Civilized City Award, a symbol of green and sustainable development. The NCCA is the most valuable honorary title granted to Chinese cities and a significant city brand [14].

Initiated in 2005, the NCCA evaluates cities comprehensively, focusing on political, economic, social, cultural, and ecological aspects. Over six rounds, numerous cities have earned the prestigious NCCA title, emphasizing the campaign's ecological civilization theme. In addition, one of the NCCA campaign's primary competition criteria is regional environment performance. Thus, the competing NCCA campaign revolves around ecological civilization, and the most direct and accurate indicator of the level of urban ecological civilization is the local environment [8].

Evaluating ecological standards poses a difficult task for local governments, who must fulfill the corresponding criteria to qualify. Through a variety of site visits, the Central Civilization Commission evaluates the advancement of environmental reform.

Sustainable ecology, which includes urban ecology and environmental pollution control needs, is one of the evaluation indicators. As an example, the national evaluation system for civilized cities mandates that the urban sewage treatment rate must exceed 60%, the air pollution index must exceed 80%, the coverage rate of areas with smog control measures must exceed 90%, and the investment index for environmental protection must exceed 2.0% (The comprehensive environmental index of the evaluation method is provided in Appendix A). The negative list and dynamic management of civilized cities are also noteworthy, encompassing measures such as the enforcement of punishments like notice of criticism, suspension of the city's status as a civilized city for one year, cancellation of the city's right to participate in evaluations, and revocation of the honorary title of a civilized city for varying degrees of issues.

The NCCA's significance extends beyond environmental accolades; it becomes a potent marketing tool for local officials. The Reform of Political Performance Appraisal Standards in 2006 marked a pivotal shift, giving equal importance to environmental preservation and local economic development in performance evaluations. Notably, local officials, driven by strong promotion incentives, strategically allocate resources to actively participate in the NCCA campaign, aiming for swift title acquisition [8].

2.2.2. The Relationship between Government and Firms in China

China's current transition period is marked by imperfect systems and laws. One unique feature of China's political and economic structure is the intricate relationship between local governments and enterprises, making government action a crucial external institutional component [8]. Mandated since 1999 by the 14th CPC Central Committee, the establishment of a modern enterprise system aimed to separate government and business functions. However, local governments, armed with significant scarce resources, influence regional enterprises behavior and incentives [31]. Despite intended separation, businesses often forge partnerships with local governments to gain access to limited resources and secure political support [32,33]. In this dynamic, firms become "assistants" to government officials in achieving political objectives, facing uncontrollable political pressure that negatively impacts their performance and increases the risk of stock crashes [34,35].

Heavy-polluting firms are not only the primary consumers of urban resources but also the manufacturers of urban pollution. Faced with the enormous pressure on urban environmental performance in the process of the NCCA campaign, local governments expect local heavy-polluting firms to contribute to improving environmental performance [8]. As a result, it is only natural for local governments to blame heavy-polluting companies for environmental pollution during the NCCA campaign. These companies will be subject to stricter environmental enforcement and higher emission requirements during this time, which will increase their political costs. For local heavy-polluting firms, however, helping local governments improve their environmental performance would reduce profits and increase tax costs, known as political costs, and could harm long-term corporate profitability. Local enterprises with high levels of pollution tend to deliberately underperform in order to avoid or minimize the political costs associated with being picked by local governments to contribute to the improvement of urban environmental performance.

2.3. Hypothesis Development

Political costs arise as a result of political actions that are adverse to the interests of a corporation. The political costs include the possible loss of wealth that businesses may experience as a result of things such as government rules, tax problems, and other political activities. In response, companies deliberately lower their earnings to lower their level, hoping to lower the chances of being watched by regulators [6,7]. Drawing on political cost theories, prior research has demonstrated that organizations tend to engage in income-decreasing earnings management as a response to anticipated political costs [27,30]. The political costs incurred by enterprises with high levels of pollution are a direct result of the NCCA campaign. Local governments engage in the NCCA campaign, which serves as a

macro-level external environmental factor that influences the operations of local enterprises that contribute to heavy pollution. This influence is mostly exerted through the imposition of political costs.

On the one hand, local governments have an incentive to actively participate in the competition and earn NCCA honors as early as possible. At the beginning of an honorary title, the host department often sets relatively high-performance standards to maximize the sound effect, and only the best-performing local government can meet the standards and receive the honorary title. On the other hand, local authorities are highly motivated to pursue promotion in order to earn recognition from the NCCA honors, so creating a powerful impetus for local governments to prioritize environmental preservation. In order to enhance their prospects for advancement, local officials may allocate greater attention to the NCCA campaign. Hence, it can be inferred that municipal authorities are driven by political incentives to enhance the environmental performance within their respective jurisdictions [8]. With this substantial incentive to earn the title of NCCA, local governments and officials tend to focus their human, material, and financial resources on rapidly improving the environmental performance of cities in the short term. When local governments engage in the NCCA campaign, they encounter challenging tasks and rigorous evaluations with regards to ecological environment norms. Local governments often implement more stringent environmental regulations for heavy-polluting firms operating within their jurisdictions due to their significant consumption of resources and contribution to pollution [29]. These regulations typically involve measures such as enhanced law enforcement and supervision, heightened environmental regulations, and increased investments in environmental protection. The origin of these funds is derived from various business entities. Local governments engage in resource transfers through related party transactions and the implementation of tax increases [36–38]

In light of stringent environmental regulations, managers of enterprises often engage in concealing their true performance in an effort to decrease their political visibility. This is achieved by assuming the identity of individuals belonging to disadvantaged groups, hence diminishing the likelihood of regulatory intervention. As per the adage, "The nail that protrudes is forcefully driven down", the financial status of other firms within the industry remains uncertain for heavily-polluting firms.

In order to avoid standing out as the most prominent entities, enterprises that engage in significant levels of pollution may engage in competitive practices aimed at manipulating their profitability to a reduced extent [30]. At the same time, according to prior research [39], certain companies may receive financial assistance from the government through the implementation of certain measures. Thus, we put forth the subsequent hypothesis:

Hypothesis 1. *Heavy-polluting firms conduct income-decreasing earnings management in response to local government participation in the NCCA champion.*

According to the fundamental Hypothesis 1, the decisions regarding profits management may exhibit variations among different ownership types in response to political expenses. State-owned enterprises, having intricate political connections, possess enhanced bargaining power with local and central governments. As a result, discretionary accruals in state-owned heavy-polluting firms may display lower sensitivity to the NCCA campaign. In contrast, non-state-owned enterprises, with limited bargaining power, are more susceptible to political costs. Thus, Corollary 1a posits that state-owned heavy-polluting firms are less inclined to engage in earnings management compared to their non-state-owned counterparts [30].

Corollary 1a. *During the NCCA event, non-state-owned heavy-polluting firms engaged in more income-decreasing earnings management than state-owned heavy-polluting firms.*

Based on the basic Hypothesis 1, when heavy-polluting firms are more visible (e.g., larger assets and higher profits), they are more likely to be intervened by the local gov-

ernment and face higher political costs. Previous studies on political costs indicate that larger and more profitable firms face increased regulation and taxation, leading to a greater incentive for concealing profits to mitigate potential political costs [6]. In the context of this research, firm visibility remains a crucial factor influencing political costs. As local governments engage in the NCCA campaign, they subject local heavy-polluting firms to rigorous evaluations of ecological criteria, increasing political costs for these firms. The paper argues that heavy-polluting firms with larger asset sizes are more likely to be targeted by governments to assist in environmental improvement tasks, as they are perceived as better equipped to undertake such responsibilities and contribute to enhancing the environment [40]. Therefore, this paper establishes Corollary 1b.

Corollary 1b. *The greater the visibility of the heavy-polluting firms are more likely to engage in income-decreasing earnings management during the NCCA campaign.*

Based on the basic hypothesis 1, officials that possess a greater motive for promotion are likely to exert increased effort towards the NCCA campaign, hence influencing the political costs borne by local heavy-polluting firms [8]. The nexus between local leaders' motivations and government actions in China is intricately linked. The likelihood of local leaders receiving promotions is positively correlated with their economic performance, compelling them to encourage substantial investments from enterprises to drive GDP expansion [41]. Reforms in the officials' assessment system have shifted higher-level governments' focus towards the overall performance of regional governance, transcending a singular emphasis on economic achievements. Local officials, driven by the opportunity to showcase their governing prowess and achieve success in the NCCA campaign, seek to enhance their chances of promotion, particularly crucial for those with strong promotion incentives. Consequently, this paper posits that heavy-polluting firms in jurisdictions where local officials have higher promotion incentives face elevated political costs. Thus, this paper proposes Corollary 1c.

Corollary 1c. *Heavy-polluting firms located in cities where officials have a greater motivation for promotion are more likely to engage in income-decreasing earnings management during the NCCA campaign.*

3. Research Methodology

3.1. Data Sources

This study focuses on the analysis of the 4th National Civilized City Evaluation in 2015 for two primary reasons. Firstly, it eliminates the influence of collusion between government and business. Prior to the nationwide anti-corruption campaign in 2012, instances of such collusion were prevalent. Local governments, driven by their economic development objectives and the pursuit of rent-seeking behavior by businesses, may have shielded heavily-polluting firms [42,43]. These heavily-polluting firms were not compelled to conceal profits to reduce their political visibility. Secondly, following the issuance of the "Guidance on Actively Harnessing Environmental Protection to Promote Supply-Side Structural Reform" by the central government at the end of 2016, environmental regulations mandated the closure of low-value, high-pollution enterprises (Data sources: https://baike.baidu.com/item/%E5%85%B3%E4%BA%8E%E7%A7%AF%E6%9E%81%E5%8F%91%E6%8C%A5%E7%8E%AF%E5%A2%83%E4%BF%9D%E6%8A%A4%E4%BD%9C%E7%94%A8%E4%BF%83%E8%BF%9B%E4%BE%9B%E7%BB%99%E4%BE%A7%E7%BB%93%E6%9E%84%E6%80%A7%E6%94%B9%E9%9D%A9%E7%9A%84%E6%8C%87%E5%AF%BC%E6%84%8F%E8%A7%81/19922851?fr=aladdin accessed on 12 October 2023). Consequently, businesses were less likely to resort to profit concealment to lower manufacturing costs, as doing so could result in the forced closure of heavily-polluting firms. Hence, this paper selects the 2015 4th National Civilized City Evaluation as the focal event for investigation, covering the sample period from 2009 to 2017.

Based on the industry classification guidance provided by the Chinese Securities Supervision Commission in 2012, this study focuses on the selection of listed companies operating in the heavy pollution industry within the Shanghai and Shenzhen Stock Markets during the period of 2009–2017. The financial statement data used in this research is sourced from the China Stock Markets and Accounting Research Database (CSMAR). Following previous study [30], we use office locations to align with city-level National Civilized City award data, as executives often make earnings management decisions from their primary workplace, and the accounting department responsible for financial data disclosure is typically in the same area.

To ensure robust findings, we rigorously selected our sample by: (1) excluding companies identified as ST and ST* or receiving preferential treatment from the stock exchange, and (2) eliminating data with significant missing or anomalous values in primary variables. The resulting sample comprises 702 companies, totaling 4822 firm-year observations (See Appendix B, for a detailed overview of the data selection methodology and composition of the sample).

The treatment sample consists of the heavy-polluting enterprises located in the fourth batch of national civilized city. The list of cities awarded the National Civilization City award is provided by the China Civilization Network. Figure 1 displays the spatial distribution of cities that have been awarded the fourth NCCA title.

Figure 1. Geographical distribution of cities receiving the fourth NCCA title.

3.2. Earnings Management Measurement

In accordance with the methodology proposed by Dechow et al. (1995), we proceed to estimate the modified Jones model, as depicted in Equation (1), for every year and industry [44]. This estimation allows us to compute the residuals ($DACC_{i,t}$), which serve as a measure of earnings management.

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_i \left[\frac{1}{A_{i,t-1}}\right] + \beta_i \left[\frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}}\right] + \gamma_i \left[\frac{(PPE_{i,t})}{A_{i,t-1}}\right] + \varepsilon_{i,t} \quad (1)$$

where TAi,t is total accruals scaled by the total assets of firm i in year t. $\Delta REV_{i,t}$ is the difference in revenue between year t and year $t-1$ scaled by total assets in year $t-1$ of firm i. $\Delta REC_{i,t}$ is the difference in net receivables between year t and year $t-1$ scaled by total assets in year $t-1$ of firm i. $PPE_{i,t}$ is the gross property, plant, and equipment of firm i in year t scaled by total assets in year $t-1$; $A_{i,t-1}$ is the total assets in year $t-1$ of firm i. We estimate Equation (1) for each two-digit industry-year with more than ten firm-year observations. $\varepsilon_{i,t}$ is the error term and our measure of earnings management. In addition,

following Jones (1991), we construct discretionary accruals measures using the Jones mode (*Jones*) [45].

3.3. Model Specification

The political cost theory suggests that firms, anticipating political costs, may adjust their accounting decisions to show lower profits. To investigate this, we explore whether highly polluting enterprises resort to income-reducing accruals when local governments participate in the NCCA campaign. We proceed to employ a difference-in-difference (DID) model Equation (2), as represented by the equation.

$$DACC_{i,t} = \beta_0 + \beta_1 Civilized_i \times Post_t + \gamma Controls_{i,t} + \eta_{j\times t} + \varphi_i + \varepsilon_{i,t} \quad (2)$$

where *DACCi,t* represents the discretionary accruals of firm *i* in year *t*, as determined by the calculation outlined in Equation (1). The declaration procedures and application practices of developed urban areas exhibit distinctive characteristics. The process of transforming a city into a civilized entity and achieving the prestigious title is estimated to need approximately three years [8]. At the same time, cities that have received the NCCA title still face a follow-up review after the selection process. Therefore, referring Zhang et al. (2021) and Li and Wen (2023) to we regard 2009 to 2011 as the basis period, and 2012 to 2017 as the event period of the NCCA campaign [1,8]. The variable *Civilized* is an indication that takes a value of 1 if a heavy-polluting firm is situated within a city that has been awarded the status of a national civilized city. Otherwise, it takes a value of 0. The variable *Post* is a binary indicator that takes the value of 1 if the year falls within the event period of the NCCA campaign, and 0 if the year falls within the basis period.

Leverage ($Lev_{i,t}$) is included due to Franz et al. (2014) find that linking it to earnings management to avoid debt covenant breaches [46]. Firm size ($Size_{i,t}$) is a control variable based on Siregar and Utama (2008) evidence of size-related variations in earnings management [47]. We consider financial performance variables—return on assets ($ROA_{i,t}$), firm growth ($S\_G_{i,t}$), and avoidance of losses ($Avloos_{i,t}$)—following Cui et al. (2021) approach [48]. Accounts receivable and inventory turnover ratio ($Rec\_Inv\_Tur_{i,t}$) are included as they relate to overall accruals and earnings management actions [10]. Aggregate remuneration ($Salary_{i,t}$) accounts for executive compensation variations [49]. Control variables also include the number of directors ($Directors_{i,t}$) and local economic indicators such as GDP ($Growth\_GDP_{i,t}$), as detailed in Table 1.

Table 1. Definition of research variables.

Variable Name	Definition
Dependent variables	
DACC	The value of the discretionary accruals, based on the updated Jones model and the math in Equation (1).
Jones	The magnitude of the discretionary accruals, as proposed by Jones (1991).
Control variables	
Lev	The ratio of total debt to total assets at the end of year t.
Size	The natural logarithm of the firm's total assets at the end of year t.
ROA	The ratio of net profit after tax in year t to total assets.
S_G	Growth rate of operating revenue.
Avloos	A dummy variable that equals one if the ROE is greater than or equal to zero and less than 1%
Rec_Inv_Tur	Accounts receivable turnover ratio add Inventory turnover ratio in year t.
Salary	Total salary paid for directors, supervisors and executives in year t (in million RMB).
Directors	corporate transparency score in year t, from 1 to 4.
Growth_GDP	Number of board members.

In order to account for variations within the sample, we employ a fixed effects model that incorporates company, city, and industry × year fixed effects for the purpose of estimating the regression. In all tests, we employ the practice of clustering standard errors by city. In general, it is anticipated that local enterprises with high levels of pollution will employ earnings management practices that result in decreased income during the NCCA

campaign, hence increasing the potential for political costs ($\beta_1 < 0$). The study framework depicted in Figure 2 is presented in this paper.

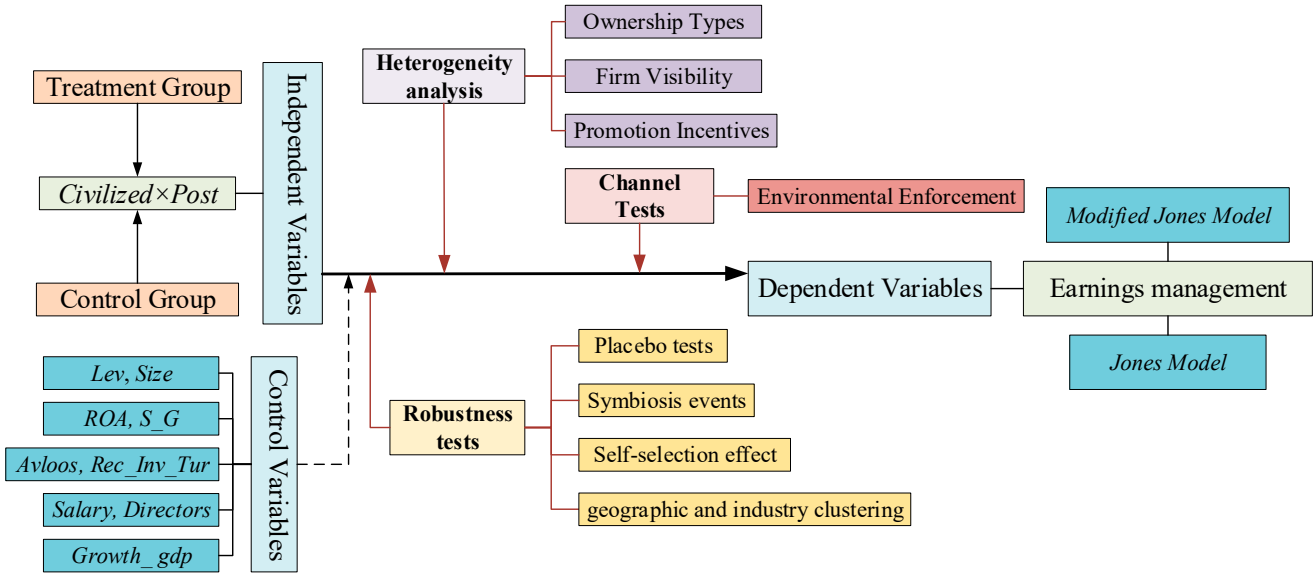

Figure 2. Research framework.

4. Discussion

4.1. Descriptive Statistics and Correlations

The findings of descriptive statistics for the main variables are presented in Table 2. The variable we are focusing on is discretionary accruals (i.e., DACC). The mean of discretionary accruals approximates zero for heavy-polluting firms, consistent with previous studies results [27,29]. The results of the descriptive statistics for the remaining control variables are also similar to the existing literature [50,51].

Table 2. Summary statistics.

VarName	Mean	Median	SD	Obs
DACC	−0.001	−0.001	0.085	4822
Lev	0.482	0.486	0.216	4822
Size	22.286	22.065	1.343	4822
ROA	0.028	0.026	0.061	4822
S_G	0.220	0.068	0.854	4822
Avloos	0.011	0.000	0.106	4822
Rec_Inv_Tur	0.206	0.188	0.129	4822
Salary	14.099	14.103	0.709	4822
Directors	2.182	2.197	0.203	4822
Growth_gdp	0.109	0.101	0.060	4822

Figure 3 presents the correlation coefficient graph of the main variables. The full sample correlation between our measure of NCCA title (i.e., Civilized) and discretionary accruals (i.e., DACC) is −0.018 but statistically insignificant. In conclusion, there is typically a modest level of correlation between other variable pairs. In other words, values less than 0.70 indicate the absence of multicollinearity.

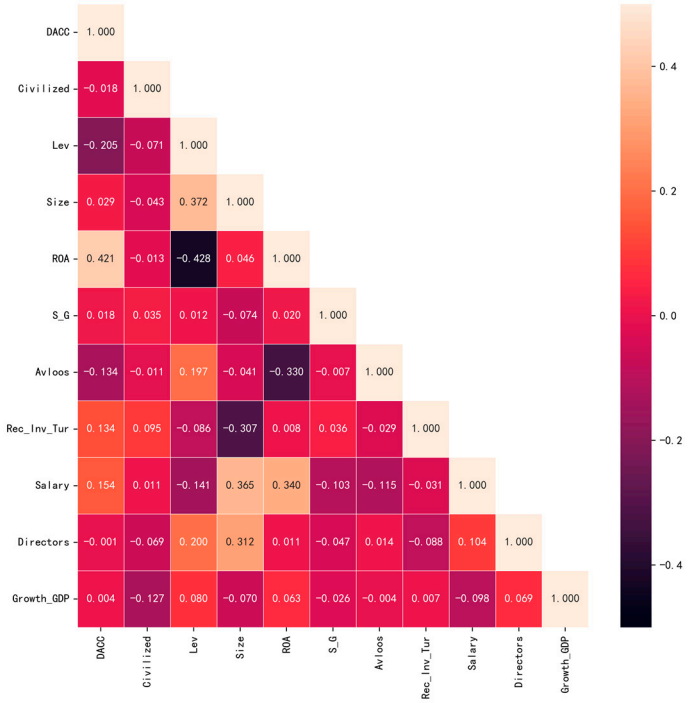

Figure 3. Heat map of correlation coefficients of main variables.

Furthermore, we proceeded with the analysis of descriptive data for the sample companies. Appendix A provides statistical information on the sample firms, including the annual distribution (Panel A) and industry category distribution (Panel B). Figure 4 illustrates the geographical distribution of the sample firms, emphasizing their concentration in China's central and coastal regions. While the sample firms are evenly distributed by year, industry and geographical clustering exists. To ensure robust conclusions, we conducted tests addressing industry and geographic clustering.

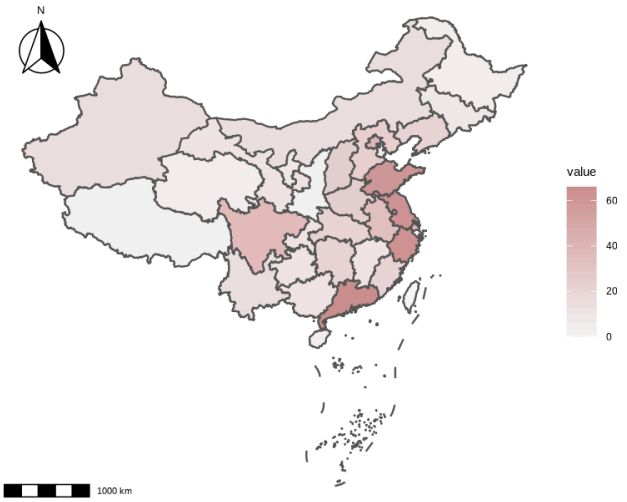

Figure 4. Geographical distribution of heavy-polluting firms.

4.2. Baseline Results

To assess the impact of the NCCA campaign on local heavy-polluting firms' income-decreasing discretionary accruals, we use Equation (2). The results are presented in Table 3. The variable Civilized × Post gauges the effect of the NCCA campaign on these firms' discretionary accruals. Across all columns, this variable consistently shows a statistically and economically significant negative coefficient. In Column 1, the coefficient is 0.0177

without control variables. Including an extensive set of controls in Column 2 yields a coefficient of 0.0162. The coefficient remains consistent at 0.0165 in Column 3, even with fixed effects for city, firms, and industry × year, controlling for stable state factors and varying industry elements over time.

Table 3. Basis regressions.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		DACC			Jones	
Civilized × Post	−0.0177 **	−0.0162 **	−0.0165 **	−0.0181 **	−0.0166 **	−0.0170 **
	(−2.1281)	(−2.2227)	(−2.2961)	(−2.2277)	(−2.2954)	(−2.3808)
Lev		−0.0761 ***	−0.0791 ***		−0.0735 ***	−0.0761 ***
		(−4.1114)	(−4.1543)		(−4.0311)	(−4.0673)
Size		0.0202 ***	0.0199 ***		0.0187 ***	0.0184 ***
		(3.1953)	(3.0798)		(3.0771)	(2.9520)
ROA		0.5821 ***	0.5803 ***		0.5760 ***	0.5745 ***
		(13.8243)	(13.5527)		(13.9526)	(13.6535)
S_G		−0.0021	−0.0023		−0.0026	−0.0028
		(−0.5671)	(−0.6511)		(−0.7151)	(−0.7966)
Avloos		0.0365 ***	0.0383 ***		0.0351 **	0.0367 ***
		(2.6264)	(2.7478)		(2.5313)	(2.6396)
Rec_Inv_Tur		0.1781 ***	0.1835 ***		0.1592 ***	0.1642 ***
		(4.6681)	(4.8044)		(4.3110)	(4.4434)
Salary		0.0019	0.0003		0.0018	0.0002
		(0.3467)	(0.0565)		(0.3265)	(0.0440)
Directors		−0.0044	−0.0025		−0.0051	−0.0035
		(−0.3028)	(−0.1662)		(−0.3609)	(−0.2382)
Growth_GDP		−0.0411	−0.0324		−0.0370	−0.0287
		(−1.0248)	(−0.8239)		(−0.9288)	(−0.7332)
Constant	0.0012	−0.4772 ***	−0.4545 ***	0.0031 ***	−0.4372 ***	−0.4123 ***
	(1.3396)	(−3.2571)	(−3.0694)	(3.4967)	(−3.0679)	(−2.8684)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	No	No	Yes	No	No	Yes
N	4822	4822	4822	4822	4822	4822
Adj. R^2	0.1798	0.3152	0.2861	0.1736	0.3069	0.2776

Note: This table shows the examination of the parallel trend hypothesis. The dependent variable in the first column is the earnings management indicator (*DACC*). In the second column, we use the earnings management indicator estimated by the Jones model (*Jones*) as the dependent variable for robustness testing and obtain similar conclusions. Controls are a set of Controls variables defined in Table 1. Firm FE represents firm fixed effects. Industry × Year FE stands for industry × year fixed effects. City FE stands for city fixed effects. T-statistics are reported in brackets below the coefficients. Standard errors are clustered at the city levels. ** and *** indicate significance at the 5% and 1% levels.

Columns 4–6 employ the Jones model (*Jones*) as the dependent variable for robustness testing, yielding consistent conclusions that strongly support our hypothesis 1. While we can't definitively dismiss the possibility of a relevant omitted variable contributing to these findings, the unpredictable and exogenous nature of the rise in political costs for local heavy-polluting firms due to local government involvement in the NCCA campaign significantly mitigates the risk of such an omission.

Reverse causation, which refers to the idea that corporate earnings management efforts can influence local government output in the NCCA campaign, is highly improbable and therefore not a significant danger to the inference. Our attention will be on the specifications listed in Column 3 of Table 3 for the next tests. With our set of control variables and fixed effects for city, firm, and industry×year, this specification has it all.

4.3. Dynamic Effect

The parallel trend assumption, crucial for unbiased difference-in-differences estimation, requires comparable patterns in earnings manipulation for both the treatment and control groups before the local government initiates the NCCA campaign. We use Equation (3) to test the dynamic effect of the event period of the NCCA campaign.

$$DACC_{i,t} = \beta_0 + \sum_{k=-3,k\neq 1}^{5} \beta_k Year_{2012+k} + \gamma Controls_{i,t} + \eta_{j\times t} + \varphi_i + \varepsilon_{i,t} \quad (3)$$

The variable $Year_{2012+k}$ represents a sequence of dummy variables that correspond to the k year after the policy impact. If k is a negative value, it denotes the k years preceding the occurrence of the policy impact. The remaining variables conform to the baseline model. We removed the year 2013 from our research since we designated the year following the policy shock as the reference group. If the coefficients β_{-3}, β_{-2}, and β_{-3} are statistically significant, the results suggest indicate potential selection bias, challenging the appropriateness of the control group as a counterfactual to the treatment group.

Table 4 the dynamic test results reveals insignificant differences before the event year (i.e., $Year_{2009}$, $Year_{2010}$, and $Year_{2011}$) but significantly different in and after the event year (i.e., $Year_{2012}$, $Year_{2014}$, and $Year_{2015}$). This indicates that our sample fulfills the parallel trend hypothesis, suggesting similar earnings management activities for firms in cities that received civilized titles and firms in other regions before the NCCA campaign.

Table 4. Dynamic effect.

Variables	(1) DACC	(2) Jones
$Year_{2009}$	−0.0155	−0.0145
	(−0.9690)	(−0.8982)
$Year_{2010}$	0.0022	0.0025
	(0.2022)	(0.2281)
$Year_{2011}$	0.0050	0.0053
	(0.5415)	(0.5887)
$Year_{2012}$	−0.0232 **	−0.0223 **
	(−2.2141)	(−2.0373)
$Year_{2014}$	−0.0283 **	−0.0283 **
	(−2.5973)	(−2.5705)
$Year_{2015}$	−0.0371 ***	−0.0377 ***
	(−3.3450)	(−3.3351)
$Year_{2016}$	−0.0098	−0.0104
	(−0.8551)	(−0.9271)
$Year_{2017}$	−0.0117	−0.0111
	(−1.0505)	(−0.9979)
Controls	Yes	Yes
Firm FE:	Yes	Yes
Industry × Year FE	Yes	Yes
City FE:	Yes	Yes
N	4822	4822
Adj. R^2	0.2875	0.2791

** and *** indicate significance at the 5% and 1% levels.

Furthermore, the dynamic test results showed that the difference between the treatment and control groups was significant only in the three years before the election but not in the two years after the election. The above dynamic test results indicate that the political cost brought by local government participation in the NCCA campaign to local heavy-polluting firms exists only before the announcement of the NCCA campaign results, after which the potential political cost decreases. The difference in earnings management between the treatment and control groups is insignificant, further validating the hypothesis

that the political cost brought by local government participation in the NCCA campaign to heavy-polluting firms.

4.4. Robustness Tests

4.4.1. Placebo Tests

An issue that may arise in this paper is that the regression results could be influenced by the random clustering of highly polluting companies in our sample, rather than being caused by the NCCA campaign. In order to eliminate this worry, this article employed a random selection process to choose fictitious experimental groups from the entire set of samples.

Theoretically, randomly forming virtual treatment groups ensures that their crossover terms not significantly impact the model-dependent variable. An equal number of companies, such as the last treatment group, were randomly selected as virtual firms in civilized cities, while the rest served as the control group. Cross-terms were then generated for regression analysis, and the corresponding coefficients were recorded.

We repeated this process 1000 times, analyzing whether the average coefficients approached 0. The kernel density distribution of regression coefficients from these self-sampling instances is shown in Figure 5 (In Figure 5, the fitting line of the blue dots represents the distribution of coefficients of the core explanatory variable in 1000 placebo tests. The results essentially follow a normal distribution, with the red dashed line at x = 0 serving as the axis of symmetry. The actual regression coefficient in this study is x = 0.0165). The results reveal a normal distribution, indicating no significant impact in these 1000 randomly chosen samples. As expected, the placebo test reaffirms the strength and reliability of the earlier estimations.

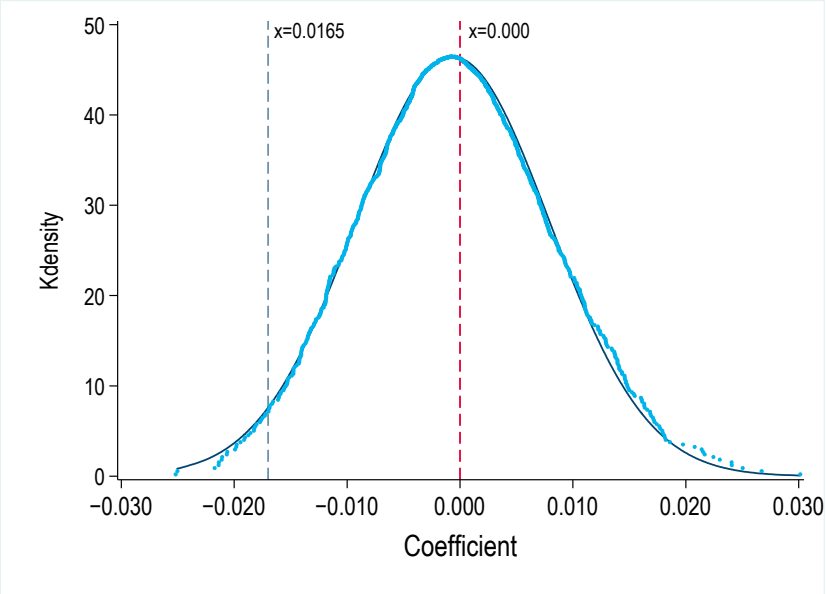

Figure 5. Nuclear density estimation map of the placebo test.

4.4.2. Symbiosis Events

While the civilized city policy is the focal point in the city competition, it is essential to address potential impacts from other competitions and experimental environmental policies such as the National Sanitary City selection, low-carbon pilot, and smart city pilot policies during the specified time frame. Following Xiao et al. (2021), the baseline regression incorporates cross terms of dummy variables representing these policies and historical trends to mitigate their influence on estimation outcomes [52]. Table 5 examines the effects of smart city pilot policies, low-carbon pilot, and National Sanitary City selection on the

main findings of this paper. Notably, all coefficients of Civilized × Post maintain significant positive values, reinforcing the validity of the earlier conclusion.

Table 5. Controlling the impact of other policies.

	(1)	(2)	(3)	(4)	(5)	(6)
	Smart City		Low Carbon City		Sanitary City Selection	
Variables	DACC					
Civilized × Post	−0.0149 *	−0.0208 **	−0.0173 **	−0.0205 **	−0.0153 **	−0.0142 *
	(−1.9540)	(−2.1186)	(−2.4272)	(−2.5692)	(−2.0836)	(−1.8283)
Civilized × Smart		0.0125				
		(1.1351)				
Civilized × Carbon				0.0073		
				(0.7442)		
Civilized × Sanitary						−0.0013
						(−0.1199)
Smart × TIM	Yes	Yes				
Carbon × TIM			Yes	Yes		
Sanitary × TIM					Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Other FE	Yes	Yes	Yes	Yes	Yes	Yes
N	4822	4822	4822	4822	4822	4822
Adj. R^2	0.2874	0.2873	0.2869	0.2868	0.2861	0.2859

Note: Civilized × Smart represents the interaction term between civilized cities and smart cities, and Smart × TIM represents the interaction term between smart cities and year dummy variables and the other interactions have similar meanings. * and ** indicate significance at the 10% and 5% levels.

4.4.3. Self-Selection Effect

Endogenous interference in the results may arise due to businesses engaging in self-selection behavior, posing a potential challenge to the basic regression's validity. Heavy-polluting businesses might deliberately choose locations with relaxed environmental regulations, introducing endogenous interference. To address this, we initially exclude firms that relocated during the study period, as heavy-polluting firms may move to areas with lenient environmental regulations, potentially affecting the results. After omitting 42 enterprises significantly contributing to pollution, the coefficient of Civilized × Post is −0.0155 and statistically significant at the 5% level, slightly lower than the basic regression's value. While acknowledging potential self-selection bias, the study's implications remain consistent with the regression results.

We further tested this using the PSM-DID technique by estimating the propensity score of businesses entering the treatment group by assessing the firm's performance indicators (i.e., Size, ROA, and S_G). Robustness was ensured through two matching methods: exact matching and local linear weighting. As seen in (3)–(6) of Table 6, our estimation results consistently support our expectations across different matching methods. Figure 6 illustrates that, post-matching, both treatment and control groups display similar density distributions of propensity scores.

4.4.4. Heavy-Polluting Firms' Geographic and Industry Clustering

We identified a concentration of heavy-polluting firms in specific provinces and industries. Notably, one-fifth of these firms are located in Guangdong and Shandong provinces. To address this, we reanalyzed our data after excluding Guangdong (436 observations) and Shandong (424 observations) provinces. The results, presented in Columns 1–4 of Table 7, remain consistent with our primary findings.

Table 6. Excluding the effects of self-selection.

	(1)	(2)	(3)	(4)	(5)	(6)
	Without Migration Samples		1:1 Matching		Local Linear	
Variables	DACC	Jones	DACC	Jones	DACC	Jones
Civilized × Post	−0.0155 **	−0.0158 **	−0.0307 *	−0.0307 *	−0.0294 *	−0.0293 *
	(−2.3662)	(−2.4476)	(−1.9267)	(−1.8888)	(−1.8058)	(−1.7518)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
N	4602	4602	1131	1131	987	987
Adj. R^2	0.2611	0.2526	0.2222	0.2108	0.1302	0.1145

* and ** indicate significance at the 10% and 5% levels.

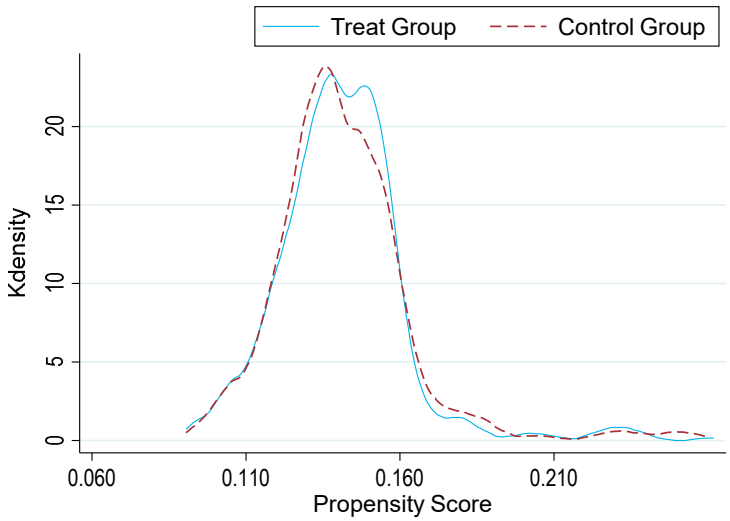

Figure 6. Density distribution.

Table 7. Excluding the effects of geographic and industry clustering.

	(1)	(2)	(3)	(4)	(5)	(6)
	City-Year Tests without Guangdong		City-Year Tests without Shandong		Industry-Year Tests without Chemical Industry	
Variables	DACC	Jones	DACC	Jones	DACC	Jones
Civilized × Post	−0.0122 *	−0.0128 *	−0.0230 ***	−0.0235 ***	−0.0117 *	−0.0124 *
	(−1.6779)	(−1.7774)	(−3.2871)	(−3.3971)	(−1.6810)	(−1.8030)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
N	4386	4386	4395	4395	3699	3699
Adj. R^2	0.2787	0.2711	0.2808	0.2714	0.2924	0.2822

* and *** indicate significance at the 10% and 1% levels.

Additionally, considering that one-fifth of heavy-polluting firms belong to the Chemical industry (972 observations), we conducted another analysis by excluding this industry. The corresponding results in Columns 5 and 6 of Table 7 affirm our main conclusions, demonstrating robustness even after excluding specific provinces or industries from our sample.

4.4.5. Alternate Discretionary Accrual Models

The results of our study remain strong even when using different discretionary accrual models. These models include the residual from the original Jones (1991) model [45], the modified Jones model [44], the modified Jones model with adjustments for accounts receivable including lagged total accruals and sales growth [53], the modified Jones model including lead, lagged, and contemporaneous cash flows [54], and the performance-adjusted modified Jones model [55]. Table 8 displays the regression outcomes of the earnings management indicators acquired through several models that align with the baseline results.

Table 8. Alternate discretionary accrual models.

Variables	(1) Forward-Looking Modified Jones Model	(2) Cash Flow Jones Model	(3) Performance Matched Jones Model
Civilized × Post	−0.0128 *	−0.0110 **	−0.0199 ***
	(−1.9675)	(−2.0243)	(−2.6941)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
City FE	Yes	Yes	Yes
N	4822	4822	4822
Adj. R^2	0.2014	0.5371	0.2060

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

4.4.6. Controlling the Impact of Other Sessions of Civilized Cities

We address concerns about potential bias from companies located in the second, third, and fifth rounds of the NCCA campaign. Excluding these years from our sample, as shown in Columns 1–4 of Table 9, does not alter our primary findings. Further analyses confirm the robustness of our results even when eliminating additional years to ensure accuracy in identifying civilized cities.

Table 9. Controlling the impact of other sessions of civilized cities.

	(1) Without Civilized City Sample in 2009	(2) Without Civilized City Sample in 2011	(3) Without Civilized City Sample in 2017	(4) Without Civilized City Sample in 2009, 2011 and 2017
Variables	DACC			
Civilized × Post	−0.0177 **	−0.0170 **	−0.0192 **	−0.0221 ***
	(−2.3866)	(−2.2817)	(−2.5551)	(−2.7758)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
N	4405	4036	4232	3026
Adj. R^2	0.2832	0.2876	0.2770	0.2684

** and *** indicate significance at the 5% and 1% levels.

4.4.7. Adding Potential Omitted Variables

In our baseline regression, we control for various factors. However, considering recent literature on corporate governance [56,57], we extend our analysis to include additional variables—firm age (Firm-Age), managerial ownership (Managerial-Ownership), and equity concentration (Equity-Concentration). The results in Table 10 affirm that these additions do not substantially change our conclusions.

Table 10. Adding Potential Omitted Variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
		DACC			Jones	
Civilized × Post	−0.0155 **	−0.0137 *	−0.0135 *	−0.0159 **	−0.0144 *	−0.0142 *
	(−1.9889)	(−1.7611)	(−1.6969)	(−2.0652)	(−1.8686)	(−1.8112)
Firm-Age	0.0032	0.0067	0.0060	0.0041	0.0074	0.0066
	(0.4827)	(0.9850)	(0.8798)	(0.6172)	(1.0673)	(0.9565)
Managerial-Ownership		0.0004 *	0.0005 *		0.0004 *	0.0004 **
		(1.6962)	(1.9652)		(1.6953)	(1.9994)
Equity-Concentration			0.0009 **			0.0009 **
			(2.0951)			(2.0561)
Constant	−0.4788 ***	−0.5408 ***	−0.5116 ***	−0.4577 ***	−0.5165 ***	−0.4877 ***
	(−3.0643)	(−3.4730)	(−3.1400)	(−3.1078)	(−3.5029)	(−3.1821)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
N	4660	4462	4360	4660	4462	4360
Adj. R^2	0.2896	0.2926	0.2904	0.2808	0.2838	0.2820

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

5. Heterogeneity Analysis and Channel Tests

5.1. Heterogeneity Analysis

This section will conduct a series of heterogeneity analyses to validate the three preceding theoretical conclusions and further the understanding of income-decreasing earnings management behavior of heavily-polluting firms during the NCCA event. The regression results are displayed in Table 11 and Figure 7.

For Corollary 1a, examining the impact of political costs on discretionary accruals for different ownership types, we split the sample into State-owned Heavy-polluting firms (State = 1) and Non-state-owned Heavy-polluting firms (State = 0). Regression results in Columns (1)–(4) of panel A in Table 11 and panel A of Figure 7 confirm our assessment. The coefficient for the state-owned subsample (−0.0142, not statistically significant) is notably smaller than the non-state-owned subsample (−0.0306, statistically significant), with a significant disparity at the 10% level. This aligns with theoretical conclusion 1a and supports the findings in [30].

For Corollary 1b, investigating the impact of local governments participating in the NCCA campaign on the political costs of heavy-polluting firms based on firm visibility (Asset Size, referring to the previous study [58]), we divided the sample into large firms (Visibility = 1) and small firms (Visibility = 0) using the annual median value of company assets. Regressing the two subsamples according to Equation (2), results in Columns (5)–(8) of panel A in Table 11 and panel B of Figure 7 support our assessment. The coefficient for the subset of small firms (−0.0296, statistically significant) is notably smaller than that of the subset of large firms (0.0017, not statistically significant), with a significant disparity at the 1% level. This aligns with theoretical implication 1b, indicating a positive correlation between the visibility of heavy-polluting enterprises and their inclination to employ earnings management practices leading to reduced income.

For Corollary 1c, we anticipate higher political costs for heavy-polluting firms in areas where local officials have stronger incentives for promotion. To test this hypothesis, we use the age of the local party secretary as a metric for assessing promotion motivations. The party secretary, with significant authority in decision-making, is the highest-ranking official in a specific jurisdiction [38,59]. Notably, city-level government officials face a longer delay in promotions to the central government compared to provincial officials, as they retire at 65 unless promoted to higher central government posts.

Table 11. Heterogeneity analysis.

Panel A: Ownership Types and Firm Visibility								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	DCAA		**Jones**		**DCAA**		**Jones**	
Variables	**State = 1**	**State = 0**	**State = 1**	**State = 0**	**Visibility = 1**	**Visibility = 0**	**Visibility = 1**	**Visibility =0**
Civilized × Post	−0.0142	−0.0306 *	−0.0143	−0.0308 *	−0.0296 ***	0.0017	−0.0306 ***	0.0006
	(−1.5505)	(−1.9025)	(−1.5547)	(−1.9711)	(−3.2135)	(0.1547)	(−3.3182)	(0.0592)
p-Value	0.0860 *		0.075 *		0.000 ***		0.000 ***	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2606	2157	2606	2157	1798	2932	1798	2932
Adj. R^2	0.3107	0.2372	0.3012	0.2294	0.3300	0.2427	0.3136	0.2381
Panel B: Promotion Incentives of Political Leaders								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	DCAA		**Jones**		**DCAA**		**Jones**	
Variables	**P_age = 1**	**P_age = 0**	**P_age = 1**	**P_age = 0**	**Pchange = 1**	**P_change = 0**	**P_change = 1**	**P_change = 0**
Civilized × Post	−0.0500 ***	−0.0127	−0.0519 ***	−0.0130	−0.0561 ***	−0.0120	−0.0552 ***	−0.0137
	(−2.9310)	(−1.4189)	(−3.2087)	(−1.4533)	(−3.7858)	(−1.0625)	(−3.9163)	(−1.2458)
p-Value	0.0000 ***		0.0000 ***		0.0000 ***		0.0000 ***	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	938	3798	938	3798	2014	2681	2014	2681
Adj. R^2	0.2092	0.2848	0.1876	0.2758	0.2757	0.2282	0.2627	0.2187

* and *** indicate significance at the 10% and 1% levels.

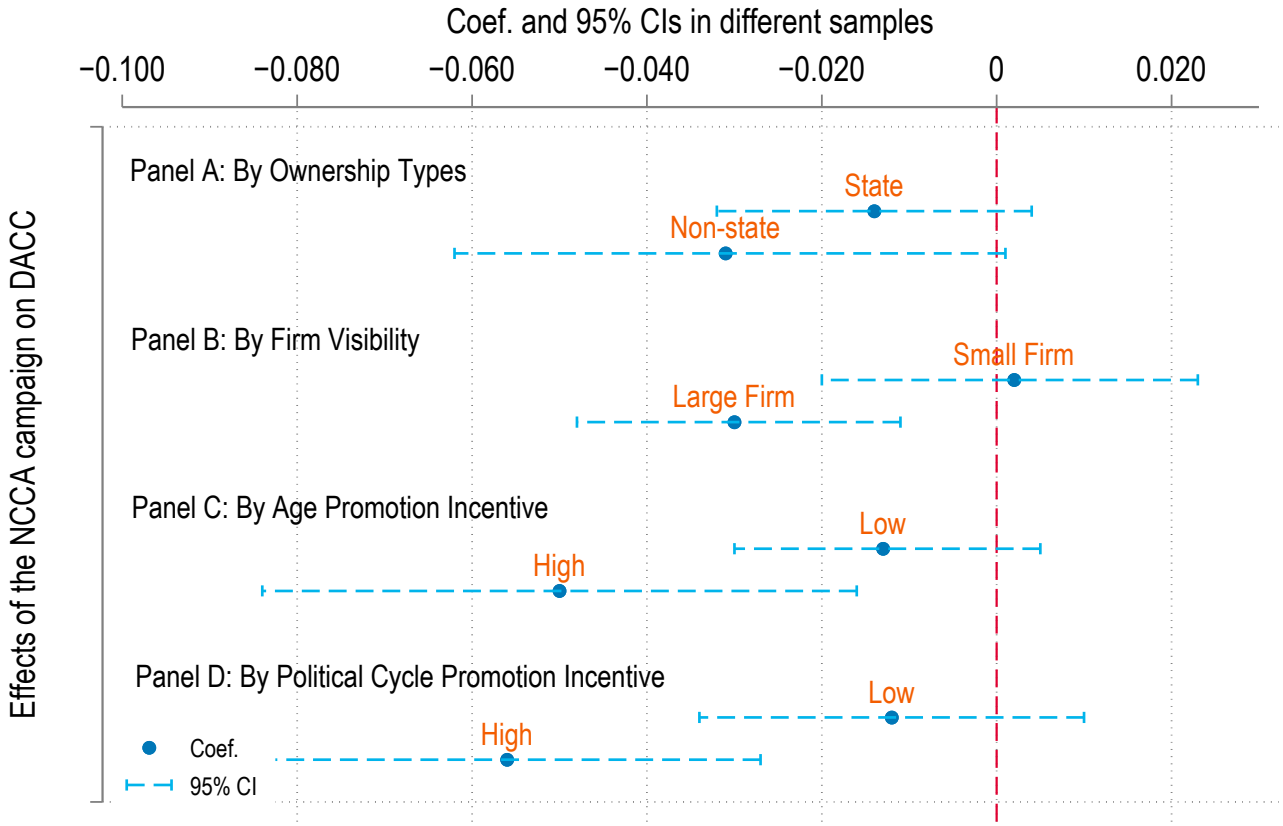

Figure 7. Graph of coefficient differences between groups.

Therefore, we refer to Chen et al. (2022) to set the cut-off point for the promotion motivation of municipal party secretaries to 55 years old [38]. To test whether the effects

of political costs on heavy-polluting firms' discretionary accruals vary between different promotion incentives of political leaders, we divided the sample into a high age promotion incentive group (i.e., P_age = 1) and a low age promotion incentive group (i.e., P_age = 0) based on municipal party secretary's age at the start of the first year of the NCCA event period (i.e., 2012). We next regress the two subsamples according to Equation (2). Columns (1)–(4) of panel B of Table 11 and panel C of Figure 7 present the results of regressions on age promotion incentives for officials heterogeneity. The regression results support our assessment that the regression coefficient for the low age promotion incentives subsample (−0.0127, not statistically significant) is significantly lower than that of the high age promotion incentives subsample (−0.0500, statistically significant). Furthermore, the difference in the coefficients is also statistically significant at the 1% level. As expected from theoretical Corollary 1c, heavy-polluting firms in jurisdictions where local officials with higher promotion incentives engage in more income-decreasing earnings management

In our additional analysis, we draw on insights from Chen et al. (2022) related to the political cycle and conspicuous promotion events [38]. New leaders often engage in fiscal expansion, stimulating the local economy during their tenure [31]. This implies that government officials have strong incentives to enhance economic performance for personal advancement, particularly before and after such events. To explore how political costs affect discretionary accruals for heavy-polluting firms under different promotion incentives, we divided the sample into a high turnover promotion incentive group (i.e., P_change = 1) and a low turnover promotion incentive group (i.e., P_change = 0) based on the turnover of the municipal party committee secretary. Regression results in Columns (5)–(8) of panel B in Table 11 and panel D of Figure 7 support our assessment. The coefficient for the low turnover promotion group (−0.0127) is significantly lower than that for the high turnover promotion group (−0.0500), with a statistically significant difference at the 1% level. In summary, the findings in panel B of Table 11 indicate that career concerns and promotion incentives of local officials lead to higher political costs for heavy-polluting firms in the NCCA campaign.

The above heterogeneity analysis results suggest differences in heavy-polluting firms' earnings management activities across cities and years. This evidence also helps to rule out the alternative explanation that common shocks, such as the impact of new economic policies, drive heavy-polluting firms' earning management activities. This alternative explanation suggests that heavy-polluting firm earnings management activity should be present across cities and years since they are also subject to the same shocks. This further supports our main inference that heavy-polluting firms conduct income-decreasing earnings management in response to local government participation in the NCCA champion to reduce the threat of political costs.

5.2. Testing the Mechanism of Environmental Enforcement

5.2.1. The Effect of NCCA Campaign on Environmental Enforcement

The previous regression results amply demonstrate that during the NCCA event, there is a significant increase income-decreasing earnings management from heavy-polluting firms located in civilized cities compared to heavy-polluting firms within other cities. The factors underlying the rise in income-decreasing earnings management provide an intriguing question. In order to stand out in the early stages of the selection of civilized cities, local governments typically strictly manage environmental pollution and environmental infractions within their borders, according to the NCCA champions. Environmental regulation is considered one of the crucial external factors for firms. The existing literature indicates that environmental regulation significantly impacts firm performance, innovation, and sustainability transformation [60–62]. Moreover, the impact of environmental pollution and pollution remediation on the political costs of firms has been confirmed by several empirical studies [28,30]. Consequently, we argue that local government participation in the NCCA champion increases corporate engagement in income-decreasing earnings management through enhanced environmental enforcement.

The Pollutant Information Transparency Index (PITI Index) was collaboratively developed in 2008 by two prominent environmental NGOs, the Institute of Public and Environmental Affairs (IPE) and the Natural Resources Defense Council (NRDC). The PITI index quantitatively evaluates five major items involving pollution source management, such as daily supervision, self-monitoring, reporting response, emission data and EIA information, in four dimensions: systematic, timely, complete and user-friendly, and being a comprehensive evaluation of the intensity of pollution management and information disclosure by local governments. In accordance with Tu et al. (2019), our initial approach involves utilizing the Pollutant Information Transparency Index (PITI Index) as an indicator of the level of strictness in environmental enforcement (PITI) [63]. In addition, as a secondary indicator of environmental enforcement, we utilize the annual fluctuation in regional Carbon Dioxide emissions as a substitute variable to gauge the level of local environmental enforcement. The annual change in regional Carbon Dioxide emissions measures the effectiveness of local government environmental enforcement (CO_2_change). We regress each environmental enforcement measure (PITI and CO_2_change) on local government participation in the NCCA champion (Civilized × Post) at the city level. The results in Table 12 confirm our hypothesis that local government involvement in the NCCA champion is correlated with increased local environmental enforcement.

Table 12. Channel tests.

	(1)	(2)	(3)	(4)
	$PITI_{t+1}$		CO_2_Change	
Civilized × Post	4.0144 *	3.5291 *	−0.0560 *	−0.0730 *
	(1.9345)	(1.6489)	(−1.6869)	(−1.9449)
Lnpop		6.3295		0.0419
		(0.6459)		(0.2343)
Growth_ GDP		9.7663		0.7727
		(0.8687)		(1.3543)
Ip		0.3069*		−0.0130
		(1.8714)		(−1.2822)
Es		4.8341		4.9129 ***
		(0.5487)		(3.7383)
Tol		0.0696 *		0.0001
		(1.8322)		(0.4760)
Constant	44.6748 ***	−13.2831	−0.0157	−0.1534
	(112.0070)	(−0.2253)	(−1.2683)	(−0.1078)
Year FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
N	710	710	1412	1412
Adj. R^2	0.7070	0.7092	0.0356	0.4566

Note: This table displays the outcomes of the mechanism examinations. Pollutant Information Transparency Index ($PITI_{t+1}$) and CO_2 emission reduction intensity (CO_2_*change*) is the annual change in regional Carbon Dioxide emissions as a surrogate for the tightness of environmental enforcement. The regression also controls for city-level control variables, including *Lnpop* representing the logarithm of the city's total population, *Growth_ GDP* representing the city GDP growth rate, *es* representing the city's energy structure, and *tol* representing the city's trade openness. * and *** indicate significance at the 10% and 1% levels.

5.2.2. Cross-Sectional Variation Analyses

We also conduct other analyses that examine differences between different sections, taking into account the measures of local environmental enforcement. If local environmental enforcement serves as the means to increase the degree of earnings management, we would expect to see a stronger effect of local government involvement in the NCCA championship on the manipulation of earnings management by local heavy-polluting firms that are subject to stricter environmental enforcement. The initial step involves dividing the entire sample into two subsets, namely the High-PITI and Low-PITI subsamples, using the PITI Index as the criterion. We introduce a binary variable, H_PITI, which takes the value of 1 if the PITI index of the city where the firm is situated exceeds the median PITI index of all

cities for the given year (i.e., the High-PITI group), and 0 otherwise (i.e., the Low-PITI group). Subsequently, we replicate the primary regression Equation (2) for each of the two subgroups and display the outcomes in Columns (1)–(4) of Table 13. The findings indicate that the NCCA campaign has a stronger impact on income-decreasing earnings management in local heavy-polluting firms located in areas with a higher PITI index.

Table 13. Cross-Sectional Variation Analyses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DCAA		Jones		DCAA		Jones	
Variables	**H_PITI = 1**	**H_PITI = 0**	**H_PITI = 1**	**H_PITI = 0**	**Reduce = 1**	**Reduce = 0**	**Reduce = 1**	**Reduce = 0**
Civilized × Post	−0.0271 *	−0.0168	−0.0274 *	−0.0162	−0.0276 ***	0.0108	−0.0280 ***	0.0100
	(−1.9097)	(−1.2066)	(−1.9263)	(−1.2052)	(−3.1857)	(0.5568)	(−3.2304)	(0.5189)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1620	1627	1620	1627	1798	3330	1238	3330
Adj. R^2	0.2569	0.3267	0.2468	0.3175	0.3300	0.2973	0.1394	0.2872

* and *** indicate significance at the 10% and 1% levels.

Moreover, we categorize Chinese cities into two groups depending on the level of reduction in urban CO_2 emissions between 2008 and 2017. Companies that emit high levels of pollution in regions with more stringent CO_2 reduction measures are more likely to face greater enforcement of environmental regulations and larger fines for their emissions. To clarify, we establish a dummy variable, reduce, that equals 1 if the current year's CO_2 emissions are less than the previous year's CO_2 emissions (i.e., the CO_2 emission reduction group) and 0 otherwise (i.e., the CO_2 emission increased group). The findings, presented in Columns (5)–(8) of Table 13, indicate that the impact of the NCCA campaign on local heavy-polluting companies' involvement in income-decreasing earnings management is stronger for firms located in regions with higher intensity of CO_2 emission reductions. This aligns with the idea that environmental enforcement plays a mediating role in the political cost faced by heavy-polluting firms.

6. Conclusions

This paper assesses the influence of local government involvement in ecological competitions on the income-decreasing earnings management practices of local heavily-polluting firms We analyze the earnings management decisions of heavily-polluting firms in response to increasing political costs during the NCCA event by integrating comprehensive data on accounting and developed cities. We establish a difference-in-difference framework by utilizing the fourth Civilized City selection as a quasi-natural experiment. In this setup, the treatment group consists of heavy-polluting enterprises situated in locations with the fourth NCCA title, while the control group comprises heavy-polluting firms located in other places.

Our results show that local government participation in the NCCA campaign increases local heavy-polluting firms engaging in more income-decreasing earnings management activities. The validity of our results remains unaffected by a comprehensive set of tests for robustness and alternate specifications. In the heterogeneity analysis, we find that the enabling effect of the NCCA event on earnings management activities is more noticeable among heavy-polluting firms with higher visibility. Furthermore, this impact is more visible in jurisdictions where local political leaders have stronger incentives for promotion. Nevertheless, the effect is moderated for state-owned heavy-polluting firms. More importantly, our findings indicate that the NCCA campaign influences busi-

ness profitability management actions mostly by implementing stricter environmental enforcement measures.

Our study specifically enhances the comprehension of how local government and officials' motivations affect the earnings management behavior of heavily-polluting firms. The findings suggest that the accounting information of enterprises with high levels of pollution is notably unreliable during the NCCA event. The outcomes of our study are valuable for auditors and regulators, who have a specific focus on the veracity of accounting data.

Auditors and regulatory authorities should enhance their efforts in auditing and regulatory oversight of heavy-polluting firms, with particular focus on their earnings management practices and the authenticity of accounting information. Auditors and regulatory bodies should strengthen the audit procedures and risk assessments for heavy-polluting firms, ensuring their financial statements accurately reflect the companies' environmental responsibilities and pollution situations. For local governments, it is essential to handle their relationship with local firms properly, avoiding heavy-handed interventions. Instead, they can adopt appropriate incentive measures to encourage heavy-polluting firms to fulfill their environmental responsibilities actively. Such incentives include tax benefits, subsidies, and financial support. By establishing good cooperative relationships with local firms, local governments can work together to improve a city's ecological status.

Author Contributions: J.D.: Conceptualization, Supervision, Methodology. B.Y.: Conceptualization, Supervision, Writing—review & editing. X.D.: Conceptualization, Methodology, Writing—review & editing. J.D., B.Y. and X.D. contributed equally to this paper. All authors have read and agreed to the published version of the manuscript.

Funding: This research was supported by the National Social Science Foundation of China (Grant number: 22&ZD126) and Guangdong Planning Office of Philosophy and Social Science (Grant number: GD20XGL46) and Guangdong Provincial Department of Education Higher Education Research Project (Grant number: 2022WTSCX035).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data that support the findings of the current research are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Environment Index of Evaluation System for NCCA.

Classification	Index Requirement
Investment	Environmental protection investment index > 2.0%
Air	Air pollution index > 80%
Smoke dust	The coverage rate of smoke dust area under control > 90%
Sewage	Urban sewage treatment rate > 60%
Water functional area	The urban water functional area water quality compliance rate must be 100%
Noise	The coverage rate of standard environmental noise > 70%
Waste	Harmless disposal rate of domestic waste > 80%

Appendix B

Table A2. Descriptive Statistics for Sample Firms.

Panel A Distribution of Years				
Year	Control group		Treatment group	
	Fre.	%	Fre.	%
2009	351	8%	49	7%
2010	376	9%	54	8%
2011	390	9%	59	8%
2012	472	11%	74	11%
2013	516	12%	83	12%
2014	525	12%	93	13%
2015	520	12%	91	13%
2016	520	12%	89	13%
2017	478	11%	82	12%
Panel B Distribution of Industry				
Industry Category	Control group		Treatment group	
	Fre.	%	Fre.	%
Chemical raw material and chemical product manufacturing industry	972	23%	150	22%
Chemical fiber manufacturing industry	127	3%	18	2%
Non-ferrous metal smelting and rolling processing industry	278	6%	86	12%
Non-ferrous metals mining and dressing	114	2%	9	1%
Rubber and plastic products industry	217	5%	97	14%
Coal mining and washing industry	201	4%	8	1%
Electricity, thermal production and supply industry	395	9%	81	12%
Leather, fur, feathers and their products, and footwear industry	15	1%	21	3%
Petroleum processing, coking, and nuclear fuel processing industries	116	2%	21	3%
Oil and gas extraction industry	32	1%	0	0%
Textile industry	225	5%	36	5%
Textile and clothing industry	121	2%	38	5%
Paper Making and Paper Products Industry	159	3%	18	2.%
Liquor, beverage, and refined tea manufacturing industry	232	5%	15	2%
Fabricated metal products	249	6%	25	3%
Non metallic mineral products industry	442	10%	28	4%
Ferrous smelting and rolling processing industry	223	5%	23	3%
Ferrous metals mining and dressing	30	1%	0	0%
Total	4148		674	

Table A2. *Cont.*

Panel C Estimation Sample Construction		
Heavily-polluting firm-years 2009–2017		6318
Less: Firms in Industry Code-year clusters with fewer than 20 firms	(539)	5779
Less: Firms with missing modified Jones model variables	(391)	5388
Less: Firms with missing test and control variables	(566)	4822
Firm-years in panel used to test Hypothesis 1	4822	

Note: This table shows the distribution of the treatment group sample and the control group sample over time and industry. Panel C describes our sample selection process showing sample formation from data retrieval to estimation. Compiled by the author.

References

1. Li, G.; Wen, H. The low-carbon effect of pursuing the honor of civilization? A quasi-experiment in Chinese cities. *Econ. Anal. Policy* **2023**, *78*, 343–357. [CrossRef]
2. Zhang, K.; Zhang, Z.-Y.; Liang, Q.-M. An empirical analysis of the green paradox in China: From the perspective of fiscal decentralization. *Energy Policy* **2017**, *103*, 203–211. [CrossRef]
3. Wu, H.; Hao, Y.; Ren, S. How do environmental regulation and environmental decentralization affect green total factor energy efficiency: Evidence from China. *Energy Econ.* **2020**, *91*, 104880. [CrossRef]
4. Zhang, B.; Chen, X.; Guo, H. Does central supervision enhance local environmental enforcement? Quasi-experimental evidence from China. *J. Public Econ.* **2018**, *164*, 70–90. [CrossRef]
5. Lo, K. Earnings management and earnings quality. *J. Account. Econ.* **2008**, *45*, 350–357. [CrossRef]
6. Watts, R.L.; Zimmerman, J.L. Towards a Positive Theory of the Determination of Accounting Standards. *Account. Rev.* **1978**, *53*, 112–134.
7. Watts, R.L.; Zimmerman, J.L. *Positive Accounting Theory*; Prentice-Hal: Upper Saddle River, NJ, USA, 1986; pp. 24–25.
8. Zhang, C.; Liu, Q.; Ge, G.; Hao, Y.; Hao, H. The impact of government intervention on corporate environmental performance: Evidence from China's national civilized city award. *Financ. Res. Lett.* **2021**, *39*, 101624. [CrossRef]
9. Key, K.G. Political cost incentives for earnings management in the cable television industry. *J. Account. Econ.* **1997**, *23*, 309–337. [CrossRef]
10. Han, J.C.; Wang, S. Political costs and earnings management of oil companies during the 1990 Persian Gulf crisis. *Account. Rev.* **1998**, *73*, 103–117.
11. Yao, P.; Zhang, Z.; Sun, J.; Yan, H. Does City Brand Promote City Development? A Quasi-natural Experimental Study Based on "National Civilized City". *J. Finance Econ.* **2021**, *47*, 32–46.
12. Liu, X.; Yang, M.; Nie, X. Can city brand reduce urban air pollution?—An empirical research based on "National Civilized City" in China. *Technol. Forecast. Soc. Chang.* **2023**, *186*, 122179. [CrossRef]
13. Gao, Y.; Li, M.; Xue, J.; Liu, Y. Evaluation of effectiveness of China's carbon emissions trading scheme in carbon mitigation. *Energy Econ.* **2020**, *90*, 104872. [CrossRef]
14. Li, B.; Han, Y.; Wang, C.; Sun, W. Did civilized city policy improve energy efficiency of resource-based cities? Prefecture-level evidence from China. *Energy Policy* **2022**, *167*, 113081. [CrossRef]
15. Healy, P.M.; Wahlen, J.M. A review of the earnings management literature and its implications for standard setting. *Account. Horiz.* **1999**, *13*, 365–383. [CrossRef]
16. Degeorge, F.; Patel, J.; Zeckhauser, R. Earnings Management to Exceed Thresholds. *J. Bus.* **1999**, *72*, 1–33. [CrossRef]
17. Dhaliwal, D.S.; Gleason, C.A.; Mills, L.F. Last-Chance Earnings Management: Using the Tax Expense to Meet Analysts' Forecasts. *Contemp. Account. Res.* **2004**, *21*, 431–459. [CrossRef]
18. Aharony, J.; Lin, C.-J.; Loeb, M.P. Initial Public Offerings, Accounting Choices, and Earnings Management. *Contemp. Account. Res.* **1993**, *10*, 61–81. [CrossRef]
19. Rangan, S. Earnings management and the performance of seasoned equity offering. *J. Financ. Econ.* **1998**, *50*, 101–122. [CrossRef]
20. McAnally, M.L.; Srivastava, A.; Weaver, C.D. Executive Stock Options, Missed Earnings Targets, and Earnings Management. *Account. Rev.* **2008**, *83*, 185–216. [CrossRef]
21. Jiang, J.; Petroni, K.R.; Wang, I.Y. CFOs and CEOs: Who have the most influence on earnings management? *J. Financ. Econ.* **2010**, *96*, 513–526. [CrossRef]
22. Ali, A.; Zhang, W. CEO tenure and earnings management. *J. Account. Econ.* **2015**, *59*, 60–79. [CrossRef]
23. Geertsema, P.G.; Lont, D.H.; Lu, H. Real earnings management around CEO turnovers. *Account. Financ.* **2020**, *60*, 2397–2426. [CrossRef]

24. Dyreng, S.D.; Hillegeist, S.A.; Penalva, F. Earnings Management to Avoid Debt Covenant Violations and Future Performance. *Eur. Account. Rev.* **2022**, *31*, 311–343. [CrossRef]
25. Monem, R.M. Earnings Management in Response to the Introduction of the Australian Gold Tax. *Contemp. Account. Res.* **2003**, *20*, 747–774. [CrossRef]
26. Godsell, D.; Welker, M.; Zhang, N. Earnings Management During Antidumping Investigations in Europe: Sample-Wide and Cross-Sectional Evidence: Antidumping Investigations in Europe. *J. Account. Res.* **2017**, *55*, 407–457. [CrossRef]
27. Boland, M.; Godsell, D. Local soldier fatalities and war profiteers: New tests of the political cost hypothesis. *J. Account. Econ.* **2020**, *70*, 101316. [CrossRef]
28. Cahan, S.F.; Chavis, B.M.; Elmendorf, R.G. Earnings management of chemical firms in response to political costs from environmental legislation. *J. Account. Audit. Financ.* **1997**, *12*, 37–65. [CrossRef]
29. Yao, S.; Liu, Y. Air Quality Uncertainty and Earnings Management. *Sustainability* **2020**, *12*, 6098. [CrossRef]
30. Yang, M.; Tang, W. Air pollution, political costs, and earnings management. *Emerg. Mark. Rev.* **2022**, *51*, 100867. [CrossRef]
31. Chen, H.; Tang, S.; Wu, D.; Yang, D. The Political Dynamics of Corporate Tax Avoidance: The Chinese Experience. *Account. Rev.* **2021**, *96*, 157–180. [CrossRef]
32. Suchman, M.C. Managing legitimacy: Strategic and institutional approaches. *Acad. Manag. Rev.* **1995**, *20*, 571–610. [CrossRef]
33. Peng, M.W.; Tan, J.; Tong, T.W. Ownership Types and Strategic Groups in an Emerging Economy. *J. Manag. Stud.* **2004**, *41*, 1105–1129. [CrossRef]
34. Fan, J.; Wong, T.; Zhang, T. Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *J. Financ. Econ.* **2007**, *84*, 330–357. [CrossRef]
35. Lee, W.; Wang, L. Do political connections affect stock price crash risk? Firm-level evidence from China. *Rev. Quant. Financ. Account.* **2017**, *48*, 643–676. [CrossRef]
36. Cheung, Y.-L.; Rau, P.R.; Stouraitis, A. Helping Hand or Grabbing Hand? Central vs. Local Government Shareholders in Chinese Listed Firms. *Rev. Financ.* **2010**, *14*, 669–694. [CrossRef]
37. Zhu, L.; Kong, D. Revenue pressure of local governments and firm productivity: Evidence from a natural experiment in China. *Econ. Transit. Institutional Chang.* **2022**, *31*, 721–748. [CrossRef]
38. Chen, T.; Tan, Y.; Wang, J.; Zeng, C. The Unintended Consequence of Land Finance: Evidence from Corporate Tax Avoidance. *Manag. Sci.* **2022**, *68*, 8319–8342. [CrossRef]
39. Zhao, Y.; Zhou, D.; Zhao, K.; Zhou, P. Is the squeaky wheel getting the grease? Earnings management and government subsidies. *Int. Rev. Econ. Financ.* **2019**, *63*, 297–312. [CrossRef]
40. Udayasankar, K. Corporate Social Responsibility and Firm Size. *J. Bus. Ethics* **2008**, *83*, 167–175. [CrossRef]
41. Li, H.; Zhou, L.-A. Political turnover and economic performance: The incentive role of personnel control in China. *J. Public Econ.* **2005**, *89*, 1743–1762. [CrossRef]
42. Chen, T.; Kung, J.K. Busting the "Princelings": The Campaign Against Corruption in China's Primary Land Market. *Q. J. Econ.* **2019**, *134*, 185–226. [CrossRef]
43. Gan, W.; Xu, X. Does anti-corruption campaign promote corporate R&D investment? Evidence from China. *Financ. Res. Lett.* **2019**, *30*, 292–296.
44. Dechow, P.M.; Sloan, R.G.; Sweeney, A.P. Detecting Earnings Management. *Account. Rev.* **1995**, *70*, 193–225.
45. Jones, J.J. Earnings management during import relief investigations. *J. Account. Res.* **1991**, *29*, 193–228. [CrossRef]
46. Franz, D.R.; HassabElnaby, H.R.; Lobo, G.J. Impact of proximity to debt covenant violation on earnings management. *Rev. Account. Stud.* **2014**, *19*, 473–505. [CrossRef]
47. Siregar, S.V.; Utama, S. Type of earnings management and the effect of ownership structure, firm size, and corporate-governance practices: Evidence from Indonesia. *Int. J. Account.* **2008**, *43*, 1–27. [CrossRef]
48. Cui, X.; Yao, S.; Fang, Z.; Wang, H. Economic policy uncertainty exposure and earnings management: Evidence from China. *Account. Financ.* **2021**, *61*, 3937–3976. [CrossRef]
49. Guidry, F.; Leone, A.J.; Rock, S. Earnings-based bonus plans and earnings management by business-unit managers. *J. Account. Econ.* **1999**, *26*, 113–142. [CrossRef]
50. Wang, L.; Shang, Y.; Li, S.; Li, C. Environmental Information Disclosure-Environmental Costs Nexus: Evidence from Heavy Pollution Industry in China. *Sustainability* **2023**, *15*, 2701. [CrossRef]
51. Zhang, Y.; Imeni, M.; Edalatpanah, S.A. Environmental Dimension of Corporate Social Responsibility and Earnings Persistence: An Exploration of the Moderator Roles of Operating Efficiency and Financing Cost. *Sustainability* **2023**, *15*, 14814. [CrossRef]
52. Xiao, J.; Li, G.; Zhu, B.; Xie, L.; Hu, Y.; Huang, J. Evaluating the impact of carbon emissions trading scheme on Chinese firms' total factor productivity. *J. Clean. Prod.* **2021**, *306*, 127104. [CrossRef]
53. Dechow, P.M.; Richardson, S.A.; Tuna, I. Why Are Earnings Kinky? An Examination of the Earnings Management Explanation. *Rev. Account. Stud.* **2003**, *8*, 355–384. [CrossRef]
54. Dechow, P.M.; Dichev, I.D. The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *Account. Rev.* **2002**, *77*, 35–59. [CrossRef]
55. Kothari, S.P.; Leone, A.J.; Wasley, C.E. Performance matched discretionary accrual measures. *J. Account. Econ.* **2005**, *39*, 163–197. [CrossRef]

56. Scherer, A.G.; Voegtlin, C. Corporate Governance for Responsible Innovation: Approaches to Corporate Governance and Their Implications for Sustainable Development. *Acad. Manag. Perspect.* **2020**, *34*, 182–208. [CrossRef]
57. Crichton, R.; Farhidi, F.; Patel, A.; Ellegate, N. Clearing up the benefits of a fossil fuel sector diversified board: A climate change mitigation strategy. *Bus. Soc. Rev.* **2021**, *126*, 433–453. [CrossRef]
58. Bushee, B.J.; Miller, G.S. Investor Relations, Firm Visibility, and Investor Following. *Account. Rev.* **2012**, *87*, 867–897. [CrossRef]
59. Chen, T.; Kung, J.K.-S. Do land revenue windfalls create a political resource curse? Evidence from China. *J. Dev. Econ.* **2016**, *123*, 86–106. [CrossRef]
60. Javeed, S.A.; Latief, R.; Lefen, L. An analysis of relationship between environmental regulations and firm performance with moderating effects of product market competition: Empirical evidence from Pakistan. *J. Clean. Prod.* **2020**, *254*, 120197. [CrossRef]
61. Javeed, S.A.; Latief, R.; Jiang, T.; San Ong, T.; Tang, Y. How environmental regulations and corporate social responsibility affect the firm innovation with the moderating role of Chief executive officer (CEO) power and ownership concentration? *J. Clean. Prod.* **2021**, *308*, 127212. [CrossRef]
62. Shutter, Z. Conservation or revolution? The sustainable transition of textile and apparel firms under the environmental regulation: Evidence from China. *J. Clean. Prod.* **2023**, *382*, 135339.
63. Tu, Z.; Hu, T.; Shen, R. Evaluating public participation impact on environmental protection and ecological efficiency in China: Evidence from PITI disclosure. *China Econ. Rev.* **2019**, *55*, 111–123. [CrossRef]