

VAT Neutrality and Corporate Social Responsibility: Evidence from China's 2018 VAT Credit Refund Reform

Ningning Zhang¹, Xiaoyan Guan^{2*}

¹ Finance Department, North China Electric Power University, Baoding, China, 071003

² Department of Economics and Management, North China Electric Power University, Baoding, China, 071003

**Author to whom correspondence should be addressed.*

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Abstract: Taking China's 2018 value-added tax (VAT) credit refund reform as an exogenous shock to improve VAT neutrality, we use a difference-in-differences approach to explore how the reform affected corporate social responsibility (CSR). We find that the reform motivated firms to improve CSR performance. The reform has a "resource" effect, increasing internal funds and reducing financing costs, thereby enhancing firms' ability to undertake CSR. The reform also has a "reputation" effect, stimulating firms' willingness to engage in CSR to improve their reputations. CSR following the reform increases firm values and reduces bankruptcy risk. Our study provides fresh insights into VAT neutrality theory and is a reference for tax reform in emerging economies.

Keywords: Corporate social responsibility; Reputation effect; Resource effect; VAT credit refund reform; VAT neutrality

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1. Introduction

In June 2018, China promulgated the "Notice on the tax policy related to the refund of VAT credit for some industries in 2018" to refund the VAT credit for certain industries. This reform has smoothed the reimbursement chain and substantially improved VAT neutrality. As China's largest tax, the VAT has extensive and far-reaching effects on businesses. China previously implemented tax rate and tax deduction policies. Previous studies have extensively examined these policies' effectiveness. However, the effects of the 2018 VAT credit refund policy, a tax system reform aimed at tax neutrality enhancement, on firm decision-making have rarely been discussed.

Given the urgency of climate change, ecological imbalances, and other social problems, corporate social responsibility (CSR) engagement has become an unavoidable business practice. Moreover, CSR is vital for firms' long-term development and competitiveness^[1]. Therefore, to fill the research gap, we examine the effects of the VAT credit refund reform on firms' CSR-related decisions.

Using the VAT credit refund reform as a quasi-natural experiment, we adopt a difference-in-differences (DID) method to explore how the reform affects CSR. This study makes three main contributions:

- (1) Our research is novel as we examine how the VAT credit refund reform affects CSR engagement, enriching the literature on VAT neutrality theory;
- (2) We pioneer the exploration of tax neutrality's impact on firms' ability and willingness to undertake CSR, complementing research on the driving forces of CSR from a novel perspective;
- (3) We provide a practical reference for other countries considering implementing VAT reform.

2. Hypothesis

The VAT credit refund reform is expected to exert “resource” and “reputation” effects. The “resource” effect enhances firms' ability to fulfill CSR. The reform smooths the chain of VAT deductions and returns to activate enterprise VAT credits and increase internal cash flow, while mitigating the resource allocation distortion of non-neutral tax policies^[2]. Reducing the distortion can reduce cash flow volatility and financial risk, thereby enhancing enterprises' external financing ability. According to idle resources theory, CSR engagement largely depends on whether a firm has surplus resources. Several studies note that financing constraints are key to inhibiting firms' CSR investments^[1,3]. Therefore, the reform will promote enterprises' ability to participate in CSR practices by enriching their resources.

Furthermore, the “reputation” effect stimulates firms' willingness to undertake CSR. The reform gives full play to the tax neutrality principle, optimizes the business environment, and strengthens the market's role in resource allocation. Therefore, after the reform, firms will focus more on building their reputations. Extant literature notes that CSR helps enterprises win stakeholders' trust and provides a strategic method for establishing a good reputation^[4]. Hence, the reform can motivate firms to improve CSR performance to improve their reputations.

Therefore, we propose the following hypothesis: The VAT credit refund reform has a positive impact on firms' CSR performance (Hypothesis 1).

3. Sample and methods

3.1. Sample

China extended its VAT credit refund policy to eligible manufacturing enterprises in 2021 and added seven more industries in 2022. Therefore, we selected A-share listed companies from 2013 to 2020 as our research sample.

We excluded financial industry, ST, or IPO firms, and firms with missing data, abnormal profit rates or asset-liability ratios. All continuous variables are winsorized at the upper and lower 1% levels. The final sample includes 16,769 firm-year observations from 2,773 firms. The data are from the China Stock Market and Accounting Research Database (CSMAR) and Wind Database.

3.2. Model specification

According to the reform, our treatment group includes advanced manufacturing, modern services and power grid enterprises. The policy time-point is 2018. We used DID to examine how the VAT credit refund reform affects CSR. **Eq. (1)** describes our model as follows:

$$CSR_{it} = \beta_0 + \beta_1 Treat_i \times Post_t + \sum Controls_{it} + \sum Firm_i + \sum Year_t + \varepsilon_{it} \quad (1)$$

CSR refers to corporate social responsibility, which is the sum of environmental and social scores from the Huazheng ESG index system^[5,6]. *Treat* is a dummy variable equal to 1 for enterprises in the treatment group and 0 for those in the control group. *Post* is a dummy variable representing time equal to 1 for the years between 2018–2020 and 0 otherwise. *Controls* includes all control variables.

We control for firm-fixed and year-fixed effects and cluster regression coefficient standard errors at the firm level.

4. Empirical results

4.1. Summary statistics

Table 1 provides the full sample descriptive statistics. The CSR mean and median are 1.347 and 1.342, respectively. Although distribution is relatively uniform, the overall level is low ^[5,6]. The mean of *Treat* × *Post* is 0.258, indicating that the treatment group comprises 25.8% of the total sample. The control variables are within reasonable ranges.

Table 1. Full sample descriptive statistics

Variables	Obs	Mean	SD	P25	Median	P75
CSR	16769	1.347	0.147	1.243	1.342	1.448
Treat × Post	16769	0.258	0.438	0.000	0.000	1.000
Size	16769	22.504	1.280	21.613	22.325	23.242
Age	16769	2.498	0.534	2.079	2.565	2.996
Lev	16769	0.448	0.201	0.291	0.442	0.599
Inv	16769	0.147	0.142	0.057	0.110	0.181
Inta	16769	0.048	0.053	0.018	0.034	0.058
OCF	16769	0.048	0.066	0.010	0.047	0.086
Turno	16769	0.603	0.418	0.329	0.508	0.745
Divp	16769	0.712	0.453	0.000	1.000	1.000
Grow	16769	0.145	0.408	-0.044	0.081	0.230
ROA	16769	0.029	0.059	0.011	0.031	0.058
SOE	16769	0.414	0.492	0.000	0.000	1.000
EBITsd	16769	0.058	0.156	0.014	0.026	0.051
Dual	16769	0.236	0.425	0.000	0.000	0.000
Board	16769	2.133	0.197	1.946	2.197	2.197
Indra	16769	0.376	0.054	0.333	0.364	0.429

Table 2 illustrates the differences in CSR before and after the reform, where the treatment group had lower CSR than the control group prior to the reform. However, this reverses afterward.

Table 2. Subsample descriptive statistics test

Variables	Time-point	Treatment (1)	Control (2)	(1)–(2)	T-test dif	Dif in Dif (T-test)
CSR	Before-policy	1.320	1.328	-0.008	-2.738***	0.041
	Post-policy	1.377	1.374	0.003	0.716	(15.856***)

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.2. Baseline findings and robustness tests

Table 3 shows the baseline findings. The dependent variables in columns (1)–(3) are *CSR*, environmental

responsibility (*Environ*), and other social responsibility (*Social*), respectively.

The coefficient of $Treat \times Post$ is 0.12 and significant at the 1% level, thereby supporting hypothesis 1. Economically, relative to unaffected firms, the CSR performance of affected enterprises increased by 0.89%, indicating that the reform improves tax neutrality and thus motivates firms to undertake CSR activities. Both environmental and other social responsibility performance increased.

Table 3. Baseline findings

Variables	(1) CSR	(2) Environ	(3) Social
Treat $\times$ Post	0.012*** (2.895)	0.005** (1.968)	0.007** (2.194)
Size	0.032*** (9.071)	0.008*** (3.903)	0.025*** (9.734)
Age	0.018 (1.535)	0.016** (2.437)	0.005 (0.493)
Lev	-0.008 (-0.669)	-0.006 (-0.963)	-0.005 (-0.529)
Inv	0.020 (1.154)	-0.003 (-0.318)	0.022* (1.647)
Inta	0.099** (2.273)	0.032 (1.263)	0.064* (1.895)
OCF	-0.028* (-1.914)	-0.003 (-0.356)	-0.028** (-2.106)
Turno	0.022*** (3.355)	0.003 (0.856)	0.019*** (3.582)
Divp	0.011*** (4.225)	-0.000 (-0.122)	0.011*** (5.065)
Grow	-0.010*** (-4.693)	-0.003*** (-2.718)	-0.006*** (-3.738)
ROA	-0.004 (-0.184)	-0.019* (-1.872)	0.015 (0.980)
SOE	0.002 (0.376)	0.008* (1.784)	-0.007 (-1.206)
EBITsd	0.011 (1.167)	0.003 (0.886)	0.008 (0.941)
Dual	0.001 (0.453)	0.002 (1.365)	-0.000 (-0.165)
Board	-0.006 (-0.518)	-0.011* (-1.832)	0.005 (0.532)
Indra	0.013 (0.369)	-0.010 (-0.548)	0.025 (0.906)
Constant	0.569*** (6.431)	0.414*** (8.407)	0.133*** (2.064)
Firm	Yes	Yes	Yes
Year	Yes	Yes	Yes
r2_within	0.024	0.008	0.023
N	16769	16769	16769

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

We tested for parallel trends before the reform and possible policy delays (**Figure 1**). Before the reform, the coefficients were not significant, satisfying the DID model's parallel trends assumption. A placebo test rules out omitted-variable bias. **Figure 2** illustrates the estimated coefficients' probability density distribution. The random sampling estimate distribution is concentrated around 0, which is below the benchmark estimate coefficient of 0.013; thus, unobserved factors do not affect the basic conclusions.

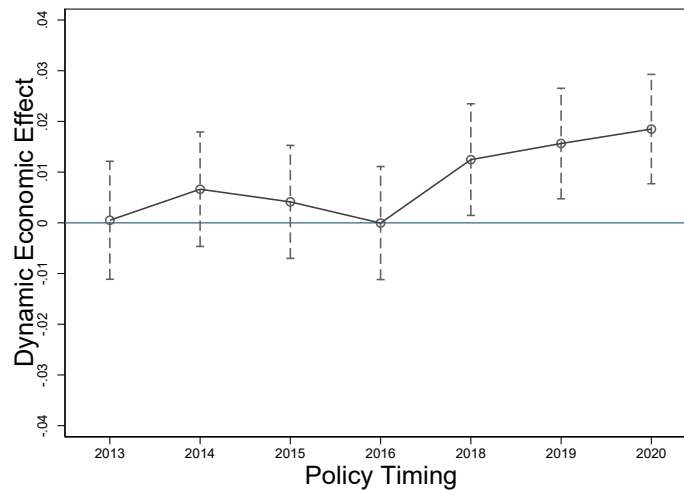


Figure 1. Parallel trend test.

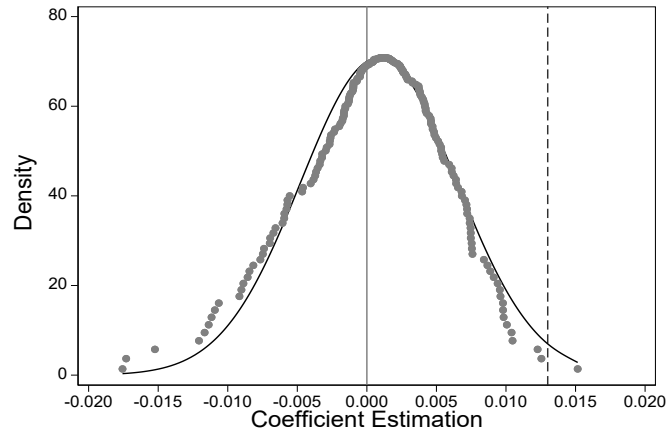


Figure 2. Placebo test.

Table 4 reports the robustness test results. In the first test group, we replace key variables. Column (1) shows the results of replacing *Treat* with 1/2 in 2018. Column (2) shows the results of replacing *CSR* with charitable giving (*Don*). In the second test group, we control for potentially missing variables. Column (3) reports the results of controlling for the actual VAT burden in the previous period (*Vatb*). Column (4) shows the results of controlling for the VAT credit to be deducted (*Ucvat*). Column (5) presents the results of considering the effect of an A-tax-rating (*RA*).

Table 4. Robustness Test

Variables	(1) CSR	(2) Don	(3) CSR	(4) CSR	(5) CSR
TP	0.014*** (2.934)	0.058* (1.865)	0.012*** (2.897)	0.012*** (2.923)	0.005 (1.343)
Vatb			0.001 (0.346)		
Ucva				0.276* (1.715)	
TP × RA					0.010*** (2.671)
RA					0.002 (0.829)
Constant	0.569*** (6.429)	-2.980*** (-5.107)	0.569*** (6.430)	0.572*** (6.439)	0.568*** (10.194)
Controls	Yes	Yes	Yes	Yes	Yes
Firm	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Prov	No	No	No	No	No
r2_within	0.024	0.024	0.024	0.025	0.025
N	16769	16769	16769	16769	16769

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. TP refers to $Treat \times Post$.

4.3. Economic implications

We examine the economic consequences of CSR following the reform by adopting the model in **Eq. (2)**:

$$TQ_{i,t}/Zscore_{i,t} = \lambda_0 + \lambda_1 Treat_i \times Post_t \times CSR_{i,t} + \lambda_2 CSR_{i,t} + \lambda_3 Treat_i \times Post_t + \sum Controls_{i,t} + \sum Firm_i + \sum Year_t + \varepsilon_{i,t} \quad (2)$$

where TQ refers to firm value and $Zscore$ indicates bankruptcy risk.

Table 5 presents the results. In columns (1) and (4), the coefficient of $Treat \times Post \times CSR$ is significantly positive. Actively engaging in CSR following the reform can increase firm value and reduce the probability of bankruptcy. Moreover, the positive effects on TQ and $Zscore$ are more significant in highly capital-intensive firms (PPE_high).

Table 5. Economic consequence analysis

Variables	(1) TQ	(2) PPE high TQ	(3) PPE low TQ	(4) Z score	(5) PPE high Z score	(6) PPE low Z score
Treat × Post × CSR	0.889*** (5.537)	1.185*** (5.324)	0.419* (1.925)	4.402*** (5.449)	4.841*** (4.638)	2.738** (2.343)
CSR	-0.275*** (-2.865)	-0.313** (-2.429)	-0.107 (-0.779)	-1.202** (-2.463)	-1.558** (-2.535)	-0.008 (-0.010)
Treat × Post	-1.386*** (-6.067)	-1.761*** (-5.574)	-0.714** (-2.330)	-6.895*** (-5.984)	-7.439*** (-4.972)	-4.566*** (-2.765)
Constant	16.790*** (14.614)	14.179*** (9.942)	16.529*** (9.625)	50.126*** (9.899)	37.427*** (6.179)	62.564*** (6.731)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
r _{2_within}	0.107	0.089	0.089	0.228	0.194	0.236
N	16769	8235	8534	16769	8235	8534
p-value		0.000			0.000	

t-statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5. Conclusions

In 2018, China implemented a VAT credit refund reform, providing an appropriate scenario for examining tax neutrality. Therefore, based on this unique background, this study verifies that VAT neutrality positively affects CSR. Specifically, the reform has both “resource” and “reputation” effects, increasing firms’ ability and willingness to enhance their CSR performance. Moreover, undertaking CSR following the reform was shown to significantly increase firm value and reduce bankruptcy risk.

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Disclosure statement

The authors declare no conflict of interest.

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