Government Intervention, Political Promotion of SOE Executives and Corporate Over-investment

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Abstract:

This paper empirically examines the impact of political promotion of SOE executives on corporate over-investment and the moderating effect of government intervention and political promotion paths on corporate over-investment using non-financial state-owned listed companies in Shanghai and Shenzhen A-shares from 2014 to 2019 as the research sample. The results show that there is a difference between "internal promotion" and "external promotion" of SOE executives on corporate over-investment, and "external promotion" of SOE executives significantly increases the degree of corporate over-investment. Government intervention plays a moderating role in the effect of political promotion on over-investment. The findings of this paper not only reveal the main reasons for the differences in the incentives of political promotion of SOE executives, but also prove the adjustment mechanism of government intervention and the heterogeneity of political promotion paths; At the same time, it has certain reference value for improving the investment efficiency and incentive system of SOEs.

Keywords: Over-investment, Political Promotion, Government intervention, SOE.

I. INTRODUCTION

Generally speaking, the incentive mechanism of SOE executives includes explicit incentives such as salary and stock options, as well as invisible incentives such as on-the-job consumption and reputation and honor. Chinese SOE executives are not managers in the general sense, they often have a certain administrative rank against the civil service, and their status as "political people" gives SOE executives space and access to political promotion. The promotion of SOE executives to the administrative level is called political promotion, and in most cases, the promotion to the administrative level is more attractive than the salary income of the position [1]. Can political promotion play a positive motivational role as a special incentive mechanism for SOE executives? In addition, what factors influence the performance of the incentive effect of political promotion? The above-mentioned issues are the current hot issues of concern to academic and industrial experts. This study attempts to reveal the effect of political promotion on over-investment of SOE executives through theoretical analysis and empirical testing, and to demonstrate the moderating effect of government intervention and political promotion path.

According to the literature, scholars have formed two main views on the incentive effect of political promotion of SOE executives: "performance theory" and "relationship theory". Scholars who hold the "performance theory" view believe that the political promotion of SOE executives has high performance sensitivity, that is, the political promotion of SOE executives mainly depends on the enterprise performance and the personal ability of executives, and thus infer that the political promotion incentive of SOE executives plays a positive incentive effect [2, 3]. However, scholars from the "relationship theory" viewpoint argue that Chinese SOEs have the attribute of "political goals" and that political relationship resources and policy burden are the key factors to determine the political promotion of SOE executives, which leads to a certain degree of incentive distortion in the political promotion incentives of SOE executives [4, 5]. This paper argues that there are two main reasons for this disagreement: first, Chinese SOE executives can not only be promoted to shareholder company management through the "internal promotion" channel, but also can be transferred to the local party and government department as a leader through the "external promotion" channel. However, the existing literature has paid little attention to the effect of political promotion path heterogeneity on the incentive effect of political promotion. Second, in the current performance appraisal objectives of SOE executives include both "economic" and "non-economic" objectives, and the supervisory departments of state-owned assets at all levels and the organizational departments of the party committees, as the main appraisal bodies, are bound to have a certain degree of "administrative color" in their appraisal and evaluation. "However, the existing literature on the influence of government intervention on the incentive effect of political promotion of SOE executives is very insufficient, and there is a lack of relevant empirical research to support it.

In summary, this paper constructs an analytical framework of "government intervention, political promotion of SOE executives and corporate over-investment", theoretically analyzes and empirically tests the effect of political promotion of SOE executives on corporate over-investment, and the moderating role of government intervention and political promotion paths in it. The possible innovations of this paper include two points: First, we distinguish the heterogeneity of the incentive effects of two political promotion paths, namely "internal promotion" and "external promotion", and reveal the institutional root of the incentive effects of political promotion of SOE executives. Second, it verifies the adjustment mechanism of political promotion path and government intervention, and explains the factors influencing the incentive effect of political promotion of SOE executives.

II. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

Under China's economic system of fiscal decentralization and "double taxation", local governments have taken on "governmental objectives" such as developing the economy, expanding employment, increasing tax revenue, and maintaining stability, and they usually choose to transfer some of these "governmental objectives" to the state-owned enterprises in their jurisdictions, thus triggering excessive investment by local state-owned enterprises [6, 7]. Central enterprises bear the strategic policy burden of maintaining macroeconomic stability and promoting industrial transformation and upgrading, and the strategic policy burden leads to the tendency of central enterprises to expand their investment scale. In addition, under the governmental management system of "political centralization" and "economic

decentralization", the central government has set up a "promotion tournament-style" appraisal mechanism with GDP growth rate as the core goal in order to promote local economic growth. Local officials use a variety of interventions to guide local SOEs to expand their investments in order to maintain a high rate of regional GDP growth and thus increase the weight of winning the "promotion tournament", thus the political promotion motive of local officials is an important reason for over-investment in local SOEs. Finally, the majority of SOEs have the impulse to expand the size of their companies under the guidance of the policy of "getting stronger and bigger", and the development model of Chinese SOEs at this stage is still "scale-oriented" . The "scale-oriented" performance assessment objectives promote the tendency of SOE executives to expand the scale of investment. In summary, local governments' economic development, local officials' pursuit of political performance, and SOEs' "scale-oriented" development approach motivate SOE executives to make decisions to expand investment, thus increasing the probability of over-investment in SOEs. Accordingly, Hypothesis 1 is proposed.

Hypothesis 1: There is a positive relationship between the political promotion of SOE executives and the degree of over-investment in SOEs.

Chinese SOE executives have dual promotion paths of "internal promotion" and "external promotion", and there are obvious differences in the results of SOE executives promoted along different paths, with "external promotion" to party and government officials, and "internal promotion" to shareholder company management. The performance assessment standards and implementation effects of SOE executives differ among different types of SOEs, with the government focusing more on the assessment of non-economic goals for "external promotion" of SOE executives and more on the assessment of economic goals for "internal promotion" of SOE executives. In other words, "performance" and "relationship" are the main factors affecting the political promotion of SOE executives, and "relationship" is more important for "external promotion" of SOE executives, while "performance" is more important for "internal promotion" of SOE executives. In summary, SOE executives who are keen on their career tend to have stronger motives of political pandering, which may lead to more policy burdens on the enterprises, and SOE executives are more inclined to make decisions to expand their investments, thus SOEs' over-investment is more serious. Accordingly, Hypothesis 2 is proposed.

Hypothesis 2: There are differences in the effects of "external promotion" and "internal promotion" of SOE executives on corporate over-investment.

The distinctive feature of corporate governance in Chinese SOEs is government intervention, which has both positive and negative governance effects of "supportive hand" and " predatory hand". Most scholars argue that government intervention has a negative governance effect of the "predatory hand" on SOEs, because the higher the level of government intervention, the more policy burdens SOEs usually have to bear. It is found that personnel control is one of the important ways of government intervention in SOEs, and under the current regulatory system of SOEs, the government controls the right to evaluate and appoint SOE executives, and guides the decision-making behavior of SOE executives by setting up a "promotion tournament" mechanism, therefore, the appraisal and promotion mechanism of SOE executives

reflects the government's goals and wishes to a certain extent. It has been shown that the promotion efficiency of SOE executives or the implementation of the promotion mechanism is affected by government intervention, and when the legal environment of the listed company is poor or the competition in the industry is weak, the private gain of control significantly reduces the promotion efficiency of the executives [8]. While the promotion mechanism of executives in SOEs in the eastern region is relatively effective, i.e., the promotion of executives in SOEs in the eastern region is more dependent on performance and personal ability [9]. Accordingly, hypothesis 3 is proposed.

Hypothesis 3: Government intervention has a moderating effect in the effect of political promotion of SOE executives on corporate over-investment.

III. RESEARCH DESIGN

3.1 Sample Selection and Data Sources

This paper selects the main board listed companies in Shanghai and Shenzhen A-shares from 2014-2019 as the initial sample, and conducts the following screening: (1) Delete the financial listed companies. (2) Delete ST-type listed companies. (3) Delete non-state-owned listed enterprises according to the nature of the ultimate controller. (4) Delete state-owned listed companies with change of ownership nature. (5) Delete state-owned listed companies whose chairman or general manager has not changed in two terms. (6) Delete listed companies with missing corporate financial data and corporate governance data. In this paper, outliers are treated for observations with continuous variables less than 1% quantile and greater than 99% quantile. The final sample of 596 companies, with a total of 4768 sample observations, including 1458 over-invested annual-firm sample observations, was obtained after censoring according to the above method.

The financial and corporate governance data of listed companies in this paper are mainly obtained from the CSMAR (Guotaian) database. For the motive of maintaining stable stock price, listed companies often do not disclose the post-executives' post-change employment in the public information, and the information of the post-executives' post-change employment is not available in the CSMAR database. This paper manually collects the post-executives' post-change employment information through Baidu Encyclopedia, Sina Finance, Financial Sector, China Finance and other network channels.

3.2 Variable Selection and Metrics

3.2.1 Metrics of over-investment

In this paper, we choose the Richardson residual metric model to measure the degree of over-investment in the sample firms. The Richardson residual metric model is widely used in corporate investment efficiency research and is the mainstream method for measuring corporate investment efficiency [10-14]. Richardson's residual metric model first regresses the expected firm investment size

according to equation (1), and then measures investment efficiency using the firm-level residual values of the model, where positive residual values indicate over-investment and negative residual values indicate under-investment.

$$Inv_{i,t} = \alpha_0 + \alpha_1 Q_{i,t-1} + \alpha_2 Debt_{i,t-1} + \alpha_3 Cash_{i,t-1} + \alpha_4 StockR_{i,t-1} + \alpha_5 Age_{i,t-1} + \alpha_6 Size_{i,t-1} \tag{1}$$
$$+ \alpha_7 Inv_{i,t-1} + \sum \alpha_8 Year + \sum \alpha_9 Ind + \varepsilon_{i,t}$$

Where, $Inv_{i,t}$ is the amount of new investment in the year; $Q_{i,t-1}$ represents the growth opportunity of the company, measured by *Tobin-Q*; $Debt_{i,t-1}$ represents the solvency of the company, measured by the gearing ratio; $Cash_{i,t-1}$ presents the cash holdings of the company; $StockR_{i,t-1}$ represents the annual return of the stock; $Age_{i,t-1}$ represents the age of the company; $Size_{i,t-1}$ represents the size of the company, equal to the natural logarithm of the total assets; *Year* and *Ind* are annual dummy variables and industry dummy variables. The residual $E_{i,t}$ from the regression of model (1) is equal to the actual investment $Inv_{i,t-1}$ minus the expected investment $EInv_{i,t-1}$, with residual greater than 0 representing over-investment, denoted by $Overinv_{i,t}$.

3.2.2 Metrics for political promotion

This paper adopts the factual determination method to measure political promotion of SOE executives, drawing on Yang Ruilong et al, Wang Zeng et al, and Zhou Mingshan and Zhang Qianqian, where Promotion is 1 if the chairman and general manager are promoted, and Promotion is 0 if the chairman and general manager are flattened or demoted (dismissed). The chairman and general manager of state-owned enterprises in China generally have an appointment period of three years, while most of them have experienced two or even more appointment periods in their positions, and usually the political promotion incentive has the most significant impact on the latest appointment period. Therefore, this paper draws on the research methods of Xu Nianxing and Zhou Mingshan and Zhang Qianqian to define the influence time of political promotion incentives as the latest tenure (3 years) and consider whether the promotion year is included in the performance appraisal.

3.2.3 Measures of political intervention

This paper draws on Huang Qunhui and Yu Jing to classify SOEs by industry type, defining special functional and public policy SOEs as regulated SOEs, with Industry set to 1, and general commercial SOEs as non-regulated SOEs, with Industry set to 0. Referring to Fan Gang's regional marketization index, this paper defines the seven provinces (municipalities directly under the central government) of Beijing, Shanghai, Tianjin, Guangdong, Jiangsu, Zhejiang and Fujian as high marketization regions, with region set to 0. The remaining provinces (municipalities directly under the central government and autonomous regions) are defined as low marketization regions, with region set to 1. Based on the type of the actual controller of the state-owned listed companies, the Affiliation of state-owned enterprises directly controlled by the government is set to 1, and the Affiliation of state-owned enterprises indirectly controlled by the government (group control) is set to 0. Based on the nature of the ultimate controllers of SOEs,

SOEs are divided into two categories: central SOEs and local SOEs, with central SOEs Admin set to 0 and local SOEs Admin set to 1. Finally, draw on the composite index construction method of Xu Xixiong political promotion opportunities and Cao Wei et al. political promotion expectations to construct a government intervention index *GOV=Industry +region+ Affiliation +Admin.*

3.2.4 Definition and description of main variables

Based on the studies of Jensen, Richardson, Jiang Fuxiu et al., and Zhong Haiyan et al., the following variables are selected as control variables in this paper, as shown in TABLE I, taking into account the influence of firm background characteristics, corporate governance structure, and management incentives on corporate over-investment.

TABLE I. Definition and description of main variables

Variable Type	Variable Name	Variable Symbols	Variable Description
Dependent variable	Over-investment	Overinv	The regression of Eq.(1) shows that the actual investment exceeds the expected level of investment, i.e., a positive residual value.
Independent variable	Political Promotion	PI	The chairman and general manager are promoted or transferred to the leadership of party and government organs, and serve as executives of higher-level group companies or other higher-level companies; the general manager serves as the chairman of the Company or other companies of the same level.
	External Promotion	OPI	The chairman and general manager are promoted or transferred to the leadership of party and government organs.
	Internal Promotion	IPI	The chairman or general manager serves as an executive of a higher-level group company or other higher-level company; the general manager serves as the chairman of the Company or other equivalent-level company.
Adjustment variable	Government intervention	GOV	GOV=Industry +region+ Affiliation +Admin
Control variable	Stock Annual Return	StockR	Measured by the company's stock return from year t-1 to year t
	Gearing ratio	Debt	Total liabilities at end of period / Total Assets
	Listing Age	Age	Length of time the company has been listed
	Company Size	Size	Natural logarithm of total assets
	Shareholding	Cent	Percentage of shareholding of the largest shareholder

Concentration		
Investment Opportunity	Growth	Growth rate of main business revenue
Size of Independent Directors	Direpro	Percentage of independent directors to board members
Free cash flow	FCF	(Profit before interest and after tax + Depreciation and amortisation - Increase in working capital - Capital Expenditure)/ Total Assets
Executive Compensation Level	Compensation	Natural logarithm of the total compensation of the top 3 executives of the company
Return on net asset	ROE:	Net Profit / Average net assets

3.3 Empirical Model Construction

First, model (2) is used to test the effect of political promotion of SOE executives on the degree of corporate over-investment. In the model (2), $Overinv_{i,t}$ represents the extent of corporate over-investment, $Age_{i,t}$ represents the length of time the company has been listed, $Debt_{i,t}$ represents the corporate gearing ratio, $Cent_{i,t}$ represents the percentage of shareholding of the largest shareholder, $Growth_{i,t}$ invests in opportunities on behalf of companies, $Direprp_{i,t}$ represents the proportion of independent directors, $Size_{i,t}$ represents the company size, $FCF_{i,t}$ represents free cash flow, $Compensation_{i,t}$ represents the level of executive compensation, $ROE_{i,t}$ represents the return on net assets, $PI_{i,t}$ represents political promotion, $Year$ represents the annual dummy variable, Ind represents the industry dummy variable. In addition, when testing the effect of "external promotion" and "internal promotion" on the degree of over-investment of SOE executives, $PI_{i,t}$ is replaced by $OPI_{i,t}$ and $IPI_{i,t}$, and other variables are kept constant, $OPI_{i,t}$ represents "external promotion", $IPI_{i,t}$ represents "internal promotion", and the subsequent tests still use this method and will not be repeated.

Second, the government intervention index is constructed using the formula $GOV = Industry + region + Affiliation + Admin$, which measures the degree of government intervention. Equation (3) is then used to test the moderating effect of government intervention in the relationship between political promotion of SOE executives and corporate over-investment, if the relationship between variable Y and variable X is a function of variable Z, Z is called the moderating variable of the relationship between X and Y. In model (3), if the regression coefficient a_{10} is significant and also the a_{10} regression coefficient is significant, then the variable $GOV_{i,t}$ is said to exert a moderating effect.

$$Overinv_{i,t} = \alpha_0 + \alpha_1 Age_{i,t} + \alpha_2 Debt_{i,t} + \alpha_3 Cent_{i,t} + \alpha_4 Growth_{i,t} + \alpha_5 Direpro_{i.t}$$
$$+ \alpha_6 Size_{i.t} + \alpha_7 FCF_{i.t} + \alpha_8 Compensation_{i.t} + \alpha_9 ROE_{i.t}$$
$$+ \alpha_{10} PI_{i.t} + \sum \alpha_{11} Year + \sum \alpha_{12} Ind + \varepsilon_{i,t}$$

(2)

$$Overinv_{i,t} = \alpha_0 + \alpha_1 Age_{i,t} + \alpha_2 Debt_{i,t} + \alpha_3 Cent_{i,t} + \alpha_4 Growth_{i,t} + \alpha_5 Direpro_{i,t}$$
$$+\alpha_6 Size_{i,t} + \alpha_7 FCF_{i,t} + \alpha_8 Compensation_{i,t} + \alpha_9 ROE_{i,t} + \alpha_{10} GOV_{i,t} + \alpha_{11} PI_{i,t}$$
$$a_{12} GOV_{i,t} * PI_{i,t} + \sum a_{13} Year + \sum a_{14} Ind + \varepsilon_{i,t}$$

(3)

IV. ANALYSIS OF EMPIRICAL RESULTS

4.1 Descriptive Statistics and Correlation Analysis

As shown in TABLE II, the mean value of over-investment in the sample companies is 0.0734 and the maximum value is 0.6259, indicating that there is over-investment in state-owned listed companies in China. The mean value of political promotion in the sample companies is 0.2300, which indicates that political promotion accounts for a relatively small proportion of company-years observations and a relatively high proportion of flat transfers and demotions (dismissals). In terms of performance, the mean value of return on net assets of the sample companies is 0.0650, indicating that most state-owned listed companies are profitable during the sample period. Corporate governance variables show that the mean value of the shareholding ratio of the largest shareholder is 0.3908, indicating that the shareholding structure of state-owned listed companies in China is still "one share only"; the maximum and minimum values of the proportion of independent directors differ significantly, with a mean value of 0.3671, and the proportion of independent directors in the board of directors is more than 1/3; The difference between the maximum and minimum values of executive compensation levels is not significant, indicating that the government's control over the compensation of state-owned listed companies is effective.

TABLE II. Descriptive statistics of the main variables

Variable	Minimum value	Maximum value	Mean value	Median	Standard deviation
Age	1.0000	26.0000	13.2600	14.0000	4.9120
Debt	0.0731	0.9372	0.5317	0.5464	0.1874
Cent	0.1601	0.7971	0.3908	0.3899	0.1514
Growth	-0.5670	3.7410	0.1824	0.1098	0.4115
Direpro	0.2857	0.5714	0.3671	0.3334	0.0516
Size	18.3998	28.3411	22.437	22.2481	1.3993
FCF	-0.6196	0.4069	0.0088	0.0082	0.1296
Compensation	12.4184	15.7605	14.1049	14.1053	0.6044
ROE	-0.6162	0.3618	0.0650	0.0639	0.1004
GOV	0.0000	4.0000	1.9800	2.0000	1.0340
PI	0.0000	1.0000	0.2300	0.0000	0.4240
Oinvest	0.0005	0.6259	0.0734	0.0451	0.0893

As shown in TABLE III, the correlation coefficients between government intervention and over-investment and between government intervention and the listing age are significantly positive at the 5% statistical level. The correlation coefficients between government intervention and the shareholding ratio of the largest shareholder, the company size, the level of executive compensation and agency costs (asset turnover ratio) are significantly negative at the 1% statistical level, and the significant negative correlation between government intervention and agency costs, these are prima facie evidence of the negative effects of the "predatory hand" of government intervention. The correlation coefficient between political promotion and company size is positive at 1% level, indicating that the current development model of SOEs in China is still "scale-oriented"; the correlation coefficient between political promotion and the listing age is negative at 1% level; the correlation between political promotion and over-investment and shareholding ratio of the largest shareholder is positive at 5% level.

TABLE III. Pearson correlation analysis of the main variables

	Age	Debt	Cent	Grow	Dir	Size	FCF	Com	ROE	Oinv	GOV	PI
Age	1											
Debt	0.080**	1										
Cent	-0.203**	-0.059*	1									
Grow	0.017	0.048	0.033	1								
Dir	0.036	0.037	-0.033	-0.013	1							
Size	-0.080**	0.309**	0.288**	-0.018	0.070**	1						
FCF	0.021	0.077**	0.124**	0.009	-0.010	0.120**	1					
Com	0.116**	-0.040	0.052	0.038	0.059*	0.350**	0.055*	1				
ROE	-0.127**	-0.198**	0.140**	0.214**	-0.057*	0.067*	0.117**	0.224**	1			
Oinv	-0.090**	0.044	0.006	0.015	-0.063*	0.030	0.132**	-0.011	0.044	1		
GOV	0.052*	0.020	-0.100**	-0.028	-0.004	-0.118**	0.006	-0.311**	-0.020	0.060*	1	
PI	-0.134**	0.037	0.059*	-0.002	-0.005	0.101**	-0.042	0.015	0.021	0.057*	-0.055*	1

Note: This table is different from other tables, ** indicates significant at the 1% level and * indicates significant at the 5% level.

4.2 Multiple Regression Analysis

This paper divides the political promotion sample into two subsamples, "external promotion" and "internal promotion", and conducts a non-parametric test for internal promotion-external promotion, and the test results are shown in TABLE IV. The results show that SOEs with "external promotion" are more over-invested than those with "internal promotion", and the difference is significant between the two sample groups. The size of the former is larger in the case of "externally promoted" compared to "internally promoted" SOEs, and the difference between the two groups is significant. The proportion of independent directors is higher in "internally promoted" compared to "externally promoted" SOEs, and the difference is significant between the two samples. In terms of performance, the former is more profitable

for "internally promoted" versus "externally promoted" SOEs. Cash flow is more abundant in "externally promoted" compared to "internally promoted" SOEs.

TABLE IV. Test of variance between the "internal promotion" and "external promotion" samples for the main variables

Variable	Grouped by executive advancement path		Z-statistic
	Internal Promotion	**External Promotion**	**Internal Promotion - External Promotion**
Age	12.5500	10.6400	3.4010*
Debt	0.5309	0.5845	0.0480
Cent	0.4030	0.4191	0.7380
Growth	0.1859	0.1654	0.0130
Direpro	0.3699	0.3568	6.6930**
Size	22.4340	23.4724	10.1990***
FCF	0.0152	0.0291	1.3140
Compensation	14.1313	14.0904	0.2510
ROE	0.0731	0.0559	0.0730
Turnover	0.6537	0.5201	0.1520
Expense	0.0889	0.0631	4.1110**
Oinvest	0.0693	0.1224	42.6760***

Note: *** indicates significant at the 1% level, ** indicates significant at the 5% level, and * indicates significant at the 10% level.

As shown in TABLE V, the regression coefficient of political promotion is 0.0480, which indicates that political promotion has a positive effect on the degree of over-investment, but the result is not significant; the regression coefficient of "internal promotion" is -0.0110, indicating that "internal promotion" has a negative effect on the degree of over-investment, but the result is not significant; the regression coefficient of "external promotion" is 0.1070, and the regression coefficient is significantly positive at the 1% statistical level, indicating that "external promotion" has a significant positive effect on the degree of over-investment. In addition, the regression coefficient of company's listing age is significantly negative at 1% statistical level; the regression coefficients of return on net assets and free cash flow are significantly positive at 1% statistical level; the regression coefficient of asset-liability ratio is significantly positive at 5% statistical level; and the regression coefficient of independent director ratio is significantly negative at 5% statistical level.

TABLE V. Regression estimation results of political promotion and over-investment

Variable	Overinv					
	Coefficient	**T-value**	**Coefficient**	**T-value**	**Coefficient**	**T-value**
Constant	0.0910	1.4390	0.0870	1.3650	0.1040*	1.6400
Age	-0.0970***	-3.3520	-0.1040***	-3.6190	-0.0890***	-3.0830
Debt	0.0760**	2.4200	0.0760**	2.4230	0.0780**	2.5000

Cent	-0.0320	-1.0640	-0.0310	-1.0090	-0.0260	-0.8580
Growth	0.0090	0.3100	0.0080	0.2790	0.0090	0.3260
Direpro	-0.0580**	-2.0830	-0.0580**	-2.0740	-0.0510*	-1.8380
Size	0.0490	1.4190	0.0540	1.5870	0.0250	0.7140
FCF	0.1230***	4.3350	0.1270***	4.4760	0.1210***	4.2870
Compensation	-0.0250	-0.8050	-0.0250	-0.7970	-0.0180	-0.5890
ROE	0.0830***	2.6990	0.0840***	2.7370	0.0850***	2.7910
PI	0.0480	1.7030				
IPI			-0.0110	-0.3840		
OPI					0.1070***	3.7300
Ind	Omission		Omission		Omission	
Year	Omission		Omission		Omission	
ADJ-R^2	0.1370		0.1350		0.1450	
F-value	5.8430***		5.5560***		6.9930***	
Sample size	1458		1458		1458	

Note: *** indicates significant at the 1% level, ** indicates significant at the 5% level, and * indicates significant at the 10% level.

As shown in TABLE VI, the regression coefficient of political promotion of SOE executives and corporate over-investment is 0.0100, and there is no significant correlation between them; while considering the influence of government intervention and political promotion on over-investment, the regression coefficient of government intervention is 0.0650 and is significantly positive at 5% statistical level; the regression coefficient of the cross product term of government intervention and political promotion is 0.1190, and is significantly positive at the 5% statistical level, indicating that government intervention plays a positive moderating role in the relationship between government promotion and over-investment. The regression coefficient of "external promotion" of SOE executives and over-investment is 0.1380, which is significantly positive at 5% statistical level; considering the influence of "external promotion" and government intervention on over-investment, the regression coefficient of government intervention is 0.0780, which is significantly positive at 1% statistical level; the regression coefficient of the cross product of government intervention and "external promotion" is 0.1380, which is significantly positive at 5% statistical level, indicating that government intervention plays a positive role in the relationship between "external promotion" and over-investment. The regression coefficient of "internal promotion" of SOE executives and over-investment is -0.0530, and there is no significant correlation between the two; considering the influence of government intervention and "internal promotion" on over-investment, the regression coefficient of government intervention is 0.0790, which is positive at the 5% statistical level; the regression coefficient of the cross product of government intervention and "internal promotion" is 0.0580, which is not significantly correlated. Through the above analysis, we find that government intervention has a positive moderating effect on the relationship between political promotion and over-investment, although the regression coefficient of the cross-product of "internal promotion" and government intervention is not significant, the regression coefficient of "internal promotion" is negative, while the regression coefficient of the cross-product of "internal promotion" is positive, indicating that government intervention strengthens the positive effect of "internal promotion" on the degree of over-investment.

TABLE VI. Regression estimation results of government intervention, political promotion and over-investment

Variable	Oinvest					
	Coefficient	**T-value**	**Coefficient**	**T-value**	**Coefficient**	**T-value**
Constant	-0.008	-0.127	0.000	-0.014	-0.014	-0.208
Age	-0.117***	-4.086	-0.108***	-3.785	-0.124***	-4.350
Debt	0.054*	1.784	0.053*	1.751	0.053*	1.755
Cent	-0.019	-0.643	-0.015	-0.488	-0.019	-0.626
Growth	0.031	1.118	0.031	1.148	0.030	1.086
Direpro	-0.065**	-2.359	-0.058**	-2.109	-0.065**	-2.345
Size	0.047	1.395	0.030	0.872	0.054	1.582
FCF	0.118***	4.231	0.114***	4.099	0.120***	4.317
Compensation	0.026	0.811	0.030	0.940	0.025	0.782
GOV	0.065**	1.992	0.078***	2.642	0.079**	2.507
PI	0.010	0.783				
IPI					-0.053	-0.905
OPI			0.134**	2.243		
PI*GOV	0.119**	2.005				
IPI*GOV					0.058	0.981
OPI*GOV			0.138**	2.403		
Ind	Omission		Omission		Omission	
Year	Omission		Omission		Omission	
ADJ-R^2	0.136		0.150		0.139	
F-value	5.405***		6.527***		5.320***	
Sample size	1458		1458		1458	

Note: *** indicates significant at the 1% level, ** indicates significant at the 5% level, and * indicates significant at the 10% level.

4.3 Robustness Test

4.3.1 Based on annual group testing

This paper divides firm-annual observations into two groups, 2014-2016 and 2017-2019, to test the effect of political promotion of SOE executives on the degree of corporate over-investment, respectively. The study shows that in the sample companies during 2014-2016, the regression coefficient of political promotion on over-investment is 0.0750, which is significantly positive at the 5% statistical level; the regression coefficient of "internal promotion" and over-investment is 0.0080, which is not significantly correlated; the regression coefficient of "external promotion" and over-investment is 0.1330, which is

significantly positive at the 1% statistical level. In the sample companies during 2017-2019, the regression coefficient of political promotion and over-investment is 0.0100, which is not significantly correlated; the regression coefficient of "external promotion" and over-investment is 0.077 and is significantly positive at the 5% statistical level.

4.3.2 Substitution moderating variable test

Fan's marketization index is selected as a proxy for government intervention to test the robustness of the moderating effect of government intervention in the relationship between political promotion of SOE executives and corporate over-investment. The regression coefficient of "external promotion" of SOE executives and over-investment is 0.1340, which is significantly positive at 5% statistical level; considering the effect of "external promotion" and government intervention on over-investment, the regression coefficient of governent intervention is 0.1280, and is significantly positive at 1% statistical level; the regression coefficient of the cross product of government intervention and "external promotion" is 0.1470, and is significantly positive at 5% statistical level, indicating that government intervention plays a positive moderating role in the relationship between "external promotion" and over-investment. The regression coefficient of "internal promotion" of SOE executives and over-investment is -0.0540, and there is no significant correlation between the two; considering the influence of government intervention and "internal promotion" on over-investment, the regression coefficient of government intervention is 0.0890, which is positive at the 5% level; the regression coefficient of the cross product of government intervention and "internal promotion" is 0.0720, there is no significant correlation. In summary, the composite index constructed in this paper is basically the same as the regression estimation result of Fan Gang's marketization index, but the difference lies in the choice of marketization index as the variable of government intervention, which has a more significant effect on the over-investment of enterprises, probably because the composite index in this paper takes into account other influencing factors.

VI. RESEARCH CONCLUSION

This paper empirically examines the influence mechanism of political promotion of SOE executives on corporate over-investment using non-financial state-owned listed companies in Shanghai and Shenzhen A-shares from 2014-2019 as the research sample, and mainly draws the following conclusions.

First, the political promotion of SOE executives generally increases the degree of corporate over-investment, among which the "external promotion" of SOE executives significantly increases the degree of corporate over-investment, while the "internal promotion" of SOE executives has no significant effect on corporate over-investment. This proves that political promotion of SOE executives has a negative incentive effect in general, and there is a difference in the effect of "external promotion" and "internal promotion" of SOE executives on corporate over-investment.

Second, government intervention in general has a positive moderating effect on the relationship between political promotion and over-investment in SOEs. The study shows that the higher the intensity of

government intervention, the more significantly the political promotion of SOE executives increases corporate over-investment; in comparison, the negative effect of government intervention on "external promotion" of SOE executives is more obvious, "external promotion" increases corporate over-investment more significantly under government intervention.

Third, the robustness test shows that the degree of over-investment in SOEs is more serious in 2014-2016 and the influence of political promotion of SOE executives on the degree of over-investment in SOEs is more significant, while the above problem is significantly improved in SOEs in 2017-2019. In addition, using the Fan's marketization index as a proxy variable for government intervention, the study shows that the conclusion that government intervention has a moderating effect in the relationship between political promotion of SOE executives and corporate over-investment is basically valid.

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