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Does Central Environmental Protection Inspector Improve Corporate Social Responsibility? Evidence from Chinese Listed Companies

Mei Feng, Chu Chen *, Jia Liu and Wei Jia

School of Economics and Management, University of Science and Technology Beijing, No. 30, Xueyuan Road, Haidian District, Beijing 100083, China
* Correspondence: b20200449@xs.ustb.edu.cn

Abstract: As an essential innovation in China’s environmental governance, the central environmental protection inspector policy (CEPI) plays a crucial role in driving the development of the corporate responsibility system. Using the difference-in-differences model with multiple time periods, samples of A-share listed companies in Shanghai and Shenzhen from 2013 to 2020 are chosen to examine the impact of the CEPI on corporate social responsibility within the context of China’s modern governance system. The results indicate the following: first, the CEPI can significantly promote enterprises to fulfill social responsibility; second, the local government environmental regulation and public participation are the dual guarantees for the effect of the CEPI’s policy, and market-based environmental regulation of the local government is more effective than command-and-control environmental regulation; and third, a high propensity for technological innovation is a critical incentive for businesses to fulfill their social responsibilities under the CEPI. For enterprises to actively respond to society, the compensation effect of innovation must be greater than its cost effect. By examining the interaction between the Central Government, the local government, companies and the public, this research aims to provide theoretical support for accelerating the creation of China’s contemporary environmental governance system.

Keywords: central environmental protection inspector; corporate social responsibility; environmental regulation; technological innovation; difference-in-differences

1. Introduction

Presently, a robust guarantee for China’s high-quality growth is the active promotion of the modernisation of the national governance system and governance ability, of which the creation of a modern environmental governance system is a crucial connection. So far, China’s environmental governance structure has consisted mainly of government, company and public engagement. Consequently, the government’s environmental governance policy is viewed as a vital instrument for addressing the negative environmental externalities of businesses and fostering their sustainable growth. However, numerous problems, such as government–enterprise collusion [1] and enterprise greenwashing [2], frequently cause the local government’s environmental regulation (ER) mechanisms to deviate from expectations and fail to direct businesses to fulfill their responsibilities in full effect. The central environmental protection inspector policy (CEPI) was established to solve the issues. China conducted the strictest environmental policies in its history between January 2016 and September 2017, with five central special inspections in 31 provinces. These policies incorporate the local government’s environmental governance operations directly into the oversight framework to examine the primary responsibility for environmental protection from the top down, including the corporate responsibility system. Will CEPI positively impact corporate accountability and raise the degree of corporate social responsibility (CSR)
in enhancing China’s modern environmental governance system? What role will the ER of the local government play?

The execution of CSR is regarded as the most important method for businesses to contribute to sustainable development [3], and it is crucial for improving corporate performance [4] and enhancing competitive advantage [5]; CSR is frequently represented in collaborative governance with stakeholders [6]. In recent years, most research on CSR’s influential elements has focused on the internal characteristics of businesses from the standpoint of corporate governance. Internal governance [7], employees’ behaviour [8], business culture [9], tax expenditure [10] and technology advancement [11] are seen as effective factors on CSR. The CSR notion of corporate social responsiveness merits consideration based on external factors. Corporate social responsiveness refers to an enterprise’s capacity to adapt to social pressure based on all types of programs and behaviour patterns of planned activities [12], representing the firm’s strategic behaviour and management process [13]. Company conduct is seen as anticipative and preventative. It implies that businesses must consider social demands as much as possible before making production and operation choices and must bolster their ability to anticipate the needs of external stakeholders [14]. The relevant behaviours of external stakeholders such as the investors [15], social media [16], consumers and the government [17] are likely to influence CSR. The government’s appropriate support and policies [18,19] will have a significant effect on the implementation of CSR, and the execution of ER policy [20] is an instance of methodology.

In the practice of global environmental governance, the degree of diffusion [21] and the effectiveness [22,23] of environmental policies are essential topics that every country consistently demonstrates concern for, and every country is investigating a rational strategy to adjust environmental standards and regulations dynamically [24–26]. In the worldwide community, environmental policy is seen as a crucial tool for protecting the ecological environment [27], fostering the sustainable growth of businesses [28,29] and coping with climate change [30]. China is continually enhancing its environmental governance system due to its twin objectives of supporting industrial growth and enhancing energy conservation and emission reduction [31,32]. China’s national capacity [33], industrial transformation [34,35] and green business growth [36,37] are positively influenced by the environmental policy in the form of diverse environmental regulatory mechanisms. ER can be categorised into Command-and-Control Environmental Regulation (CACER), Market-Based Environmental Regulation (MBER) and Voluntary Environmental Regulation (VER) in China’s environmental governance systems [38]. Subsequently, CACER and MBER are government-implemented and part of formal ER [39]. In specific research, indicators are typically defined at the level of provincial government [40]. Enterprises or the general public are regarded as VER subjects. The former relies on the voluntary participation of businesses in environmental governance, while the latter emphasises the involvement of citizens [41]. According to existing studies, local government ER actions may affect CSR [20] or environmental responsibility [42].

CEPI, as a form of Central Government environmental control, has attracted the attention of a minority of Chinese researchers in recent years, but it has not yet been the centre of study in the subject of environmental governance in China. CEPI has been shown to boost environmental investment [43] significantly and green innovation [44,45], improve their green total-factor productivity [46] and decrease pollutant emissions [47]. However, the above research solely examines the influence of CEPI on firms’ environmental behaviour or performance to explain the effect of CEPI on enterprises’ individual environmental responsibility. Few researchers have expanded their focus on CEPI research from a single environmental component to multidimensional CSR. As an external stakeholder of businesses, the Central Government’s CEPI policy is a component of businesses’ social pressure. The pressure of CEPI may also stimulate corporate social responsiveness, allowing businesses to address the demands of stakeholders engaged in executing rectification measures, thereby substantially enhancing their CSR levels. There are reasons to believe that the CEPI can have a certain impact on corporate accountability. What methods support the
successful deployment of CEPI? How is it conducted from the top down? Do different local government ER measures play a part in the process? Are there any steps that the public and businesses at the endpoint of the environmental governance system can take to bolster the potential CSR-promoting influence of the CEPI? These questions merit investigation.

Based on the considerations, the A-share listed businesses in Shanghai and Shenzhen from 2013 to 2020 serve as samples for this paper’s application of the DID model with multiple time periods to examine the influence of CEPI on CSR and the mechanism. First, the DID model with multiple time periods is used to test the efficacy of CEPI, a new environmental governance policy. The discussion of its impact on a single enterprise’s environmental behaviour or performance is extended to that on CSR so that the role of CEPI in enhancing the corporate responsibility system can be discerned more comprehensively. Second, when examining the CEPI policy of the Central Government, this study also considers the role of the local government’s ER policy as well as the behaviours of the public and businesses in environmental governance and explores CSR from the top down in the multi-level and multi-dimensional modern environmental governance system. This paper will contribute to understanding the transmission mechanism of the effective implementation of CEPI policy and provide theoretical reference and empirical evidence for accelerating the construction of China’s modern environmental governance system, which is led by the government, enterprises, social organisations and the general public.

2. Policy Background and Hypotheses Development

2.1. Implementation of CEPI

In China’s environmental governance practice of more than 40 years, the extensive development mode of “high input, high consumption, high emission, low efficiency” and “pollution first, governance later” in the early stage has exacerbated environmental pollution and ecological imbalance while impeding the sustainable development of Chinese companies. Therefore, the Chinese government has issued a series of stringent environmental protection laws, such as the Environmental Protection Law, the Law on the Prevention and Control of Air Pollution, and the Law on the Promotion of Cleaner Production, which have exerted a non-negligible positive influence on the sustainable development of Chinese enterprises [37,48,49], and the construction of ecological civilisation has consequently demonstrated remarkable overall results. Before 2015, a sizable number of environmental protection laws and policies in China were uniformly formulated by the Central Government and then implemented by the local government and their environmental protection departments, i.e., to supervise and control polluting enterprises through local administrative means. Environmental governance expenses imposed due to stringent regulations are frequently borne directly by the local government and the businesses under its supervision [50]. Nevertheless, because environmental governance is obviously characterised by publicity, externality and crossing administrative boundaries, with the rapid development of the economy and society and the constant change of the environmental pollution situation, the disadvantages of the local government as a single subject have gradually become prominent, and the limitations of the dependency–governance model with the local government as a single subject are progressively highlighted. The incongruent objectives of the Central Government and the local government, along with the resulting information asymmetry, culminated in recurrent problems such as rivalry between local governments [51] and rent-seeking enterprise [52].

China established several innovative environmental protection measures, such as the River Chief System [53], to extricate itself from the predicament. This system details the province and local government’s management and protection of rivers and lakes and their respective responsibilities. In addition, the channels for public participation in environmental governance have been expanded. China’s environmental governance paradigm has shifted from “supervising firms” to “supervising both firms and the government.” In 2015, China published the Environmental Protection Supervision Program (Trial), which has been legally implemented since January 2016. This was done to strengthen the supervision
of enterprise environmental compliance further. As shown in Table 1, in China, the first round of CEPI-particular actions was implemented in 31 provinces and municipalities over the course of two years, in a total of five batches, and “looking back” activities were implemented in 2018 to encourage the correction of issues. The first round of inspections effectively inspected the environmental governance practices of local governments at all levels based on reports from the general public, site visits, and investigations. They directly examined polluting businesses and ordered them to suspend operations for rectification, significantly deterring non-compliant enterprises. Companies in various locations have been held to a high standard of accountability for their conduct.

Table 1. Enforcement details about the first round of CEPI.

| Inspector Batch   | Inspector Time                        | Inspector Provinces and Autonomous Regions in China          |
|-------------------|---------------------------------------|-------------------------------------------------------------|
| The pilot         | 4 January 2016 to 5 February 2016     | He Bei                                                      |
| The first batch   | 12 July 2016 to 19 August 2016        | Inner Mongolia, Heilongjiang, Jiangsu, Jiangxi, Henan, Guangxi, Yunnan, Ningxia |
| The second batch  | 24 November 2016 to 30 December 2016  | Beijing, Shanghai, Hubei, Guangdong, Chongqing, Shanxi, Gansu |
| The third batch   | 24 April 2017 to 28 May 2017          | Shanxi, Anhui, Tianjin, Hunan, Fujian, Liaoning, Guizhou    |
| The fourth batch  | 7 August 2017 to 15 September 2017    | Jilin, Zhejiang, Shandong, Hainan, Sichuan, Xizang, Qinghai, Xinjiang |

As the Central Government’s CEPI directly targets firms for supervision, the stringent inspection procedures and “looking back” tactics will unquestionably subject enterprises to enormous external pressure. Based on the idea mentioned above of corporate social responsiveness, the execution of rectification plans may be seen as the social reaction of companies under CEPI pressure. Enterprises’ social responsiveness triggered by periodic inspection pressures may also be featured by preventability. The businesses will rigorously implement the current rectification plan and integrate the issues under review into future strategies. In other words, they will enhance every part of their production and operation decision-making process to prevent the same or higher expenses for future corrections. Strategic comprehensive rectification is the reaction of businesses to a variety of social challenges, as well as the enhancement of their CSR system. In this article, the improvement of CSR level is viewed as the social responsiveness of businesses under CEPI pressure. Based on this approach, further research will investigate the CSR-related pressures and responsiveness of businesses under the influence of CEPI.

2.2. Research Hypothesis

Two significant aspects of the CEPI implementation process may influence businesses: the method of supervision and the severity of rectification.

In terms of supervision, after the first round of CEPI was introduced to the local government of provinces, municipalities and autonomous regions, a special hotline and post office box were established to receive complaints from the public 24 h a day. Based on relevant clues, organisations and enterprises would be visited, and appropriate personnel would be held accountable. The entire process of monitoring would involve gathering information from stakeholders and passing it to businesses and other relevant departments. A transparent and symmetric framework for sharing information is crucial for companies to pay attention to stakeholders and fulfill their social duties throughout project implementation [54]. Meanwhile, this type of supervision will cause CEPI to exert intense, invisible pressure on the supervised local businesses, compelling them to listen to the public and negotiate with stakeholders for cooperative governance. In addition, it will guide companies to take the initiative to deeply integrate environment-oriented sustainable development and stakeholder-centred management methodologies [55], i.e., to fulfill CSR holistically based on sustainable strategic management.
Concerning rectification efforts, the central inspection team would typically report to the local government on environmental protection inspection, propose specific rectification tasks and urge enterprises to assume primary responsibility for rectification and to carry out rectification work expeditiously. In addition, the central inspection team took “looking back” measures to address problems in the first round of inspection rectification and made CEPI more regular and institutionalised to prevent local businesses from closing temporarily or creating absurd corrections to meet inspection requirements. These harsh rectification actions could cause CEPI to generate substantial visible pressure and could directly and effectively rectify firms’ noncompliance behaviours. In addition, the policies could defend stakeholders’ interests through coercion and push managers to consider the repercussions of their environmental damage. Nonetheless, implementing the rectification list would unavoidably compel businesses to shoulder their environmental expenses. In this instance, the effect of the cost increase would drive companies to improve their equipment [56] and spend more resources to assume social duties.

It is important to emphasise that CEPI feedback was tailored to a particular environmental occurrence, and the affected stakeholder was likely to be a single individual. But taking on a single environmental responsibility or focusing on a single stakeholder is insufficient for a business to reach its rectification objectives. Companies must frequently integrate technology, capital and human resources in actual environmental management practice. To effectively control environmental costs and shift environmental behaviour from post-treatment to pre-prevention, enterprises must promote green technology innovation through quality management [57], increase green total factor productivity [58] and ensure sustainable growth of their performance in the face of strict CEPI corrections. On the other hand, noting that non-compliant environmental behaviours will have detrimental consequences on supply chain partners [59], the CEPI’s rectification scheme often considers the upstream and downstream of polluting firms. Enterprises must also integrate green supply chain management via green buying and extensive consumer communication [60]. Therefore, under the pressure of environmental protection imposed by CEPI, businesses must respond to the demands of a variety of stakeholders, such as the environment, suppliers, customers, employees and shareholders, in the process of rectification, i.e., they must assume multidimensional CSR as opposed to a piece of single environmental responsibility. Therefore, in this study, the following hypothesis is proposed:

Hypothesis 1 (H1). CEPI can raise the level of CSR.

For the efficient implementation of environmental legislation in different locations, the local government’s environmental expertise is a crucial aspect [61]. Faced with the stringent rectification requirements of CEPI, the local government plays a vital role in supervising and assisting businesses in completing the rectification, and ER is a crucial tool for the local government. If the local government and its environmental protection department lack motivation, it is likely that environmental pollution problems cannot be mitigated [62], leading to the failure of environmental policies or only partial correction. However, CEPI is intended to compensate significantly for the inefficiencies of standard ER approaches. The most significant distinction between CEPI and prior environmental policies is that CEPI places equal emphasis on enterprise and government supervision, and the fulfilment of local government responsibilities in their respective administrative areas can be subject to effective supervision [63]. As a result, the local government resistance that may be met in the process of supervising businesses will be diminished, allowing CEPI to have a more significant impact on the social responsibility fulfilment of local companies. Therefore, the local government’s environmental governance mechanisms may also play a role in ensuring the implementation of CSR under CEPI.

CACER is often an environmental policy that carries out mandatory supervision and management of firms’ pollutant emission behaviours in line with applicable laws and regulations [64] and is as externally binding as CEPI. The combination of the two
can exert the most institutional pressure on businesses, compelling them to pay close attention to the standardisation of environmental behaviours and meet their obligations to various stakeholders. If not, companies will incur more pollution expenses. Different from CACER, MBER of the local government uses market-oriented means such as fees or subsidies to internalise the environmental costs of enterprises, encourage enterprises to gain further economic incentives through green technology innovation [65], and guide them to have internal motivation for environmental protection so that they can perform CSR more effectively. Comparatively, MBER may be more adaptable [66]. Consequently, the following hypothesis is advanced further in this paper:

**Hypothesis 2 (H2).** When the intensity of the local government’s ER is high, CEPI has a more significant role in promoting the fulfilment of CSR.

### 3. Research Design and Methodology

#### 3.1. Modelling

The first round of CEPI was used as a quasi-natural experiment to examine the net effect of CEPI on CSR by selecting the appropriate data of A-share listed businesses from Shanghai and Shenzhen. This research uses a DID model with multiple time periods to assess the effects of CEPI, as the first round of CEPI was done in 31 provinces and autonomous regions of China in five batches over two years beginning in January 2016. The benchmark regression model is described as follows:

$$CSR_{i,t} = \alpha + \beta \text{CEPI}_{i,t} + \lambda X_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}$$  

(1)

wherein the subscripts $i$ and $t$ represent the enterprise and year, respectively; $CSR_{i,t}$ refers to corporate social responsibility; $\text{CEPI}_{i,t}$ refers to the explanatory variable used to measure whether an enterprise is subject to CEPI; $X_{i,t}$ refers to the set of control variables; $\mu_i$ and $\delta_t$ refer to individual and time-fixed effects, respectively; $\epsilon_{i,t}$ refers to random disturbance.

According to the *Environmental Protection Supervision Program (Trial)*, the Central Environmental Protection Group will focus on the pollution discharge of enterprises in heavily polluting industries. Therefore, when constructing $\text{CEPI}_{i,t}$, dummy variables of a treatment group and a control group, as well as policy time are set in this paper. The treatment group included enterprises from 16 heavily polluting industries identified according to the *Listed Companies Environmental Protection Verification Industry Classification Management Directory* and the *Listed Companies Environmental Information Disclosure Guide*, while the control group included enterprises in other non-heavily polluting industries. When the CEPI Working Group carries out an inspection action on a province or autonomous region, the value of the year and subsequent years is 1; otherwise, the value is 0.

#### 3.2. Definitions of Variables

**3.2.1. Corporate Social Responsibility**

The CSR index is developed from Hexun.com’s CSR score, which has been one of the most extensively utilised indicators in China’s CSR research field in recent years [67]. Compared to other indexes focusing on disclosure level, it is more appropriate to examine the CSR performance of listed firms [68]. The natural logarithm of this score plus one is utilised as a proxy variable for CSR in this article.

Based on the social responsibility report and financial report disclosed by Chinese publicly traded companies, the score is a comprehensive reflection of the enterprises’ performance in fulfilling social responsibility, calculated in terms of five dimensions: shareholders’ responsibility, employees’ responsibility, responsibility of supplier, customer and consumer, environmental responsibility and social responsibility. The default weighting ratio of each dimension is 30%, 15%, 15%, 20% and 20%, respectively, and there are 13 secondary and 37 tertiary indicators. Notable is that the calculation of the score considers the variety of the industry when determining the weight percentage of each dimension. The duty of
employees, suppliers, customers and consumers’ rights and interests is adjusted to 20% in the consumer industry. In comparison, in the manufacturing industry, environmental and social responsibility are adjusted to 30% and 10%. The service industry’s environmental and social responsibility indicators are adjusted to 10% and 30%.

3.2.2. Environmental Regulation

Command-and-Control Environmental Regulation (CACER): The number of administrative environmental penalties will be used in this research to represent CACER [65, 69, 70]. CACER will use the natural logarithm of this value plus one as a variable. Compared to index values such as the number of ER [71] issued by the provinces where the enterprises are located and the comprehensive emission index of pollutants per unit of output value [72] in some studies, this index can more accurately reflect the actual effect and results of the local government’s implementation of CACER.

Market-based Environmental Regulation (MBER): The ratio of the completed investment in pollution control projects this year [73] to the local GDP will be used in this paper. MBER can be further classified into indicators of the cost and incentive types. Since 2017, the widely used cost-type indicator, pollutant discharge fee, has ceased to be published [74]. In this work, incentive-type indicators are used to quantify the explicit local government incentives for pollution reduction and cleaner enterprise production.

3.2.3. Control Variables

ROA, ROE, LEV and other corporate financial metrics are typical options for control variables in studies of listed businesses. In order to perform a more accurate analysis, the study reviews other important factors from prior research that influence CSR at the enterprise level. The association between CSR and credit and financing activities has been discovered to be tight [4]. Cash on hand [75], total asset turnover [76] and other factors may all impact the financing behaviour of a business, making them all suitable control variables. At the corporate governance level, board structure [7], the ownership structure and even firm size [77] may also impact the level of CSR.

This research selects control variables based on seven firm characteristics: enterprise size, growth ability, turnover ability, degree of financialisation, cash-generating capacity, ownership concentration and board composition. Specific variables include the natural logarithm of end-of-year total assets (Size), the sustainable growth rate (GR), the total asset turnover rate (TAT), the profit ratio of financial activities (FAP), the net profit and cash flow ratio (CF), the number of shares held by the company’s largest shareholder (Share) and the ratio of independent directors (InDir). Wherein, the sustainable growth rate (GR) is used to represent the comprehensive financial situation of enterprises, and the financial activities proportion (FAP) is calculated by the formula (Investment Income + Fair Value Change Income + Exchange Income)/(Total Profit).

3.3. Data Sources and Sample Selection

Samples of A-share businesses listed in Shanghai and Shenzhen from 2013 to 2020 are selected. The CSR score is acquired from Hexun.com, other data of companies from CSMAR, and the regional data from the EPS database and China Environmental Yearbook. A few missing data were completed by manual collection.

First, enterprises with severely insufficient financial data are excluded from sample data processing; second, financial and insurance enterprises and those in ST and *ST states are excluded; and third, to control extreme values, all continuous variables will be Winsorised at the 1% and 99% quantiles.

4. Analysis

4.1. Descriptive Statistics and Correlation Analysis

To acquire a comprehensive understanding of the samples in the benchmark regression, this paper did a descriptive statistical analysis of the principal variables, as shown in Table 2.
Table 2. Descriptive Statistics.

| Variable | Obs | Mean  | Std. Dev. | Min  | Max  |
|----------|-----|-------|-----------|------|------|
| CSR      | 10,728 | 3.077 | 0.665     | 0.300 | 4.336 |
| GR       | 10,728 | 0.054 | 0.083     | −0.307 | 0.333 |
| Share    | 10,728 | 35.413 | 14.788    | 9.540 | 74.566 |
| TAT      | 10,728 | 0.620 | 0.442     | 0.067 | 2.593 |
| CF       | 10,728 | 1.722 | 5.039     | −16.648 | 28.966 |
| InDir    | 10,728 | 0.375 | 0.054     | 0.333 | 0.571 |
| Size     | 10,728 | 4.279 | 1.325     | 1.759 | 8.143 |
| FAP      | 10,728 | 0.243 | 0.608     | −0.642 | 3.844 |

The mean, maximum, minimum and standard deviation of CSR level of the explained variables of Chinese listed companies is 3.077, 4.336, 0.665 and 0.665, respectively, as shown in Table 2, indicating that there is a relatively large disparity in CSR level among businesses during the observation period. Some companies may continue to engage in social responsibility activities at a limited level, thereby remaining “bystanders” of social responsibility management. Consequently, it is of practical importance to investigate the influence of CEPI on CSR. The distribution of other control variables is essentially consistent with previous enterprise-related research in the existing literature; hence this paper will not conduct a detailed analysis.

Table 3 demonstrates that the Spearman’s correlation coefficients of all explained variables are less than 0.5, the threshold value for collinearity, indicating that there is no significant multicollinearity problem; the model of benchmark regression is reliable. The next step of analysis can be conducted.

Table 3. Correlation Analysis.

| Variable | CSR | GR   | Share | TAT   | CF     | Size  | FAP   | InDir |
|----------|-----|------|-------|-------|--------|-------|-------|-------|
| CSR      | 1   |      |       |       |        |       |       |       |
| GR       | 0.474 *** | 1   |       |       |        |       |       |       |
| Share    | 0.198 *** | 0.096 *** | 1    |       |        |       |       |       |
| TAT      | 0.042 *** | 0.219 *** | 0.063 *** | 1    |       |       |       |       |
| CF       | 0.019 *   | −0.098 *** | 0.057 *** | 0.056 *** | 1    |       |       |       |
| Size     | 0.278 *** | 0.182 *** | 0.257 *** | −0.008 | 0.110 *** | 1    |       |       |
| FAP      | 0.047 *** | −0.011 | −0.003 | −0.128 *** | 0.026 *** | 0.101 *** | 1    |       |
| InDir    | −0.023 ** | −0.013 | 0.040 *** | −0.024 ** | −0.001 | 0.048 *** | 0.021 ** | 1    |

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

4.2. Baseline Regression

This paper used DID with multiple time periods to examine the influence of CEPI on the CSR level. Individual and time-fixed effects were controlled to eliminate the impact of omitted variables and time trends at the enterprise levels on the regression results. Table 4 outlines the test results.
Table 4. Benchmark Regression Results.

|                | (1)        | (2)        |
|----------------|------------|------------|
| CEPI           | 0.114 ***  | 0.050 ***  |
|                | (5.09)     | (2.60)     |
| GR             | 3.932 ***  | (35.39)    |
| Share          | 0.002 **   | (2.08)     |
| TAT            | −0.101 *** | (−3.16)    |
| CF             | 0.006 ***  | (4.95)     |
| Size           | 0.140 ***  | (8.78)     |
| FAP            | 0.037 ***  | (2.78)     |
| InDir          | 0.105      | (0.65)     |
| Constant       | 3.057 ***  | 2.195 ***  |
|                | (455.99)   | (22.67)    |
| Observations   | 10,728     | 10,728     |
| R²             | 0.449      | 0.616      |
| Year FE        | YES        | YES        |
| Firm FE        | YES        | YES        |

Note: *** and ** indicate significance at the 1% and 5% statistical levels, respectively. The t values are in parentheses.

As shown in Table 4, the coefficients of CEPI dummy variables are significantly positive at the 1% significance level regardless of the insertion of control variables. After adding control variables, the absolute value of the CEPI coefficient reduces slightly, indicating that CEPI has a significant positive impact on the CSR compliance of firms in the implementation region. The first hypothesis is justified. Since the first round of CEPI was implemented in all provinces and autonomous regions of China in 2016, the Central Government has exerted direct environmental governance pressure on the heavily polluting local enterprises, urging them to carry out rectification regarding the supervised environmental events and to fulfil the responsibility to the various stakeholders involved in the event, thereby promoting the full implementation of CSR. Evidently, the top-down environmental governance pressure imposed by CEPI was a significant impetus for businesses to embrace social responsibility.

From the perspective of control variables, other than the ratio of total assets turnover and the ratio of independent directors, the coefficient values of the remaining variables are significantly positive, indicating that a decent financial situation and adequate investment and financing capacity are essential foundations for enterprises to fulfil their social responsibility and that a good enterprise resource base and intense equity supervision are also favourable conditions for their fulfilment.

4.3. Parallel Trend Test

A vital prerequisite for using the DID method is that the gap trend of explained variables in the experimental and control groups is stable before being affected by relevant policies. That is, it is necessary to carry out a parallel trend test. In this paper, referring to Beck et al. [78], a series of dummy variables were added to replace the original $CEPI_{i,t}$ in model (1) to detect the impact of CEPI on CSR in different periods. The base year was set as two years before the implementation of the policy. The regression equation is as follows:

$$CSR_{i,t} = \alpha + \beta_0 Pre_{4,i,t} + \beta_3 Pre_{3,i,t} + \beta_4 Pre_{1,i,t} + \beta_0 Current_{i,t} + \beta_1 After_{1,i,t} + \beta_2 After_{2,i,t}$$

$$+ \beta_3 After_{3,i,t} + \beta_4 After_{4,i,t} + \lambda X_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}$$  \hspace{1cm} (2)
where Pre4$\_t$ means that when period $t$ is the fourth year before the supervision for the province where enterprise $i$ is located, this variable is set to 1; otherwise, it is 0. Current$\_t$ indicates that when period $t$ is the year in which the province where enterprise $i$ is located is supervised, this variable is set to 1; otherwise, it is 0. After1$\_t$ means that when period $t$ is the year after the supervision for the province where enterprise $i$ is located, this variable is set to 1; otherwise, it is 0. The meaning of the remaining dummy variables can be deduced in the same manner. The settings of control variables and fixed effects are consistent with Model (1).

Figure 1 displays the estimated values with confidence intervals of 95%. In the three periods preceding the occurrence of the policy, the coefficient of the policy dummy variable shows non-significance difference from 0; thus, the parallel trend hypothesis is supported. The coefficient of the policy dummy variable is notably positive in the current period, the second period and the third period of CEPI implementation. Overall, it can be seen that CEPI has an evidently positive effect on CSR, which, after experiencing a stage of constant strengthening, declines dramatically in the fourth period. Notable is the fact that in the second period of the policy’s implementation, the positive effect is negligible. This is likely because, in the year when the CEPI Working Group was established, some businesses resorted to temporary closure or falsified rectification to deal with the inspectors. In 2018, the CEPI Working Group began implementing “looking back” methods, which effectively halted the “rebound” of ecological contamination and allowed CEPI’s positive effects to continue to play out consistently. To boost CSR, CEPI still requires solid external assurance.

4.4. Placebo Test

Since unobservable factors may influence the effect of CEPI on CSR, to strengthen the reliability of the benchmark regression results, two methods for testing placebo are adopted: the time placebo test and the individual placebo test.

The CEPI implementation year has been assumed to be two years earlier and recalculated for the time placebo test. As shown in Table 5, columns (1) and (2), whether or not control variables are included, the coefficient of CEPI of the pseudo policy time is not statistically significant, and the value of the regression coefficient is considerably lowered. This finding demonstrates that CEPI policy, which is assumed to be implemented gradually.
in 2014 and 2015, has no discernible effect on CSR, supporting the concept of randomness in the policy’s implementation.

**Table 5. Time Placebo Test.**

|       | CSR   |       |       |
|-------|-------|-------|-------|
|       | (1)   | (2)   |       |
| **CEPI** | 0.044 | 0.016 |       |
|       | (1.49) | (0.61) |       |
| **Constant** | 3.066 *** | 2.210 *** |       |
|       | (338.08) | (22.61) |       |
| **Observations** | 10,728 | 10,728 |       |
| **R²** | 0.448 | 0.616 |       |
| **Controls** | NO    | YES   |       |
| **Year FE** | YES   | YES   |       |
| **Firm FE** | YES   | YES   |       |

Note: *** indicate significance at the 1% statistical levels. The t values are in parentheses.

In the individual placebo test, 413 businesses were selected randomly from the overall sample to serve as the virtual treatment group, while the remaining companies served as the control group. The random sample is repeated 1000 times, and model-based calculations are performed (1). As depicted in Figure 2, the results of the individual placebo test indicate that the estimated coefficients of the majority of CEPI are less than the estimated value of 0.050 in column (2) of Table 4 and are centred around zero. In contrast, the p values of most estimated values are distributed above 0.1. This result suggests that the CEPI policy has no meaningful influence on the experimental group picked randomly from a sample size of 1000. The improvement in the CSR level of the actual treatment group may be attributed primarily to the implementation of the CEPI policy rather than to other unobservable causes.

**Figure 2. Individual Placebo Test Results.**
4.5. Robustness Test

This research applies four distinct robustness testing approaches, including removing municipalities directly under the Central Government, eliminating the effects of other policies, controlling interactive fixed effects and PSM-DID to make the results above more robust and trustworthy. Table 6 displays the test outcomes.

Table 6. Robustness Test Results.

| Excluding Municipalities Directly under the Central Government | Excluding the Policy of 2014 | Interactive Fixed Effects | PSM-DID |
|---------------------------------------------------------------|-----------------------------|---------------------------|---------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| CEPI | 0.109 *** | 0.045 ** | 0.143 *** | 0.067 *** | 0.113 *** | 0.052 *** | 0.114 *** | 0.050 *** |
| (4.45) | (2.14) | (5.77) | (3.16) | (4.82) | (2.59) | (5.09) | (2.60) |
| Constant | 3.035 *** | 2.226 *** | 3.081 *** | 2.214 *** | 3.057 *** | 2.189 *** | 3.057 *** | 2.194 *** |
| (397.86) | (20.42) | (274.18) | (22.69) | (455.81) | (22.49) | (455.59) | (22.63) |
| Observations | 8520 | 8520 | 10,728 | 10,728 | 10,728 | 10,728 | 10,714 | 10,714 |
| R² | 0.449 | 0.614 | 0.450 | 0.616 | 0.471 | 0.630 | 0.450 | 0.616 |
| DID2014 | NO | NO | YES | YES | NO | NO | NO | NO |
| Controls | NO | YES | NO | YES | NO | YES | NO | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year * Province FE | NO | NO | NO | NO | YES | YES | NO | NO |

Note: *** and ** indicate significance at the 1% and 5% statistical levels, respectively. The t values are in parentheses.

First, because the economic development level and resource endowment of China’s four municipalities, Beijing, Shanghai, Tianjin and Chongqing, are relatively superior to those of other provinces and autonomous regions in the same economic area, the listed companies located in the four municipalities are excluded based on the entire sample, and the effect of CEPI on the fulfilment of CSR is re-estimated. Table 6’s columns (1) and (2) indicate that CEPI’s impact on CSR remains considerably positive at the 1% significance level.

Second, the Central Environmental Interview policy was introduced in 2014 during the sample period, which is the same environmental governance measure as CEPI at the Central Government level. To test whether the policy implementation will cause estimation bias, \( DID2014_{i,t} = Treat_{i,t} \times Post_{i,t} \) of the policy year is further constructed in this paper. Where, if the enterprise belongs to a heavily polluting industry, \( Treat_{i,t} \) is set as 1; otherwise, it is 0; if the year is 2014 or later, \( Post_{i,t} \) is set as 1; otherwise, it is 0. As shown in columns (3) and (4) of Table 6, the regression coefficient of the CEPI is still significantly positive at the 1% level.

Third, to reduce the impact of the business cycle and regional economic development on corporate environmental responsibility practises, the article also controls the fixed effects of the interaction term between year and region. Table 6’s columns (5) and (6) indicate that the direction and significance of the CEPI’s regression coefficients remain stable.

Fourth, the robustness test was conducted using the PSM-DID method to better exclude the unobserved differences between the treatment and control groups that do not vary over time. In this study, the firm size (Size), the sustainable growth rate (GR), the profit share of financial activities (FAP) and the net profit cash flow ratio (CF) are taken as covariates, and the nearest neighbour 1:1 matching approach is used to match samples. As depicted in Figure 3, the probability density of the propensity scores of the post-matching treatment group and the control group are closer, and the matching effect is enhanced. In addition, the outcomes in columns 7 and 8 of Table 6 are substantially congruent with the benchmark regression outcomes. CEPI can still considerably increase CSR, and empirical evidence continues to support the hypothesis.
Additionally, the variability of their environmental governance practices may alter the effect of CEPI on CSR. Exploration of these issues is conducive to future research on the CEPI’s long-term implementation mechanism. This article analyses the mechanisms of CACER and MBER of the local government, which is further utilised to explore the heterogeneity of public environmental supervision and corporate green technology innovation.

4.6.1. The Local Government’s CACER and MBER

This article aims to examine the potential role of ER at the local level when the CEPI Working Group conducts environmental supervision, as opposed to reviewing how CEPI influences CSR. Different from the conventional mediating influence analysis in DID research, the paper utilises grouped regression to investigate the possible function of the local government ER and the internal mechanism of the CEPI policy effect.

In this paper, the median grouping test is utilised, and the complete sample is separated into four subsample groups based on the two ER means of the local government: strong CACER, weak CACER, strong MBER and weak MBER. The configuration of the regression model remains compatible with the baseline regression. According to Table 7, the regression findings indicate that both CACER and MBER of the local government cause apparent heterogeneity in the influence of CEPI on CSR.

The regression coefficient of CEPI is significantly positive at the 5% level in the strong MBER subsample group and the strong CACER subsample group, as shown in columns (1) to (4) of Table 7, fails the significance test in the weak CACER subsample group and is significantly positive at the 10% level in the weak market incentive ER subsample group. The findings show that CEPI has a more prominent role in promoting CSR when the local government maintains a higher ER level, regardless of the kind of ER measures.
Notably, the policy impact of CEPI on CSR can be ensured to some extent, even if the local government’s market incentive ER implementation intensity is low.

Table 7. Grouped Regression Results Based on the Local Government ER.

|                | Strong-CACER | Weak-CACER | Strong-MBER | Weak-MBER |
|----------------|--------------|------------|-------------|-----------|
| CEPI           | 0.066 **     | 0.025      | 0.060 **    | 0.052 *   |
|                | (2.31)       | (0.90)     | (2.07)      | (1.74)    |
| GR             | 3.681 ***    | 4.071 ***  | 3.780 ***   | 3.999 *** |
|                | (22.59)      | (25.76)    | (22.36)     | (25.48)   |
| Share          | 0.001        | 0.003 **   | 0.002       | 0.003 **  |
|                | (0.48)       | (2.40)     | (1.28)      | (2.08)    |
| TAT            | –0.047       | –0.132 *** | –0.157 ***  | –0.065    |
|                | (–1.01)      | (–2.78)    | (–3.12)     | (–1.46)   |
| CF             | 0.006 ***    | 0.005 ***  | 0.008 ***   | 0.003     |
|                | (3.01)       | (3.50)     | (4.83)      | (1.58)    |
| Size           | 0.124 ***    | 0.154 ***  | 0.154 ***   | 0.136 *** |
|                | (5.15)       | (6.62)     | (6.13)      | (5.58)    |
| FAP            | 0.059 ***    | 0.030 *    | 0.054 **    | 0.022     |
|                | (3.05)       | (1.65)     | (2.47)      | (1.25)    |
| InDir          | –0.004       | 0.098      | 0.328       | 0.014     |
|                | (–0.02)      | (0.42)     | (1.25)      | (0.06)    |
| Constant       | 2.358 ***    | 2.082 ***  | 2.077 ***   | 2.211 *** |
|                | (15.90)      | (15.20)    | (13.35)     | (15.59)   |
| Observations   | 4843         | 5531       | 4946        | 5467      |
| R²             | 0.631        | 0.628      | 0.629       | 0.652     |
| Year FE        | YES          | YES        | YES         | YES       |
| Firm FE        | YES          | YES        | YES         | YES       |

Note: ***, ** and * indicate significance at the 1%, 5% and 10% statistical levels, respectively. The t values are in parentheses.

As an essential body to ensure the long-term effectiveness of the CEPI policy, the local government will play an important role in supervising the subsequent enterprise rectification process because the CEPI Working Group is typically stationed in a local area for a brief period, around one month. The superposition of ER pressure and CEPI pressure of local government will make enterprises face double costs of environmental violation, which forces enterprises to make more prudent management decisions and pay attention to the compliance of environmental behaviours in all aspects of production and operation. In this way, it is better to take into account the stakeholders in all links and improve the level of CSR from multiple dimensions. However, suppose the degree of ER in the local government is poor. In that case, it is possible that businesses would implement the rectification plan hastily and carry out fraudulent or ineffective rectification without enough local external supervision, which will significantly lessen the policy impact of CEPI.

In addition, the internal mechanism of the local government’s ER is crucial because it encourages businesses to take the initiative to internalise the external costs of ER. Compared to CACER, MBER can enable companies to invest more in cleaner production and services, lessen the burden of environmental costs placed on them through environmental investment support for pollution and emission reduction and compensate for their “compliance costs” through increased green total factor productivity. This will surely motivate businesses to fulfil their obligations under CEPI.

4.6.2. The Local Government’s ER and the Public’s VER

In the top-down modern environmental governance system in China, specific environmental governance tools include not only the CEPI of the Central Government and various types of ER of the local government but also environmental supervision with the public as the main body, which is known as VER. It is typically challenging for the general
public to exert its impact on CSR alone since VER lacks coercive authority. Therefore, this paper subjects VER to the combined influence of CEPI and local government ER, and it further examines the impact of local public engagement in environmental governance on the performance of CSR.

In this study, VER is assessed by the number of National People’s Congress environmental recommendations and CPPCC environmental proposals released in the China Environmental Yearbook. The quantity of such recommendations and proposals can effectively show the concern of the Chinese people and of the democratic parties for environmental problems and the public’s readiness to engage in environmental governance to some level. Only two groups of samples belonging to strong CACER and MBER are chosen for the grouped regression in this study. Based on the median of VER, these two sample groups have been further separated into two subsample groups at the second level: strong VER and weak VER. The setting of the regression model is still based on model (1), and Table 8 displays the regression results.

Table 8. Grouped Regression Results Based on Public VER under the Local Government’s Strong ER.

|               | Strong CACER | Strong MBER |
|---------------|--------------|-------------|
|               | Strong-VER  | Weak-VER  | Strong-VER  | Weak-VER  |
| (1)           | (2)         | (3)        | (4)         |
| CEPI          | 0.053 *     | 0.125      | 0.106 ***   | −0.019     |
|               | (1.74)      | (1.57)     | (3.06)      | (−0.30)    |
| GR            | 3.350 ***   | 5.280 ***  | 3.286 ***   | 4.719 ***  |
|               | (18.95)     | (12.60)    | (16.01)     | (15.63)    |
| Share         | 0.002       | −0.004     | 0.001       | 0.004      |
|               | (1.02)      | (−1.26)    | (0.61)      | (1.19)     |
| TAT           | −0.055      | −0.074     | −0.135 **   | −0.142     |
|               | (−1.05)     | (−0.82)    | (−2.25)     | (−1.52)    |
| CF            | 0.007 ***   | −0.000     | 0.008 ***   | 0.007 ***  |
|               | (3.43)      | (−0.00)    | (3.79)      | (2.64)     |
| Size          | 0.117 ***   | 0.149 ***  | 0.170 ***   | 0.149 ***  |
|               | (4.46)      | (2.73)     | (5.92)      | (2.73)     |
| FAP           | 0.052 **    | 0.053      | 0.035       | 0.069 *    |
|               | (2.40)      | (1.07)     | (1.19)      | (1.88)     |
| InDir         | 0.229       | −0.469     | 0.243       | 0.508      |
|               | (0.80)      | (−1.11)    | (0.69)      | (1.17)     |
| Constant      | 2.298 ***   | 2.509 ***  | 2.127 ***   | 1.842 ***  |
| Observations  | (13.72)     | (7.56)     | (11.46)     | (5.82)     |
| R²            | 3853        | 875        | 3242        | 1554       |
| Year FE       | YES         | YES        | YES         | YES        |
| Firm FE       | YES         | YES        | YES         | YES        |

Note: ***, ** and * indicate significance at the 1%, 5% and 10% statistical levels, respectively. The t values are in parentheses.

From columns (1) to (4) of Table 8, it can be seen that the existence of solid VER makes the effect of CEPI on CSR considerably positive at the 1% significance level for the strong MBER sample group. If VER continues at a high level, the impact of CEPI on CSR in the strong CACER sample group is positive at the 10% level. Under the simultaneous pressures of CEPI and the local government’s strong ER, the comparatively extensive engagement of the local people in environmental governance is also favourable to CEPI’s positive influence on CSR. The CEPI Working Group supervises a local region by receiving public complaints in addition to making site visits. For the CEPI Working Group to gather adequate information and carry out its duties efficiently, a high level of public engagement awareness in environmental governance is a crucial need. As an essential stakeholder in the process of corporate accountability, the public can also exert pressure on businesses during the subsequent enterprise rectification process, which the local government oversees, and...
require firms to disclose all social responsibility information and fulfil their responsibilities in full.

Furthermore, strong VER has a more significant effect in the MBER sample group than in the CACER sample group. This outcome is consistent with the previously outlined greater importance of the local government MBER in ensuring the execution of the CEPI policy. It is reasonable to believe that, in the face of CEPI, MBER of the local government can not only provide the effect of CEPI policies but also effectively activate the vitality of enterprises so that enterprises can better pay attention to external social issues and make social responses under the triple environmental governance pressure of the Central Government, the local government and the public, thereby substantially enhancing the level of CSR.

4.6.3. Heterogeneity Analysis at the Level of Enterprises

To further investigate the role of firms in the positive impact of CEPI on CSR, this paper performs an enterprise-level heterogeneity analysis. In the research on the sustainable growth of organisations, technology innovation (TI) is seen as a critical component for enhancing the financial, social and environmental sustainability of businesses [79]. Thus, this paper uses technological innovation as a grouped variable at the enterprise level to investigate whether firms with varying levels of technical innovation will develop varied CSR strategies in response to CEPI pressure.

This paper uses the number of invention patent applications, utility model patent applications and design patent applications to simultaneously measure technological innovation [80,81], with each index added by one and processed by natural logarithm to reflect the technological innovation willingness of enterprises, and they are named as TI\(_1\), TI\(_2\) and TI\(_3\), respectively. The data are extracted from the CNRDS database, and the regression model is still set up in line with model (1). The results of the regression are reported in Table 9.

Table 9. Results of Heterogeneity Analysis Based on TI of Enterprises.

|          | High-TI\(_1\) | Low-TI\(_1\) | High-TI\(_2\) | Low-TI\(_2\) | High-TI\(_3\) | Low-TI\(_3\) |
|----------|---------------|--------------|---------------|--------------|---------------|--------------|
| CEPI     | 0.095 ***     | 0.038        | 0.082 **      | 0.021        | 0.183 ***     | 0.025        |
|          | (3.44)        | (1.22)       | (2.57)        | (0.77)       | (3.83)        | (1.15)       |
| GR       | 3.960 ***     | 3.846 ***    | 4.123 ***     | 3.778 ***    | 3.643 ***     | 3.980 ***    |
|          | (21.27)       | (26.71)      | (20.17)       | (26.67)      | (12.86)       | (31.99)      |
| Share    | −0.000        | 0.003 **     | 0.000         | 0.003 **     | 0.002         | 0.002 **     |
|          | (−0.13)       | (2.54)       | (0.17)        | (2.47)       | (0.61)        | (2.18)       |
| TAT      | −0.127 **     | −0.099 **    | 0.007         | −0.120 ***   | −0.284 ***    | −0.096 ***   |
|          | (−2.28)       | (−2.35)      | (0.13)        | (−2.96)      | (−2.72)       | (−2.77)      |
| CF       | 0.006 ***     | 0.005 ***    | 0.006 ***     | 0.005        | 0.005         | 0.005 ***    |
|          | (3.07)        | (3.43)       | (2.85)        | (4.29)       | (1.26)        | (4.53)       |
| Size     | 0.145 ***     | 0.135 ***    | 0.173 ***     | 0.123 ***    | 0.150 ***     | 0.124 ***    |
|          | (5.59)        | (5.76)       | (6.39)        | (5.55)       | (3.55)        | (7.00)       |
| FAP      | 0.032         | 0.039 **     | 0.022         | 0.035 ***    | −0.038        | 0.049 ***    |
|          | (1.34)        | (2.35)       | (0.94)        | (3.20)       | (−0.83)       | (3.53)       |
| InDir    | −0.210        | 0.389 *      | −0.275        | 0.430 *      | −0.396        | 0.223        |
|          | (−0.86)       | (1.66)       | (−1.05)       | (1.93)       | (−0.93)       | (1.23)       |
| Constant | 2.374 ***     | 2.058 ***    | 2.163 ***     | 2.128 ***    | 2.546 ***     | 2.189 ***    |
|          | (15.14)       | (14.91)      | (13.03)       | (17.02)      | (8.83)        | (20.76)      |
| Observations | 4857        | 5648         | 4664          | 5819         | 1858          | 8715         |
| R\(^2\)  | 0.615         | 0.650        | 0.619         | 0.655        | 0.637         | 0.627        |
| Year FE  | YES           | YES          | YES           | YES          | YES           | YES          |
| Firm FE  | YES           | YES          | YES           | YES          | YES           | YES          |

Note: ***, ** and * indicate significance at the 1%, 5% and 10% statistical levels, respectively. The t values are in parentheses.
As indicated in columns (1) through (6) of Table 9, the regression coefficients of CEPI are positive significant at the levels of 1%, 5% and 1% for sample groups with a high number of invention patent applications, utility model patent applications and design patent applications, respectively. In contrast, the coefficients of CEPI in the low-level TI intention group all failed the significance test. Regardless of the patent application volume category, businesses with a greater propensity for technological innovation can improve their social responsibility performance under CEPI.

When the supervised enterprises have a strong desire to engage in technical innovation, high technology research and development input can effectively enhance the innovation compensation effect of the enterprises, reimburse for environmental governance costs brought on by CEPI rectification and increase the efficiency of the enterprises in fulfilling social responsibility through the application of innovative technology and updated production service mode so that the enterprises are better able to fulfil their social obligations. Clearly, the intrinsic incentive of businesses toward technological innovation is necessary for CEPI to play a long-term role in boosting CSR.

5. Discussion

Based on the above empirical research, it is clear that the implementation of CEPI has increased the level of CSR, with local government ER and social public VER also have a beneficial impact. This study will explore the relevance and enlightenment of this empirical data from three perspectives.

First, empirical findings have widened the viewpoints of current studies. Compared to previous studies focusing on enterprise environmental behaviour research, it is demonstrated in this paper that CEPI can have a more comprehensive impact on the sustainable development of enterprises, i.e., it can improve the CSR system comprising five dimensions: shareholder responsibility, employee responsibility, supplier, customer and consumer rights responsibility, environmental responsibility and social responsibility. As a significant breakthrough in China’s environmental governance practice, CEPI has broader practical importance and influence than only protecting the environment. The adoption of CEPI may assist Chinese businesses in combining the development of a modern corporate system with the fulfilment of corporate responsibility, and CEPI is a crucial policy instrument for developing a modern CSR system. In addition, parallel trend tests demonstrate the excellent sustainability of the CEPI policy. In the third year after the introduction of CEPI, CSR may still be greatly enhanced. This relatively long-lasting policy benefit has not been documented in prior CEPI-focused environmental research. This outcome further demonstrates the efficacy of the CEPI policy.

Second, the empirical findings have validated businesses’ potential pressure and responsiveness mechanism in terms of CSR under the influence of CEPI. The results of the further analysis indicate that the superposition of the strong ER level of local government and the VER level of the local public is not only a critical external guarantee for enterprises to improve their CSR level under CEPI but also massively increases the external environmental governance pressure faced by enterprises based on the analysis of CSR theory. On the one hand, the Central Government’s implementation of CEPI is the harshest and most direct monitoring approach in the history of China’s environmental governance practice, resulting in unprecedented external pressure on businesses. Alternatively, while the Central Inspector Group collects complaints directly from the public, they will also oversee the environmental governance operations of the local government while inspecting firms, hence increasing the pressure from stakeholders on companies under CEPI. Likewise, the number of social concerns that businesses must address throughout the correction process grows proportionally. Under different challenges, businesses will develop more significant social responsiveness and dramatically increase their CSR level. In addition, within China’s modern environmental governance system, the demands and reactions of the Central Government, local government, the public and even companies in implementing CEPI are evaluated from top to bottom. The primary pressure sources are the Central Government,
the local government and the local public, while the primary social responsiveness is the business sector, as the executor of ER. The findings of heterogeneity analysis reveal further that, under multiple pressures, firms’ internal foundation for implementing a sustained social responsiveness is a strong ambition to innovate technologically. Therefore, the empirical analysis findings not only verify the two hypotheses presented in this study but also show the connection between CEPI and CSR from pressure to responsiveness.

Thirdly, the empirical findings serve as a theoretical reference for modernising China’s environmental governance system. Modern environmental governance necessitates the formation of a multi-level responsibility structure with the Central Government in control, the local government in the lead, the local people in participation and firms in benign autonomy. On the one hand, CEPI measures should be implemented regularly, and enterprises in various provinces, municipalities and autonomous regions should be inspected in batches regularly to increase the frequency and intensity of “looking back” measures. Essential to the long-term efficacy of the CEPI policy is the continuity of the Central Government’s environmental governance pressure. On the other hand, the local government’s ER should play an influential role in ensuring the effectiveness of the CEPI policy, CACER measures should be used to supervise the implementation of rectification plans by enterprises effectively and MBER measures should be used to provide external support for enterprises to carry out comprehensive rectification to alleviate the pressure associated with rectification costs. In the meantime, the channels for the local public to participate in environmental governance should be widened to ensure their right to know and supervise. Furthermore, as corporate stakeholders, public pressure should be utilised rationally to encourage businesses to fulfil their social responsibilities. In addition, it is vital to create policies that encourage the innovation of businesses. Expanding enterprises’ investment and financing channels via external financial support, relieving the cost pressure of enterprises and assisting enterprises to benefit from the innovation-compensation effect are the internal foundations for enhancing the positive responsiveness of enterprises to social issues and ensuring that they fulfil their social responsibilities in full. Lastly, speeding up the creation of a modern corporate structure is a crucial assurance that businesses will continue to engage in high-level CSR activities. From the standpoint of strategic planning, corporate governance mechanisms such as board structure and equity structure should be continually adjusted to give scientific direction to companies’ social responsiveness.

6. Conclusions

The application of CEPI is a significant innovation in China’s environmental governance practice, which may establish a comprehensive, modern, top-down environmental governance system with the local government, the public and businesses. Based on the data of A-share listed companies in Shanghai and Shenzhen from 2013 to 2020, an empirical analysis of the effect of CEPI on CSR was conducted, the role of the local government’s ER and local social public’s VER in the fulfilment of CSR was investigated and a heterogeneity analysis was also conducted based on the willingness for technological innovation of enterprises using the DID model with multiple time periods. The primary conclusions of this study are as follows.

First, the implementation of CEPI has the potential to considerably increase the CSR level of Chinese publicly traded enterprises within the current time period. In the first period following the conclusion of the inspection, the policy’s effect was briefly diminished, but it gradually increased in the second and third periods. The direct external pressure exerted by CEPI can directly support the implementation of CSR and sustainably heighten the interest of diverse stakeholders. However, it is still essential to be vigilant for problems such as fraudulent rectification in the early stages of implementing the rectification plan after the inspection has concluded. This indicates that the “looking back” actions of the CEPI Working Group are necessary to ensure the stability and long-term effect of the CEPI policy.
Second, a local government with a high ER intensity can effectively ensure the promotion effect of CEPI on CSR, but the impact of different ER approaches varies. The local government MBAER has a greater impact than CACER. This diverse effect persists even when the local community and the general public are involved in environmental governance. High local government ER and public VER intensity may effectively guarantee the beneficial impact of CEPI on CSR. Compared with CACER, the combination of solid VER and strong MBER will more significantly increase the policy impact of CEPI.

Thirdly, the diverse TI willingness of businesses renders the CEPI’s effect on CSR heterogeneous. The performance of social responsibility under CEPI can be improved by companies with a greater readiness to innovate technologically. Through the innovation-compensation effect, businesses can effectively compensate for the expense of environmental compliance throughout the stage of supervision and rectification and significantly increase their internal desire to respond to the demand of CEPI and fulfill the social duty.

This paper’s findings contribute a novel perspective to studying environmental governance and corporate sustainability. It aids policymakers and business managers in comprehending the interplay between environmental governance actors. It also provides data for China to build a modern environmental governance system, perform the leading role of the government and the primary function of businesses more effectively and increase public engagement in environmental governance. Based on the results of the control variables, easing financing constraints and enhancing the investment and financing capacity and resource-based capacity of businesses are crucial prerequisites for them to effectively benefit from the innovation-compensation effect under CEPI pressure.

However, this study does have certain limitations. For instance, an examination of the heterogeneity of specific dimensions of CSR was not conducted, and NGOs, the media and other subjects in the environmental governance system were not included in the research. Future research should then continue to develop the research framework of the environmental governance system, subdivide the impact of CEPI on corporate shareholders, employees, the environment and other multi-dimensional responsibility systems, and clarify the rights and responsibilities of various subjects to provide a theoretical basis for accelerating the formation of a robust pattern of environmental governance for the entire society.

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