

Foreign Divestment and High-Quality Development of State-Owned Enterprises

Xin Qin

School of Mathematical Sciences, Anhui University, Hefei 230000, China;

qx190725@163.com

Abstract. In China, state-owned enterprises (SOEs) are a crucial pillar and leading force in the national economy, with their high-quality development having a significant impact on the country's economic progress. In recent years, the pace of foreign investment entering China has notably slowed, and the relocation of foreign enterprises from certain industries has increased, making foreign divestment a reality that cannot be ignored. This paper selects data from Chinese A-share listed state-owned companies from 2013 to 2022 as the initial research sample to empirically analyze the impact of foreign divestment on the high-quality development of SOEs. The study finds that: (1) Foreign divestment significantly inhibits the high-quality development of SOEs. (2) Foreign divestment can suppress the high-quality development of SOEs by exacerbating financing constraints, reducing innovation output, and diminishing corporate competitiveness. (3) Implementing a differentiated strategy intensifies the inhibitory effect of foreign divestment on the high-quality development of SOEs, whereas mixed-ownership reform and the digital economy can mitigate this impact. Additionally, the heterogeneity test in this paper reveals that the inhibitory effect of foreign divestment on the high-quality development of local SOEs is stronger than that on central SOEs. Regionally, the inhibitory effect is most pronounced in the eastern regions. This paper enriches the research on foreign divestment and high-quality development of SOEs, exploring the heterogeneous impacts on central and local SOEs and SOEs in different regions, which aids in formulating targeted policy measures to enhance the risk resistance of SOEs and promote their high-quality development.

Keywords: Foreign divestment, SOEs, High-quality development, Financing constraints.

1. Introduction

Foreign Direct Investment (FDI) has long been one of the key drivers of economic development, technological progress, and industrial upgrading. As the largest developing country with rapid economic growth, China ranks second globally in Gross Domestic Product (GDP). The continuous improvement in the business environment and the strengthening of comprehensive advantages in attracting investment have made China one of the leading destinations for FDI, leveraging its cheap input factors, large population, and extensive consumer market ^[1]. However, with changes in the global economic environment, international trade conditions, and geopolitical patterns, the pace of foreign capital entry into China has significantly slowed, and the relocation of foreign enterprises from certain industries has increased ^[2]. This phenomenon of foreign divestment is becoming an undeniable reality. In China, state-owned enterprises (SOEs) are crucial pillars and leading forces in the national economy and play a central role in driving economic development. Compared to private enterprises, SOEs have relatively weaker adaptability to market changes. Currently, SOEs are continuously reforming and innovating to adapt to market development, which requires substantial funds that depend not only on government support but also on domestic and foreign investments. The emergence of foreign divestment poses new challenges and opportunities for SOEs. Issues such as reduced foreign trade exports, capital shortages, and loss of technology and experience due to foreign divestment pose challenges to the high-quality development of SOEs.

What impact does foreign divestment have on the high-quality development of SOEs? What are the mechanisms at play? This paper will analyze this issue based on existing research findings and relevant statistical data, proposing corresponding countermeasures. Compared to existing studies, this paper's marginal contributions are: Firstly, it enriches the research on the impacts of foreign

divestment. Existing studies on the topic have mainly focused on the motives and mechanisms of foreign divestment^[3,4,5], its impact on enterprise exports^[2], and the efficiency of enterprises' autonomous innovation^[1], with few directly addressing its impact on the high-quality development of SOEs. Secondly, by collecting and analyzing related data, this study empirically tests the impact of foreign divestment on the high-quality development of SOEs, including dimensions such as innovation output, financing constraints, and corporate competitiveness. This not only enriches the empirical research in the field of foreign divestment but also provides suggestions on how SOEs can respond to it. Thirdly, while most research on foreign divestment is conducted at a macro level, this paper examines it from the perspective of SOEs. Furthermore, given the differences among central and local SOEs and across regions, this paper also explores the heterogeneous impacts of foreign divestment on the high-quality development of SOEs in different types and regions. This helps to deepen the understanding of the varying effects faced by different types and regions of SOEs when confronting foreign divestment, aiding in the formulation of targeted policy measures to enhance the risk resistance of SOEs and promote their high-quality development.

2. Literature Review and Research Hypotheses

2.1. Literature Review

Foreign divestment refers to the voluntary or involuntary reduction in the shareholding percentage by foreign investors in the institutions they have invested in. This includes forms such as transfer or sale of shares, equity segmentation, equity separation, management buyouts, and bankruptcy or non-bankruptcy liquidation^[3]. Existing research on foreign divestment largely focuses on the motives and methods of divestment, with less exploration at the corporate level. Some scholars suggest that rising operating costs^[6,7], increased business risks^[8], reduced market opportunities^[9,10], and poor investment environments^[5] may lead to foreign divestment. Additionally, the likelihood of divestment is negatively correlated with company size and age^[11], and positively correlated with corporate debt levels and the degree of financing difficulty^[12]. Studies by Javorcik and Poelhekke^[13], as well as Mohr^[14], have examined the impact of foreign divestment on the operational performance of host country subsidiaries.

High-quality development of state-owned enterprises refers to the sustained evolution of fulfilling their economic positioning and social missions at a high level over the medium to long term^[15]. Existing literature on high-quality development often focuses on high-quality economic development^[16], energy^[17], trade^[18], and agriculture^[19], with less research on the high-quality development of state-owned enterprises. Overall, there is a scarcity of research on the impact of foreign divestment on the high-quality development of state-owned enterprises, and no studies have directly explored the relationship between foreign divestment and high-quality development of state-owned enterprises. Therefore, this paper attempts to use data from Chinese A-share listed state-owned companies from 2013 to 2022 as the initial research sample, analyzing the impact of foreign divestment on the high-quality development of state-owned enterprises to supplement existing research on divestment and high-quality development of state-owned enterprises.

2.2. Research Hypotheses

2.2.1 Foreign Disinvestment and the High-Quality Development of SOEs

Foreign divestment is a significant yet often overlooked phenomenon. It may lead to several risks for enterprises, including shortages of funds, loss of technology and management experience, reduced market share, and weakened competitive advantages. These risks can have a negative impact on the high-quality development of state-owned enterprises. Specifically:

Foreign divestment can exacerbate financing constraints for enterprises, thereby adversely affecting the high-quality development of state-owned enterprises. Firstly, foreign divestment leads to a reduction in short-term funding sources for enterprises and reduces the financing channels

available to them. Consequently, enterprises are forced to rely on domestic financial markets or informal financial channels for direct credit support, which significantly increases the difficulty and cost of financing^[2], adding to the financial pressure and risk faced by enterprises. Secondly, foreign divestment may trigger market concerns about the future development prospects of enterprises, potentially leading to a credit crunch and further exacerbating their financing difficulties. Additionally, a decline in operational performance is one of the significant triggers for foreign divestment events. Therefore, enterprises that have experienced foreign divestment, compared to those that have not, may find themselves more prone to financing difficulties due to limited profitability, with the occurrence of divestment events exacerbating their financial conditions^[3,5]. Financing constraints may prevent enterprises from timely upgrading equipment, introducing advanced technologies, or conducting marketing promotions, placing them at a disadvantage in terms of technology, product, and market competitiveness. This can also impact the production efficiency and economies of scale, limiting the development potential and competitiveness of enterprises and hindering their ability to achieve high-quality development goals.

Foreign divestment may reduce corporate innovation output, thereby inhibiting the high-quality development of state-owned enterprises. Firstly, foreign divestment may reduce the introduction of technology into enterprises. Research by Meyer and Sinani (2009)^[20] found that foreign direct investment provides a direct channel for knowledge transfer, facilitating host country enterprises in learning advanced technology, organizational practices, and management strategies. Therefore, foreign divestment results in direct technological losses for state-owned enterprises, as the relocation of some high-tech foreign enterprises takes away technology and experience, weakening the domestic firms' ability to benefit from technological spillovers obtained through high-tech multinational corporations^[4]. The disappearance of technological spillovers leads to increased variable costs of innovation. Additionally, enterprises lose models for imitation, leading to the disappearance of imitative innovation activities^[1]. Secondly, foreign investment often brings resources such as capital, talent, and markets, which are crucial for the innovative development of enterprises. However, once foreign divestment occurs, enterprises may face issues such as capital shortages, talent loss, and a decline in market share, further suppressing their innovative activities and development potential.

Foreign divestment may inhibit the high-quality development of state-owned enterprises by reducing their competitiveness. After foreign divestment, state-owned enterprises may face intensified market competition, which could exceed their current capabilities. Additionally, foreign divestment may lead to a shortage in market supply, preventing state-owned enterprises from meeting market demand and causing them to lose market share they could have otherwise secured. This loss of market share not only affects the revenue and profitability of state-owned enterprises but may also impact their brand image and market position, further suppressing their potential for high-quality development. Furthermore, the withdrawal of foreign investors could cause state-owned enterprises to miss opportunities for international market expansion. Foreign investors often have broader international market channels and resources. Through cooperation with foreign firms or by leveraging their international networks, state-owned enterprises can better expand into international markets, enhancing their brand recognition and international competitiveness. However, once foreign divestment occurs, state-owned enterprises may struggle to compete independently in the international market. Based on this, this article proposes:

Hypothesis 1: Foreign divestment inhibits the high-quality development of state-owned enterprises.

1.1. Foreign divestment inhibits the high-quality development of state-owned enterprises by intensifying their financing constraints.

1.2. Foreign divestment inhibits the high-quality development of state-owned enterprises by reducing their innovation output.

1.3. Foreign divestment inhibits the high-quality development of state-owned enterprises by reducing their competitiveness.

2.2.2 Moderating Effects of Differentiation Strategies, Mixed Ownership Reforms and Digital Economy

According to Porter's (1980) competitive strategy theory, implementing a differentiation strategy focuses on the uniqueness and distinction of products and services^[21]. Dess and Davis (1984) suggest that enterprises implementing a differentiation strategy pay more attention to the development of new products, brand positioning, and marketing technology innovations^[22]. Therefore, the implementation of a differentiation strategy often requires substantial initial investments to establish a unique brand image, product characteristics, or service advantages. However, when foreign divestment occurs, these initial investments may not yield sufficient returns, exacerbating issues such as capital shortages and operational difficulties for the enterprise. Moreover, the deficiencies in technology and management resulting from foreign divestment make it difficult for state-owned enterprises to effectively implement a differentiation strategy, thereby affecting their motivation for innovation and development. Additionally, the market differentiation positioning and brand premium that a differentiation strategy might bring could further weaken the market position and competitiveness of state-owned enterprises, intensifying the impact of foreign divestment on them. Therefore, this paper proposes the following hypothesis:

Hypothesis 2: A differentiation strategy significantly enhances the negative effects of foreign divestment on the high-quality development of SOEs.

Mixed-ownership reform in SOEs involves introducing more private and foreign capital into state-owned enterprises, facilitating cross-fusion of equity. When implemented extensively, this reform can optimize business operations, invigorate enterprises, improve performance, and promote high-quality economic development^[23]. Mixed-ownership reforms bring in private capital and market mechanisms, introduce a diversified ownership structure and management models, and expand the financing channels for SOEs, making them more flexible and resilient. This enables SOEs to better respond to external changes and challenges, reducing the negative impacts of foreign divestment. Additionally, mixed-ownership reform promotes resource sharing and synergies between SOEs and other enterprises, mitigating to some extent the loss of technology and experience caused by foreign divestment, which is beneficial for business growth. Therefore, the following hypothesis is proposed:

Hypothesis 3: Mixed-ownership reform significantly mitigates the negative effects of foreign divestment on the high-quality development of SOEs.

The digital economy refers to economic activities and industry development based on information technology, mainly relying on the Internet, big data, artificial intelligence, and the Internet of Things to enhance production efficiency and to optimize and transform industrial models, achieving transformation and upgrading of relevant industries^[24]. The rise of the digital economy provides SOEs with broader development opportunities. SOEs can utilize digital technologies to optimize management, enhance efficiency, and thereby strengthen their competitiveness, reducing the incentives for foreign divestment. Additionally, the development of the digital economy provides more development opportunities for SOEs. SOEs can acquire advanced technologies, market channels, and innovative models through cooperation with enterprises related to the digital economy, thus enhancing their own development levels. For example, expanding operations in fields like e-commerce, cloud computing, and artificial intelligence can foster industry integration and innovation, thereby reducing dependency on traditional industries. This not only alleviates the adverse impacts of foreign divestment but also enhances the core competitiveness of SOEs. Furthermore, the development of the digital economy also promotes the opening and diversification of financial markets, providing more financing channels and options for SOEs. Through digital financial platforms, SOEs can more quickly obtain financial support, easing the problem of capital shortages and mitigating the impact of foreign divestment. Therefore, the following hypothesis is proposed:

Hypothesis 4: The digital economy significantly reduces the negative effects of foreign divestment on the high-quality development of SOEs.

3. Variable Selection, Modeling and Data Sources

3.1. Variable Selection

3.1.1 Explained Variable

Total Factor Productivity (TFP_LP) of Enterprises, referring to the study by Liao and Wang (2023)^[25], is calculated using the following Cobb-Douglas function to measure the Total Factor Productivity of SOEs:

$$\ln Y_{it} = b_{0t} + b_{1t} \ln K_{it} + b_{2t} \ln L_{it} + b_{3t} \ln M_{it} + tfp_{it} \quad (1)$$

Here, $\ln Y$ represents the output level measured by taking the logarithm of operating revenue; $\ln K$ represents the level of capital input measured by taking the logarithm of net fixed assets; $\ln L$ represents the level of labor input measured by taking the logarithm of the number of employees in SOEs; $\ln M$ represents the intermediate input of SOEs measured by taking the logarithm of cash payments for goods purchased and services received by SOEs; i represents state-owned listed companies, and t represents the year. By using the Stata software with the LP semi-parametric estimation method, the total factor productivity of sample SOEs over the years can be obtained.

3.1.2 Explanatory Variables

Foreign divestment (FD): This paper obtained the nature and shareholding ratio of the top ten shareholders of state-owned listed companies in the A-share market from the China Stock Market & Accounting Research Database(CAMAR) for the years 2013 to 2022. The level of foreign divestment is measured by the change in the proportion of holdings by overseas shareholders among the top ten shareholders of the company annually.

3.1.3 Mechanism Test Variables

Financing Constraints (WW): This paper draws on the research of White and Wu (2006)^[26] and Livdan et al. (2009)^[27], using the WW index to measure the degree of financing constraints faced by firms.

Innovation Output (IO): Referencing the research by Quan Xiaofeng and Yin Hongying (2017)^[28], this paper measures corporate innovation through the number of patent applications. To more accurately depict the timing of innovation outputs, this paper defines patent outputs based on the application year rather than the granting year. When measuring innovation output, it draws on the approach of Bereskin et al. (2016)^[29], considering the different contributions of three types of patents to a company and subjectively allocating weights of 3:2:1. The total weighted sum of these three types of patents, plus one, is represented by the natural logarithm.

Firm Competitiveness (FC): This paper follows the research of Wang Yanchao et al. (2020)^[30] and uses the Lerner Index to measure a firm's competitiveness. This index reflects the ability of a business to price above direct costs or marginal costs. A higher Lerner Index indicates stronger pricing power and greater competitiveness.

3.1.4 Moderator Variables

Differentiation Strategy (Diff): This paper draws on the research of Hu Nan et al. (2020)^[31] and uses the "seed word + Word2Vec similar words expansion" method to measure corporate differentiation strategy. The measure is based on the total occurrences of a set of words related to differentiation strategy per 100 words in the annual reports.

Mixed Ownership Reform (MOR): Inspired by the measurement method of Ma Lianfu^[32] and others, this study uses the sum of the shareholding percentages of non-state shareholders among the top ten shareholders as an indicator of the depth of mixed ownership reform in the sample companies.

Digital Economy Index (DEI): Following the construction ideas of Liu Jun et al. (2020)^[33], and considering the availability of related data at the city level, this index measures the comprehensive development level of the digital economy from two aspects: internet development and digital inclusive finance.

3.1.5 Control Variables

To enhance the accuracy of the research conclusions as much as possible, this study, referencing the research of Wang Xi and Liu Meng (2020) ^[34], selects the following as control variables: corporate growth (Growth), return on equity (ROE), concentration of equity ownership (Top1), capital structure (Capital), debt-to-assets ratio (Leverage), and regional gross domestic product (GDP). Additionally, this paper includes industry dummy variables (Industry) and year dummy variables (Year) to control for industry and annual effects. The specific forms of these variables are shown in Table 1.

Table 1. Definition of variables

Variable Properties	Variable Names	Variable Symbols	Variable Descriptions
explained variable	Total Factor Productivity	TFP_LP	was calculated by the LP semiparametric method
explanatory variable	foreign divestment	FD	changes in the proportion of foreign shareholdings among the top ten shareholders of SOEs
	financial constraints	WW	WW index
intermediary variable	innovation output	IO	$\ln(3/6 * \text{invention patent} + 2/6 * \text{utility model patent} + 1/6 * \text{design patent} + 1)$
	firm competitiveness	FC	$(\text{operating income} - \text{operating costs} - \text{selling expenses} - \text{administrative expenses}) / \text{Operating income}$
instrumental variable	differentiation strategy	Diff	total number of occurrences of differentiation strategy-related word sets per 100 words, on average, in annual reports
	mixed ownership reform	MOR	sum of shareholdings of non-state shareholders among the top ten shareholders
	digital economy	DEI	comprehensive development index for digital economy
control variable	corporate growth	Growth	total asset growth rate
	return on net assets	ROE	net profit/average balance of shareholders' equity
	shareholding concentration	Top1	shareholding ratio of the largest shareholder
	capital structure	Capital	net fixed assets + net inventories/total assets
	asset-liability ratio	Leverage	total liabilities/total assets
	gross regional product	GDP	gross regional product of cities where SOEs are located

3.2. Modeling

Based on the above theoretical analysis, this paper establishes baseline regression models (2) through (5) to test the relationship between foreign divestment and the high-quality development of SOEs:

$$TFP_LP_{it} = \beta_0 + \beta_1 FD_{it} + \beta_j Controls_{it} + \lambda_{it} + \mu_{it} + \varepsilon_{it} \quad (2)$$

$$Middle_{it} = \beta_0 + \beta_1 FD_{it} + \beta_j Controls_{it} + \lambda_{it} + \mu_{it} + \varepsilon_{it} \quad (3)$$

$$TFP_LP_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 interaction_{it} + \beta_j Controls_{it} + \lambda_{it} + \mu_{it} + \varepsilon_{it} \quad (4)$$

$$TFP_LP_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 interaction_{it} + \beta_3 FD_{it} * interaction_{it} + \beta_j Controls_{it} + \lambda_{it} + \mu_{it} + \varepsilon_{it} \quad (5)$$

Here, TFP_LP represents total factor productivity, indicating the indicator of high-quality development of SOEs; FD stands for foreign divestment; Controls denotes the set of control variables; λ_{it} and μ_{it} represent year and industry fixed effects, respectively; β_0 represents the constant term; and ε_{it} represents the random error term.

In Model (3), "middle" represents the three variables: financing constraints (WW), innovation output (IO), and firm competitiveness (FC).

In Model (5), interaction terms between foreign divestment and moderating variables are introduced, with the moderating variables being differentiation strategy (Diff), mixed ownership reform (MOR), and digital economy (DEI).

3.3. Sample Selection and Data Sources

This study selects data from Chinese A-share listed SOEs from 2013 to 2022 as the initial research sample and processes the data as follows: First, financial enterprises are excluded. Second, abnormal trading samples marked with ST or *ST are excluded. Third, samples with missing or outlier values in key variables are excluded. Fourth, only samples with at least five consecutive years of no missing data are retained. Fifth, to reduce the influence of sample outliers, this study truncates all samples at the 1st and 99th percentiles. The original data are from the China Stock Market & Accounting Research Database (CSMAR), China City Statistical Yearbook, China County Statistical Yearbook, and the National Bureau of Statistics of the People's Republic of China.

4. Empirical Analysis

4.1. Descriptive Statistical Analysis

From Table 2, it can be observed that the mean of total factor productivity (TFP_LP) for SOEs is 8.832, with a maximum value of 13.04 and a minimum value of 4.862, indicating that there is a certain disparity in total factor productivity among different SOEs. The mean of foreign divestment (FD) is 0.000, with a maximum value of 0.667 and a minimum value of -0.810, suggesting significant variation in the extent of foreign divestment among sample companies, with some companies attracting foreign investment while others facing foreign divestment.

Table 2. Descriptive statistics of main variables

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
TFP_LP	7673	8.832	1.136	4.862	8.772	13.04
FD	7688	0.000	0.025	-0.810	0.000	0.667
WW	7171	-1.065	0.093	-3.446	-1.063	-0.379
IO	7697	3.520	2.322	0.000	3.850	10.326
FC	7621	0.119	0.154	-1.982	0.095	0.846
DEI	7474	1.355	1.387	-1.414	1.081	4.345
MOR	7673	0.132	0.138	0.002	0.079	0.946
Diff	7633	0.004	0.002	0.000	0.003	0.014
Growth	7518	0.100	0.284	-0.712	0.067	11.443
ROE	7737	0.017	1.426	-82.574	0.067	14.775
Top1	7751	0.403	0.155	0.068	0.395	2.992
Capital	7742	0.260	0.431	0.000	0.165	7.427
Leverage	7761	0.505	0.208	0.010	0.512	3.262
GDP	7755	13.677	12.789	0.091	9.051	44.809

Note: Values in parentheses are t-values; ***, **, and * respectively indicate significance at the 1%, 5%, and 10% levels, the same below.

4.2. Analysis of Baseline Regression Results

Table 3 presents the baseline regression results. In column (1), the regression analysis does not include control variables. The results show that the coefficient of foreign divestment (FD) is -1.448, significant at the 1% level. This indicates a significant negative correlation between foreign divestment and the total factor productivity of SOEs, suggesting that foreign divestment can inhibit the high-quality development of SOEs. In column (2), after including all control variables, the coefficient of foreign divestment remains significant at the 1% level, with a value of -1.316, supporting the conclusion of hypothesis 1.

Table 3. Baseline regression results

	TFP_LP (1)	TFP_LP (2)
FD	-1.448*** (-3.25)	-1.316*** (-3.42)
Growth		0.117*** (3.55)
ROE		0.044*** (6.71)
Top1		0.736*** (10.66)
Capital		0.868*** (29.18)
Leverage		1.838*** (33.19)
GDP		0.011*** (12.46)
Year FE	yes	yes
Industry FE	yes	yes
Constant	7.574*** (11.23)	6.741*** (11.87)
N	7665	7491
Adj – R ²	0.2981	0.4985

4.3. Examination of the Impact Mechanism of Foreign Divestment on the High-Quality Development of SOEs

Analyzing the impact mechanism of foreign divestment on the high-quality development of SOEs, the results are shown in Table 4. In column (1), the coefficient of financial constraint (WW) is 0.099, significant at the 1% level, indicating that foreign divestment significantly exacerbates the financial constraints of SOEs. Columns (2) and (3) show that the coefficients of foreign divestment on SOE innovation output (IO) and enterprise competitiveness (FC) are significantly negative at the 1% level and 5% level, suggesting a significant negative impact of foreign divestment on innovation output and enterprise competitiveness. These results indicate that foreign divestment can exacerbate the financial constraints of SOEs, reduce innovation output, weaken enterprise competitiveness, thereby further inhibiting the high-quality development of SOEs. Hypotheses 1.1, 1.2, and 1.3 are supported.

Table 4. Regression results of the analysis of the mechanism of foreign divestment and high-quality development of SOEs

	WW (1)	IO (2)	FC (3)
FD	0.099*** (2.75)	-2.203*** (-2.89)	-0.146** (-2.39)
Controls	yes	yes	yes
Year FE	yes	yes	yes
Industry FE	yes	yes	yes
Constant	-1.513*** (-30.97)	1.416 (1.26)	0.070 (0.78)
N	6921	7444	7492
Adj – R ²	0.3743	0.5377	0.3031

4.4. Moderating Effects of Differentiation Strategies, Mixed Ownership Reforms and Digital Economy

Introducing the interaction terms of differential strategy, mixed ownership reform, and digital economy with foreign divestment into the model for research, the results are shown in Table 5.

Column (1) shows that the regression coefficient of the interaction term between differential strategy and foreign divestment is significantly negative at the 10% confidence level and consistent with the direction of the impact of foreign divestment on the high-quality development of SOEs, indicating that differential strategy exacerbates the inhibitory effect of foreign divestment on the high-quality development of SOEs to a certain extent. Columns (2) and (3) show that the regression coefficients of the interaction terms between mixed ownership reform, digital economy, and foreign divestment are significantly positive at the 5% confidence level, opposite to the direction of the impact of foreign divestment on the high-quality development of SOEs, indicating that mixed ownership reform and digital economy can alleviate the inhibitory effect of foreign divestment on the high-quality development of SOEs to a certain extent. Hypotheses 2, 3, and 4 are confirmed.

Table 5. Results of the Moderating Effect Test

	TFP_LP (1)	TFP_LP (2)	TFP_LP (3)
FD	-1.418*** (-3.68)	-1.741*** (-2.95)	-1.232** (-2.59)
Diff	31.708*** (4.95)		
FD*Diff	-446.947* (-1.89)		
MOR		0.836*** (10.37)	
FD*MOR		3.249** (2.17)	
DEI			0.041*** (3.65)
FD*DEI			0.640** (1.98)
Controls	yes	yes	yes
Constant	6.639*** (11.73)	6.899*** (155.84)	7.032*** (165.84)
N	7436	7472	7217
Adj - R ²	0.5004	0.3146	0.3130

4.5. Robustness Tests

The level of foreign divestment is measured using the change in Outward Foreign Direct Investment (OFDI) of company 'i' in year 't', substituting the explanatory variable FD previously mentioned. Regression analysis was re-conducted, and the results show that the coefficient of OFDI is significantly negative at the 5% level. Return on Total Assets (ROTA) and log of Labor Productivity (lnLabprod) are used as substitutes for Total Factor Productivity as indicators of high-quality development in state-owned enterprises, and the regression analysis was repeated. The results indicate that the coefficients of FD are significantly negative at the 1% and 10% levels. This demonstrates that regardless of the indicators used, the conclusions of this study remain unchanged. With the inclusion of firm fixed effects, the coefficient of FD is significantly negative at the 5% level, further substantiating that foreign divestment can inhibit the high-quality development of state-owned enterprises.

4.6. Heterogeneity Test

4.6.1 Heterogeneity Analysis of SOEs Types

This paper classifies China's state-owned enterprises into central and local SOEs based on their controlling shareholder and explores whether there is heterogeneity between the two, as shown in Table 6. Columns (1) and (2) indicate that the regression coefficients of foreign divestment are significantly negative at the 5% confidence level, demonstrating that foreign divestment significantly

inhibits the high-quality development of both central and local SOEs. However, the coefficients suggest that the inhibitory effect of foreign divestment on the high-quality development of local state-owned enterprises is stronger than that on central SOEs.

4.6.2 Analysis of Regional Heterogeneity

Given the vast geographical expanse of China, to further examine the regional heterogeneity of the impact of foreign divestment on the high-quality development of state-owned enterprises (SOEs), this study subdivides the entire sample into three groups: the eastern, central, and western regions. Empirical tests are then conducted separately for each region, and the regression results are shown in Table 6. Columns (3) to (5) reveal that foreign divestment has the strongest inhibitory effect on the high-quality development of SOEs in the eastern region. Since the reform and opening-up policy, the eastern region has capitalized on its unique geographical advantages, seizing historical opportunities for industrial transfer from developed countries and Hong Kong, Macao and Taiwan regions of China, and has become the most economically dynamic area. However, this open economic development has also made the eastern region highly susceptible to fluctuations in the global economy^[35].

Table 6. Regression results of heterogeneity test

	TFP_LP				
	national SOEs (1)	local SOEs (2)	east (3)	central (4)	west (5)
FD	-0.983** (-2.18)	-1.420** (-1.81)	-1.411*** (-3.24)	-0.610 (-0.66)	-0.205 (-0.18)
Controls	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes
Constant	8.478*** (11.75)	4.724*** (8.33)	6.194*** (10.91)	7.744*** (11.61)	4.785*** (9.18)
N	2598	4761	4580	1544	1367
Adj – R ²	0.5835	0.4945	0.5233	0.5605	0.5503

5. Conclusion and Recommendations

In recent years, the phenomenon of foreign divestment has occurred occasionally, and such divestment can have both beneficial and adverse effects. The core issue is how to leverage strengths and avoid weaknesses to maximize benefits and minimize harms. This paper examines Chinese A-share listed state-owned companies from 2013 to 2022 as the research sample. Based on data from the China Stock Market & Accounting Research Database (CSMAR), China City Statistical Yearbook, China County Statistical Yearbook, and the National Bureau of Statistics of the People's Republic of China, this study systematically analyzes the impact of foreign divestment on the high-quality development of state-owned enterprises (SOEs), yielding the following conclusions: (1) Foreign divestment significantly inhibits the total factor productivity of SOEs, thereby hindering their high-quality development. (2) Foreign divestment can suppress the high-quality development of SOEs by exacerbating their financing constraints, reducing their innovation output, and decreasing their competitiveness. (3) Implementing differentiated strategies intensifies the inhibitory effect of foreign divestment on the high-quality development of SOEs, while mixed-ownership reform and the digital economy can mitigate this effect. Additionally, the heterogeneity test in this paper finds that the inhibitory effect of foreign divestment on the high-quality development of local SOEs is stronger than that on central SOEs. Regionally, the inhibitory effect is most pronounced in the eastern areas.

Based on these conclusions, to minimize the negative impacts of foreign divestment on the high-quality development of local SOEs, this paper proposes the following policy recommendations: (1) While vigorously attracting investment, the government should also pay close attention to foreign divestment. This can be achieved by establishing a comprehensive foreign investment monitoring and data analysis system to timely understand the investment status and trends of foreign investors,

allowing for the prompt formulation of corresponding policies. (2) SOEs can actively expand diversified financing channels, including issuing bonds and attracting social capital investments, to reduce dependence on a single source of financing and lower financing risks. Additionally, the government can use policy guidance and other means to encourage cooperation between SOEs, private enterprises, and foreign enterprises, promoting the process of mixed-ownership reform to achieve optimal resource allocation and maximize benefits. (3) In the face of challenges brought by foreign divestment, SOEs need to strengthen their core competitiveness and improve their risk resistance capabilities. Increasing investment in autonomous innovation, enhancing the level of independent innovation, and reducing dependence on foreign capital are crucial to adapting to new market environments. (4) Although differentiated strategies are often viewed as effective ways to enhance enterprise competitiveness and high-quality development, under the context of foreign divestment, their regulatory effects may not be sufficient to offset the inhibitory impact on the high-quality development of SOEs and may even exacerbate it. Therefore, when facing foreign divestment, SOEs should reevaluate the effectiveness of differentiated strategies, make timely adjustments, and avoid unnecessary losses. (5) The government should take measures to enhance the construction of digital infrastructure and strengthen digital security to promote the development of the digital economy. This provides SOEs with broader development opportunities, allowing them to better integrate into the trends of the digital era and minimize the adverse effects potentially caused by foreign divestment.

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