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Does Industrial Policy Reduce Corporate Investment Efficiency? Evidence from China

Ting Wang [1], Rujun Wang [2] and Hua Zhang [3,*]

[1] School of Economics, Zhejiang University, Hangzhou 310027, China
[2] Bond Financing Headquarter, Haitong Securities Company Limited, Shanghai 200001, China
[3] School of Economics & Academy of Financial Research, Zhejiang University, Hangzhou 310027, China
* Correspondence: prozhwa@126.com

Abstract: We investigate the impact and mechanism of industrial policy on corporate investment and investment efficiency. Using the micro-level data of A-share listed firms on China's stock market from 2001–2020, we examine whether industrial policies have different effects on China's state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs). Moreover, we identify specific policy followers to further illustrate the impact of industrial policy on investment efficiency. The empirical results show that industrial policies promote investments among non-SOEs at the cost of reducing their investment efficiency, but have no effect on the investment and efficiency of SOEs. Government subsidy and inter-industry competition are the main mechanisms for the negative impact of industrial policy on investment efficiency. Moreover, target industrial policies reduce the investment efficiency of both SOE and non-SOE policy followers. Therefore, to achieve the goal of improving corporate investment efficiency and promoting sustainable economic development, policy-makers should pay more attention to the consequence of unnecessary government subsidy and excessive inter-industry competition.

Keywords: industrial policy; investment efficiency; policy follower; sustainable development

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1. Introduction

The investments of firms contribute to improving industry upgrading and adjusting industrial structure, thus play a crucial role in economic development. To achieve economic goals, policy-makers have enacted a series of industrial policies to guide corporate investment, optimize resource allocation and promote industrial structure adjustment [1]. In order to clarify the direction of economic and social development, China has implemented short- and medium-term national planning with a five-year horizon since 1953. During the 13th Five-Year Plan (2015–2020) for National Economic and Social Development (13th Five-Year Plan), target industries has experienced a rapid growth. According to the "Statistical Communiqué of the People's Republic of China on the 2017 National Economic and Social Development" [2], with the support of a strategic emerging industries development plan, the value added of the industrial strategic emerging industries above the designated size increased by 11.0% during 2016–2017, and the innovation and profitability of these target industries have improved substantially. However, the "visible hand" of the government intervene is a double-edged sword [2,3]. Improper design or invalid implementation of industrial policies may distort the behavior of corporate investment, resulting in over-investment and investment inefficiency.

The Implement of the Five-Year Plan is deemed as an industrial policy to promote economic growth [4]. Generally, target industries mentioned by the Five-Year Plans will receive more resources and support, and hence experience a rapid growth. From the micro perspective, the investment decisions of firms belonging to the target industries can be influenced by the Five-Year Plans. Therefore, the effectiveness of industrial policies has an important impact on economic development. If industrial policies stimulate firms to make efficient investment, industry upgrading and resource allocation will be significantly improved [5,6]; otherwise, there will be overcapacity and redundant construction in some industries [7]. Most of the studies investigate the impact of industrial policies from the perspective of macroeconomic level [8–10]. There are few studies on the relationship between industrial policy fluctuations and firms' investment and performance. Existing literature focuses on the impact of industrial policy on corporate investment [4,11], while the investment efficiency of firms is largely ignored.

We contribute to the literatures of industrial policy by exploring the relationship between industrial policy and corporate investment efficiency. Furthermore, we examine the different consequences of national and local industrial policy. As local policies formulated according to national policies may not match the local economic conditions, studies focusing on the impact of national industrial policies may overlook the role of local industrial policies in corporate investment [7,11,12]. Considering that Chinese firms are closely related to local government policies, we emphasize the influence of local industrial policies on firms' investment and efficiency. In addition, there is a significant disparity between the status of SOEs and non-SOEs in China [13,14]. Although non-SOEs are the fundamental force of economic development and have grown rapidly in recent years, SOEs still have advantages in funding availability and market entry [15]. Hence, we investigate the responses of both SOEs and non-SOEs to industrial policies, respectively.

China has gone through thirteen Five-Year Plans, which provide a unique institution background for us to investigate the consequences of industrial policy on corporate investment efficiency. We hand-collect the documents of "The Five-Year Plan for National Economic and Social Development", published by Chinese central and provincial government departments, covering the implement periods of 10th (2001–2005), 11th (2006–2010), 12th (2011–2015) and 13th (2015–2020) Five-Year Plans; then, we identify the target industries and match them with data on A-share listed firms to investigate the impact of industrial policy on corporate investment and investment efficiency. Our empirical results show that industrial policies have a heterogenous effect on the investment and efficiency of SOEs and non-SOEs. Industrial policies significantly motivate the investments of non-SOEs at the cost of reducing their investment efficiency. Meanwhile, industrial policies have little impact on the investment and efficiency of SOEs. Government subsidy and inter-industry competition are the main influence mechanism of the industrial policies on investment efficiency.

Moreover, we define the specific policy followers (firms in target industries that increase investment after the implement of supporting industrial policies) to further explore the impact of industrial policy on corporate investment efficiency. We find that the investment efficiency of policy followers has significantly reduced by the implement of industrial policies.

Our study makes several contributions. Firstly, we enrich the influence factors of corporate investment from the perspective of industrial policies. Existing literatures explore the determinants of corporate investment and investment efficiency from the view of firm-level. The investments of corporates are affected by the cost of capital [16–19], debt structure [20,21], manager characteristics [22,23] and political connections [24,25]. In addition, the information asymmetry caused by disclosure quality [26,27] and corporate governance [28,29] have a substantial effect on corporate investment efficiency. Our study focuses on the impact of industrial policy on corporate investment and investment efficiency to reveal how macroeconomic policies interact with corporate investment decisions. Secondly, we investigate how industrial policies affect corporate investment efficiency from the perspective of government subsidy and inter-industry competition. Finally, we test the investment efficiency of specific policy followers. Overall, our study provides a new insight on the impact of industrial policy on corporate investment and investment efficiency, and underlines the importance of the formulation of industrial policies.

The rest of the paper is structured as follows: Section 2 provides the theoretical analysis and hypotheses development; Section 3 describes the sample selection, data sources and variable definitions; Section 4 presents the empirical results; Section 5 discusses the robustness checks; Section 6 makes some discussions; Section 7 concludes.

2. Literature Review and Hypothesis Development

The goal of industrial policies is to promote industry upgrading, which reflects economic development pattern. Industrial policies are often accompanied by preferential measures (such as increased financing opportunities, fewer industry barriers and relaxed administrative controls), which creates a favorable environment for firms to make related investments and may significantly affect their investment efficiency. Firms in the target industries can receive ongoing government subsidies and it is easier for them to obtain bank loans, compared to other firms [12,30]. Some firms can also take advantage of direct financing, such as bond issuance and secondary equity offering, to meet their funding needs [25]. Therefore, the implements of industrial policies send a positive signal to firms in the target industries, resulting in increased investments.

Considering the disparity in terms of financing and investing between SOEs and non-SOEs, the impact of industrial policies on corporate investment may vary with firms' ownership status. The ownership status of SOEs includes central-controlled, local-controlled, city governments and state-owned assets management company. The financial discrimination view indicates that compared with non-SOEs, SOEs have more political connections and softer budget constraints, allowing them to acquire more long-term debts and bear lower funding costs [15,31]. However, firms targeted by industrial policies may obtain more government subsidies and financing opportunities, enabling non-SOEs in target industries to make long-term investments, such as purchase fixed assets and increase research and development investment [32]. In addition, SOEs usually have political connections, and it is easier for them to breach industrial barriers compared to non-SOEs [14]. It is difficult for non-SOEs to enter highly profitable industries, such as energy, finance, transportation and other monopolistic sectors; they account for only 20% in such industries [33]. Consequently, non-SOEs need to seek out political connections to secure economic benefits. For example, they actively respond to supportive industrial policies by increasing related investments, and exploit the favorable conditions to achieve the goal of profit maximization. Hence, we propose the following Hypothesis 1:

Hypothesis 1: *Industrial policies have a positive effect on corporate investment. However, the positive effect may be heterogenous according to firms' ownership status; industrial policies have no significant impact on the investment of SOEs, but a significant impact for non-SOEs.*

In a perfect market, a firm's optimal investment decision is based on the market value of the investment opportunities, which is reflected in Tobin's Q ratio [34]. However, there exists government intervention, information asymmetry and agency problems, in reality. As a result, firms may deviate from the optimal investment level and make inefficient investment in an imperfect market [35]. To compensate for market failures and achieve economic goals, the government usually conducts administrative methods to affect the allocation of resource, and formulates corresponding policies.

Policies that encourage innovation and technological enhancement may contribute to firms' performance, but otherwise lead to inefficiency and overcapacity [36]. When economic policy lacks clear guidelines, firms will be more cautious and avoid over-investment. Furthermore, differences in managerial style and investment strategy between SOEs and non-SOEs may also affect their investment efficiency [37]. To achieve social and political goals (such as reducing unemployment and promoting regional development), the government may intervene in the investment decisions of SOEs [25,38], which may even occur before the implement of industrial policies. Consequently, SOEs may make investment decisions without maximizing profit, and favorable industrial policies barely affect their investment efficiency. By contrast, the sales and labor productivity of non-SOEs dropped after their nationalization, resulting in a worse performance [39]. Non-SOEs aim to maximize profits without undertaking political tasks, making their investments more efficient than those of SOEs. However, firms in target industries will receive more government subsidies and bank loans than others [14,40]. This may induce non-SOEs to blindly cater to target industrial policies, without considering the return of investment. Accordingly, we propose Hypotheses 2:

Hypothesis 2: *Industrial policies reduce corporate investment efficiency. However, the negative effect may vary with firms' ownership status; industrial policies have no significant effect on the investment efficiency of SOEs, but a significant effect for non-SOEs.*

The supportive industrial policies affect firms' investment efficiency by affecting resource allocation, such as capital flows and inter-industry competition structure [41]. Generally, target industries are offered government support, including national special funds and preferential policies. Local industry upgrading is also supported by local government subsidies, which contributes to the career promotion of local politicians [42]. Due to information asymmetry, the government cannot fully capture the operation and prospect of firms that receive subsidies; thus, the allocation of resources is critical for economic growth. If the government misallocates resource to firms that have no comparative advantage in target industries, or there are some firms that make unnecessary investments in order to obtain subsidies, the investment efficiency will be distorted [30]. Moreover, government subsidies help to accelerate the development of emerging industries in the early stage of expansion, but have little impact on subsequent innovation and the increase in homogenized products, eventually causing overcapacity [43,44]. As the A-share listed firms in China's stock market are qualified to certain profit requirements, our sample is relatively mature and has already experienced their first growth stage. Therefore, the government subsidy might have a negative impact on the investment efficiency of listed firms.

In addition to administrative intervention, inter-industry competition also plays a role in resource allocation, promoting the development of growth-oriented firms [45]. The imitation behavior of investments increases with the degree of inter-industry competition [46,47]. Thus, inter-industry competition reinforces the effect of industrial policies on firms' investment efficiency [38]. Thus, we propose the following Hypothesis 3:

Hypothesis 3: *The negative impact of industrial policies on the investment efficiency increases with the amount of government subsidies and the degree of inter-industry competition.*

Industrial policies can reduce entry barriers and the cost of investment, resulting in market optimism and triggering an investment boom [48]. To investigate the impact of investment waves on corporate investment efficiency, we define specific policy followers in target industries based on firms' annual reports, investment announcements and funding reports. The policy followers in target industries make investment decisions according to the guidelines of industrial policies to meet the preferences of investors. The herding behavior of policy followers can easily lead to inefficient investment, which generates overcapacity and impairs the effectiveness of industrial policies. Therefore, we present the following Hypothesis 4:

Hypothesis 4: *Industrial policies have a negative effect on the investment efficiency of policy followers.*

Based on these Hypotheses, the idea and structure of the study is generalized in Figure 1:

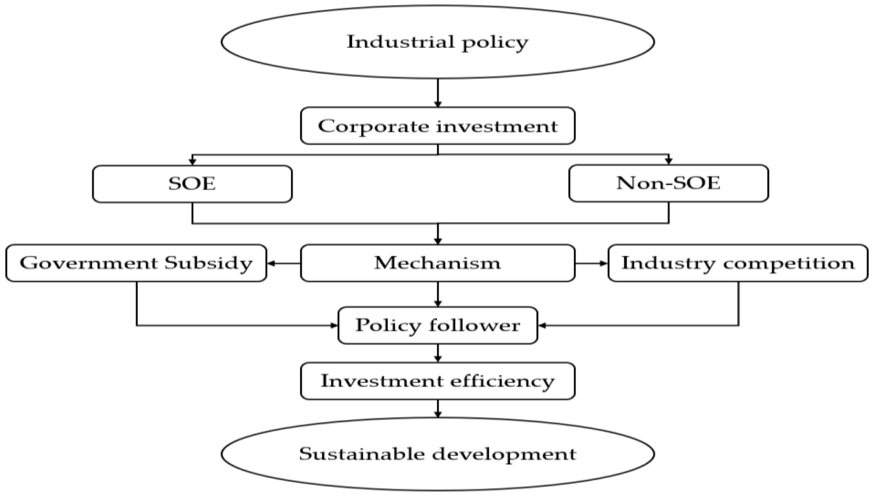

Figure 1. Generalized research structure.

3. Data and Variable Definitions

3.1. Data

We hand-collect the 10th (2001–2005), 11th (2006–2010), 12th (2011–2015) and 13th (2015–2020) Five-Year Plans for National Economic and Social Development, published by Chinese provincial government departments covering the implement period of 2001 to 2020, and identify the target industries; then, we match the target industries with the balance sheet of A-share listed firms on China's stock market according to year and the Guidelines on Industry Classification of Listed Companies, published by the China Securities Regulatory Commission (CSRC) in 2001 [49]. To avoid the sample selection bias, we construct our sample by excluding the following firms: (1) special treatment firms; (2) financial firms considering their different balance sheet structure; (3) firms with missing data; (4) firms insolvent in the period; and (5) firms with less than three years of continuous data. Firm-level data is retrieved from the China Stock Market and Accounting Research (CSMAR) database and Wind databases, respectively. Finally, we build an unbalanced panel data set including 33,788 firm-year observations, including 886 SOEs and 1436 non-SOEs.

3.2. Variable Definitions

3.2.1. Dependent Variables

Inspired by existing literature [26,50], we estimated the following investment model in Equation (1) to calculate the optimal value of corporate investment, and then use the absolute residual to measure corporate investment efficiency (*Inefficiency*):

$$Invest_{i,t} = \alpha_0 + \alpha_1 Invest_{i,t-1} + \alpha_2 CF_{i,t-1} + \alpha_3 TQ_{i,t-1} + \alpha_4 Age_{i,t-1} + \alpha_5 Size_{i,t-1} + \alpha_6 Leverage_{i,t-1} + \alpha_7 Return_{i,t-1} + +\alpha_8 MTB_{i,t-1} Industry + Year + \varepsilon_{i,t} \quad (1)$$

where $Invest_{i,t}$ is the investment of firm i in year t, measured as the capital expenditures divided by total assets at the beginning period [51–53]. $CF_{i,t-1}$ is the operating cash flow of firm i in year $t-1$; $TQ_{i,t-1}$ is the market value of equity divided by book value of assets of firm i in year $t-1$ [24,35]. $Age_{i,t-1}$ is the listing age of firm i in year $t-1$; $Size_{i,t-1}$ is the log of total assets of firm i in year $t-1$; $Leverage_{i,t-1}$ is the liability to asset ratio of firm i in year $t-1$ [26]; $Return_{i,t-1}$ is the stock return of firm i in year $t-1$ and; $MTB_{i,t-1}$ is the market value of equity, plus book value of assets, minus book value of equity, scaled by book value of assets [38]. *Industry* and *Year* are the industry and time fixed effects, respectively, and $\varepsilon_{i,t}$ is the residual term.

We then used the absolute residual to capture corporate investment efficiency ($Inefficiency_{i,t}$), which is the deviation from optimal investment. A higher value of *Inefficiency* infers that firm making more inefficiency investment.

3.2.2. Independent Variables

Following the existing literature [4], we used the industrial policy dummy variable (*IP*) to identify whether a firm belongs to the target industry of Five-Year Plans. Specifically, based on the Guidelines on Industry Classification of Listed Companies, published by the CSRC in 2001 [49], when an industry is mentioned by key words, such as "vigorously develop", "major push", "focus on" and "strongly support" in the documents of Five-Year Plans, we define the industry as a target industry. We then define the industrial policy (*IP*) according to the firm's industry classification. If firms belong to the target industry, then *IP* equals 1; otherwise, *IP* equals 0. In addition, we use the dummy variable *Follower* to define the policy follower. If a firm is in the target industry and its increased investment in year t is higher than that in year $t-1$, then *Follower* equals 1; otherwise, *Follower* equals 0.

We also chose government subsidy (*Subsidy*) and inter-industry competition (*HHI*) to explore how industrial policy affects corporate investment and investment efficiency. The CSRC has required listed firms to disclose detailed data on government subsidy since 2007, so we measured government subsidy (*Subsidy*) as the amount of government subsidy divided by total assets [12,36], in which government subsidies are reported in the non-operating income items of the annual reports. We calculated the Herfindahl–Hirschman Index (*HHI*) to capture the inter-industry competition [54]. The *HHI* is calculated as the following Equation (2):

$$HHI = \sum_{i=1}^{n} \left(\frac{X_i}{X}\right)^2, \text{ and } X = \sum_{i=1}^{n} X_i \quad (2)$$

where X_i is the operating income of firm i and n is the total number of firms in the industry. A high value of *HHI* means a great income difference within the industry, implying a high market concentration and a low degree of competition, and vice versa.

3.2.3. Control Variables

Referring to the previous empirical studies related to corporate investment [13,23,25], we used the following control variables for empirical estimation: The log of total assets (*Size*), measuring firm size; the operating income growth rate (*Growth*), measuring firm's profitability; the liabilities to assets ratio (*Leverage*), measuring the debt structure; the operating cash flow (*CF*), measuring the liquidity level; the stock return (*Return*), measuring the market performance and; the ownership status of firm (*SOE*) equals 1, if firm is state-owned (including central-controlled, local-controlled, city governments and state-owned assets management company); otherwise, *SOE* equals 0. Table 1 provides definitions of the variables used in our paper:

Table 1. Variable definitions.

Variable	Definition
Invest	The capital expenditures divided by total assets at the beginning period
Inefficiency	The absolute residual of Equation (1)
IP	If the firm belongs to the target national industrial policy, then IP_N equals 1; otherwise, IP_N equals 0 If the firm is targeted by local industrial policy, then IP_L equals 1; otherwise, IP_L equals 0
Subsidy	The log of government subsidy
HHI	The HHI index of the industry
Follower	If the investment of the firm of target national industrial policy in year t is higher than in year $t-1$, then $Follower_N$ equals 1; otherwise, $Follower_N$ equals 0. If the investment of the firm of target local industrial policy in year t is higher than in year $t-1$, then $Follower_L$ equals 1; otherwise, $Follower_L$ equals 0
Size	The log of total assets
Growth	The operating income growth rate
Leverage	The ratio of liabilities to assets
CF	The operating cash flow
Return	The stock return
SOE	The ownership status of firm (*SOE*) equals 1 if firm is state-owned (including central-controlled, local-controlled, city governments and state-owned assets management company); otherwise, *SOE* equals 0

This table presents the definition of variables used in the paper.

3.3. Summary Statistics

We winsorize the continuous firm-level variables at the top and bottom 1%, which means that the observed values outside the 1% and 99% quantiles are replaced with observed values in those quantiles to exclude the effects of spurious outliers. The descriptive statistics of all variables are shown in Panel A of Table 2. The mean of the IP_N is 0.5439, which means that 54.39% of the firms belong to the industries targeted by national industrial policies. The mean of IP_L is 0.4305, which means that only 43.05% of the firms are supported by local industrial policies. Hence, firms benefit more from national rather than local industrial policies. Panel B compares the difference of corporate investment (*Invest*), investment efficiency (*Inefficiency*) and industrial policy (*IP*) between SOEs and non-SOEs. The investment of non-SOEs is significantly higher than SOEs, and the investment efficiency of non-SOEs is significantly lower than SOEs. This indicates that non-SOEs make more inefficient investment compared to SOEs. Moreover, SOEs are distributed in industries that get more support from Five-Year Plans of the central government. Non-SOEs are scattered in industries that are more supported by Five-Year Plans of provincial governments. Panel C reports the correlation matrix of key variables; the variance inflation factor (VIF) of these variables is less than 10, indicating there is no serious multicollinearity.

Table 2. Summary statistics.

Panel A. Descriptive statistics

	Mean	St. Dev	Min	Median	Max	Obs.
Invest	0.0631	0.0696	0.0002	0.0405	0.4071	33,680
Inefficiency	0.0325	0.0371	0.0003	0.0215	0.2202	30,915
IP_N	0.5439	0.4981	0.0000	1.0000	1.0000	33,790
IP_L	0.4305	0.4952	0.0000	0.0000	1.0000	33,790
$Follower_N$	0.4320	0.4954	0.0000	0.0000	1.0000	16,418
$Follower_L$	0.4325	0.4954	0.0000	0.0000	1.0000	13,479
Subsidy	0.1090	0.5322	−2.1179	0.0435	3.1590	25,203
HHI	0.1530	0.1479	0.0202	0.1088	1.0000	33,678
Size	3.5994	1.3186	0.8554	3.4356	8.0197	33,707
Growth	0.1834	0.4868	−0.6412	0.1075	3.7009	33,706
Leverage	0.4618	0.2049	0.0530	0.4651	0.9459	33,707
CF	0.0798	0.1031	−0.2427	0.0697	0.5264	33,703
Return	0.1914	0.7030	−0.7216	−0.0112	3.4350	33,702
SOE	0.4576	0.4982	0.0000	0.0000	1.0000	33,788

Panel B. The comparison between SOEs and non-SOEs

	Mean of SOE	Mean of non−SOE	Difference	T value
Invest	0.0473	0.0518	−0.0045 ***	−5.2472
Inefficiency	0.0350	0.0363	−0.0013 ***	−2.6741
IP_N	0.5514	0.5154	0.0359 ***	6.3251
IP_L	0.4077	0.4648	−0.0571 ***	−10.1185

Panel C. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Invest	1								
Inefficiency	0.2791 ***	1							
IPC	0.0437 ***	0.0294 ***	1						
IPL	−0.0056	−0.0105 *	0.2383 ***	1					
Size	0.0317 ***	−0.0925 ***	−0.0958 ***	0.0272 ***	1				
Growth	0.1054 ***	0.0877 ***	0.0292 ***	−0.0194 ***	0.0097 *	1			
Leverage	−0.0274 ***	−0.0503 ***	−0.0572 ***	−0.0713 ***	0.3461 ***	0.0409 ***	1		

Table 2. *Cont.*

CF	0.0702 ***	0.0391 ***	−0.0676 ***	0.0886 ***	0.1024 ***	0.0110 *	−0.2116 ***	1	
Return	0.0411 ***	0.0222 ***	0.0237 ***	−0.0147 ***	−0.0609 ***	0.1012 ***	−0.0025	−0.0305 ***	1

This table displays summary statistics for key variables. Panel A shows the descriptive statistics of variables, Panel B presents the mean value test of SOEs and non-SOEs, and Panel C is the correlation matrix. All of the firm-level variables are winsorized at the 1% and 99% levels to mitigate the effects of outliers. The definitions of the variables are given in Table 1. * and *** indicate statistical significance at the 10 and 1 percent levels, respectively.

4. Empirical Results

We explore the impact of industrial policy on corporate investment or investment efficiency by estimating the following Equation (3):

$$Y_{\mathrm{i,t}} = \beta_0 + \beta_1 IP_{i,t} + \beta_2 Controls_{i,t-1} + Industry + Year + \varepsilon_{i,t} \quad (3)$$

where $Y_{\mathrm{i,t}}$ is the corporate investment (*Invest*) or investment efficiency (*Inefficiency*) of firm i at year t. $IP_{i,t}$ is the national (IP_N) or local (IP_L) industrial policy dummy variable, indicating whether firm i belongs to the target industries at year t. $Controls_{i,t-1}$ are the lagged control variables, including *Size*, *Growth*, *Leverage*, *CF*, *Return* and *SOE*. *Industry* and *Year* are the industry and time fixed effects, respectively. $\varepsilon_{i,t}$ is the residual term. We estimate Equation (3) using the Ordinary Least Squares method. Standard errors are clustered at the firm-level in all specifications for heteroskedasticity [55].

4.1. Industrial Policy and Corporate Investment

Table 3 shows the results of using corporate investment (*Invest*) as the dependent variable in Equation (3). Columns (1), (2) and (3) show the impact of national industrial policies on the investment of the full, SOE and non-SOE samples, respectively. The coefficient of IP_N for the full sample is significantly positive at a 1% statistical level, indicating that national industrial policy stimulates corporate investment. The coefficient of IP_N for the SOE sample is insignificant, meaning that investment of SOEs is not affected by national industrial policy. The coefficient of IP_N for the non-SOE sample is significantly positive at a 1% statistical level, showing that investment of non-SOEs is motivated by national industrial policy. Columns (4), (5) and (6) represent the effects of local industrial policies on the investments of the full, SOE and non-SOE samples, respectively. The coefficient of IP_L is significantly positive in the full and non-SOE samples, but insignificant in the SOE sample. Overall, both national and local industrial policies have a positive impact on corporate investment, but the effect is heterogenous for SOEs and non-SOEs. Compared with non-SOEs, SOEs have more political connections, so their investment is less sensitive to policy shocks [51]. Hence, the positive effect of industrial policies is significant for non-SOEs, supporting our Hypothesis 1.

Moreover, the economic significance of local industrial policies on corporate investment is weaker than that of national industrial policies. Looking at the coefficient of the full sample, the coefficient of IP_N is 0.0048, meaning that, ceteris paribus, compared with firms not supported by national industrial policy, the investment of target firms increases 0.48%. Meanwhile, the coefficient of IP_L is 0.0024, indicating that, ceteris paribus, compared with firms not supported by local industrial policy, the investment of targeted firms increases 0.24%. The differences between national and local industrial policies can be explained by the hierarchical effect: local industrial policy is formulated according to national industrial policy, with weaker guidance and compulsory administration.

Table 3. The impact of industrial policy on corporate investment.

Dependent Variable: *Invest*	Independent Variable: IP_N			Independent Variable: IP_L		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
IP	0.0048 ***	0.0005	0.0088 ***	0.0024 *	0.0006	0.0041 **
	(0.0006)	(0.7793)	(0.0000)	(0.0554)	(0.7571)	(0.0145)
Size	0.0038 ***	0.0027 ***	0.0047 ***	0.0038 ***	0.0027 ***	0.0047 ***
	(0.0000)	(0.0034)	(0.0000)	(0.0000)	(0.0033)	(0.0000)
Growth	0.0055 ***	0.0048 ***	0.0054 ***	0.0055 ***	0.0048 ***	0.0055 ***
	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0000)
Leverage	−0.0179 ***	−0.0042	−0.0221 ***	−0.0182 ***	−0.0042	−0.0228 ***
	(0.0000)	(0.3981)	(0.0000)	(0.0000)	(0.3930)	(0.0000)
CF	0.0775 ***	0.0972 ***	0.0612 ***	0.0780 ***	0.0973 ***	0.0616 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0102 ***	0.0080 ***	0.0117 ***	0.0102 ***	0.0080 ***	0.0117 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0089 ***			−0.0089 ***		
	(0.0000)			(0.0000)		
Constant	0.0477 ***	0.0413 ***	0.0420 ***	0.0492 ***	0.0414 ***	0.0449 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,795	14,369	16,426	30,795	14,369	16,426
Adjust R^2	0.1342	0.1869	0.1154	0.1337	0.1869	0.1140

This table reports the results of using corporate investment (*Invest*) as the dependent variable in Equation (3). Columns (1), (2) and (3) present the impact of national industrial policies on the investments for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) show the effects of local industrial policies on the investments of the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

4.2. Industrial Policy and Corporate Investment Efficiency

Table 4 provides the results of using firms' investment efficiency (*Inefficiency*) as the dependent variable in Equation (3). Columns (1), (2) and (3) are the impact of national industrial policies on the investment efficiency of the full, SOE and non-SOE samples, respectively. The coefficient of IP_N for the full sample is significantly positive at a 1% statistical level, indicating that national industrial policy reduces the efficiency of corporate investment. The coefficient of IP_N for the SOE sample is insignificant. The coefficient of IP_N for the non-SOE sample is significantly positive at a 1% statistical level, which means that national industrial policy induces over-investment among non-SOEs. Columns (4), (5) and (6) show the effects of local industrial policies on the investment efficiency of the full, SOE and non-SOE samples, respectively. The coefficient of IP_L is significantly positive in the full and non-SOE samples, but insignificant in the SOE sample. These results show that target industrial policies reduce financing constraints and industry barriers, which encourages non-SOEs to make arbitrary investment, but significantly reduces their investment efficiency. However, industrial policies have no effect on the investment efficiency of SOEs, consisting with our Hypothesis 2.

Furthermore, China's economy has entered a new normal development state; the upgrading of industrial structure becomes the main driver of economic development. Hence, the corporate investment and investment efficiency may be affected by some other policies, such as the implementation of the Mass Entrepreneurship and Innovation Campaign in 2015. Inspired by previous studies, which explore the impact of policy on corporate investing and financing behavior [56], we consider the effect of the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign in 2015 on the relationship of industrial policies on corporate investment and investment efficiency. Tables A1 and A2 in Appendix A reports the results of regressing corporate investment and investment efficiency on the industrial policy, with an additional control variable *Dummy2015*, respectively. Our findings are consistent after considering other policies.

Table 4. The impact of industrial policy on corporate investment efficiency.

Dependent Variable: *Inefficiency*	Independent Variable: IP_N			Independent Variable: IP_L		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
IP	0.0027 ***	−0.0006	0.0058 ***	0.0013 **	0.0008	0.0018 **
	(0.0001)	(0.5165)	(0.0000)	(0.0257)	(0.3488)	(0.0348)
Size	−0.0024 ***	−0.0023 ***	−0.0023 ***	−0.0024 ***	−0.0023 ***	−0.0023 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Growth	0.0026 ***	0.0018 **	0.0029 ***	0.0026 ***	0.0018 **	0.0029 ***
	(0.0000)	(0.0119)	(0.0000)	(0.0000)	(0.0117)	(0.0000)
Leverage	−0.0068 ***	−0.0039 *	−0.0066 ***	−0.0070 ***	−0.0039 *	−0.0070 ***
	(0.0000)	(0.0918)	(0.0054)	(0.0000)	(0.0882)	(0.0032)
CF	0.0239 ***	0.0303 ***	0.0198 ***	0.0242 ***	0.0300 ***	0.0202 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0063 ***	0.0047 ***	0.0075 ***	0.0063 ***	0.0047 ***	0.0075 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0043 ***			−0.0043 ***		
	(0.0000)			(0.0000)		
Constant	0.0411 ***	0.0389 ***	0.0376 ***	0.0420 ***	0.0382 ***	0.0399 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,779	14,365	16,414	30,779	14,365	16,414
Adjust R^2	0.0952	0.1314	0.0750	0.0947	0.1314	0.0726

This table reports the results of corporate investment efficiency (*Inefficiency*) as the dependent variable in Equation (3). Columns (1), (2) and (3) are the impact of national industrial policies on the investment efficiency of the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) show the effects of local industrial policies on the investment efficiency of the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

4.3. The Influence Mechanism of Industrial Policy on Investment Efficiency

We explore the influence mechanism of industrial policies on corporate investment efficiency by estimating the following Equation (4):

$$Inefficiency_{i,t} = \gamma_0 + \gamma_1 IP_{i,t} + \gamma_2 M_{i,t} + \gamma_3 IP_{i,t} * M_{i,t} + \gamma_4 Controls_{i,t-1} + Industry + Year + \varepsilon_{i,t} \quad (4)$$

where $Inefficiency_{i,t}$ is the deviation from optimal investment of firm *i* at year *t*. $IP_{i,t}$ is the national (IP_N) or local (IP_L) industrial policy dummy variable, indicating whether the firm *i* belongs to target industries at year *t*. $M_{i,t}$ is the influence mechanism of industrial policy on investment efficiency, including government subsidy (*Subsidy*) and inter-industry competition (*HHI*). $Controls_{i,t-1}$ are the lagged control variables, including *Size*, *Growth*, *Leverage*, *CF* and *Return*. *Industry* and *Year* are the industry and time fixed effects, respectively. $\varepsilon_{i,t}$ is the residual term.

4.3.1. Government Subsidy

Table 5 reports the results of using government subsidy (*Subsidy*) as the mechanism variable in Equation (4). The coefficient of IP_N and IP_L are significantly positive, consisting with the baseline results. In Column (1), the interaction term IP_N **Subsidy* is significantly positive at a 5% statistic level, inferring that national industrial policy reduces firms' investment efficiency by providing government subsidies. Similarly, Column (2) shows that government subsidies enhance the negative effect of local industrial policy on corporate investment efficiency. Therefore, the negative impact of industrial policies on the investment efficiency increases with the amount of government subsidy, supporting our Hypothesis 3. In addition, these results consist with the existing literature examining the relation of government subsidy and corporate investment efficiency [12].

Table 5. The mechanism influence of industrial policy: Government subsidy.

Dependent Variable: *Inefficiency*	**Independent Variable: IP_N**	**Independent Variable: IP_L**
	(1)	**(2)**
IP	0.0011 *	0.0009 *
	(0.0953)	(0.0881)
*IP*Subsidy*	0.0029 **	0.0018 *
	(0.0313)	(0.0717)
Subsidy	−0.0013	−0.0006
	(0.1832)	(0.3853)
Size	−0.0017 ***	−0.0017 ***
	(0.0000)	(0.0000)
Growth	0.0026 ***	0.0026 ***
	(0.0000)	(0.0000)
Leverage	−0.0092 ***	−0.0094 ***
	(0.0000)	(0.0000)
CF	0.0241 ***	0.0243 ***
	(0.0000)	(0.0000)
Return	0.0064 ***	0.0064 ***
	(0.0000)	(0.0000)
Constant	0.0372 ***	0.0375 ***
	(0.0000)	(0.0000)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	20,590	20,590
Adjust R^2	0.1145	0.1142

This table reports the mechanism of industrial policy affecting corporate investment efficiency through government subsidy (*Subsidy*). The independent variable in Columns (1) and (2) is national and local industrial policy, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

4.3.2. Inter-Industry Competition

Table 6 provides the results of using inter-industry competition (*HHI*) as the mechanism variable in Equation (4). The coefficient of IP_N and IP_L are significantly positive, which is consistent with our Hypothesis 1 that industrial policies reduce investment efficiency. In Column (1), the interaction term IP_N **HHI* is significantly negative at a 1% statistic level, indicating that a higher inter-industry competition will lead to investment inefficiency (a smaller value of *HHI* means a higher competition). The coefficient of interaction term IP_L **HHI* in Column (2) illustrates that the negative impact of local industry policy on corporate investment efficiency increases with the degree of inter-industry competition. Thus, Hypothesis 3 is supported.

4.4. Policy Followers and Corporate Investment Efficiency

We also investigate the investment efficiency of firms that made investment decisions referencing to the guidance of industrial policies, defined as policy followers (*Follower*). Furthermore, we estimate the following Equation (5):

$$Inefficiency_{i,t} = \delta_0 + \delta_1 Follower_{i,t} + \delta_2 Controls_{i,t-1} + Industry + Year + \varepsilon_{i,t} \quad (5)$$

where $Inefficiency_{i,t}$ is the deviation from optimal investment of firm i at year t. $Follower_{i,t}$ is the dummy variable identifying whether the firm i is a national ($Follower_N$) or local ($Follower_L$) policy follower at year t. (The definition of policy follower is described in Section 3.2.2) $Controls_{i,t-1}$ are the lagged control variables, including *Size*, *Growth*, *Leverage*, *CF*, *Return* and *SOE*. *Industry* and *Year* are the industry and time fixed effects, respectively. $\varepsilon_{i,t}$ is the residual term.

Table 6. The mechanism influence of industrial policy: Inter-industry competition.

Dependent Variable: *Inefficiency*	**Independent Variable: IP_N**	**Independent Variable: IP_L**
	(1)	**(2)**
IP	0.0020 ***	0.0005 *
	(0.0034)	(0.0802)
*IP*HHI*	−0.0086 ***	−0.0071 ***
	(0.0006)	(0.0083)
HHI	−0.0025	−0.0005
	(0.1912)	(0.7564)
Size	−0.0016 ***	−0.0016 ***
	(0.0000)	(0.0000)
Growth	0.0020 ***	0.0020 ***
	(0.0001)	(0.0001)
Leverage	−0.0127 ***	−0.0124 ***
	(0.0000)	(0.0000)
CF	0.0268 ***	0.0269 ***
	(0.0000)	(0.0000)
Return	0.0055 ***	0.0055 ***
	(0.0000)	(0.0000)
Constant	−0.0016 ***	−0.0016 ***
	(0.0000)	(0.0000)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	24,042	24,042
Adjust R^2	0.0676	0.0671

This table reports the mechanism of industrial policy affecting corporate investment efficiency through inter-industry competition (*HHI*). The independent variable in Columns (1) and (2) is national and local industrial policy, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. * and *** indicate statistical significance at the 10 and 1 percent levels, respectively.

Table 7 shows the empirical results of Equation (5). Columns (1), (2) and (3) present the impact of national industrial policies on policy followers for the full, SOE and non-SOE samples, respectively. The coefficients of $Follower_N$ are all significantly positive at a 1% statistical level, which means that the investment efficiency of policy followers is negatively affected by national industrial policies. This finding holds for both SOE and non-SOE policy followers. Columns (4), (5) and (6) provide the results of the impact of local industrial policies on policy followers for the full, SOE and non-SOE samples, respectively. The coefficients of $Follower_L$ are all significantly positive at a 1% statistical level. These results reveal that national and local industrial policies induce policy followers to over-invest blindly, thus reducing their investment efficiency, supporting our Hypothesis 4.

Instead of using the absolute value of deviation from optimal investment as the measure of investment efficiency, we constructed a dummy variable *OverInvest* to capture whether industrial policies induced the over-investment of policy followers. If the residual of Equation (2) is positive, *OverInvest* equals 1; otherwise, *OverInvest* equals 0. We re-estimate Equation (5) by using *OverInvest* as the dependent variable. The empirical results are shown in Table A3 of Appendix B. The coefficients of $Follower_N$ and $Follower_L$ are all significantly positive at a 1% statistic level, indicating that national and local industrial policies indeed lead policy followers to over-invest.

Table 7. The impact of industrial policy on the investment efficiency of policy followers.

Dependent Variable: *Inefficiency*	Independent Variable: $Follower_N$			Independent Variable: $Follower_L$		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
Follower	0.0086 ***	0.0073 ***	0.0098 ***	0.0084 ***	0.0070 ***	0.0095 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Size	−0.0015 ***	−0.0011 *	−0.0016 ***	−0.0012 ***	−0.0012 **	−0.0013 **
	(0.0004)	(0.0540)	(0.0085)	(0.0049)	(0.0470)	(0.0387)
Growth	0.0031 ***	0.0030 ***	0.0028 ***	0.0034 ***	0.0023 **	0.0038 ***
	(0.0000)	(0.0010)	(0.0013)	(0.0000)	(0.0201)	(0.0001)
Leverage	−0.0119 ***	−0.0057 *	−0.0141 ***	−0.0080 ***	−0.0046	−0.0079 **
	(0.0000)	(0.0702)	(0.0000)	(0.0002)	(0.1381)	(0.0129)
CF	0.0189 ***	0.0272 ***	0.0126 **	0.0195 ***	0.0306 ***	0.0111 **
	(0.0000)	(0.0000)	(0.0150)	(0.0000)	(0.0000)	(0.0321)
Return	0.0048 ***	0.0033 ***	0.0063 ***	0.0056 ***	0.0033 ***	0.0071 ***
	(0.0000)	(0.0004)	(0.0000)	(0.0000)	(0.0016)	(0.0000)
SOE	−0.0060 ***			−0.0044 ***		
	(0.0000)			(0.0000)		
Constant	0.0390 ***	0.0321 ***	0.0371 ***	0.0329 ***	0.0295 ***	0.0312 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,408	7939	8469	13,474	5860	7614
Adjust R^2	0.1357	0.1614	0.1207	0.1422	0.1762	0.1276

This table reports the impact of the industrial policy on policy followers' investment efficiency. Columns (1), (2) and (3) show the investment efficiency of the national industrial policy followers for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) provide the results of local industrial policy followers for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

5. Robustness Checks

The formulation of industrial policy is based on the economic developmental status quo, which is an important factor for corporate investment as well. To eliminate the simultaneous effects and reverse-causality problem, we conducted two-stage least squares regression. In addition, we applied different definitions for investment efficiency and policy follower to test the robustness of our findings.

5.1. 2SLS for the Endogenous Problem

There is a potential sample selection problem that may cause endogeneity. Specifically, the current structure and prospect of industry play a key role in drafting industrial policies. As the investment efficiency varies among industries, the goals of industrial policies in different industries will embody diversities. For example, some policies may target to improve traditional industries, while others focus on promoting emerging industries. Hence, the impact of industrial policy on corporate investment efficiency could be biased, resulting from confounding factors.

Inspired by Heckman's two-stage selection model [57], we chose economic development and industry factors as the independent variables to calculate the fitted value of industrial policy (*Fitted_IP*) and *Lambda* in the first stage. In the second stage, we added the *Lambda* into Equation (3), and used *Fitted_IP* as the independent variable to re-estimate the empirical regression.

For the impact of national industrial policy on corporate investment and its efficiency, we use national GDP and industry profitability to estimate the fitted value of national industrial policy ($Fitted\_IP_N$) in the first stage. Table 8 reports the results of the second-stage regression. The coefficients of the $Fitted\_IP_N$ are significantly positive for the full and non-SOE samples, but insignificant for the SOE sample. Although the coefficients of *Lambda* are significant in some columns, national industrial policy stimulates non-SOEs' investment at the cost of reducing their investment efficiency, which is consistent with the baseline results in Tables 3 and 4.

Table 8. Robustness check: 2SLS for national industrial policy.

	Dependent Variable: *Invest*			Dependent Variable: *Inefficiency*		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
$Fitted\_IP_N$	0.0041 ***	0.0002	0.0078 ***	0.0022 ***	−0.0007	0.0047 ***
	(0.0023)	(0.9147)	(0.0001)	(0.0013)	(0.4092)	(0.0000)
Size	0.0045 ***	0.0031 ***	0.0056 ***	−0.0016 ***	−0.0017 ***	−0.0014 ***
	(0.0000)	(0.0006)	(0.0000)	(0.0000)	(0.0000)	(0.0016)
Growth	0.0054 ***	0.0050 ***	0.0053 ***	0.0026 ***	0.0019 ***	0.0027 ***
	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0049)	(0.0000)
Leverage	−0.0223 ***	−0.0073	−0.0280 ***	−0.0100 ***	−0.0061 ***	−0.0108 ***
	(0.0000)	(0.1400)	(0.0000)	(0.0000)	(0.0064)	(0.0000)
CF	0.0786 ***	0.0981 ***	0.0624 ***	0.0230 ***	0.0306 ***	0.0177 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0101 ***	0.0079 ***	0.0117 ***	0.0061 ***	0.0045 ***	0.0073 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0079 ***			−0.0038 ***		
	(0.0000)			(0.0000)		
Lambda	0.0026 ***	0.0008	0.0043 ***	−0.0000	−0.0012 *	0.0011 *
	(0.0018)	(0.5206)	(0.0003)	(0.9598)	(0.0541)	(0.0939)
Constant	0.0452 ***	0.0401 ***	0.0392 ***	0.0385 ***	0.0369 ***	0.0348 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,790	14,367	16,423	30,776	14,363	16,413
Adjust R^2	0.1511	0.1984	0.1370	0.1143	0.1453	0.0984

This table reports the results of second-stage regression for national industrial policy by using the two-stage selection model. We use national GDP and the profitability of the industry to estimate the fitted value of national industrial policy ($Fitted\_IP_N$) in the first stage. Columns (1), (2), and (3) provides the impact of national industrial policies on the investments for the full, SOE and non-SOE samples, respectively. Columns (4), (5), and (6) provide the effects of national industrial policy on investment efficiency for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. * and *** indicate statistical significance at the 10 and 1 percent levels, respectively.

For the impact of local industrial policy on corporate investment and investment efficiency, we use national GDP, provincial GDP and industry profitability to estimate the fitted value of local industrial policy ($Fitted\_IP_L$) in the first stage. Table 9 reports the results of the second-stage regression. The coefficients of $Fitted\_IP_L$ are significantly positive for the full and non-SOE samples, but insignificant for the SOE sample. These results prove that our Hypothesis 1 holds after considering the endogenous problem.

5.2. Change the Definition of Investment Efficiency

Alternatively, we define the investment efficiency as the sensitivity of investment expenditure to investment opportunity [58], and estimate the following Equation (6):

$$Invest_{i,t} = \omega_0 + \omega_1 IP_{i,t} + +\omega_2 TQ_{i,t-1} + \omega_3 IP_{i,t} * TQ_{i,t-1} + \omega_4 Controls_{i,t-1} + Industry + Year + \varepsilon_{i,t} \quad (6)$$

where $Invest_{i,t}$ is the investment of firm i in year t, measured as the capital expenditures, divided by total assets at the beginning period.

$IP_{i,t}$ is the national (IP_N) or local (IP_L) industrial policy dummy variable, indicating whether firm i belongs to the target industries at year t. $TQ_{i,t-1}$ is the market value of equity, divided by book value of assets of firm i in year $t-1$. $Controls_{i,t-1}$ are the lagged control variables, including *Size*, *Growth*, *Leverage*, *CF*, *Return* and *SOE*. *Industry* and *Year* are the industry and time fixed effects, respectively. $\varepsilon_{i,t}$ is the residual term.

Table 9. Robustness check: 2SLS for local industrial policy.

	Dependent Variable: *Invest*			Dependent Variable: *Inefficiency*		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
$Fitted\_IP_L$	0.0027 **	0.0008	0.0043 **	0.0014 **	0.0010	0.0017 **
	(0.0313)	(0.6445)	(0.0106)	(0.0129)	(0.2336)	(0.0320)
Size	0.0045 ***	0.0032 ***	0.0057 ***	−0.0016 ***	−0.0017 ***	−0.0013 ***
	(0.0000)	(0.0006)	(0.0000)	(0.0000)	(0.0001)	(0.0017)
Growth	0.0054 ***	0.0050 ***	0.0054 ***	0.0026 ***	0.0019 ***	0.0027 ***
	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0048)	(0.0000)
Leverage	−0.0226 ***	−0.0074	−0.0287 ***	−0.0101 ***	−0.0061 ***	−0.0112 ***
	(0.0000)	(0.1375)	(0.0000)	(0.0000)	(0.0060)	(0.0000)
CF	0.0790 ***	0.0981 ***	0.0626 ***	0.0233 ***	0.0304 ***	0.0180 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0101 ***	0.0079 ***	0.0117 ***	0.0061 ***	0.0045 ***	0.0073 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0078 ***			−0.0038 ***		
	(0.0000)			(0.0000)		
Lambda	0.0026 ***	0.0008	0.0042 ***	−0.0000	−0.0011 *	0.0011
	(0.0020)	(0.5081)	(0.0003)	(0.9199)	(0.0568)	(0.1046)
Constant	0.0463 ***	0.0399 ***	0.0415 ***	0.0391 ***	0.0361 ***	0.0366 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,790	14,367	16,423	30,776	14,363	16,413
Adjust R^2	0.1509	0.1984	0.1361	0.1141	0.1454	0.0967

This table reports the results of second-stage regression for local industrial policy by using the two-stage selection model. We use national GDP, provincial GDP and industry profitability of the to estimate the fitted value of local industrial policy ($Fitted\_IP_L$) in the first stage. Columns (1), (2), and (3) provides the impact of local industrial policies on the investments for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) provide the effects of local industrial policy on investment efficiency for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

If the coefficient ω_3 of interaction term *IP***TQ* is significantly negative, industrial policy reduces corporate investment efficiency. Table 10 shows the results of using the sensitivity of investment expenditure to investment opportunity as the measure of investment efficiency. Columns (1), (2) and (3) present the impact of national industrial policy on investment efficiency of the full, SOE and non-SOE samples, respectively. The coefficients of IP_N are positive, and the coefficients of IP_N*TQ are negative for the full and non-SOE samples, indicating that national industrial policy increases corporate investment while reducing its efficiency. However, the investments and investment efficiency of SOEs are not affected by national industrial policy. Columns (4), (5) and (6) show that local industrial policy has a positive influence on investment, but a negative impact on efficiency for the full and non-SOE samples. Thus, our baseline results are robust to a different measure of investment efficiency.

Table 10. Robustness check: change the definition of investment efficiency.

Dependent Variable: *Invest*	**Independent Variable: IP_N**			**Independent Variable: IP_L**		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
IP	0.0075 ***	0.0062	0.0106 ***	0.0029 **	0.0036	0.0046 *
	(0.0002)	(0.1350)	(0.0001)	(0.0485)	(0.2186)	(0.0806)
*IP*TQ*	−0.0007 *	−0.0018	−0.0006 **	−0.0001 *	−0.0013	−0.0002 **
	(0.0837)	(0.1811)	(0.0490)	(0.0902)	(0.3071)	(0.0147)
TQ	−0.0010 **	−0.0009 *	−0.0008 *	−0.0013 **	−0.0011 **	−0.0009 *
	(0.0253)	(0.0599)	(0.0527)	(0.0493)	(0.0470)	(0.0945)
Size	0.0047 ***	0.0040 ***	0.0056 ***	0.0048 ***	0.0041 ***	0.0055 ***
	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0000)
Leverage	−0.0042	0.0161 ***	−0.0120 **	−0.0048	0.0157 ***	−0.0127 ***
	(0.2224)	(0.0019)	(0.0110)	(0.1709)	(0.0024)	(0.0071)
MTB	−0.0332 ***	−0.0399 ***	−0.0299 ***	−0.0332 ***	−0.0399 ***	−0.0297 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Tangibility	0.0559 ***	0.0444 ***	0.0608 ***	0.0555 ***	0.0441 ***	0.0605 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
ROA	0.1573 ***	0.1976 ***	0.1323 ***	0.1566 ***	0.1964 ***	0.1327 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0097 ***			−0.0096 ***		
	(0.0000)			(0.0000)		
Constant	0.0514 ***	0.0454 ***	0.0449 ***	0.0542 ***	0.0471 ***	0.0485 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,615	14,314	16,301	30,615	14,314	16,301
Adjust R^2	0.1480	0.2004	0.1286	0.1471	0.2001	0.1269

This table reports the robustness test by changing the measurement of investment efficiency. We define investment efficiency as the sensitivity of investment expenditure (*Invest*) to investment opportunities (*TQ*) [58]. Columns (1), (2) and (3) present the impact of national industrial policies on the investment efficiency for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) show the effects of local industrial policies on the investment efficiency of the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

5.3. Change the Definition of Policy Followers

Considering that increased corporate investment may result from other factors that are irrelevant to industrial policy (for example, a new patent or an unexpected technique breakthrough), we refined the definition of policy followers. If the increased investment of firm in target industry in year t is higher than the average of its increased investment in year $t-1$ and $t-2$, the dummy variable *Follower_R* equals 1; otherwise, *Follower_R* equals 0. Table 11 presents the results of the impact of industrial policy on the investment efficiency of policy followers. The coefficients of $Follower\_R_N$ and $Follower\_R_L$ are all significantly positive at a 1% statistic level for all samples. Therefore, industrial policies reduce the investment efficiency of policy followers, supporting Hypothesis 4. In addition, to verify the accuracy of the definition of policy follower, we randomly check the investment announcements of corporations from the policy followers. We find that policy followers mention they make investments references to following national or local industrial policies.

Table 11. Robustness check: change the definition of policy follower.

Dependent Variable: ***Inefficiency***	**Independent Variable:** ***Follower_R$_N$***			**Independent Variable:** ***Follower_R$_L$***		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
Follower_R	0.0118 ***	0.0112 ***	0.0120 ***	0.0117 ***	0.0108 ***	0.0123 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Size	−0.0014 ***	−0.0011 **	−0.0014 **	−0.0010 **	−0.0009	−0.0012 *
	(0.0010)	(0.0436)	(0.0287)	(0.0200)	(0.1354)	(0.0549)
Growth	0.0020 ***	0.0021 **	0.0015	0.0022 ***	0.0007	0.0027 **
	(0.0032)	(0.0361)	(0.1018)	(0.0022)	(0.3968)	(0.0106)
Leverage	−0.0071 ***	−0.0032	−0.0078 **	−0.0051 **	−0.0043	−0.0032
	(0.0015)	(0.3116)	(0.0262)	(0.0170)	(0.1455)	(0.3192)
CF	0.0187 ***	0.0247 ***	0.0127 **	0.0180 ***	0.0277 ***	0.0105 **
	(0.0000)	(0.0000)	(0.0158)	(0.0000)	(0.0000)	(0.0449)
Return	0.0045 ***	0.0031 ***	0.0061 ***	0.0052 ***	0.0027 **	0.0067 ***
	(0.0000)	(0.0012)	(0.0000)	(0.0000)	(0.0136)	(0.0000)
SOE	−0.0054 ***			−0.0044 ***		
	(0.0000)			(0.0000)		
Constant	0.0339 ***	0.0288 ***	0.0313 ***	0.0289 ***	0.0264 ***	0.0268 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,540	7213	7327	12,400	5529	6871
Adjust R^2	0.1487	0.1756	0.1303	0.1520	0.1902	0.1336

This table reports the robustness check by changing the definition of policy follower. We refine policy followers (*Follower_R*) as the increased investment of firm in target industry if year t is higher than the average of their increased investment in year $t-1$ and $t-2$. Columns (1), (2) and (3) represent the investment efficiency of the national industrial policy followers for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) provide the investment efficiency of local industrial policy followers for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and p-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

6. Discussion

We investigate the impact of industrial policy on corporate investment and investment efficiency from the perspective of Chinese Five-Year Plans. Using four Five-Year Plans covering the periods from 2001 to 2020, we match the firm-level data with target industries of the industrial policies. We document compelling evidence of the negative effect of industrial policy on corporate investment efficiency. As one form of government intervention, the industrial policy stimulates corporate investment at the cost of reducing investment efficiency. However, we do not observe such evidence in SOEs.

Existing literatures find that government interventions significantly promote the investment of SOEs, and distort their optimal investment by political connections [25,35]. On the contrary, we argue that industrial policies harm investment efficiency of non-SOEs, due to economic policy uncertainty, which plays a crucial role in corporate investment [24,51,59]. Although non-SOEs targeted by industrial policy make inefficient investments, it may be a rational investment decision for them. Compared with SOEs, non-SOEs are less politically connected and it is harder for them to keep in touch with the government [60], thereby making it more difficult to track the industrial policy changes. When non-SOEs expose to supportive industrial policies, they may make investment decisions blindly to cater to policies.

Our study sheds light on the impact of industrial policy on investment efficiency of firms with different ownership status. Since non-SOEs face higher economic policy uncertainty, making more investments may be the best option for them, even though it will harm their investment efficiency. Hence, there is an urgent need for policy-makers to formulate reasonable policies to effectively guide the investment behavior of non-SOEs.

7. Conclusions

Based on the micro-level data of A-share listed firms on China's stock market and the four Five-Year Plans during 2001 to 2020, we explored whether industrial policies have different effects on the investment and efficiency of SOEs and non-SOEs, respectively. Our findings provided a new insight on the impact of industrial policy, from the perspective of corporate investment and investment efficiency. Firstly, target industrial policies have a positive impact on investment of non-SOEs; however, they distort their investment efficiency. Moreover, compared to local industrial policies, national industrial policies have a stronger marginal effect on corporate investment and investment efficiency. Nevertheless, target industrial policies have no significant influence on the investment and efficiency of SOEs. Secondly, industrial policies affect corporate investment efficiency through government subsidy and inter-industry competition. The investment efficiency of non-SOEs decreases with the increase in the amount of government subsidy and the degree of inter-industry competition. Finally, industrial policies induce over-investment behaviors among policy followers, and have a negative effect on their investment efficiency, holding for both SOE and non-SOE policy followers.

Overall, industrial policies stimulate the investment of non-SOEs, by eliminating financial constraints and reducing industry barriers, but at the cost of reducing their investment efficiency. Therefore, to improve the effectiveness of industrial policies, governments should pay great attention to enhancing the investment efficiency of non-SOEs, by cutting down unnecessary government subsidies and preventing excessive inter-industry competition. More importantly, it is necessary to maintain the continuity and stability of industrial policies, which contribute to create favorable expectations for the investment decisions of non-SOEs, thereby avoiding inefficient investments. Given that industrial policies have little impact on the investment of SOEs, they will play an important part in smooth economic fluctuations. SOEs can maintain the investments of projects related to the macroeconomy and people's livelihoods in a downward economic cycle.

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

Nomenclature

SOEs	State-owned enterprises
Non-SOEs	Non-state-owned enterprises
Five-Year Plan	The Five-Year Plan for National Economic and Social Development
National industrial policy	The Five-Year Plan for National Economic and Social Development, published by Chinese central government departments
Local industrial policy	The Five-Year Plan for National Economic and Social Development, published by Chinese provincial government departments

Policy followers	Firms in target industries that increase investment after the implement of supporting industrial policies
CSRC	China Securities Regulatory Commission
CSMAR	China Stock Market and Accounting Research

Appendix A

Inspired by previous studies which explored the impact of policy on corporate investing and financing behavior [56], we considered the effect of the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign in 2015 on the relationship of industrial policies on corporate investment and investment efficiency. Specifically, we defined a dummy variable *Dummy2015* to capture the consequences of the policies in 2015. *Dummy2015* equals 1 for years after 2015; otherwise, *Dummy2015* equals 0. Table A1 reports the results of regress corporate investment on the industrial policy with an additional control variable *Dummy2015*. The coefficients of IP_N and IP_L are still significantly positive for total and non-SOE samples, but insignificant for SOE samples. The coefficients of *Dummy2015* are significantly negative for all regressions, which means that firms make investment decisions more cautiously after the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign. The positive effect of industrial policies on corporate investment for non-SOEs is not affected by the policies in 2015. This is robust to our baseline results in Table 3.

Table A1. The impact of the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign on corporate investment.

Dependent Variable: *Invest*	**Independent Variable: IP_N**			**Independent Variable: IP_L**		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
IP	0.0064 ***	0.0024	0.0101 ***	0.0017	−0.0009	0.0043 **
	(0.0000)	(0.1902)	(0.0000)	(0.1682)	(0.6328)	(0.0109)
Dummy2015	−0.0242 ***	−0.0288 ***	−0.0207 ***	−0.0258 ***	−0.0292 ***	−0.0233 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Size	0.0025 ***	0.0006	0.0041 ***	0.0024 ***	0.0006	0.0039 ***
	(0.0000)	(0.4778)	(0.0000)	(0.0001)	(0.4971)	(0.0000)
Growth	0.0071 ***	0.0064 ***	0.0071 ***	0.0071 ***	0.0064 ***	0.0072 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Leverage	−0.0167 ***	−0.0035	−0.0254 ***	−0.0171 ***	−0.0035	−0.0258 ***
	(0.0000)	(0.4806)	(0.0000)	(0.0000)	(0.4768)	(0.0000)
CF	0.0716 ***	0.0952 ***	0.0511 ***	0.0715 ***	0.0956 ***	0.0502 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0056 ***	0.0049 ***	0.0060 ***	0.0056 ***	0.0049 ***	0.0060 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0077 ***			−0.0075 ***		
	(0.0000)			(0.0000)		
Constant	0.0614 ***	0.0586 ***	0.0560 ***	0.0652 ***	0.0605 ***	0.0614 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,795	14,369	16,426	30,795	14,369	16,426
AdjustR^2	0.1250	0.1742	0.1034	0.1239	0.1741	0.1013

This table reports the results of using corporate investment (*Invest*) as the dependent variable in Equation (3). For all regressions, we added *Dummy2015* as a control variable to capture the effect of the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign in 2015. Columns (1), (2) and (3) present the impact of national industrial policies on the investments for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) show the effects of local industrial policies on the investments for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5 and 1 percent levels, respectively.

Table A2 shows the empirical results of regress investment efficiency on the industrial policy, with an additional control variable *Dummy2015*. The coefficients of IP_N and IP_L

remain significantly positive for total and non-SOE samples, but insignificant for SOE samples. The coefficients of *Dummy2015* are significantly negative for all regressions, indicating that the investment efficiency of firms experience a notable improvement after the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign. The negative role of industrial policies on investment efficiency for non-SOEs is robust to the policies in 2015, which is consistent with our baseline results in Table 4.

Table A2. The impact of the new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign on investment efficiency.

Dependent Variable: *Inefficiency*	**Independent Variable: IP_N**			**Independent Variable: IP_L**		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
IP	0.0033 ***	0.0002	0.0061 ***	0.0009	0.0001	0.0017 **
	(0.0000)	(0.8626)	(0.0000)	(0.1208)	(0.9122)	(0.0370)
Dummy2015	−0.0062 ***	−0.0091 ***	−0.0040 ***	−0.0070 ***	−0.0092 ***	−0.0055 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Size	−0.0032 ***	−0.0034 ***	−0.0028 ***	−0.0032 ***	−0.0034 ***	−0.0030 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Growth	0.0035 ***	0.0025 ***	0.0038 ***	0.0035 ***	0.0025 ***	0.0039 ***
	(0.0000)	(0.0003)	(0.0000)	(0.0000)	(0.0003)	(0.0000)
Leverage	−0.0053 ***	−0.0035	−0.0061 ***	−0.0055 ***	−0.0035	−0.0064 ***
	(0.0008)	(0.1291)	(0.0055)	(0.0006)	(0.1276)	(0.0038)
CF	0.0251 ***	0.0327 ***	0.0195 ***	0.0250 ***	0.0327 ***	0.0190 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Return	0.0034 ***	0.0026 ***	0.0041 ***	0.0034 ***	0.0026 ***	0.0041 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SOE	−0.0035 ***			−0.0034 ***		
	(0.0000)			(0.0000)		
Constant	0.0456 ***	0.0460 ***	0.0413 ***	0.0475 ***	0.0460 ***	0.0449 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,779	14,365	16,414	30,779	14,365	16,414
Adjust R^2	0.0867	0.1191	0.0675	0.0858	0.1191	0.0645

This table reports the results of using investment efficiency (*Inefficiency*) as the dependent variable in Equation (3). For all regressions, we add *Dummy2015* as a control variable to capture the effect of new normal of China's economy and the implementation of the Mass Entrepreneurship and Innovation Campaign in 2015. Columns (1), (2) and (3) present the impact of national industrial policies on the investment efficiency for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) show the effects of local industrial policies on the investment efficiency for the full, SOE and non-SOE samples, respectively. All variables are defined in Table 1. We control industry and year fixed effects for all of the regressions. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5 and 1 percent levels, respectively.

Appendix B

Table A3. The over-investment behavior of policy followers.

Dependent Variable: *OverInvest*	**Independent Variable: $Follower_N$**			**Independent Variable: $Follower_L$**		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
Follower	0.5087 ***	0.4916 ***	0.5244 ***	0.4909 ***	0.4702 ***	0.5085 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Size	0.0385 ***	0.0254 ***	0.0515 ***	0.0432 ***	0.0247 ***	0.0615 ***
	(0.0000)	(0.0005)	(0.0000)	(0.0000)	(0.0049)	(0.0000)
Growth	0.0227 ***	0.0283 ***	0.0163 *	0.0412 ***	0.0417 ***	0.0357 ***
	(0.0008)	(0.0055)	(0.0756)	(0.0000)	(0.0025)	(0.0007)

Table A3. *Cont.*

Dependent Variable: *OverInvest*	Independent Variable: $Follower_N$			Independent Variable: $Follower_L$		
	Total (1)	**SOE (2)**	**Non-SOE (3)**	**Total (4)**	**SOE (5)**	**Non-SOE (6)**
Leverage	0.0977 ***	0.1847 ***	0.0497	0.0430	0.1071 **	0.0269
	(0.0002)	(0.0000)	(0.1550)	(0.1421)	(0.0242)	(0.4729)
CF	0.1569 ***	0.2558 ***	0.0475	0.0754	0.1853 **	−0.0333
	(0.0008)	(0.0006)	(0.4269)	(0.1319)	(0.0269)	(0.5893)
Return	−0.0510 ***	−0.0563 ***	−0.0447 ***	−0.0390 ***	−0.0461 ***	−0.0362 ***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0006)	(0.0002)
SOE	−0.0316 ***			−0.0440 ***		
	(0.0054)			(0.0008)		
Constant	−0.0139	−0.0474 *	−0.0263	−0.0010	−0.0102	−0.0479 *
	(0.4309)	(0.0906)	(0.2187)	(0.9621)	(0.7697)	(0.0563)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,408	7939	8469	13,474	5860	7614
Adjust R^2	0.2830	0.2706	0.3100	0.2663	0.2485	0.2927

This table shows the robustness test by testing the over-investment behavior of policy followers. We constructed the dummy variable *OverInvest* to capture whether industrial policies induce the over-investment of policy followers. Specifically, if the residual of equation (2) is positive, the company over-invest and *OverInvest* equals 1; otherwise, *OverInvest* equals 0. Columns (1), (2) and (3) represent the investment efficiency of the national industrial policy followers for the full, SOE and non-SOE samples, respectively. Columns (4), (5) and (6) provide the investment efficiency of local industrial policy followers for the full, SOE and non-SOE samples, respectively. Standard errors are clustered at the firm-level, and *p*-statistics are reported in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 percent levels, respectively.

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