

Environmental Dynamics, Financial Flexibility and Enterprise Strategic Change

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Abstract

Enterprise strategic change is affected by the external environment, so the research on the relationship between external environment and strategic change has always been concerned by academic circles. Based on contingency theory and resource-based theory, this paper analyzes the influence of environmental dynamics on the strategic change of manufacturing enterprises, and explores how corporate financial flexibility adjusts the relationship between environmental dynamics and strategic change. Taking the 2011-2017 A-share listed manufacturing companies in Shanghai and Shenzhen stock markets as the research object, the empirical results show that: 1) the environmental dynamism is positively related to strategic change—the more dynamic the environment is, the more the manufacturing enterprise inclined to implement the strategic change; 2) financial flexibility positively regulates the impact of environmental dynamics on strategic change. The high level of financial flexibility means abundant resources for strategic change, and the greater the role of environmental dynamism in promoting the implementation of strategic change by manufacturing enterprises. This paper deepens the research on the impact of environmental dynamism on enterprise strategic change, and introduces financial flexibility as a moderating variable, which enriches the theoretical system of strategic change. At the same time, this paper takes manufacturing enterprises as the research object to provide theoretical and practical guidance for Chinese manufacturing enterprises to optimize financial flexible reserve according to the dynamic degree of the environment to successfully implement strategic change.

Keywords

Environmental Dynamics, Financial Flexibility, Strategic Change

1. Introduction

Zhang *et al.* (2010) [1] proposed that strategic change increases the opportunity

for enterprises to coordinate with the environment. With the rapid development of information technology, the competitive environment faced by manufacturing enterprises changes rapidly and is difficult to predict. In the dynamic changing environment, Fu Haotian *et al.* (2018) [2] thought only by keeping up with the changes of the environment and timely adjusting strategies can enterprises become more competitive in the fierce competition. In reality, many well-known enterprises failed to adjust their strategies in time. For example, Kodak missed the best opportunity for change due to its slow strategic change, lost the opportunity to enter the digital camera market, and finally went bankrupt. While some enterprises keep up with environmental changes and implement strategic changes in time in the development process. For example, Huawei does not stick to the existing strategy and constantly innovates, and it has become the undisputable leader in the industry. Van *et al.* (1995) [3] used actual cases to reflect the importance of strategic change to the development of enterprises, and it is the constant changes of enterprises that shape the growth of enterprises. Therefore, it is of far-reaching significance to discuss enterprise strategic change and its influencing factors in depth.

There are many researches on strategic change, but they have different emphases, so the definition of strategic change cannot be unified. Müller *et al.* (2018) [4] made an analysis and summary of studies on strategic change over the past 30 years, and summarized three main views: the deterministic view, the voluntaristic view and the dialectical view. In the dialectical view, Hannan *et al.* (1977) [5] believed that strategic change is the result of factors such as institutional and environmental pressure, and that managers, limited by the environment and organizational structure, are unable to significantly change enterprise strategy, but only passively respond to environmental fluctuations, so management decisions have little impact on enterprises. In the voluntaristic view, Child (1972) [6] emphasized the initiative of managers and believed that strategic change is the decision-making process of managers, who can not only significantly influence strategic decision-making, but also actively shape the environment and organizational structure. In the dialectical view, Astley *et al.* (1983) [7] held that both environment and manager choice are the basic elements that determine strategic change, and the organization is neither purely subjective nor purely objective, but consists of managers under structural constraints. Therefore, environmental constraints, organizational structure and management decisions act on strategic change. In recent years, Chinese research mainly focuses on the relationship between internal and external environment of enterprises and strategic change. For example, Lian Yanling *et al.* (2014) [8] pointed out that the gap in company performance expectation positively affects the implementation degree of strategic change. Liu Xinmin *et al.* (2013) [9] studied the mechanism of CEO succession type on strategic change by empirical method. Chen *et al.* verified that there is an inverted u-shaped relationship between enterprise strategic change and performance, in which environmental dynamics and complex-

ity play a positive regulatory role. Zhang Xiaodi *et al.* (2017) [10] believed that organizations unlearning promotes enterprises to implement strategic transformation. Lian Yanling *et al.* (2016) [11] discussed the impact mechanism of bankruptcy threat on strategic change. It can be seen that Chinese literatures mostly take the internal factors of the company as the main effect on the strategic change, while the external environment is generally taken as the moderating variable for research.

The external environment is the foundation for the survival and growth of enterprises and has a subtle influence on the strategic choice. Therefore, Su Zhong Feng *et al.* (2006) [12] found that it is of practical significance to deeply explore the influence mechanism of external environment on enterprise strategic change. Dess *et al.* (1984) [13] believed that the external environment of an enterprise is a complex system and can be divided into three dimensions for discussion when analyzing its impact on the enterprise: environmental complexity, environmental munificence and environmental dynamism. The complexity of the environment is determined by the breadth and difference of the enterprise's business. Tung (1979) [14] studied found that the wider the business scope and the greater the difference, the more complex the environment will be. To understand the degree of environmental munificence, it is necessary to comprehensively consider the abundance of resources in the environment and the difficulty of obtaining resources. Catrogiovanni (1991) [15] drew the conclusion that high inclusiveness is conducive to the benign development of enterprises. The dynamic degree of the environment is determined by the predictability and stability. Stability is expressed as the occurrence frequency, variation frequency and degree of events. When the events in the environment are highly unpredictable and change frequently, it indicates that the environment is highly dynamic.

Levinthal (1997) [16] pointed out that the dynamism of the environment is a key factor that should be taken into account when an enterprise makes strategic decisions. The change of the environment is of high risk, and minor decision-making mistakes can also bring about great losses to the enterprise. Only by correctly dealing with the changes brought about by the dynamic environment can the enterprise survive. This paper discusses the internal mechanism of environmental dynamics acting on enterprise strategic change, and points out that the highly dynamic external environment makes enterprises have to shape their own dynamic ability to push forward strategic change in the wake of environmental change. Furthermore, this paper analyzes the impact of corporate financial flexibility on the relationship between environmental dynamics and corporate strategic change. Wang Aiqun *et al.* (2017) [17] believed that financial flexibility provides enterprises with necessary resources to effectively promote strategic change, especially when the environment is in great fluctuation, enterprises with abundant financial flexibility reserves are more willing to try high-risk projects. Based on the comprehensive analysis of existing literature, this paper believes that financial flexibility has an important impact on the relationship

between environmental dynamics and enterprise strategic change. The data samples selected are A-share listed manufacturing enterprises from 2011 to 2017, which proves that dynamic environment positively promotes the implementation of strategic change by manufacturing enterprises. In addition, financial flexibility positively adjusts the relationship between the two.

This article mainly has the following innovation: first, few literature takes external environment impact on strategic change as the primary effect for further discussion, especially dynamic environment affects strategic change, this article is based on contingency theory analyzes the environmental dynamics mechanism affecting enterprise implementing strategic change, complements the strategic transformation theory framework. Second, considering that financial flexibility supports enterprises in implementing strategic change from the perspective of resources, this paper deeply explores the regulatory role of financial flexibility in the relationship between environmental dynamics and strategic change, and reveals the internal mechanism of financial flexibility influencing the relationship between environmental dynamics and corporate strategic change. Third, using empirical method to research the strategic change, the existing literature are not according to the industry to subdivide samples, considering that in recent years, China's manufacturing enterprises in the key period of economic transformation, needs through strategic changes to obtain a unique competitive advantage to adapt to the changeable economic environment, this paper focus on manufacturing enterprises, in order to provide Chinese manufacturing enterprises with theoretical support to implement strategic change successfully.

The structure of the remainder is as follows: the second part is literature review and research hypothesis. Combining with existing literature, it deduces contingency theory and resource-based theory, analyzes the impact of environmental dynamics on the company's strategic change, and analyzes moderating effect of financial flexibility. The third part introduces the sample selection, data source, variable selection and model design of this paper. The fourth part is empirical test and result analysis. Descriptive analysis, correlation analysis and regression analysis are used to analyze the data, so as to test the research hypothesis. The fifth part is robustness test. The last part is the conclusion, summarizes the research findings of this paper.

2. Literature Review and Research Hypothesis

2.1. The Relationship between Environmental Dynamics and Strategic Change

Enterprises analyze resources, technology, information and other factors in the external environment, and make decisions on whether to adopt strategic adjustment and change accordingly. Therefore, Beal *et al.* (2000) [18] summarized that external factors to some extent determine whether an enterprise changes its business strategy. However, the existing literature has not yet formed a unified conclusion on the mechanism of dynamic environment impacting strategic

change. Li Shu *et al.* (2014) [19] thought that in the face of strong dynamic environment, enterprise is hard to get all the information that making decisions require from the environment, so companies will be based on the limited information and perceptual cognition to seek satisfaction solution, due to unpredictable environmental changes speed and direction, companies tend to keep the original strategy as a satisfactory solution, rather than the implementation of strategic change. After analyzing the previous literature, He Zheng *et al.* (2006) [20] concluded that when the dynamics of the external environment significantly reduces, the external environment is more suitable for the survival and growth of enterprises, and enterprises are more willing to take the initiative to change the existing strategy. Tan *et al.* (1994) [21] studied the relationship between environmental dynamics and enterprise strategy in the context of China's economic transformation and believed that the stronger the environmental dynamics in the transformation process, the more likely the enterprise is to adopt defensive strategy rather than actively seek change.

At the same time, many scholars hold the opposite view. They emphasized that the dynamic environment has a promoting effect on the enterprise strategic change. Wu Lidong *et al.* (2012) [22] believed that only by keeping consistent with changes in the external environment can an enterprise not be eliminated and develop. Haveman (1992) [23] pointed out that enterprises will actively implement strategic changes to adapt to changes in the environment. Based on contingency theory, F. Luthans (1976) [24] proposed that strategic management should be timely integrated to match with the external dynamic environment. It should always pay attention to the matching degree between the fluctuation of the environment and the existing strategy. Once it was found that the inherent strategy no longer adapted to the changes of the environment, it should quickly change the strategy to ensure the adaptability of enterprise strategy to the environment. Based on the resource-based view, Wernerfelt (1984) [25] believed that heterogeneous resources are the basis for enterprises to build competitiveness. In the fierce competition in the external environment, only by actively adjusting the internal allocation of key strategic resources and forming non-replicable strategic resources can enterprises gain stronger competitiveness and profitability.

A high degree of environmental dynamics is accompanied by the high frequency of use of resources in the environment, the high change speed of customer preferences, and the high update speed of technology, only by optimizing the allocation of strategic resources, and actively making strategic changes to effectively seize the opportunity and improve the adaptability and matching degree of the enterprise in the external environment. Combined with practical cases, we find that many enterprises actively implement strategic changes in a dynamic environment and are able to stand out. Therefore, this paper believes that the positive promotion mechanism is more realistic. In conclusion, hypothesis 1 is proposed in this paper.

Hypothesis 1: With the enhancement of environmental dynamics, the degree

of strategic change implemented by manufacturing enterprises is greater.

2.2. The Moderating Role of Financial Flexibility

Graham *et al.* (2009) [26] regarded financial flexibility is the ability of an enterprise to timely acquire or utilize financial resources in order to cope with the dynamic changing environment, grasp investment opportunities and maximize enterprise value. Most literatures discuss the construction of enterprise financial flexibility from three dimensions: 1) high cash holdings. For example, Soenen (2003) [27] thought sufficient cash reserves can bring enterprises more choices and development opportunities, and it is easier to enhance financial flexibility; 2) low level of financial leverage. For example, Modigliani *et al.* (1963) [28] thought it is easier for enterprises to seize investment opportunities for financing and obtain high financial flexibility by keeping low financial leverage ratio; 3) appropriate payment policies. For example, Oded (2009) [29] pointed out that compared with cash dividends, stock repurchase plans retain the option of repurchase, which makes enterprises have stronger financial flexibility. In conclusion, enterprises should comprehensively consider cash holdings, financial leverage and payment policies to obtain strong financial flexibility, so as to meet the capital demand caused by unexpected events. Zeng Aimin *et al.* (2013) [30] proved through empirical data that when faced with major unexpected changes, enterprises with strong financial flexibility can timely raise and mobilize financial resources and respond more effectively to turbulent external environment or take advantage of favorable investment opportunities generated by random events.

In the highly dynamic environment, if the enterprise carries on the strategic transformation in time, it can maintain the adaptability to the environment and not be eliminated. Financial flexibility provides necessary resources for the implementation of strategic change and can reduce the loss caused by the failure of change. O'Brien (2003) [31] drew the conclusion that financial flexibility provides enterprises with necessary resources for the research and development of new products and investment in new fields, so that they can still maintain their competitive advantages in a dynamic environment. Marchica *et al.* (2010) [32] believed that enterprises with financial flexibility do not have to worry about capital chain rupture, so they are more willing to promote projects with high uncertainty. Combined with the above viewpoints, it can be seen that when an enterprise has strong financial flexibility, it will have favorable conditions for implementing strategic change in a dynamic environment and be able to promote strategic change more conveniently. In conclusion, hypothesis 2 is proposed in this paper.

Hypothesis 2: financial flexibility plays a positive role in regulating the relationship between environmental dynamics and enterprise strategic change.

The above two assumptions are summarized in this paper, and the theoretical model of this paper is shown in **Figure 1**.

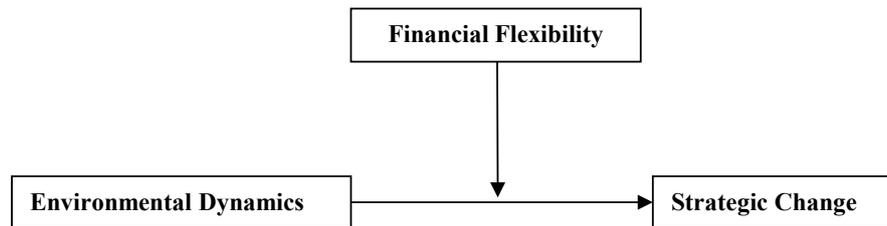


Figure 1. Theoretical model.

3. Sample and Research Design

3.1. Research Variables

1) Strategic Change

This study refers to existing studies and measures strategic changes with financial data. The specific measurement method is combined with the research of Zhang *et al.* (2010) [1], strategic change value is measured by the strategic resource allocation between annual volatility. If the strategic resource that the enterprise allocates between year has bigger difference, the enterprise can be judged to have carried out a greater degree of strategic change, on the other hand, the degree of strategic change is smaller. The specific measurement steps are as follows: Step 1, get six dimensions of indexes of enterprise's strategic resources: advertising rate (advertising promotional cost/operating income), R & d investment rate (R & D expenses/operating income), renewal rate of fixed assets (net value of fixed assets/original value of fixed assets), indirect rate ((management cost + sales cost, financial cost)/operating income), inventory levels (inventory/operating income), and financial leverage (incur debts/total assets). Step 2, calculate the difference between the values of the six intensities in year t and year $t - 1$, respectively. For example, "R & D intensity = |R & D intensity t - R & D intensity $t - 1$ |". Step 3 is to standardize the difference. Step 4 is to sum up the six standardized values and divide them by six to get the mean, namely the strategic change value.

2) Environmental Dynamics

Dess *et al.* (1984) [13] pointed out that environmental dynamics is the degree of change of events in the environment and the predictability of changes. The dynamics of the environment arise from the external environment, and the business activities of the enterprise are adjusted around the fluctuations of the external environment and the sales revenue of the enterprise changes accordingly. Therefore, Ghosh *et al.* (2009) [33] thought it is feasible to measure environment dynamics by the performance changes of the enterprise. Dess *et al.* and Niu Jianbo *et al.* measured the environmental dynamics based on the sales revenue of the enterprise. However, this article fails to obtain sufficient data for sales revenue in the database, so to replace sales revenue with operating income, and calculated the value of the environmental dynamics through the existing methods. In conclusion, based on the operating income to measure the degree of dynamic business environment, the concrete measure method refers to the re-

search of Niu Jianbo *et al.* (2012) [34] with the variation coefficient of business income in five years to measure the dynamics of the environment, namely the enterprise standard deviation divided by the expected value of revenues for five years. The size of the variation corresponds to the environmental dynamics of the enterprise.

3) Financial Flexibility

Enterprise financial flexibility can be measured by three indexes: cash holding level, debt financing flexibility and equity financing flexibility. Due to the unique institutional environment in China, the state strictly monitors the equity refinancing process of listed companies, making it difficult for companies to have equity financing flexibility. Therefore, this index is not taken into account in the actual measurement. Zeng Aimin *et al.* (2013) [30] summed up three ways to define financial flexibility: a) single index judgment method. Compare whether a single financial index is higher than a certain standard to judge the strength of financial flexibility; b) multi-index combination method. Judge financial flexibility level by combining cash holdings and financial leverage ratio. If an enterprise holds a high amount of cash and has a low financial leverage ratio, it indicates that it has a high financial flexibility. On the contrary, if the cash holdings and financial leverage ratio of an enterprise are both at a low level, it reflects its low financial flexibility; c) multi-index synthesis method. After comprehensive analysis of the two types of financial indicators, assign specific weights to each category of financial indicators and sum up to get the final score, determine the level of financial flexibility according to the summation score. The following refers to the multi-index synthesis method, and follows the measurement logic of Wang Aiqun *et al.* (2017) [17], the measurement formula: financial flexibility = cash flexibility + debt financing flexibility, where, cash flexibility = enterprise cash holding rate – industry average cash holding rate, debt financing flexibility = Max (0, industry average debt ratio – enterprise debt ratio).

3.2. Model Construction

This paper establishes and tests the regression model to verify the above two hypotheses. Model 1 is used to test hypothesis 1, model 2 is used to test hypothesis 2, and the product of $Dyna_{i,t}$ and $Ff_{i,t}$ is used to study the adjustment effect of financial flexibility. The model to be tested is as follows:

$$Ch_{i,t} = \beta_0 + \beta_1 Dyna_{i,t} + \beta_2 Age_{i,t} + \beta_3 Esize_{i,t} + \beta_4 Csize_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$Ch_{i,t} = \beta_0 + \beta_1 Dyna_{i,t} + \beta_2 Ff_{i,t} + \beta_3 Dyna_{i,t} \times Ff_{i,t} + \beta_4 Age_{i,t} + \beta_5 Esize_{i,t} + \beta_6 Csize_{i,t} + \varepsilon_{i,t} \quad (2)$$

where, the dependent variable $Ch_{i,t}$ represents the strategic change of year t of enterprise i , the explanatory variable $Dyna_{i,t}$ represents the environmental dynamics of year t of enterprise i , the regulatory variable $Ff_{i,t}$ represents enterprise financial resource flexibility, $Dyna_{i,t} \times Ff_{i,t}$ is the cross term, $Age_{i,t}$, $Csize_{i,t}$ and $Esize_{i,t}$ are the natural logarithms of enterprise age, total assets and total employees respectively. This paper mainly discusses the estimation of the regression

coefficient of the independent variable β_1 in model 1 and the regression coefficient of the product term β_3 in model 2. If the regression coefficient of the independent variable β_1 in model 1 and model 2 is positive, the dynamic environment will positively affect the enterprise's strategic change behavior. If, in model 2, the product term regression coefficient β_3 and the regression coefficient of the independent variable β_1 are opposite signs, it indicates that financial flexibility reduces the impact of environmental dynamics on strategic change. Otherwise, it shows that financial flexibility enhances the effect of environmental dynamics on strategic change. In addition, in order to eliminate the interference of other relevant factors on enterprise strategic change, the model controls the enterprise age, total employee size and total asset size. Detailed descriptions of each variable are shown in **Table 1**.

3.3. Sample Selection

In this paper, manufacturing enterprises listed on the Shanghai and Shenzhen stock exchanges from 2011 to 2017 and listed in the industry classification standard of CSRC (SIC level 1 code) were taken as the basic sample database, and ST or *ST and enterprises with serious data loss are excluded, these excluded data was totally ignored. The data was from the WIND database. Finally, 1277 samples (a total of 8939 observations) were obtained. Excel2013 and Stata15.0 were used to process and analyze data in this paper.

4. Empirical Test and Result Analysis

4.1. Descriptive Statistics and Correlation Analysis

The descriptive statistical results of each variable in this paper are shown in **Table 2**, including the basic descriptive statistical values of each variable. As shown in **Table 2**, the mean, standard deviation and range of the strategic change of the sample companies are 0, 0.5552 and 8.4202 respectively, which reflects the great difference in the strategic change among Chinese manufacturing enterprises.

Table 1. Detailed description of variables.

Variables types	Variable code	Variable name	Variable measurement
dependent variable	$Ch_{i,t}$	strategic change	volatility of strategic resource allocation between years
independent variable	$Dyna_{i,t}$	environmental dynamics	standard deviation/expected value of business revenue over the past five years
moderating variable	$Ff_{i,t}$	financial flexibility	financial flexibility = cash flexibility + debt financing flexibility
control variable	$Age_{i,t}$	enterprise age	take the natural logarithm of the number of years from the establishment to the statistics
	$Esize_{i,t}$	total staff size	take the natural logarithm of the total number of employees at the end of the period
	$Csize_{i,t}$	total staff size	take the natural logarithm of the total number of assets at the end of the period

Table 2. Descriptive statistical results of variables.

Variable	Mean	Standard deviation	Minimum	Maximum	Range
$Ch_{i,t}$	0.0000	0.5552	-0.5579	7.8623	8.4202
$Dyna_{i,t}$	0.2860	0.2218	0.0127	1.8748	1.8621
$Ff_{i,t}$	0.0792	1.4993	-1.0321	21.4881	22.5202
$Age_{i,t}$	18.5364	4.6894	6.0000	39.0000	33.0000
$Esize_{i,t}$	5229.2900	11,044.1200	26.0000	200,949.0000	200,923.0000
$Csize_{i,t}$	9,810,000,000	22,900,000,000	45,900,000	375,000,000,000	374,954,100,000

The mean value of environmental dynamics is 0.2860, and the standard deviation and range are 0.2218 and 1.8621, respectively, indicating that the environment faced by manufacturing enterprises presents a certain dynamic nature, and there is a great difference among them. The average value of financial flexibility is 0.0792, the standard deviation is 1.4993, and the range difference is 22.5202, indicating that the level of financial flexibility reserve of China's manufacturing enterprises is generally low, and different enterprises have different financial flexibility.

By analyzing the correlation of various variables in the model, we can preliminarily grasp the relationship among environmental dynamics, financial flexibility and enterprise strategic change. In the following paragraphs, Pearson correlation coefficient method is used to complete the correlation analysis of each variable, and STATA operation results are sorted out in **Table 3**.

The enterprise age has a small and insignificant correlation with the strategic change, and the total employee size, total assets size and the strategic change are significantly correlated. There is a significant positive correlation between the environmental dynamics and strategic change, indicating that dynamic environment can promote manufacturing enterprises to adopt strategic change behavior. There is a significant positive correlation between financial flexibility and enterprise strategic change, which reflects that manufacturing enterprises with financial flexibility are more inclined to adopt strategic change.

4.2. Regression Analysis

In this study, the samples selected balanced panel data for regression analysis. According to Hausman test results, the calculation results of fixed effect model are more effective. The data in this paper are panel data, which may have heteroscedasticity, serial correlation and other problems. The standard error will be underestimated by using the common panel data estimation method, resulting in biased model estimation results. Only the "Heteroscedasticity—sequence correlation" robust standard deviation can be unbiased, consistent and effective. Therefore, in the subsequent panel data model estimation, this paper mainly adopts "Heteroscedasticity—sequence correlation" robust standard deviation method for estimation. The time fixed effect is added into the model, and the

time dummy variable is used to realize it, and the first dummy variable is removed to avoid full collinearity. The empirical results are shown in **Table 4**.

The dependent variable of the three models shown in **Table 4** is strategic change, the benchmark model is the control variable regression analysis model, you can see from the benchmark model, the total employee scale of regression

Table 3. The correlation analysis of variables.

Variable	Ch _{<i>i,t</i>}	Dyna _{<i>i,t</i>}	Ff _{<i>i,t</i>}	Age _{<i>i,t</i>}	Esize _{<i>i,t</i>}	Csize _{<i>i,t</i>}
Ch _{<i>i,t</i>}	1.000					
Dyna _{<i>i,t</i>}	0.299***	1.000				
Ff _{<i>i,t</i>}	0.063***	-0.036**	1.000			
Age _{<i>i,t</i>}	-0.017	-0.023	-0.021	1.000		
Esize _{<i>i,t</i>}	-0.128***	-0.000	-0.115***	0.031***	1.000	
Csize _{<i>i,t</i>}	-0.095***	0.025	-0.100***	0.017***	0.784***	1.000

Significance level: ***p < 0.01, **p < 0.05, *p < 0.1, N = 1277.

Table 4. The regression analysis of variables.

Variable	Benchmark model	Model 1	Model 2
Dyna _{<i>i,t</i>}		0.443*** (0.002)	0.450*** (0.001)
Ff _{<i>i,t</i>}			0.180 (0.223)
Dyna × ff _{<i>i,t</i>}			0.221*** (0.005)
Age _{<i>i,t</i>}	0.975 (0.160)	0.867 (0.198)	0.849 (0.204)
Esize _{<i>i,t</i>}	-0.206** (0.017)	-0.232*** (0.007)	-0.194*** (0.007)
Csize _{<i>i,t</i>}	0.247*** (0.007)	0.166 (0.102)	0.170* (0.089)
Dumt2	-0.088** (0.034)	-0.066 (0.106)	-0.070* (0.086)
Dumt3	-0.168** (0.024)	-0.127* (0.083)	-0.129* (0.077)
_cons	-6.604*** (0.002)	-4.302* (0.060)	-4.633*** (0.042)
F	3.35***	5.70***	5.80***
Adj.R2	0.016	0.029	0.043

Significance level: ***p < 0.01, **p < 0.05, *p < 0.1, N = 1277. The values in parentheses are measured as p. The above model is the result of adjusting the “Heteroscedasticity sequence correlation” robust standard deviation.

coefficient is negative and the significance level is less than 5%, namely, it is negatively correlated with strategic change. However, the regression coefficients of the enterprise age and the total asset size of the enterprise are positive, so they are positively correlated with the strategic change. Adding environmental dynamics variables into the benchmark model to form model 1 to test hypothesis 1, the regression coefficient of environmental dynamics is 0.443, and the significance level is below 1%, indicating that the higher the environmental dynamics of manufacturing enterprises, the more willing they are to adopt strategic changes, and hypothesis 1 is supported. Model 2 is on the basis of model 1 to join the product of environment dynamics and flexible financial, flexible financial variables, the results show that the regression coefficient of the product of environmental dynamics and financial flexibility is 0.221, staying below 1% significance level, environmental dynamics regression coefficient is positive, the product term is the same sign as the regression coefficient of environmental dynamics, it shows that flexible financial reserve can positively adjust the relationship between dynamic environment and strategic change of manufacturing enterprises, in line with the content of the hypothesis 2.

5. Robustness Test

In order to test the robustness of the above empirical results, this paper conducts the robustness test as follows:

The strategic change is remeasured with a new approach. This part refers to the research of Finkelstein and Hambrick (1990) [35] to measure strategic change. The specific measurement steps are as follows: First, take 2014, 2015 and 2016 as the base period T , respectively, calculate the variance of the above six indicators within 3 years ($T - 1$, $T + 1$); Then, the obtained annual variance is standardized based on the industry; Finally, the above six standardized index values are added up to obtain the annual strategic change of each enterprise. The re-test of the strategic change based on the new measurement shows that there is still a significant and robust positive relationship between environmental dynamics and strategic change, and the moderating effect of financial flexibility is still significant and robust, that is, hypothesis 1 and 2 in this paper are still supported.

6. Conclusions

When facing the dynamic external environment, manufacturing enterprises tend to implement strategic changes by adjusting resource allocation to adapt to the changeable external environment. This paper demonstrates the mechanism of environmental dynamics and strategic change through empirical methods, and further discusses the regulatory effect of financial flexibility. Based on the balance panel data of 1277 manufacturing enterprises listed in Shanghai and Shenzhen from 2011 to 2017, the following conclusions are drawn: first, the dynamic environment plays a significant role in promoting the strategic change of

manufacturing enterprises, when the environmental elements have large fluctuation and are difficult to predict; in order to meet the needs of the environment and shape the competitiveness in the turbulent environment, manufacturing enterprises are more willing to implement new strategies and change the allocation of resources. Second, financial flexibility has a significant positive regulating effect on the relationship between environmental dynamics and strategic change, that is, the richer the financial flexibility reserve owned by manufacturing enterprises, the more significant the role of dynamic environment in promoting the implementation of strategic change.

Based on contingency theory and resource-based theory, this paper introduces environmental dynamics as an independent variable into the research framework of strategic change, which makes up for the deficiency that existing literature mostly takes environmental variables as mode ratings rather than main independent variables. In addition, this paper verified that financial flexibility can positively adjust the relationship between environmental dynamics and strategic change, and enriched the theoretical system of enterprise strategic change. Under the background of economic globalization, Chinese manufacturing enterprises are in a critical period in urgent need of transformation and upgrading. This research sample selects Chinese listed manufacturing enterprises, and the conclusions obtained have practical guiding significance for Chinese manufacturing enterprises to cope with the dynamic external environment, reasonably reserve financial flexibility and effectively implement strategic changes.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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