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Research Article

Research on the Impact of Board Governance Model Based on Multi-Internet of Things Perception System on System Risk of Large Business Institutions in China

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Corporate governance structure is a subject of great theoretical and practical significance, especially the impact of board characteristics on corporate performance, which has been the focus of scholars' attention. However, due to the particularity of China's commercial institutions, especially the state-owned commercial institutions in the transition economy, which have a strong government-led color in system, commercial institutions mainly rely on strengthening the governance of the board of directors to improve the effectiveness of their internal governance. Based on the basic principles of the Internet of Things (IOT) business environment, this paper divides the architecture of multiple IOT perception system into perception domain and business domain. This paper studies the development mode of the economic and business perception system stage of the Internet of Things: the primary stage, the growth and maturity stage, and the integration stage. Strengthen the establishment of an independent director system, create an environment in which independent directors exercise full power, strengthen penalties for violations of directors, strengthen the integrity of directors, and establish a scientific and reasonable board evaluation mechanism. The effective operation of enterprises is based on the perfect market rules and a good market order. The reform of state-owned enterprises with the core of establishing a modern enterprise system and improving corporate governance structure must be carried out simultaneously with the construction of market systems.

1. Introduction

Board governance originates from the agency problem caused by the separation of ownership and management rights of companies. In order to overcome the market failure caused by asymmetric market information, governments of various countries have implemented different policies, thus forming different board governance systems.

Since the subprime mortgage crisis in the United States, a series of financial scandals have occurred in succession, which prove that even in advanced countries, there are still problems of board governance [1]. The US board of directors' governance system, which has been regarded as a model of study in the past, has been severely challenged. This has also led the community to reexamine its institutional content and then raise the heated discussion on board governance again [2].

Regression econometric modeling is a type of modeling commonly used by economists. This modeling method has been criticized from various quarters, but it is deeply rooted and still has a market in most countries of the world. Various existing econometrics textbooks fall within the scope of the regression modeling approach described here. Board governance refers to the mechanism of internal management and external monitoring, which requires the management to implement its own responsibilities. It must take into account the rights and interests of interested parties, pursue the business performance of the enterprise, and strive for the maximum benefits for all shareholders [3]. Among them, the internal mechanism is through the design of the board of directors, supervisor, and shareholders' meeting, through the mutual checks and balances among the three, to achieve the purpose of board governance, which includes the operation of the board of directors and the establishment of the
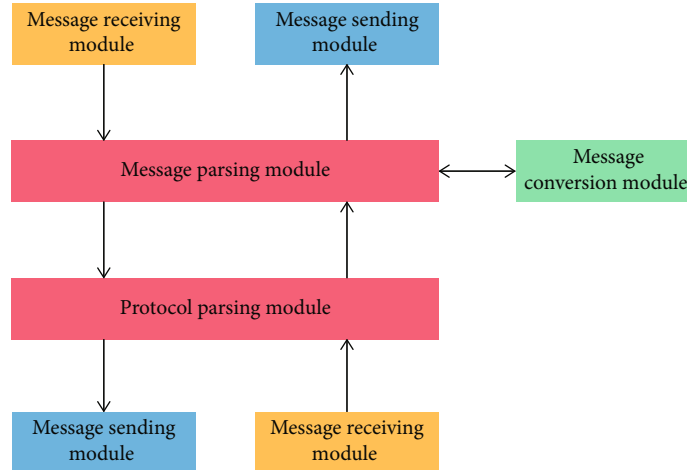
Figure 1: Communication dimension of information and communication in the Internet of Things.

audit system [4]. However, the external mechanism starts from the government's formulation of laws and regulations, the certification of accountants, and the competition of market products and, through external supervision pressure, ensures that the management pursues the interests of the company. The operating style of a joint stock limited company is that most directors inject funds, but they cannot devote much time and spirit to participate [5–7]. In addition, due to lack of relevant knowledge and management ability, professional management should be entrusted to take charge. At this time, the separation of ownership and management right will result in agency problem. The cost paid to solve or reduce the adverse effects caused by agency problem is called agency cost [8]. According to the agency theory, the management class controls the management right of the enterprise. In the case of information asymmetry, it may pursue its own interests due to self-interested motives, which may easily cause damage to shareholders' rights. Therefore, it is necessary to establish a reasonable supervision or control mechanism to carry out checks and balances [9]. The exogenous concept used by the regression econometric model was first proposed by Ding Bergen in the 1930s and conceptualized by Kopmans in the late 1940s, forming three exogenous concepts of traditional modeling methods. After that, people did not study much about the concept of exogenous, but it was widely used. The setting of exogenous and exogenous variables plays an important role in regression econometric models.

If the enterprise itself does not have a good quality of board governance, its performance will not be improved. It is once faced with drastic changes in the external environment or major impact, such as national war, inflation, economic recession, or high interest rates [10]. It may cause strong harm to the company, while it will reduce the company's value and affect the stock price. If it is large, it may cause the company to collapse or bankruptcy. This shows the importance of corporate governance mechanism [11].

Systematic risk, also known as market risk, is also called nondispersible risk. It refers to the possibility that all stock
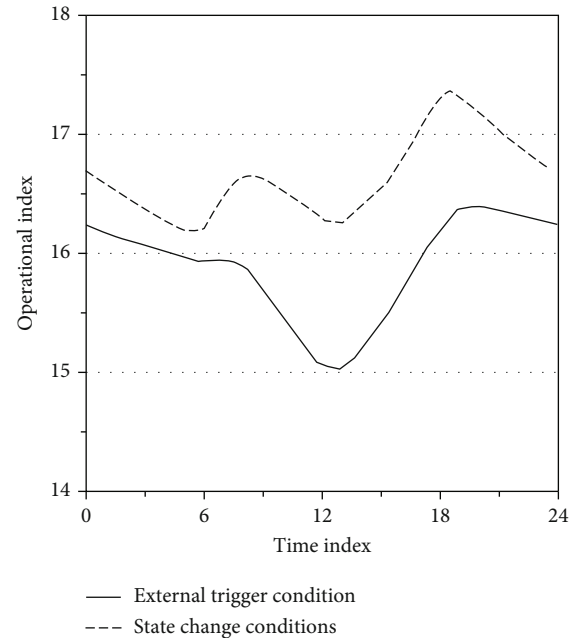

Figure 2: Ontology mapping rules in the Internet of Things.

prices fall in the stock market due to the impact and changes caused by the overall political, economic, social, and other environmental factors, thus bringing losses to stock holders [12–14]. The inducement of system risk occurs outside the enterprise, and the company itself cannot completely avoid or disperse, which has a large impact. Although system risks cannot be controlled and dispersed, if an enterprise with a sound management system is supplemented by a good governance mechanism of the board of directors and fully implemented, if it encounters system risks, and even if it cannot be completely prevented from being affected, it can at least effectively reduce its impact and damage on the enterprise [15].

At present, the relevant research on the impact of Board Governance on enterprises can mainly include the following:
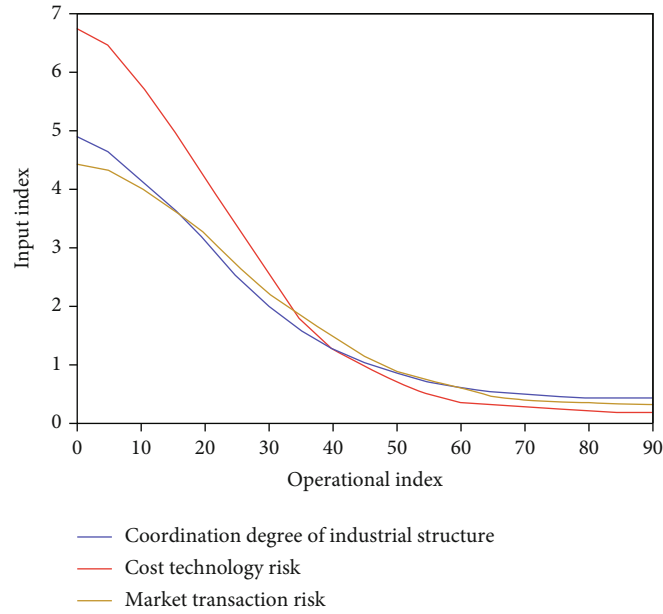
FIGURE 3: Influencing factors of multiple Internet of Things perception system.

TABLE 1: The regression results of board governance on operational performance under all samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-34.009	0.000	-1.540	0.000	1.425	0.093
BLOCK	0.068	0.015	0.002	0.460	0.008	0.291
BH	0.097	0.000	0.003	0.124	-0.005	0.503
INST	-0.076	0.001	-0.003	0.097	0.004	0.452
INDEP	0.740	0.000	0.021	0.159	0.084	0.098
COLL	-0.074	0.000	-0.001	0.471	0.003	0.427
SER	1.756	0.075	-0.063	0.392	-0.358	0.158
ASZ	2.905	0.000	0.135	0.000	-0.030	0.547
DAR	-0.216	0.000	-0.013	0.000	0.000	0.942
SG	0.025	0.000	0.001	0.000	0.000	0.754
DU	-1.994	0.000	-0.068	0.080	-0.343	0.011
F test	53.170		23.993		1.551	
Significance	0.000		0.000		0.116	
R square	0.207		0.105		0.008	
R square after adjustment	0.203		0.101		0.003	

(1) Discuss the influence of board governance on business performance. "Agency Theory," "Resource Dependence Theory," "Interest Convergence Hypothesis," "Interest Plunder Chains," and other theories all explain the influence of the board theory on the business performance of enterprises from different angles [16]

(2) Discuss the influence of board governance on enterprise risks. Cheung and others believe that companies with better board governance have less risk [17]

(3) To explore the impact of systemic risk on enterprise performance, Shum et al. took emerging markets of China, Brazil, Russia, and India as research objects and explored the correlation between systemic risk and corporate stock market returns and found that there was a significant positive correlation between them [18–20]. Zeitun et al. used 59 listed companies in Jordan as a sample to explore the relationship between equity structure, system risk, and business performance in corporate governance. The performance measurement variables used indicators such
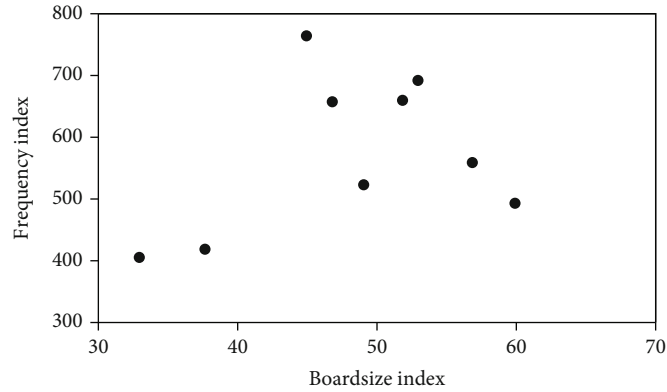
FIGURE 4: Normal distribution map of board size frequency.

Proportion of independent directors
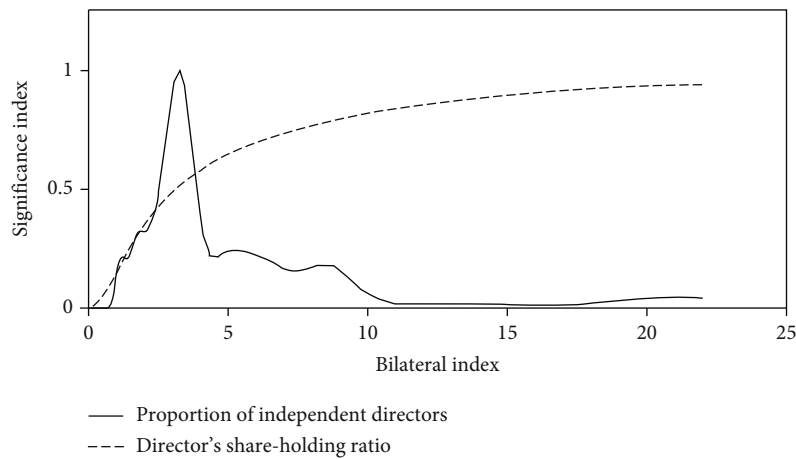--- Director's share-holding ratio

FIGURE 5: Relevance analysis of governance variables of board of directors.

as return on assets and return on equity [21]. The results show that the ownership structure and business performance are significantly positively correlated. In addition, companies with lower equity concentration and higher foreign ownership have lower systemic risk [22]

But what is the relationship among board governance, system risk, and business performance? The answer to this question is still less in academia. Therefore, this paper takes the company's systemic risk as a mediator variable and takes the domestic electronic technology company as an example to study the impact of its board governance on business performance and analyze its effect [23].

2. Research Method

2.1. Research Samples and Research Hypothesis. This paper selects the listed electronic technology companies in our country from 2007 to 2015 as the research object, including the semiconductor industry, computer and peripheral equipment industry, electronic component industry, electronic circuit industry, communication network industry, photoelectric industry, and other electronic industries, among which the samples are divided into two parts: large

enterprises and small and medium-sized enterprises [24]. Among them, except for manufacturing, construction, mining, and other industries, the rest of the industry has a turnover of less than RMB 10 million in the previous year or a number of employees with less than 100 employees in large enterprises.

This paper divides companies into large companies and small and medium-sized companies. Firstly, the relationship between board governance (C) and performance (P) is discussed. Then, explore the impact of board governance (C) on systemic risk (R), and analyze whether board governance has a direct impact on business performance or systemic risk is a mediator of corporate governance's impact on performance.

This paper proposes the following assumptions:

Hypothesis 1. The governance degree of board of directors of large companies is significantly correlated with business performance.

Hypothesis 2. There is a significant correlation between the degree of board governance and system risk in large companies.

TABLE 2: The return results of board governance on operational performance in the sample of large companies.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-12.440	0.000	-0.703	0.000	0.407	0.638
BLOCK	0.050	0.063	0.000	0.686	0.012	0.106
BH	0.070	0.008	0.002	0.117	0.004	0.566
INST	-0.059	0.006	-0.001	0.419	0.001	0.887
INDEP	0.778	0.000	0.025	0.001	0.073	0.140
COLL	-0.064	0.000	-0.001	0.334	0.002	0.606
SER	-1.014	0.254	-0.004	0.916	-0.347	0.152
ASZ	1.505	0.000	0.063	0.000	0.021	0.678
DAR	-0.203	0.000	-0/006	0.000	-0.002	0.700
SG	0.032	0.000	0.001	0.000	$-3.823E-05$	0.960
DU	-1.452	0.003	-0.036	0.074	-0.123	0.362
F test	40.406		20.008		1.091	
Significance	0.000		0.000		0.366	
R square	0.202		0.111		0.007	
R square after adjustment	0.197		0.106		0.001	

TABLE 3: The return results of board governance on operational performance in the sample of small and medium-sized companies.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-116.622	0.000	-4.537	0.002	4.205	0.233
BLOCK	0.175	0.015	0.006	0.418	-0.005	0.796
BH	0.218	0.002	0.011	0.151	-0.033	0.076
INST	-0.066	0.253	-0.008	0.201	0.011	0.488
INDEP	0.627	0.314	0.003	0.968	0.103	0.529
COLL	-0.156	0.021	-0.002	0.745	0.017	0.329
SER	0.739	0.829	-0.137	0.712	-0.853	0.439
ASZ	8.090	0.000	0.375	0.000	-0.127	0.562
DAR	-0.191	0.000	-0.029	0.000	0.006	0.511
SG	0.014	0.003	0.001	0.008	0.000	0.875
DU	-4.031	0.008	-0.190	0.243	-1.180	0.003
F test	14.723		8.178		1.385	
Significance	0.000		0.000		0.184	
R square	0.256		0.160		0.031	
R square after adjustment	0.238		0.141		0.009	

Hypothesis 3. The governance degree of board of directors of large companies is significantly related to business performance because of the intermediary effect of systemic risk.

Hypothesis 4. There is a significant correlation between the degree of board governance and business performance of small and medium-sized companies.

Hypothesis 5. The degree of board governance of small and medium-sized companies is significantly related to system risks;

Hypothesis 6. The governance degree of the board of directors of small and medium-sized companies is significantly related to the operating performance due to the intermediary effect of system risks.

2.2. Research Variables. The governance mechanism of the board of directors can be divided into seven aspects: protecting the rights and interests of shareholders, strengthening the functions of the board of directors, giving full play to the supervisory functions, respecting the interests of stakeholders, and enhancing the transparency of information. The research selection method is often related to the final result. It is concluded that the relevant domestic literatures mainly focus on the ownership structure and the composition of the board of directors, and the research results show that it is the most fundamental problem. Therefore, this
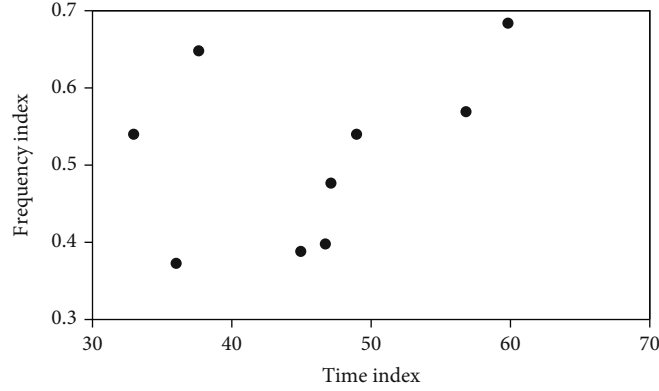
FIGURE 6: The change range of independent director's proportion.

TABLE 4: The return of system risk to operational performance under all samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-14.886	0.000	-1.098	0.000	0.773	0.290
BETA	12.950	0.000	0.228	0.115	-0.544	0.279
ASZ	1.210	0.000	0.095	0.000	0.027	0.621
DAR	-0.188	0.000	-0.013	0.000	-0.001	0.882
SG	0.026	0.000	0.001	0.000	0.000	0.805
DU	-3.620	0.000	-0.096	0.027	-0.265	0.078
F test	101.889		41.434		1.485	
Significance	0.000		0.000		0.179	
R square	0.230		0.108		0.004	
R square after adjustment	0.228		0.106		0.001	

paper selects the relevant impact items as variables from the above two parts a total of 8:

(1) Proportion of shares held by major shareholders (BLOCK) = number of shares held by major shareholders/number of shares outstanding in circulation of the company

(2) Shareholding ratio of directors (BH) = number of shares held by directors/number of shares of common shares outstanding in circulation of the company

(3) Institutional legal person shareholding ratio (INST) = number of institutional legal person shares/ number of common shares outstanding by the company

(4) Independent Board of Directors (INDEP) = total number of independent directors

(5) Directors' stock pledge ratio (COLL) = number of directors pledged at the end of the year/number of shares held by directors at the end of the year

(6) Chairman concurrently serves as a manager, virtual variable (SER): the virtual value of enterprise chair-

man concurrently serves as manager is set to 1, and the rest is 0

The variables used to measure business performance include financial performance (ROA, ROE) and market performance (Rt).

(1) Return on Assets (ROA) = After-tax Net Profit/Total Assets

(2) Return on Shareholders' Equity (ROE) = Pre-tax Net Profit before Interest Depreciation/Shareholders' Equity

(3) Stock Return Rate $(R_i, t) = \ln (P_i, t/P_i, t - 1)$

Among them, R_i and T are the original remuneration of the company's current stock, P_i and T are the company's current stock price, P_i and $t - 1$ are the company's stock price at the end of the previous period.

The system risk used in this paper is measured by the company's current stock return and the weekly return of the market:
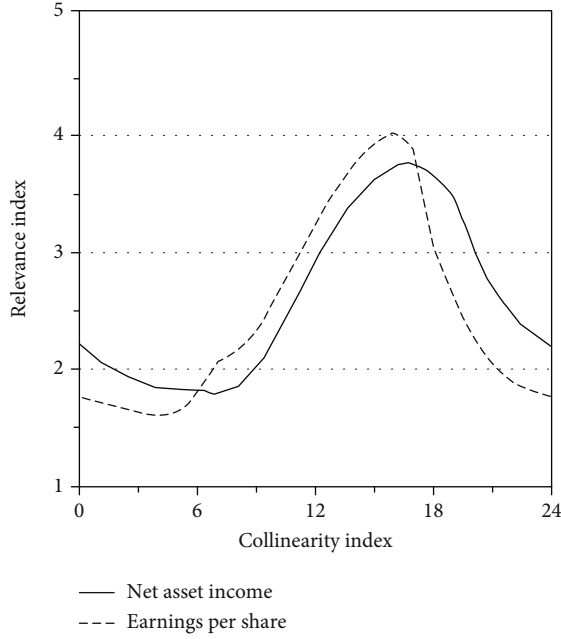
$$R_i = \alpha_i + \beta_i R_m + \varepsilon_i. \tag{1}$$

Figure 7: Relevance analysis of operating performance variables.

Among them, R_i is the stock return rate; α_i is the intercept term; β_i is the stock system risk value; R_m is the market return rate; ε_i is the residual term. The system risk value (BETA) of each sample company for each year is obtained by the least square method described above.

The control variables in this paper are as follows:

(1) Company size (ASZ): measured by the natural logarithm of the commonly used final assets

(2) Debt Ratio (DAR) = Total Corporate Liabilities/Total Assets

(3) Revenue growth rate (SG)

(4) Annual dummy variable (DU): the data year belongs to 2008 and 2009 when the dummy value is 0; the rest is 1

2.3. Regression Model. The economic significance of the regression model is to explain the amount of the average change in y when x changes by one unit. That is, every time x increases by 1 unit, y changes by b units. It is to predict the economic outcome we produce by affecting a variable value of economic significance. Through the analysis of the previous stage of economic development, predicting the future economic development is of great significance to the economic development planning and to the maximization of economic benefits.

The empirical regression model established in this paper is as follows:

(1) Model 1: regression model of business performance to board governance

$$yi = \alpha + b1BLOCKi + b2BHi + b3INSTi + b4INDEPi \\ + b5COLLi + b6SERi + b7ASZi + b8DARi + b9SGi \\ + b10DUi + \varepsilon1, I \tag{2}$$

(2) Regression model of system risk to board governance

$$BETAi = \gamma + c1BLOCKi + c2BHi + c3INSTi + c4INDEPi \\ + c5COLLi + c6SERi + c7ASZi + c8DARi + c9SGi \\ + c10DUi + \varepsilon2, I \tag{3}$$

(3) Regression model of business performance to systemic risk

$$yi = \zeta + d1BETAi + d2ASZi + d3DARi + d4SGi + d5DUi + \varepsilon3, I \tag{4}$$

(4) Regression model of board governance and system risk to business performance

$$yi = \lambda + e1BLOCKi + e2BHi + e3INSTi + e4INDEPi \\ + e5COLLi + e6SERi + e7 BETAi + e8ASZi + e9DARi \\ + e10SGi + e11DUi + \varepsilon4, I \tag{5}$$

3. Result Analysis

3.1. Regression Analysis of Board Governance on Business Performance

3.1.1. Regression Analysis of Board Governance on Operating Performance Based on Model 1. "Maximizing the benefits of the enterprise" is the goal of the enterprise. This goal can be divided into multiple economic and social goals and is not completely equivalent to the goal of maximizing the benefits of shareholders. When analyzing earnings per share, horizontal comparison between different companies can be made to evaluate the relative profitability between companies. It is possible to make longitudinal comparison of the same company in different periods and predict the change trend of the company's profit level. It is also possible to compare operating performance with profit forecasts and master the company's management capabilities. On the one hand, the large-scale board of directors provides more comprehensive decision-making consultation, reducing the possibility of insider control. On the other hand, large-scale directors

TABLE 5: Regression of system risk to operational performance in large enterprise samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-1.828	0.496	-0.469	0.000	0.550	0, 454
BETA	12.806	0.000	0.289	0.000	-0.422	0.396
ASZ	0.669	0.000	0.046	0.000	0.026	0.609
DAR	-0.181	0.000	-0.006	0.000	-0.002	0.679
SG	0.034	0.000	0.001	0.000	$3.232E - 05$	0.966
DU	-2.918	0.000	-0.068	0.002	-0.068	0.649
F test	80.143		39.656		0.334	
Significance	0.000		0.000		0.893	
R square	0.200		0.110		0.001	
R square after adjustment	0.197		0.107		-0.002	

TABLE 6: The return of system risk to operational performance in the sample of small and medium-sized enterprises.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(constant)	-83.327	0.000	-4.116	0.001	0.286	0.926
BETA	9.545	0.107	-0.306	0.619	-0.912	0.546
ASZ	6.198	0.000	0.357	0.000	0.075	0.740
DAR	-0.163	0.000	-0.029	0.000	0.003	0.769
SG	0.016	0.001	0.001	0.009	0.000	0.724
DU	-5.696	0.001	-0.155	0.394	-0.997	0.026
F test	24.680		15.936		1.730	
Significance	0.000		0.000		0.126	
R square	0.221		0.155		0.020	
R square after adjustment	0.197		0.107		0.008	

mean extensive participation of multistakeholders and thus can take care of the interests of all parties, which is conducive to absorbing different opinions and reducing the company's operating risks. Establish a good working relationship between the company's management and ordinary employees. At the same time, the board of directors is also entrusted with the mission of exercising corporate property on behalf of the company's stakeholders. Relevant interest groups need to rely on the board of directors to safeguard their own rights and interests and divide individual responsibilities and rights. In addition to considering the security of assets, it is also necessary to consider the efficiency of bank operations. Therefore, different regulatory agencies may have different regulatory objectives, resulting in regulatory conflicts. The concept of multiple IOT awareness systems is derived from the metaphor of natural ecosystems, similar to natural systems, including enterprises, extended enterprises, and the external environment, in order to better study the Internet of Things economy. Therefore, environmental factors will also have a certain impact on multiple IOT awareness systems. Achieve a comprehensive perception of the Internet of Things. It is precisely because of the huge organizational structure of the multi-Internet of Things

awareness system that it faces complex security issues such as component access, management, and authentication. Select the optimal defense strategy of the Internet of Things system to more accurately quantify the vulnerability of specific attack and defense strategies, complete the identification and assessment of the vulnerability of the Internet of Things system, and formulate reasonable security risk control measures.

The Internet of Things (IOT) is an extension and expansion of the Internet. However, due to the natural inheritance of the Internet of Things (IOT) to the Internet, all kinds of attacks against traditional network systems are also applicable to the Internet of Things (IOT) system. The Internet of Things is defined as a network in which the Internet of Things realizes the all-round interconnection of things and things, people and people, and people and things. The network is aimed at perception and is characterized by using various perception methods to obtain information of various material worlds. The communication dimension of information and communication in the Internet of Things is shown in Figure 1.

The mapping process from multiweight network sensing system analysis to network constitutes the network model of

the Internet of Things system after establishing a corresponding relationship between each element in the wireless communication mechanism analysis diagram and elements in the network model. The ontology mapping rules of the internet of things are shown in Figure 2.

On the basis of studying the horizontal development of the Internet of Things, the development indicators of the Internet of Things economy are comprehensively considered from the perspective of commercial ecology, and representative evaluation indicators are selected. Through the combination of qualitative and quantitative analysis, it truly reflects the development status of Internet of Things economy. The influencing factors of multiweight Internet sensing system are shown in Figure 3.

For all samples, the results of Board Governance on business performance are shown in Table 1. From the table, we can see that all corporate governance variables are significantly correlated with ROA under the significant level of 10%, including the proportion of large shareholders, the proportion of directors, and the number of independent directors. It is negatively correlated with the proportion of institutional legal person shareholding, director stock pledge ratio, and chairman and manager. The model test F statistic was 53.17, reaching a significant level ($P < 0.01$), and the overall explanatory power was 0.203.

However, the return on equity (ROE) and the return on equity (Rt) are below 10% of the significant level, except that they are significantly related to the shareholding ratio of institutional legal persons and the number of independent directors and supervisors, respectively. There is no significant relationship between the variables, and although the model reaches a significant level, the overall explanatory power is weak.

The chairman of the board of directors of a company represents the board of directors of the company, that is, the rights and interests of the owners of the company, and is the highest representative of the interests of shareholders. The general manager of a company belongs to the category of employees of the company. The chairman of the board of directors is appointed by the board of directors, subject to the supervision of the board of directors, and undertakes the important task of operating the company and executing the decisions of the board of directors. The largest board size is 13, which to a large extent exceeds the theoretical optimal value. The smallest board size is 5 people. However, this only accounts for a very small part of the sample. Therefore, this scale is reasonable, and the normal distribution of the board scale frequency is shown in Figure 4. The correlation analysis between the governance variables of the board of directors is shown in Figure 5.

For large enterprises, the regression results of board governance on business performance are shown in Table 2. It can be seen from the table that the governance variables of large companies are below 10% of the significant level. Except that the relationship between SER and ROA is not significant, the other variables are significantly correlated. Among them, the proportion of shares held by major shareholders, the proportion of shares held by directors and supervisors, and the number of independent directors were

TABLE 7: Regression results of board governance on system risk under all samples.

	Coefficient	P
(Constant)	-0.347	0.000
BLOCK	-0.001	0.000
BH	-0.001	0.025
INST	$-9.354E-05$	0.709
INDEP	-0.003	0.127
COLL	0.000	0.531
SER	0.015	0.168
ASZ	0.043	0.000
DAR	-0.002	0.000
SG	$-7.558E-05$	0.005
DU	0.130	0.000
F test	116.530	
Significance	0.000	
R square	0.364	
R square after adjustment	0.360	

positively correlated. The proportion of pledges held by directors and supervisors was negatively correlated. The analysis of F statistics of regression model was 40.406, reaching a significant level ($P < 0.01$). And the model explanatory power is 0.197.

However, the analysis results of the remaining operating performance indicators show that only INDEP has a significant positive correlation with ROE. However, the stock return rate (Rt) has no significant correlation with all variables, and the explanatory power of both models is weak.

For small and medium-sized enterprises, the results of Board Governance on business performance are shown in Table 3. It can be seen from the table that under the significant level of 10% of the board governance variables in the sample of small and medium-sized enterprises, three items such as the proportion of major shareholders, the proportion of directors' shares, and the proportion of pledge of directors' shares are significantly correlated with the rate of return on assets (ROA). Among them, the proportion of major shareholders' shares and the proportion of directors' shares are positively correlated. The model test F statistics analysis was 14.723, reaching a significant level ($P < 0.01$), and the model explanatory power was 0.238.

Under different governance levels, the profitability, operation ability, solvency, and development ability of enterprises show different levels, which will lead to different sustainable growth and market value levels of enterprises. The change in the proportion of independent directors is shown in Figure 6.

Under the significant level of 10%, each board governance variable has no significant correlation with the return on equity (ROE), while only the proportion of directors holding shares has significant negative correlation with the return on equity (Rt), but the model does not reach the significant level and has weak explanatory power.

TABLE 8: Regression results of board governance on system risk in large enterprise samples.

	Coefficient	P
(Constant)	-0.236	0.000
BLOCK	-0.001	0.000
BH	-0.001	0.034
INST	0.000	0.658
INDEP	-0.007	0.006
COLL	0.000	0.315
SER	0.011	0.343
ASZ	0.037	0.000
DAR	-0.002	0.000
SG	0.000	0.001
DU	0.128	0.000
F test	76.778	
Significance	0.000	
R square	0.324	
R square after adjustment	0.320	

TABLE 9: Regression results of board governance on system risk in small and medium-sized enterprises sample.

	Coefficient	P
(Constant)	-0.755	0.000
BLOCK	-0.001	0.078
BH	5.428E-05	0.927
INST	0.000	0.443
INDEP	0.013	0.011
COLL	-0.001	0.302
SER	0.052	0.068
ASZ	0.064	0.000
DAR	-0.002	0.000
SG	$-3.781E-05$	0.324
DU	0.135	0.000
F test	28.568	
Significance	0.000	
R square	0.400	
R square after adjustment	0.386	

Regression analysis shows that board governance has a significant correlation with ROA in business performance indicators in both large and medium-sized enterprises, and the model has better explanatory power. In line with the research hypothesis; but compared with ROE and Rt, the relationship between the board's governance variables is not significant, and the explanatory ability is weak, unable to support the research hypothesis.

3.2. Regression Analysis of System Risk on Operating Performance

3.2.1. Regression Analysis of Business Performance with Model 2 System Risk. Systematic risk is used as a control parameter to exclude the influence of other factors on ROE and ROE.

For all samples, the results of regression analysis of system risk to business performance are shown in Table 4. It can be seen from the table that the regression coefficient of system risk to ROA in all samples is 12.950, which reaches a significant level ($P < 0.001$), indicating that there is a significant positive correlation between system risk and ROA, which is consistent with the hypothesis of this study. And the model F test has a statistical value of 101.889, which also reaches a significant level, and the overall explanatory power is 0.228.

Perfect corporate governance and effective implementation of social responsibility can jointly promote the healthy growth of enterprises. Corporate governance has an obvious positive regulatory effect on corporate social responsibility and corporate growth. From a group perspective, human capital refers to the total amount or quality of the acquired professional knowledge, practical experience, personal health, and social network connections of each member of a group. In addition, an effective restraint mechanism should be established, which mainly includes market restraint and legal restraint. Legal restriction refers to the economic and legal responsibilities of independent directors stipulated in the law. Market restriction refers to the establishment of a competitive market for independent directors and the selection and elimination of independent directors by the market mechanism. The government first leads the development of the Internet of Things in the field of public management; then funds support the application market of leading industries and enterprises and then to the application market of families and individuals, following a path of integration and development of public domain and commercial domain. Then, through the equilibrium analysis of the income matrix, the defender's optimal defense strategy is calculated, and large-scale distributed applications, network applications, mobile applications, and database applications are managed. This is an organic component of the Internet of Things ecosystem. With the help of application service middleware, application service developers can free themselves from complex and cumbersome distributed computing resource management issues. On this basis, the comprehensive hazard of the attack strategy based on multiple vulnerability combinations is calculated from the perspective of the defender, so that the defender can more accurately evaluate the vulnerability of the IOT system. In the IOT system, the integrity of the data is usually verified by the message authentication code. The value of the message authentication code will change greatly due to the slight change of the data, which helps to confirm the reliability of the data.

Study the correlation between the indicators of company performance and each independent variable to test whether there is multicollinearity between variables. The correlation coefficient between earnings per share and return on net assets is. It is generally believed that if the absolute value of the correlation coefficient between variables is greater than, it is highly correlated, and there may be collinearity problem. Therefore, it is impossible to put these two variables into the regression model at the same time. The correlation analysis

TABLE 10: The regression results of board governance and system risk on operational performance under all samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(constant)	-28.566	0.000	-1.438	0.000	1.265	0.144
BLOCK	0.090	0.001	0.002	0.348	0.007	0.338
BH	0.108	0.000	0.003	0.102	-0.005	0.475
INST	-0.075	0.001	-0.003	0.100	0.004	0.456
INDEP	0.793	0.000	0.022	0.139	0.083	0.140
COLL	-0.076	0.000	0.001	0.454	0.003	0.420
SER	-1.996	0.040	-0.067	0.358	-0.351	0.166
BETA	15.687	0.000	0.295	0.043	-0.460	0.363
ASZ	2.235	0.000	0.122	0.000	-0.010	0.853
DAR	-0.187	0.000	-0.013	0.000	-0.001	0.880
SG	0.026	0.000	0.001	0.000	0.000	0.712
DU	-4.034	0.000	-0.107	0.014	-0.283	0.060
F test	55.849		22.218		1.485	
Significance	0.000		0.000		0.130	
R square	0.232		0.107		0.008	
R square after adjustment	0.227		0.102		0.003	

between the business performance variables is shown in Figure 7.

However, the relationship between system risk and ROE and Rt is not significant. Although the regression model of ROE reaches a significant level, the overall explanatory ability of ROE is weak.

For large-scale enterprises, the regression analysis results of system risk on business performance are obtained as shown in Table 5. It can be seen from the table that the system risk has a significant positive correlation with ROA and ROE in the sample of large enterprises. The statistical values of the model F test were 80.143 and 39.656, respectively, which reached a significant level ($P < 0.01$). The overall explanatory power of the model was 0.197 and 0.107, respectively. However, the relationship between systemic risk and Rt is not significant.

For small and medium-sized enterprises, the regression analysis results of system risk on business performance are obtained as shown in Table 6. It can be seen from the table that under the sample of SMEs, there is no significant positive correlation between systemic risk and operational performance indicators (ROA, ROE and Rt). Model F test statistics are 80.143 and 39.656, respectively, which reach significant levels ($P < 0.01$), and the overall explanatory power of the model. Among them, the test F statistics of ROA model and ROE model were 80.143 and 39.656, respectively, which reached significant levels ($P < 0.01$), and the overall explanatory power of the model reached 0.212 and 0.145, respectively.

In summary, the system risk in the sample of large enterprises has a significant correlation with ROA in business performance indicators, and the model has a good explanatory power, which is in line with the hypothesis of this study. However, compared with ROE and Rt, the relationship

between system risk and ROA is not significant, because there are many factors affecting stock prices, so it is impossible to discuss it with a single variable. For small and medium-sized enterprises, there is no significant correlation between system risk and all indicators of business performance, so the assumptions in this paper are not supported.

3.3. Regression Analysis of Board Governance on System Risk

3.3.1. Regression Analysis of the System Risk of Board Governance Is Carried Out with Model 3. For the whole sample, the regression analysis results of board governance on system risk are shown in Table 7. It can be seen from the table that under the 5% significant level of board governance in all samples, only two items such as BLOCK and BH have significant negative correlation with system risk. There was no significant correlation with other variables. The model test F statistics is 116.53, reaching a significant level ($P < 0.01$), and the overall explanatory power is 0.36.

Regression analysis results of board governance on systemic risk are shown in Table 8 for large enterprise samples. As can be seen from the table, besides the significant negative correlation between the proportion of major shareholders (BLOCK) and the proportion of directors (BH), the number of independent directors (INEDP) also shows significant negative correlation. The model test F statistics was 76.778, reaching a significant level ($P < 0.01$), and the overall explanatory power was 0.32.

For the sample of small and medium-sized enterprises, the results of regression analysis of system governance on system risk are shown in Table 9. It can be seen from the table that the two major shareholder ratios (BLOCK) and independent director seats (INEDP) are significantly negatively correlated with system risk, while the chairman and

TABLE 11: The regression results of board governance and system risk on operating performance in large enterprise samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-9.029	0.004	-0624	0.000	0.360	0.680
BLOCK	0.071	0.007	0.001	0.391	0.012	0.117
BH	0.081	0.002	0.002	0.070	0.004	0.581
INST	-0.057	0.007	-0.001	0.446	0.001	0.890
INDEP	0.875	0.000	0.027	0.000	0.072	0.149
COLL	-0.067	0.000	-0.001	0.278	0.002	0.600
SER	-1.179	0.177	-0.008	0.823	-0.345	0.155
BETA	14.476	0.000	0.333	0.000	-0.197	0.695
ASZ	0.975	0.000	0.050	0.000	0.028	0.600
DAR	-0.176	0.000	-0.005	0.000	-0.002	0.642
SG	0.034	0.000	0.001	0.000	$-6.380E-05$	0.933
DU	-3.298	0.000	-0.078	0.000	-0.098	0.513
F test	43.974		20.251		1.005	
Significance	0.000		0.000		0.438	
R square	0.232		0.122		0.007	
R square after adjustment	0.227		0.116		0.000	

TABLE 12: The regression results of board governance and system risk on operating performance in large enterprise samples.

	ROA		ROE		Rt	
	Coefficient	P	Coefficient	P	Coefficient	P
(Constant)	-109.778	0.000	-4.746	0.002	3.568	0.336
BLOCK	0.184	0.010	0.006	0.442	-0.006	0.761
BH	0.218	0.002	0.011	0.152	-0.033	0.076
INST	-0.070	0.229	-0.008	0.207	0.011	0.476
INDEP	0.508	0.418	0.006	0.925	0.114	0.489
COLL	-0.151	0.025	-0.003	0.729	0.017	0.343
SER	0.274	0.937	-0.123	0.743	-0.829	0.377
BETA	9.070	0.121	-0.277	0.659	-0.844	0.583
ASZ	7.509	0.000	0.393	0.000	0.073	0.761
DAR	-0.175	0.000	-0.029	0.000	0.005	0.627
SG	0.014	0.002	0.011	0.009	0.000	0.855
DU	-5.256	0.002	-0.152	0.406	-1.066	0.018
F test	13.648		7.438		1.284	
Significance	0.000		0.000		0.231	
R square	0.260		0.160		0.032	
R square after adjustment	0.241		0.139		0.007	

general manager (SER) also presents significant positive risks to the system. Related. The statistic of model test F was 28.568, reaching a significant level ($P < 0.01$), and the overall explanatory power was 0.386.

Based on the above regression analysis, it is found that board governance is significantly correlated with system risk. Therefore, it is concluded that whether an enterprise can implement the board governance system is one of the management strategies to effectively reduce system risk.

4. Regression Analysis of Board Governance, System Risk, and Operating Performance

Regression analysis of board governance, systemic risk, and business performance is carried out with model 4.

For all samples, the results of regression analysis are shown in Table 10. As can be seen from the table, under the overall sample, there is a significant relationship between board governance and system risk on ROA. The model test

Table 13: Inspection of the mediating effect of system risk on board governance and operational performance under all samples.

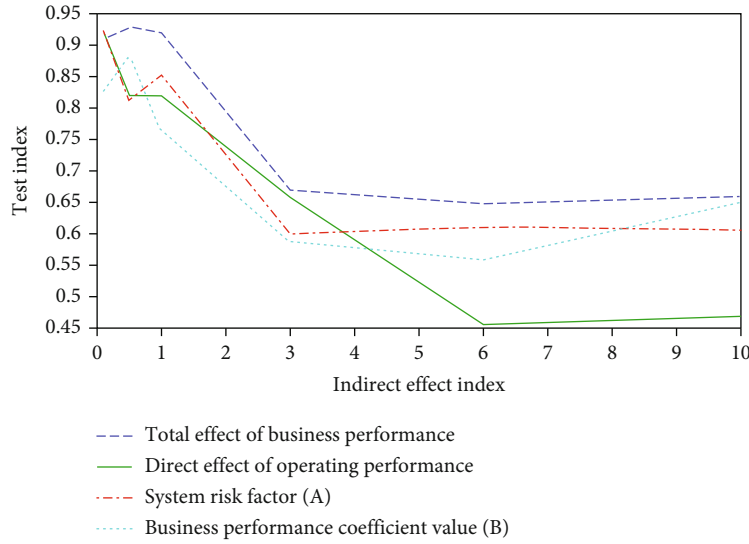|	Model 1 The total effect of board governance on business performance	Model 4 The direct effect of board governance on business performance	Coefficient difference Indirect effect $(A) * (B)$	Model 2 System risk coefficient of corporate governance (A)	Model 4 The value of system risk to operating performance coefficient (B)	T value
BLOCK	0.068	0.090	-0.022	-0.00143	15.687	-25.61***
BH	0.097	0.108	-0.011	-0.00068	15.687	-13.04***
INST	-0.076	-0.075	-0.001	-0.00009	15.687	-1.45
INDEP	0.740	0.793	-0.053	-0.00340	15.687	-8.68***
COLL	-0.074	-0.076	0.002	0.00011	15.687	4.00***
SER	-1.756	-1.996	0.24	0.01529	15.687	7.86

FIGURE 8: The mediating effect of system risk on board governance and business performance in all samples.

F statistics was 55.849, reaching a significant level ($P < 0.01$), and the overall explanatory power was 0.227.

At the same time, the regression analysis showed that the relationship between board governance and ROE was not significant, but there was a significant positive correlation between system risk and ROE. The F statistics of model test was 22.218, which reached a significant level ($P < 0.01$). The overall explanatory power is 0.102. In addition, the relationship between board governance and systemic risk is not significant, the model test does not reach a significant level, and the overall explanatory ability is weak.

For large enterprise samples, the regression analysis results are shown in Table 11. It can be seen from the table that there is a significant relationship between board governance and systemic risk on ROA in the sample of large enterprises. Among them, only the chairman and the general manager (SER) are not significant. The model test F statistics was 43.974, reaching a significant level ($P < 0.01$), and the overall explanatory power was 0.227.

At the same time, the regression results show that the relationship between the number of independent directors and ROE is not significant in the board governance, but the system risk is significantly positively correlated with ROE, and the model test F statistics is 22.218. The level of significance was significant ($P < 0.01$) and the overall explanatory power was 0.102. In addition, the relationship between board governance and systemic risk is not significant, the model test does not reach a significant level, and the overall explanatory ability is weak.

For small and medium-sized enterprises, the results of regression analysis are shown in Table 12. From the table, we can see that in the sample of SMEs, the relationship between board governance and systemic risk on ROA is not significant except for the proportion of directors' shareholding (BH). The F statistics of model test is 13.649. The level of significance was significant ($P < 0.01$) and the overall explanatory power was 0.241.

At the same time, the regression results show that the relationship between board governance and system risk is not significant for ROE and Rt, of which the statistic F of ROE model test is 7.438. The level of significance was significant ($P < 0.01$) and the overall explanatory power was 0.139. The Rt model test did not reach a significant level, and the overall explanatory ability is weak.

5. Inspection of the Mediating Effect of System Risk on the Relationship between Board Governance and Business Performance

Since ROE and Rt have less significant relationship with board governance and system risk, this paper only tests the intermediary effect of system risk on the relationship between corporate governance and operating performance for the model with ROA as the dependent variable.

The mediation effect is judged by the difference of $(\tau - \tau')$ by Judd et al. The coefficient difference value is the mediation effect. For all samples, the results of mediation effects of large-scale enterprise samples and small and medium-sized enterprise samples are shown in Table 13, Figure 8, Table 14, Figure 9, Table 15, and Figure 10, respectively.

From Table 13 and Figure 8, we can see that the total effect of large shareholder ownership on ROA is 0.068. The results can be divided into direct effect of large shareholder on operating performance 0.09 and indirect effect of large shareholder on system risk and TQC of -0.022. Since the indirect effect reaches a significant level of 1%, the system risk has a negative intermediary effect on the ROA for the shareholding of large shareholders.

The total effect of directors' shareholding on ROA is 0.097, which can be divided into direct effect of directors' shareholding on operating performance of 0.108, and indirect effect of directors' shareholding on ROA through systematic risk of -0.011. As the indirect effect reaches 1%

Table 14: Inspection of the mediating effect of system risk on board governance and business performance in large enterprise samples.

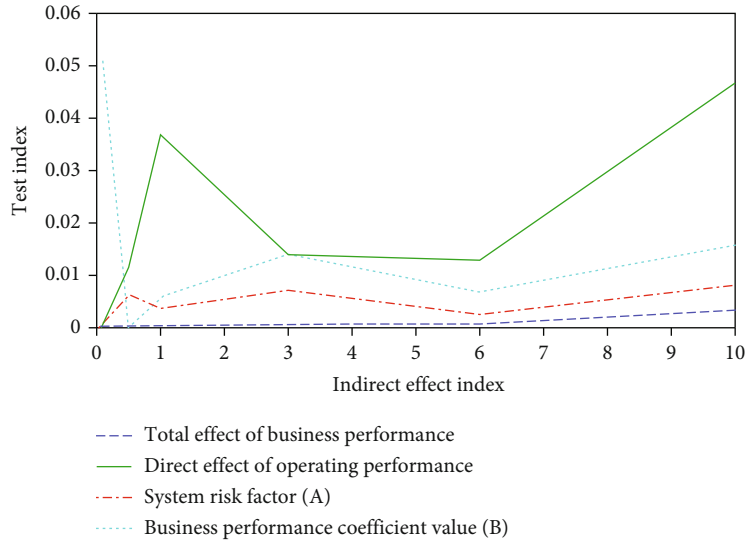|	Model 1 The total effect of board governance on business performance	Model 4 The direct effect of board governance on business performance	Coefficient difference Indirect effect $(A) * (B)$	Model 2 System risk coefficient of corporate governance (A)	Model 4 The value of system risk to operating performance coefficient (B)	T value
BLOCK	0.050	0.071	-0.021	-0.00148	14.476	-22.07***
BH	0.070	0.081	-0.011	-0.00075	14.476	-12.00***
INST	-0.059	-0.057	-0.002	-0.00013	14.476	-2.63***
INDEP	0.778	0.875	-0.097	-0.00673	14.476	-15.25***
COLL	-0.064	-0.067	0.003	0.00019	14.476	6.08***
SER	-1.014	-1.179	0.165	0.01140	14.476	5.31***

FIGURE 9: Inspection of the mediating effect of system risk on board governance and business performance in large enterprise samples.

significant level, systematic risk has negative intermediary effect on directors' shareholding.

The total effect of corporate ownership on ROA is -0.076, which can be divided into the direct effect of corporate ownership on operating performance of -0.075 and the indirect effect of corporate ownership on ROA through systemic risk of -0.001. Since the indirect effect is less than 1% significant, the system risk has no effect on the intermediary of the ROA.

The total effect of independent directors' seats on ROA is 0.74, which can be divided into the direct effect of independent directors' seats on operating performance is 0.793, and the indirect effect of independent directors' seats on ROA through system risk is -0.053. Since the indirect effect reaches a significant level of 1%, the system risk has a negative intermediary effect on the ROA for the independent directors.

The total effect of directors' equity pledge on ROA is -1.756, which can be divided into the direct effect of directors' equity pledge on business performance of -1.996 and the indirect effect of directors' equity pledge on ROA through systematic risks of 0.24. Since the indirect effect reaches a significant level of 1%, the system risk has a positive intermediary effect on the ROA for the director's shareholding pledge.

The total effect of the chairman concurrently holding the position of manager on ROA is -1.756, which can be divided into the direct effect of the chairman concurrently holding the position of manager on operating performance of -1.996, and the indirect effect of the chairman concurrently holding the position of manager on ROA through systematic risks, which is 0.24. As the indirect effect reaches a significant level of 1%. Therefore, the system risk has a positive intermediary effect on the ROA for the chairman and the manager.

From Table 14 and Figure 9, it can be seen that the total effect of large shareholder Shareholding on ROA is 0.05. The results can be divided into the direct effect of large share-

holder Shareholding on operating performance which is 0.71 and the indirect effect of large shareholder Shareholding on ROA through systemic risk is which -0.021, because the indirect effect reaches a significant level of 1%. Therefore, system risk has a negative intermediary effect on ROA for large shareholders.

The total effect of directors' shareholding on ROA is 0.07, which can be divided into the direct effect of directors' shareholding on operating performance of 0.081 and the indirect effect of directors' shareholding on ROA through systematic risks of -0.011. Since the indirect effect reaches a significant level of 1%, the system risk has a negative intermediary effect on the ROA for the directors.

The total effect of corporate shareholding on ROA is -0.059, which can be divided into the direct effect of corporate shareholding on business performance of -0.057 and the indirect effect of corporate shareholding on ROA through systemic risks of -0.002. Since the indirect effect reaches a significant level of 1%, the systemic risk has a negative intermediary effect on the ROA for the legal person's shareholding.

The total effect of independent directors' seats on ROA is 0.778, which can be divided into the direct effect of independent directors' seats on operating performance which is 0.875 and the indirect effect of independent directors' seats on ROA through system risk which is -0.097. Since the indirect effect reaches a significant level of 1%, the system risk has a negative intermediary effect on the ROA for the independent directors.

The total effect of the pledge on ROA is -0.064, which can be divided into the direct effect of the pledge on operating performance of -0.067 and the indirect effect of the pledge on ROA through systematic risk of 0.003. Since the indirect effect reaches a significant level of 1%, the system risk has a positive intermediary effect on the ROA for the pledge of the director.

The total effect of the chairman concurrently serving as general manager on ROA is -1.014, which can be divided

TABLE 15: Inspection of the mediating effect of system risk on board governance and business performance in small and medium-sized enterprises.

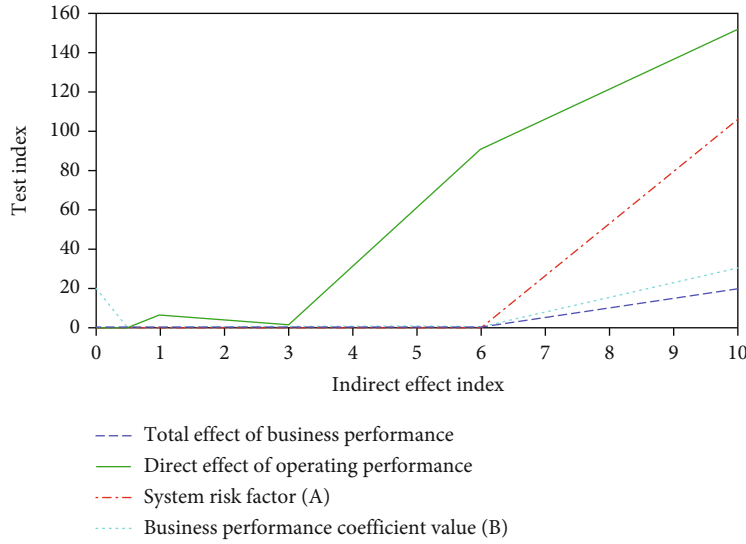|	Model 1 The total effect of board governance on business performance	Model 4 The direct effect of board governance on business performance	Coefficient difference Indirect effect $(A) * (B)$	Model 2 System risk coefficient of corporate governance (A)	Model 4 The value of system risk to operating performance coefficient (B)	T value
BLOCK	0.175	0.184	-0.009	-0.00104	9.070	-1.86*
BH	0.218	0.218	0	-0.00005	9.070	0
INST	-0.066	-0.070	0.004	0.00036	9.070	1.02
INDEP	0.627	0.508	0.119	0.01317	9.070	2.82***
COLL	-0.156	-0.151	-0.005	-0.00057	9.070	-1.10
SER	0.749	0.274	0.475	-0.05235	9.070	2.02**

FIGURE 10: Inspection of the mediating effect of system risk on board governance and business performance in small and medium-sized enterprises.

into the direct effect of the chairman concurrently serving as general manager on operating performance of -1.179 and the indirect effect of the chairman concurrently serving as general manager on ROA through system risks of -0.165. Since the indirect effect reaches a significant level of 1%, the system risk has a positive intermediary effect on the ROA for the chairman and the general manager.

As can be seen from Table 15 and Figure 10, the total effect of large shareholder ownership on ROA is 0.175 in the sample of SMEs. The results can be divided into the direct effect of large shareholder ownership on operating performance of 0.184 and the indirect effect of large shareholder ownership on ROA through systemic risk of -0.009, because the indirect effect does not reach a significant level of 1%. Therefore, system risk has a negative intermediary effect on ROA, but it is less significant.

The total effect of independent directors' appointment on ROA is 0.627, which can be divided into direct effect of independent directors' appointment on business performance of 0.598 and indirect effect of independent directors' appointment on ROA of 0.119, through systematic risks. Since the indirect effect reaches a significant level of 1%, the system risk has a positive intermediary effect on the ROA for the independent directors.

The total effect of chairman concurrently serving as general manager on ROA is 0.749, which can be divided into the direct effect of chairman concurrently serving as general manager on operating performance of 0.274 and the indirect effect of chairman concurrently serving as general manager on ROA of 0.475 through systematic risks. As the indirect effect reaches 1% significant level, therefore, the system risk has a positive intermediary effect on the ROA for the chairman and the manager.

In addition, the directors' and supervisors' shares have no indirect effect on ROA through systematic risks, and the indirect effect of corporate shares and the collateral ratio of directors' and supervisors' shares is not significant. The results show that they have no intermediary effect on ROA.

6. Summary

The Internet of Things economy is not an isolated economy, but exists in a certain living environment; the Internet of Things economy can not be separated from the business environment. By comparing the risks posed by threats with the costs of eliminating them, some threats need to be dealt with in a timely manner, while actions taken by some security personnel may not be worthwhile. Innovation and adaptability are strong, which can give the board more vitality; moderately increase the proportion of directors with bank background; companies can make full use of or actively cultivate the background resources of board members, making the relationship become an advantageous resource for enterprises to reduce their financial risks. This paper divides the sample into two parts: large enterprise and small and medium-sized enterprise for analysis, and introduces the intermediary variable of systemic risk, so that the same variable has different relevance, difference, and intermediary effect for the sample with different enterprise scale. Empirical analysis found the following:

(1) There is a significant correlation between board governance and ROA of business performance in large-scale enterprises, and there exists intermediary effect of systemic risk. However, ROE and Rt are also analyzed by board governance and systemic risk. The relationship between them is not significant. Therefore, this study summarizes the hypothesis that the sample of large enterprises supports the mediating effect of systemic risk

(2) The relationship between board governance and systemic risk is not significant in the sample of SMEs and with different business performance. The shareholding of directors and supervisors does not have an indirect impact on ROA through systemic risk, and the indirect effect of legal person shares and the shareholding ratio of directors and supervisors is not significant. The results show that they have no mediating effect on ROE. This study believes that the SME sample does not support the hypothesis of the existence of systemic risk mediation effects

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author declares no competing interest.

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