The Impact of Business Environment Optimization on Corporate Violations

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Abstract: *The business environment has an important impact on the strategic decision-making of enterprises. Based on the systematic analysis of the internal mechanism of business environment optimization affecting corporate irregularities, this paper conducts an empirical test with the help of China's business environment report from 2017 to 2021 and the actual data of Shanghai and Shenzhen A-share listed companies. Through research, it is found that optimizing the business environment helps to curb corporate violations ; the heterogeneity test shows that compared with some non-state-owned enterprises, the optimization of the business environment has a more obvious inhibitory effect on the violations of state-owned enterprises ; the test of the mechanism of action finds that optimizing the business environment can inhibit corporate violations by improving the quality of internal control ; further analysis of the impact of the six sub-environments of the business environment on corporate violations found that the rule of law environment, tax burden and infrastructure environment have a strong inhibitory effect on corporate violations. The conclusion of this paper provides a reference for continuously optimizing the business environment and curbing corporate violations.*

Keywords: *Business environment, Enterprise violations, Quality of internal control*

1. Introduction

In recent years, there have been frequent violations of listed companies in China, such as the fictitious profits of ' Zhangzi Island ' and the financial fraud of ' Ruixing Coffee '. According to the statistics of Guotai 'an, from 2017 to 2021, on average, more than 28 % of listed companies received illegal punishment every year. Corporate irregularities such as information disclosure violations and financial fraud threaten the normal operation of the securities market. In 2020, the State Council issued ' Opinions on Further Improving the Quality of Listed Companies ', proposing to severely punish violations by listed companies. Therefore, it is of great practical significance to deeply analyze the internal causes and governance mechanisms of corporate violations, and to explore ways to curb corporate violations. As an important external institutional environment for enterprises, the business environment covers the sum of various environments throughout the life cycle of enterprises, and plays a vital role in stimulating market vitality and promoting economic development. Then, how the performance of the business environment affects corporate violations is worthy of in-depth analysis.

This paper takes Shanghai and Shenzhen A-share listed companies from 2017 to 2021 as the research object, and answers the following questions: whether optimizing the business environment will have an impact on corporate violations; what is its path of action; what aspects of the business environment have a stronger impact on corporate violations. The possible innovations and contributions of this paper are as follows: (1) From the perspective of business environment optimization, this paper deeply explores the factors of corporate violations and supplements the relevant research. (2) Although there is literature on corporate violations from the external environment, there is no literature that focuses on the role of the business environment in corporate violations. (3) Analyze the differentiated impact of the business environment sub-environment on corporate violations, and obtain the causes of the business environment inhibiting corporate violations.

2. Literature Review, Theoretical Basis, and Research Hypothesis

2.1. Literature Review

The empirical research on the economic consequences of the business environment in the academic

circle mainly focuses on its impact on regional economic development and enterprise development. Based on the perspective of national value chain, Zou et al. established a competitive equilibrium model and proposed that a good business environment can promote urban economic development and improve the efficiency of resource allocation [1]. Chen Xiaodong and Peng Anxing believe that optimizing the business environment changes the micro-environment of macroeconomic policy operation [2]. Pei Ran and Hou Guanyu use DPQCA to reveal the internal relationship between business environment and the development of digital economy, and find that the stability of policies and the fairness of market competition all play a positive rolein promoting the development of digital economy [3]. At the level of enterprise development, Li Yuanyuan and Zhang Guangsheng use panel fixed effect model to study and find that business environment has a promoting effect on R&D investment [4]. Nam and Tram also found that optimizing the business environment can enhance the innovation vitality of enterprises [5].

The existing literature on the study of corporate violations mainly from the internal and external perspectives. From the perspective of corporate internal governance, internal control defects, equity structure, stability of senior management team, characteristics of the board of directors, characteristics of the board of supervisors and other factors will affect corporate violations. From the perspective of corporate external supervision and competition, factors such as legal environment, media attention, product market competition, and third-party auditor industry expertise can effectively inhibit the occurrence of corporate violations, and exert significant supervision and external governance effects [6]. As the external environment for the survival and development of an economy, the development level of the business environment has a direct impact on the rise and fall of enterprises. However, most of the existing studies are based on a certain factor of the business environment to explore its impact on enterprise violations, and less from the overall perspective of the business environment and different dimensions of the impact on enterprise violations.

2.2. Theoretical Analysis and Research Hypothesis

As a micro individual of the business environment, enterprises are affected by the business environment of the region. The optimization of the business environment enables enterprises to have rich governance strategies, so that the government has the ability and motivation to play the role of corporate supervisor, reduce corporate violations, and maintain the orderly participation of enterprises in capital market activities. Specifically, the business environment mainly affects corporate violations from the following aspects: First of all, the improvement of the business environment can improve the quality of internal control. The poor quality of internal control of enterprises indicates that its internal control cannot guarantee that enterprises operate in accordance with the existing development model, which further leads to the difficulty of compliance management of enterprises and the occurrence of violations. On the other hand, relying on the principal-agent theory, good internal control quality will improve the governance level of enterprises and alleviate the agency problem [7]. Good internal control can motivate management to work hard, prevent them from exceeding internal control due to the pursuit of self-interest, and increase business risks. It is also possible to avoid the " tunneling " behavior of major shareholders by regulating related party transactions, and weaken the motivation of corporate violations. Secondly, the optimization of business environment can maintain organizational legitimacy. According to the new institutional theory, legitimacy affects the strategic choice of enterprises through coercion and imitation mechanisms in the environment in which enterprises live. Enterprises tend to imitate enterprises in their fields that are considered more legitimate or successful [8]. Therefore, in order to achieve sustainable and healthy development, enterprises are more willing to operate in compliance.

However, the business environment may also produce ineffective supervision and negative supervision, so that enterprises have violations. From the perspective of corporate management, due to the existence of agency problems, corporate executives will pursue personal interests under good business environment conditions, and then violations will occur. Secondly, from the perspective of industry competition, according to the prospect theory, managers show a risk pursuit, and in order to improve performance, managers are more likely to adopt a violation strategy [9]. Finally, from the perspective of resource homogenization, the resources contained in the homogeneous industrial network have the characteristics of high consistency and substitutability, which cannot meet the needs of enterprises ' scarce resources. On the contrary, redundant and repetitive resources increase the opportunity cost of enterprises and promote enterprises to violate regulations.

Based on the above analysis, the following two competitive hypotheses are proposed:

Hypothesis 1. Business environment optimization inhibits corporate violations.

Hypothesis 2. Business environment optimization promotes corporate violations.

3. Data source, Variable Definition and Model Setting-UP

3.1. Sample selection and data source

In this paper, A-share listed companies in Shanghai and Shenzhen from 2017 to 2021 are selected as the initial research samples. On the basis of the initial samples, the data are screened according to the following criteria: financial and insurance listed companies are deleted; Enterprises that were abnormally operated by ST, *ST and PT during the study period were excluded; The observed value with asset-liability ratio greater than or equal to 1 or less than or equal to 0 was excluded; Eliminate all samples with missing variable data; And 1% indentation of all continuous variables to eliminate the effect of extreme values. After the above processing, the final observation value is 15480. The business environment data comes from the ' China Provincial Enterprise Business Environment Index Report ' and the ' China Urban Competitiveness Report ', and the enterprise violation data and other data come from the Cathay Pacific database. The statistical and test software used in this article is Stata17.0.

3.2. Variable Definition

Interpreted Variables (Vio): Corporate irregularities refer to the penalties imposed by the regulatory authorities on companies for violating relevant laws and regulations in the course of their operations, including fictitious profits, delayed disclosure of internal transactions, violation guarantees, and major omissions. This article draws on the research of Khanna et al. [10], and uses corporate irregularities and corporate irregularities to measure corporate irregularities. Vio1 indicates the tendency of enterprise violation. If the enterprise violates the rules in the year, the value is 1, otherwise it is 0. Vio2 represents the number of corporate violations, measured by the total number of violations that occurred in the year.

Business environment (ENV): Referring to previous scholars ' research, the business environment at the city level and the provincial level is used as a proxy variable. The business environment at the city level (ENV1) is measured by the ' comprehensive competitiveness index ', which comprehensively measures the economic competitiveness of each city from the aspects of enterprise subjects and market factors. The data is from the ' China Urban Competitiveness Report '. The provincial-level business environment (ENV2) is measured by the ' business environment index ', which comprehensively measures the business environment of each province from the aspects of policy public, administrative intervention, rule of law environment and market environment. The data comes from the ' China Provincial Business Environment Index Report '.

Controlled Variables: In this paper, the following control variables are set with reference to the previous literature on the influencing factors of enterprise violations: Corporate size (size), asset- liability ratio (Lev), return on assets (Roa), corporate Growth (Growth), Board size (Board), ownership concentration (Top1), Dual (Dual), proportion of independent directors (Id), and property rights (Soe). In addition, the fixed effects of industry and year are also controlled in this paper.

3.3. Model Setting-Up

Whether the enterprise violates Vio1 is a dummy variable, and the number of violations Vio2 is a counting variable. Model (1) that controls the industry and year effects is constructed, and Poisson and Logit regressions are performed to verify the business environment. Among them, ENV represents the business environment, Controls represents control variables other than industry and year, Ind represents the industry dummy variable, Year represents the annual dummy variable, i represents the individual company, t represents the year, β is the regression coefficient, ε represents the random disturbance term.

$$Vio_{i,t} = \beta_0 + \beta_1 ENV_{i,t} + \sum \beta_j \, Controls_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \qquad (1)$$

4. Descriptive Statistics and Correlation of Variables

Table 1 shows the descriptive statistical results of the variables. It can be seen that the average number of corporate violations is 0.159, indicating that in the research sample, the company has 0.159 violations per year; the average value of whether the violation is 0.288, indicating that in the study sample, 28.8 % of the Shanghai and Shenzhen A-share listed companies have violations every year; the standard

deviation of the business environment at the city level is 0.291, the minimum and maximum values are 0.007 and 1, respectively. The standard deviation of the business environment at the provincial level is 0.133, the minimum and maximum values are 3.19 and 3.92, respectively, indicating that the development of the business environment between different regions in China is uneven, and the overall level is not high, and there is still much room for improvement.

The correlation coefficients between corporate violations and the business environment are -0.045, -0.054, -0.075 and-0.075, respectively, all of which are negatively correlated at a significant level of 1 %. It is preliminarily shown that the better the business environment, the smaller the company's violation tendency and the fewer the number of violations. There is a strong correlation between the explained variables and the control variables, indicating that the control variables are selected properly. In addition, the absolute values of the correlation coefficients between the control variables are less than 0.5, indicating that there is no serious multicollinearity in the regression model. Due to the limited space, the results are not listed and can be obtained from the author if necessary.

Table 1: Descriptive statistics of main variables.

Variables	N	Average	SD	Minimum	Median	Maximum
Vio1	15480	0.288	0.813	0	0	10
Vio2	15480	0.159	0.366	0	0	1
ENV1	15480	3.717	0.133	3.190	3.710	3.920
ENV2	15480	0.468	0.291	0.00700	0.419	1

5. Analysis of Empirical Results

5.1. Model Regression Analysis

Model 1 and Model 2 in Table 2 report the impact of the business environment on the number of corporate violations and whether they are violations, respectively. The regression coefficients of the business environment in the two models are significantly negative at the level of 1 %, indicating that the business environment can significantly reduce the number of corporate violations and reduce the tendency of violations, that is, the business environment can inhibit corporate violations. Suppose H1 is verified and H2 is rejected. The above data shows that the business environment is a key factor that directly or indirectly affects the survival, development and normal operation of an enterprise. Therefore, according to the results, it is further estimated that with the improvement of the business environment, the quality of internal control of enterprises can be improved, which makes the operation of enterprises more standardized and institutionalized, thus reducing the tendency of enterprises to violate regulations and reducing the number of violations of regulations.

Table 2: Regression results of business environment on corporate irregularities.

Variables	Model 1		Model 2	
	Vio1	Vio1	Vio2	Vio2
ENV1	-0.388*** (0.120)		-0.597*** (0.187)	
ENV2		-0.397*** (0.072)		-0.398*** (0.109)
Controls	Yes	Yes	Yes	Yes
N	15480	15480	15480	15480
Pseudo R^2	0.1424	0.1433	0.1114	0.1116

Note: The z value is in parentheses. * * *, * * and * are significant at 1 %, 5 % and 10 %, respectively. The same below.

5.2. Heterogeneity Analysis and Robustness Test

The differences in resource allocation, and management systems between state-owned and non-state-owned enterprises may lead to differences in the impact of the business environment on corporate violations due to differences in the nature of property rights. In this paper, according to the nature of the property rights of listed companies, the samples are divided into state-owned enterprises and non-state-owned enterprises for group testing. The regression results are shown in Table 3. The data together show that in state-owned enterprises, the negative correlation between the business environment and the

enterprise's violation behavior is significant. The reasons for this result may be as follows: as the mainstay of the national economy, state-owned enterprises should bear more social responsibilities, play a guiding role in the development of capital markets, and be willing to cooperate with the government to supervise corporate violations and improve the quality of enterprises.

Table 3: Heterogeneity analysis

Variables	State-owned Enterprise				Non-state-owned Enterprise			
	Vio1	Vio1	Vio2	Vio2	Vio1	Vio1	Vio2	Vio2
ENV1	-1.642***		-1.651***		-0.087		-0.274	
	(0.272)		(0.387)		(0.138)		(0.222)	
ENV2		-1.050***		-1.296***		-0.250***		-0.153
		(0.185)		(0.258)		(0.078)		(0.123)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4842	4842	4756	4756	10638	10638	10638	10638
Chi^2	739.92	738.06	377.32	385.92	2659.92	2669.85	1150.25	1150.30
Pseudo R^2	0.1406	0.1402	0.1129	0.1155	0.1460	0.1465	0.1143	0.1143

In order to verify the robustness of the regression results, this paper uses the Probit model and the OLS model to estimate respectively. The unreported regression results are consistent with the previous ones, which proves that the conclusion of the benchmark regression is robust. In order to alleviate the interference of endogenous problems caused by reverse causality on the results, this paper regresses the explanatory variables and control variables lagging one period. The results show that the regression coefficient of the business environment lagging one period is still significantly negative, and the test results are not substantially different from the previous ones, which once again confirms the robustness of the conclusions of this paper. It is limited to space, and can be obtained from the author if necessary.

5.3. Analysis of Influence Mechanism

As one of the internal supervision mechanisms of enterprises, internal control is likely to have an important impact on the decision-making of enterprises. According to the principal-agent theory, the separation of corporate ownership and management rights is easy to cause agency problems. Good internal control quality can improve the company's governance level, curb many illegal operations of enterprises from the source, and provide enterprises with more access to information resources, provide more reasonable solutions for their internal control construction, and reduce the possibility of corporate violations. Based on the above analysis, the following models (2) and (3) are established to test whether the business environment affects corporate violations by improving the quality of internal control. Among them, IC represents the quality of internal control, which is measured by Dibo internal control index / 100. The larger the value, the higher the quality of internal control.

$$IC_{i,t} = \beta_0 + \beta_1 ENV_{i,t} + \sum \beta_j \, Controls_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \qquad (2)$$

$$Vio_{i,t} = \beta_0 + \beta_1 ENV_{i,t} + \beta_2 IC_{i,t} + \sum \beta_j \, Controls_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \qquad (3)$$

Table 4: Influencing mechanism analysis.

Variables	IC	IC	Vio1	Vio1	Vio2	Vio2
ENV1	0.535***		-0.161		-0.273	
	(0.110)		(0.122)		(0.197)	
ENV2		0.244***		-0.249***		-0.247**
		(0.068)		(0.072)		(0.114)
IC			-0.239***	-0.238***	-0.347***	-0.347***
			(0.007)	(0.007)	(0.017)	(0.017)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	13879	13879	13879	13879	13879	13879
Chi^2	2232.18	2220.89	3934.74	3944.95	1799.22	1802.01
Pseudo R^2			0.1747	0.1751	0.1410	0.1412
R^2	0.0861	0.0856				

Table 4 reports the mediating role of internal control quality. The regression results show that the business environment can significantly improve the internal control quality of listed companies. After adding internal control variables to the main regression, the regression coefficient of internal control quality is significantly negative at the 1 % level, indicating that the higher the quality of internal control, the less the violation of listed companies. At this time, the regression coefficient of the business

environment on corporate violations is negative. That is to say, when considering the quality of internal control, the business environment can still play a governance role, but the absolute value and significance of its regression coefficient are reduced. It shows that to a certain extent, the quality of internal control of enterprises plays a part of intermediary role, that is, the business environment can inhibit corporate violations by improving the quality of internal control of enterprises.

5.4. Further Analysis

In order to clarify the differences in the impact of different sub-environments of the business environment on corporate violations, combined with the research of this paper, with reference to existing research, six sub-environments that may affect corporate violations are selected from the provincial level, including administrative intervention, legal environment, tax burden, human resources supply, infrastructure conditions, and market environment. The above research samples are still used to empirically test which dimensions of the business environment have a stronger inhibitory effect on corporate violations. In this paper, the model (4) to be verified is set to:

$$Vio_{i,t} = \beta_0 + \beta_1 Sub\_ENV_{i,t} + \beta_2 IC_{i,t} + \sum \beta_j Controls_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \qquad (4)$$

Sub _ ENV represents the sub-environment of the business environment, and the remaining variables are consistent with the previous article. In this result, the regression coefficients are all negative, and the significance level is slightly different. It shows that the rule of law environment, tax burden and infrastructure environment have a strong inhibitory effect on corporate violations. It may be because the business environment supports the development of enterprises through legislative provisions and tax reduction and fee reduction, as well as the strengthening of cooperation between the government and enterprises to form a standardized cooperation mechanism to reduce corporate violations. Therefore, reducing corporate taxes and increasing infrastructure construction are important measures to improve the business environment and reduce corporate violations. Limited to space, the results are not listed, and can be obtained from the author if necessary.

6. Conclusions and Recommendations

The construction of business environment has always been the focus of the party and the state. The business activities of enterprises depend on the business environment of the region, and the impact of the business environment on the development of enterprises has always been a research hotspot in academia. A good business environment can affect the corporate governance mechanism and regulate the production and operation activities of enterprises. This paper selects China 's Shanghai and Shenzhen A-share listed companies from 2017 to 2021 as research samples to empirically test the impact of business environment on corporate irregularities. The results show that the optimization of business environment has a significant negative impact on corporate irregularities, and this impact is more obvious in state-owned holding enterprises. In addition, the quality of internal control plays an intermediary role in it.

Based on the above research, this paper puts forward three policy recommendations. First, the state should continue to attach importance to the construction of the business environment, increase the reform of "decentralization, management and service" and provide a fair and just market operating environment for enterprises. Secondly, the quality of internal control of enterprises has a significant mediating effect. It is suggested that the government should consider the characteristics of internal control of enterprises when formulating relevant policies to better optimize the business environment. Thirdly, for enterprises, they should strengthen the construction of corporate governance mechanism and make efforts to improve the quality of internal control.

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