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The impact of financial flexibility on corporate strategic change: Evidence based on listed Chinese manufacturing companies

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Abstract
Purpose: This research examines if financial flexibility may aid Chinese manufacturing firms in implementing strategic shifts. It further probes how an uncertain environment can affect financial flexibility's association with strategic transformation.
Methodology: Based on the literature review, this research examines the inter-association between environmental uncertainty, financial flexibility, and strategic change using an empirical investigation of data gathered from listed manufacturing companies in China between 2010 and 2021.
Findings: The study shows that financial flexibility positively influences strategic change. The higher the environmental uncertainty, the more manufacturing companies make strategic changes. Positively moderating the financial flexibility's association with and strategic transformation is environmental uncertainty.
Research limitations: Further investigations are necessary to explore factors influencing strategic change in firms. This should include a broader industry context, refined control variables, targeted research methodology, and in-depth heterogeneity studies.
Practical implications: Understanding how financial flexibility and environmental uncertainty influence strategic change is vital for Chinese-listed manufacturing companies. This knowledge enhances their ability to operate effectively in a complex business landscape, make well-informed strategic decisions, and maintain long-term competitiveness and sustainability. Additionally, it offers valuable insights for executives, investors, and policymakers to grasp the intricacies of strategic shifts in the manufacturing industry.
Value: The findings enrich research on strategic change in business and expand the application of resource-based theory. The paper points out that financial flexibility facilitates firms to make strategic changes and provides a reference for manufacturing companies to improve their resource allocation.

Keywords: Financial flexibility, Strategic change, Environmental uncertainty

Introduction

In recent years, driven by the continuous development and widespread application of information technology, China's manufacturing sector has become highly competitive, prompting numerous companies to pursue transformative changes. The value-added of China for manufacturing in 2022 was the highest in 13 years, accounting for roughly 30% of the worldwide total. However, the advancement in the quality and core competitiveness of China's manufacturing industry has lagged behind its scale growth (Schneider-Petsinger et al., 2019). China's manufacturing industry has reached a pivotal phase where enhancing quality levels is essential. To remain competitive, manufacturing firms, particularly in China, must continuously innovate and adopt new technologies. Financial flexibility contributes to the sustainability of manufacturing companies (Guo et al., 2020). Analyzing the impact of financial flexibility on strategic change can help Chinese manufacturing companies implement measures to improve their resilience against economic downturns, capitalize on growth opportunities, and maintain long-term development. Thus, understanding this relationship aids firms in planning and executing strategic changes in their technological capabilities.

China's manufacturing companies have been transformed in terms of production methods, strategic directions and product forms (H. Wang et al., 2023). Businesses frequently pursue knowledge via a variety of channels to inculcate a more comprehensive knowhow of the issue and to determine viable resolutions when faced with new circumstances (Dutt & Mitchell, 2020). How to realize the transformation of manufacturing companies and help them improve quality and efficiency to achieve core competitiveness has become an issue for all senior managers of manufacturing companies and related researchers and scholars to consider. Many enterprises try to leapfrog strategic change in an increasingly complex environment to gain unique competitive advantages (Xiao et al., 2021). Strategic change refers to a company's strategic behavior that deviates from its regular business strategy compared to competitors within the same industry. This deviation is reflected in how the company allocates key strategic resources differently from the industry average (Tang et al., 2011). Although strategy replication is a much better option in homogeneous environments (Posen et al., 2019), rapid changes in a firm's internal and external environments require corporate decision-makers to take stock of the situation and respond strategically and promptly to the changing circumstances.

Environmental uncertainty introduces significant unpredictability to companies' production operations and strategic decisions, compelling them to proactively respond and capitalize on fleeting opportunities (Zhang, 2020). In contrast, financial flexibility is the capacity of a company in securing and restructuring its finances with reasonable price (Gamba & Triantis, 2008). Its core value lies in creating options for the firm's unpredictable future investment and financing needs (Yang & Pan, 2019). On the one hand, financial flexibility allows companies to enhance their ability to finance in uncertain environments and be less exposed to negative shocks (Yung et al., 2015); meanwhile, financial flexibility boosts a company's capacity to capitalise on advantageous prospects for investment (Arslan-Ayaydin et al., 2013). Financial flexibility's coordination and adaptive effects can promote continuous innovation (Z. Xiao et al., 2020) and help companies gain an advantageous position. Consequently, it is necessary to examine financial flexibility’s connection with strategic change.

Thus, according to previous findings among studies, this research will integrate uncertainty in the environment into its entire research structure encompassing financial flexibility and strategic transformation in order to probe comprehensively financial flexibility’s effect on strategic change. The review of literature and research hypothesis are detailed in the subsequent section. The design of the research is the subject of Section 3, the empirical outcomes and the analysis thereof are presented in Section 4, and the conclusions are summarised in Section 5.

Literature Review and Research Hypotheses

Financial flexibility and strategic change

Strategic change is dynamic and complex (Lan et al., 2019), thus placing greater demands on the ability of firms to adjust their financial resources dynamically. Financial flexibility grants significant benefits, and financial theory needs to evaluate the overall strategic plan instead of individual initiatives (Arbogast & Kumar, 2018). As a long-cycle and high-risk corporate behavior, strategic change requires firms to have a certain financial resource base to secure it (Matloob et al., 2023). Financial flexibility plays a crucial role in financing innovation and technology adoption. The business environment is dynamic and changing, especially for manufacturing companies in China in a rapidly changing economic environment (Wen et al., 2022). Financial flexibility enables quick access to financial resources at a reasonable cost and influences strategic decisions (Byoun, 2021). Consequently, financial flexibility's impact on strategic change in publicly traded Chinese manufacturing companies is of the utmost importance. These businesses can more effectively adapt to external changes by utilising financial flexibility as an essential means, which can be achieved by comprehending this impact. Zhao and Zhang (2010) argue that financial flexibility can be an effective safeguard of financial capability for corporate strategic decision-making, which is a proven way of enhancing the company's core competitiveness, as well as a practical method for enhancing a business's fundamental competitiveness and an enduring process for optimising financial resource allocation and controlling and managing risks in finances. Firms with better financial flexibility raise cash by issuing equity, thus maintaining low leverage (Byoun, 2021); financially flexible firms tend to invest more (Mahmood et al., 2022) and rely much less on internal capital investment (Arslan-Ayaydin et al., 2013). As a result, companies that can take advantage of financial flexibility increase their debt and can better utilize set-aside cash to exercise investment options.

According to the resource dependence theory, strategic change can only be implemented with the synergistic use of various resources, especially the integrated use of financial resources (Choi et al., 2021). A company's dynamic capacity to adapt is the primary indicator of its financial flexibility. A high level of financial flexibility can effectively alleviate the current demand for financial resources for enterprises implementing strategic change. It can also set aside a certain amount of cash reserves and external debt capacity to ensure enterprises seize favorable investment opportunities in the future (Arslan-Ayaydin et al., 2013). Thus, higher financial flexibility allows firms to make proactive choices. Financial flexibility can reduce the cost of acquiring volatile capital from external sources (DeAngelo et al., 2011), satisfy the demand for capital due to financing constraints, alleviate the company's financial difficulties (Ferreira & Vilela, 2004), and facilitate the process of strategic change. This research puts forward the following hypothesis based on the preceding analyses:

H1: Financial flexibility promotes strategic change, which means financial flexibility is positively related to strategic change.

Environmental uncertainty and strategic change

Chinese manufacturing companies are more sensitive to environmental uncertainty due to business environment, regulation, and other factors (Chen et al., 2021). China has experienced rapid economic growth over the past decades. This pace of development often leads to dynamic environmental changes and unpredictable market developments, making it difficult for manufacturing firms to anticipate changes in demand, competition, and technology. Chinese manufacturing companies are deeply integrated into global supply chains (Ning et al., 2022). Changes in global economic conditions, trade policies, and geopolitical dynamics can create

uncertainty and affect the flow of firms' resources, making Chinese firms more vulnerable to external influences. The manufacturing sector, especially in electronics and technology, is characterized by rapid technological progress (Wen et al., 2022). Chinese manufacturing companies endeavoring to remain competitive have to navigate a technical environment that is constantly innovating and evolving, and innovation will lead to greater environmental uncertainty (Nobari et al., 2020).

Under the dynamic environmental change, it is challenging for companies to maintain and create a competitive advantage. The environment shapes corporate strategy (Li et al., 2023). For businesses, sustained competitive advantage stems from a firm's rapid adaptation to environmental change (Gottschalg & Zollo, 2007), and strategic behaviors must be dynamically matched to environmental change (Hrebiniak & Joyce, 1985). With rapid economic development, environmental changes are more prominent, and the strategic management of enterprises needs to pay more attention to environmental changes (Lan et al., 2019). Companies can either effectively mitigate or dynamically react to the adverse effects of uncertainty of macroeconomics on their operations by making the suitable decisions financially and strategically (Fu et al., 2019), which can effectively help the companies continue to develop faster and better and at the same time contribute to the overall steady growth of the macroeconomy. In order to adapt to environmental uncertainty, enterprises need to continuously adjust their strategies (Wang et al., 2019). Therefore, with the frequency of environmental changes, corporate strategic adjustments become more routine. The dynamic matching of strategic behavior with environmental uncertainty depends, to some extent, on the need to form a strategy within the firm that matches environmental changes (Labianca et al., 2000). Based on prior investigations, this investigation suggests the subsequent hypothesis:

H2: Environmental uncertainty promotes strategic change, which means environmental uncertainty is positively related to strategic change.

Moderating effect of environmental uncertainty

Manufacturing enterprises in China confront a more complicated environment amid the economic shift in the country. Increasing environmental uncertainty increases instability (Chen et al., 2021), in which case there is no stable strategic path for companies. Therefore, when companies face drastic environmental changes, they must revise or change their original strategic paths and seek new paths that match the existing environment (Su & Mao, 2019). Therefore, the role played by environmental uncertainty between financial flexibility and strategic change must be addressed. The information asymmetry level among the decision-makers of the company rises in response to evolving information dynamics, which introduces volatile risks against its transformation in a strategic sense. Environmental uncertainty exacerbates agency problems and hinders the input and output of technological innovation in companies (J. Chen et al., 2021). In times of drastic environmental changes, companies need more financial flexibility to cope with the possible risks that increase during strategic change. Strategic change brings benefits, significant costs, and risks to companies (Cui et al., 2010; Xie et al., 2016) and requires sufficient resources to support it. Fan et al. found that when a company implements a financial flexibility policy, it can utilize its existing capabilities, such as low-cost advantage, to obtain financial resources, which effectively enhances the efficiency of its change (Fan et al., 2018). Therefore, the facilitating effect of financial flexibility on strategic change will be strengthened. The continuity of factor inputs is necessary for the long-term process of strategic change, as seen from a resource dependence approach, which will increase the company's demand for resource factors. At the same time, due to the need for historical experience in strategic change, the scarcity of alternative resource elements and the degree of reliance on existing resource elements will also increase. Consequently, the larger the strategic

change's degree, the higher the resource reliance of the organisation. When management has greater financial flexibility, it becomes more willing to implement strategic transformation. This research puts forward the following hypothesis based on the preceding analyses:
H3: Environmental uncertainty enhances the contribution of financial flexibility to strategic change.
The objective of this investigation is to probe how strategic change is influenced by financial flexibility and to integrate uncertainty of the environment into the research design. The association among the variables that this paper investigated is illustrated in Figure 1, which simplifies the representation of the relationship model.

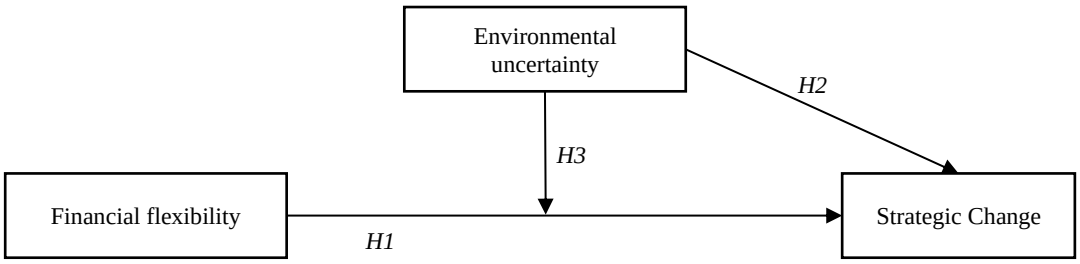

Figure 1 Research Idea Map

Methods

Research Samples and Data Sources

The hypotheses that were put forward above will be tested using a list of manufacturing firms in China as the research object for this paper. The information A-share manufacturing business in Shanghai and Shenzhen stock exchanges between 2011 and 2021 were chosen as the preliminary sample data to evaluate the hypotheses proposed in this research. On the basis of the preliminary sample, screening was applied based on these guidelines: (1) Since the financial sector's model for asset valuation is substantially distinct compared to what other sectors possess, the statement format is special, and the data are not comparable. At the same time, companies in the financial industry are subject to specific regulations, and executives' degree of control influence on companies is limited. Thus, the samples of listed companies in the financial industry are excluded; (2) current year IPO and pre-listing information were disregarded, as were previously delisted businesses; (3) also disregarded were those with lacking data; and (4) continuous variables at above and below 1% levels were Winsorised, thereby disregarding outliers in the analysis of data. Ultimately 5718 observations were obtained. The sample data for this research were acquired through CSMAR. Stata 17.0 was utilised to perform the statistical analysis.
Definition of Main Variables
Financial flexibility
According to DeAngelo et al. (2011) and Ge and Zhan (2008), the capacity of a firm to gain access to and utilise funds (whether external or internal) that have been acquired via finance-related policies is known as financial flexibility. The financial flexibility of a company is significantly influenced by its capacity for raising external debt, the equity financing degree, and its high capital holdings. This paper adopts the methods of DeAngelo et al. (2011) and Zeng et al. (2011) to assess financial flexibility (FF) using two dimensions: the company's cash flexibility level and its debt flexibility level. The calculation method is detailed below.

$$Caf = Ccar - Icar$$
$$Cif = max\{0, Iadr - Cdr\}$$

$$FF = Cif + Caf$$

Where *Ccar* represents the corporate cash ratio, *Icar* is the industry cash ratio, and the difference between the two, *Caf*, indicates the corporate cash flexibility. *Iadr* denotes the industry average debt ratio, *Cdr* represents the corporate debt ratio, and the maximum value of the difference between the two and 0 represents the corporate debt flexibility, *Cif*. The sum of corporate cash flexibility, *Caf*, and corporate debt flexibility, *Cif*, yields the final financial flexibility (FF).

Strategic change

This study defines strategic change as altering a company's resource allocation patterns across several key strategic dimensions. Finkelstein et al.'s research pioneered using a composite measure involving six key strategic dimensions to assess strategic change (Finkelstein & Hambrick, 1990; Triana et al., 2019). This study adopts this method to measure the extent of strategic change in a company, utilizing the following six key dimensions: (1) investment in advertising and promotion (selling expenses/operating revenue); (2) investment in research and development (R&D expenditures/operating revenue); (3) degree of renewal of fixed assets (net fixed assets/total fixed assets); (4) investment in overheads (overheads/operating revenue); (5) level of inventory (inventory/sales revenue); (6) financial leverage (total liabilities/owners' equity). Subtract the average value of each dimension for an industry in the relevant year. First, standardize the indicator by dividing its absolute value by its standard deviation. Then, calculate the strategic change (SC) by averaging each firm's six standardized strategic indicators. A higher value indicates a more significant strategic shift in the firm.

Environmental uncertainty

Using Shen et al.'s (2012) calculation approach, we approximate each company's anomalous sales revenue by utilising the following formula, which is according to sales data from sample firms within the last five years:

$$Sale = \varphi_0 + \varphi_1 Year + \varepsilon$$

In this context, *Sale* refers to operating income, and *Year* is the annual variable. If the observation value is from two years ago, the *Year* is 3; if it is from three years ago, the *Year* is 2; and for the current year, the *Year* is 5. The purpose of regressing the year variable is to account for changes in sales revenue due to the firm's stable development. Abnormal sales revenue is indicated by the residual ε. To determine the environmental uncertainty in the industry at an unadjusted state, we divide the company's sales revenue's standard deviation within the last five years by the mean sales revenue during that time. We consequently divide the uncertainty indicator (unadjusted) by the median among the industry's companies that year to determine the final industry-adjusted environmental uncertainty indicator (EU). A higher value indicates greater environmental uncertainty faced by the company.

Control variables

Based on prior research (Chortareas & Noikokyris, 2021; X. Li & Shiu, 2020; Yang & Pan, 2019), this paper recognizes these variables as control variables. Including independent directors proportion (Indep), duality (Dual), and shareholding ratio of the largest shareholder (Top1), leverage (Lev), revenue growth rate (Growth), company size (Size), firm age (FirmAge) and state-owned enterprises (SOE).

Based on the corporate governance perspective, independent directors have better access to information or higher credibility in top management (Fogel et al., 2021). Therefore, independent directors who are more influential can more effectively determine and mitigate the shortcomings of the company, thereby transforming its strategy towards a more advantageous manner. Similarly, CEO duality weakens the control of the board of directors to

some extent and enhances the CEO's ability to grow and make strategic decisions quickly (Bui et al., 2019). In turn, a firm's largest shareholder may have considerable influence over key board committees responsible for strategic planning (e.g., the strategy committee or the finance committee) and can, therefore, influence decisions related to the firm's strategic direction (Peterson & Philpot, 2013).

Based on the corporate operation perspective, financial leverage contributes to a firm's financial decision-making (Nan & Wen, 2023), and proactively increasing financial leverage can improve a firm's financial flexibility (Denis & McKeon, 2012). Moreover, financial leverage affects a firm's capital structure, and a firm's strategic adjustments usually involve decisions about the optimal capital structure. From a resource perspective, financial leverage affects a firm's ability to finance investments and strategic plans (Paswan, 2021). A higher sales growth rate means greater business growth. Increased operating income enhances firm value (Q. Yang et al., 2018) and provides a resource base for firms to increase financial flexibility and make strategic changes (Fahlenbrach et al., 2020). Firm size is linked to strategic change (Le & Kroll, 2017), reflecting a firm's capacity to access resources and seize investment opportunities. Larger firms have a greater ability to integrate resources and take risks. Similarly, firm age significantly affects strategy and performance (Coad et al., 2017; Kilenthong et al., 2016), with younger firms more inclined to engage in innovative activities compared to older firms (Khan et al., 2020; Withers et al., 2011).

Based on the firm's ownership perspective, state-owned enterprises (SOEs), whose ownership and management are exercised by the government, play an important role in economic development. In Chinese SOEs, managers are assigned by the government and generally lack extensive industry-related experience. As a result, firms that tend to be less affected by changes in political uncertainty adjust faster in their strategies (Gu et al., 2019).

Table 1 represents the variables that this paper utilised.

Table 1 Variable definitions

Type	Name	Symbols	Definition
Dependent variable	Strategic change	SC	Changes in resourcing patterns across multiple key strategic dimensions
Independent variable	Financial flexibility	FF	in the text
Moderating variables	Environmental uncertainty	EU	in the text
Control variables	Proportion of independent directors	Indep	Number of independent directors/number of board of directors
	Duality	Dual	The chairman and general manager are the same person as 1, otherwise it is 0.
	Shareholding ratio of the largest shareholder	Top1	Number of shares held by the largest shareholder/total number of shares
	Leverage	Lev	Total liabilities at year-end/total assets at year-end
	Revenue growth rate	Growth	Current year's operating income/previous year's operating income - 1

Company size	Size	Natural logarithm of total assets for the year
FirmAge	FirmAge	ln(current year - year of incorporation + 1)
State-owned enterprises	SOE	State-owned enterprises take the value of 1, others 0
Dummy year	Year	

Model construction

This paper constructs a total of 3 regression models in the empirical part. This paper develops the regression model (1) below to assess the first hypothesis, which states that financial flexibility encourages business strategic change.

$$SC = \beta_0 + \beta_1 FF + \beta_2 Indep + \beta_3 Dual + \beta_4 Top1 + \beta_5 Lev + \beta_6 Growth + \beta_7 Size + \beta_8 FirmAge + \beta_9 Soe + \sum year + \varepsilon \quad (1)$$

Where ε is the random perturbation term and ∑year denotes the year effect.

This paper sets up regression model (2) to test hypothesis 2: environmental uncertainty promotes strategic change in companies.

$$SC = \beta_0 + \beta_1 EU + \beta_2 Indep + \beta_3 Dual + \beta_4 Top1 + \beta_5 Lev + \beta_6 Growth + \beta_7 Size + \beta_8 FirmAge + \beta_9 Soe + \sum year + \varepsilon \quad (2)$$

This paper sets up a regression model (3) to test hypothesis 3: environmental uncertainty moderates financial flexibility and strategic change.

$$SC = \beta_0 + \beta_1 FF + \beta_2 EU + \beta_3 FF \times EU + \beta_4 Indep + \beta_5 Dual + \beta_6 Top1 + \beta_7 Lev + \beta_8 Growth + \beta_9 Size + \beta_{10} FirmAge + \beta_{11} Soe + \sum year + \varepsilon \quad (3)$$

Findings

In this investigation, the Hausman test is employed to assess the appropriateness of the random effect and fixed effect models prior to conducting regression analysis of the panel data with Stata 17.0. The fixed effect model is appropriate, as the Hausman test's p-values are below 0.05 in this paper. In the interim, each variable's variance inflation factor (VIF) in the model is below 2, which suggests that no multicollinearity exists.

Table 2 Descriptive statistics of each variable

Variable	Obs	Mean	Std. dev.	Min	Max
SC	5,718	0.5938	0.2923	0.1644	2.1343
FF	5,718	0.0119	0.1590	-0.2521	0.6673
EU	5,718	1.2600	1.0226	0.0715	13.7265
Indep	5,718	0.3730	0.0540	0.2857	0.6000
Dual	5,718	0.2433	0.4291	0.0000	1.0000
Top1	5,718	0.3399	0.1420	0.0719	0.7788
Lev	5,718	0.4633	0.1876	0.0441	0.9520
Growth	5,718	0.1559	1.1495	-0.5140	58.8416
Size	5,718	22.4322	1.3045	19.8465	26.7796

FirmAge	5,718	2.8309	0.3011	1.7918	3.6889
SOE	5,718	0.4285	0.4949	0.0000	1.0000

The variables' descriptive statistics are presented in Table 2. Strategic change, being the explanatory variable, has a mean value of 0.5938, a maximum of 2.1343, and a minimum of 0.1644, suggesting that strategic change varies considerably among manufacturing firms. The average financial flexibility value in Chinese manufacturing companies is 0.060, with respective minimum and maximum values of -0.2521 and 0.6673. It indicates that even if certain financial flexibility is being sustained by manufacturing firms in China, the overall level is not high, and there is significant variation between companies. The moderator variable, environmental uncertainty, shows minimum and maximum values of 0.0715 and 13.7265, respectively, indicating considerable differences in the environmental uncertainty faced by different companies.

Regression Analysis

The specific regression results are shown in Table 3.

Table 3 Regression analysis

	(1) SC	(2) SC	(3) SC	(4) SC
FF		0.430***		
		(11.77)		
EU			0.037***	0.033***
			(7.13)	(6.23)
FF×EU				0.104***
				(5.09)
Indep	0.114	0.123*	0.103	0.103
	(1.58)	(1.73)	(1.46)	(1.46)
Dual	-0.006	-0.008	-0.005	-0.006
	(-0.64)	(-0.94)	(-0.58)	(-0.61)
Top1	0.122***	0.112***	0.111***	0.111***
	(4.06)	(3.77)	(3.73)	(3.75)
Lev	0.212***	0.461***	0.201***	0.284***
	(7.66)	(13.02)	(7.32)	(9.05)
Growth	-0.001	-0.002	-0.012***	-0.011**
	(-0.37)	(-0.78)	(-2.89)	(-2.19)
Size	0.017***	0.014***	0.017***	0.016***
	(4.31)	(3.42)	(4.34)	(4.02)
FirmAge	0.026*	0.018	0.029**	0.025*
	(1.81)	(1.28)	(2.07)	(1.78)
SOE	-0.021***	-0.024***	-0.015*	-0.017**
	(-2.65)	(-3.08)	(-1.90)	(-2.17)
Year	control	control	control	control
_cons	-0.097	-0.099	-0.138	-0.130
	(-1.07)	(-1.10)	(-1.52)	(-1.44)
N	5718	5718	5718	5718
R^2	0.060	0.088	0.074	0.082

adj. R^2	0.057	0.085	0.071	0.078
F	14.627	21.740	16.177	18.232

t statistics in parentheses
* p < 0.1, ** p < 0.05, *** p < 0.01

Model (1) reports the regression results containing only control variables.
Equation (1) is employed by Model (2) to assess financial flexibility's beneficial influence on strategic change. Table 3 illustrates that at the 1% level, financial flexibility is considerably positive. It implies that with more significant financial flexibility for a firm, the more likely it is to implement strategic change, thus confirming Hypothesis 1.
Model (3) provides the regression outcomes from equation (2) in order to assess how strategic change is being influenced by environmental uncertainty in a positive way. Table 3 demonstrates that at the 1% level, environmental uncertainty (an explanatory variable) has a considerable positive impact on strategic change. This suggests that the likelihood of a company implementing strategic change increases with higher environmental uncertainty, thereby testing Hypothesis 2.
Equation (3)'s regression outcomes are illustrated in model (4). These results suggest that financial flexibility's association with strategic change is moderated by environmental uncertainty. From Table 3's empirical regression outcomes, the coefficient EU×FF, which quantifies the interaction between financial flexibility and environmental dynamics, exhibits a substantial upward trend at 1%. It implies that financial flexibility's favourable impact on strategic change is exacerbated by environmental uncertainty, which provides support for Hypothesis 3.

Table 4 Robustness test

	(1) SC	(2) SC	(3) SC	(4) SC
FF		0.398***		
		(6.29)		
EU			0.039***	0.036***
			(4.81)	(4.35)
FF×EU				0.074**
				(2.29)
Indep	0.262**	0.270**	0.240**	0.236**
	(2.24)	(2.32)	(2.10)	(2.07)
Dual	0.002	-0.001	0.003	0.002
	(0.12)	(-0.10)	(0.22)	(0.15)
Top1	0.130**	0.119**	0.118**	0.120**
	(2.53)	(2.31)	(2.34)	(2.37)
Lev	0.263***	0.469***	0.239***	0.295***
	(5.35)	(7.76)	(4.91)	(5.48)
Growth	-0.002	-0.003	-0.012***	-0.011**
	(-0.54)	(-0.87)	(-2.83)	(-2.30)
Size	0.015**	0.013*	0.016**	0.015**
	(2.23)	(1.89)	(2.44)	(2.23)

FirmAge	0.003	-0.009	0.012	0.006
	(0.12)	(-0.41)	(0.51)	(0.27)
SOE	-0.044***	-0.050***	-0.037***	-0.038***
	(-3.20)	(-3.62)	(-2.70)	(-2.80)
Year	control	control	control	control
_cons	-0.002	-0.019	-0.087	-0.066
	(-0.01)	(-0.13)	(-0.57)	(-0.43)
N	2260	2260	2260	2260
R^2	0.061	0.080	0.078	0.081
adj. R^2	0.055	0.075	0.072	0.075
F	8.024	10.298	8.683	9.121

t statistics in parentheses
* p < 0.1, ** p < 0.05, *** p < 0.01

The period selection may introduce errors; therefore, the sample interval is reduced to 2015-2020, and regression analysis is conducted. The results are shown in Table 4. The table illustrates that the regression outcomes are generally consistent with the previous findings, indicating that the study's conclusions remain unchanged.

Discussion and Conclusion

This research and others investigate the inter-association between environmental uncertainty, financial flexibility, and strategic change. The empirical findings indicate the following: (1) Financial flexibility stimulates strategic change; the more likely a business is to undertake strategic change, the greater its financial flexibility. (2) As environmental uncertainty increases, firms implement more strategic modifications. (3) The financial flexibility for strategic change is more advantageous as environmental uncertainty's level increases. Financial flexibility for the company's strategic change provides the right to choose future investment and financing to have a certain degree of financial autonomy in the change process. When companies have a certain degree of financial flexibility for strategic change, they should fully consider the speed of environmental change. The rapidly changing environment will affect the judgment and decision-making efficiency of the company management. Therefore, companies should consider their level of financial flexibility before strategic change and the current and inter-period use of financial flexibility for a reasonable allocation so that the dual attributes of financial flexibility can play a greater role.

Theoretical Implications

By investigating strategic change, environmental uncertainty, and financial flexibility's correlation within the purview of manufacturing companies in China, we can gain a more comprehensive knowhow of the distinctive business environment in the said country, as well as corporate financial resources, and strategic management. This study expands the use of resource-based theory by revealing how Chinese manufacturing companies cope with resource dependence in an environmentally uncertain business environment. It contributes to dynamic capabilities theory by exploring how financial flexibility, as a form of response to external changes, leads these companies toward resource construction and reorganisation.

Practical and Social Implications

Regarding environmental uncertainty, Chinese manufacturers can enable decisions with more information by comprehending the relationship between financial flexibility and strategic

change. Manufacturing firms must prioritise financial flexibility, apportion their resources efficaciously considering business environment variations, and optimise such apportioning approaches for navigating such an intricate environment. Likewise, it gives beneficial insights towards investors, policymakers, and executives who are interested in comprehending manufacturing-based strategic change's dynamics.

Limitations and Suggestions for Future Research

Although it has made a substantial contribution to the investigation of the factors that influence strategic change on a corporate level, additional research is required. All of the manufacturing firms that are listed in China were examined in this study, failing to investigate other industries and SMEs in China. Prospective research will investigate the more comprehensive industry purview and the primary factors that can enhance the efficacy of firms in strategic change. This study did not consider some control variables, such as profitability or redundant resources. Future research will employ the redundant resources and profitability of firms to be the control variables to determine if the outcomes become different. The study uses panel data, with some limitations in inferring causality. Future research could use other methods, such as case studies, to enrich and validate the findings of strategic change. This study failed to conduct a more in-depth heterogeneity analysis, including examining financial flexibility's influence towards strategic change in manufacturing firms across life cycles and geographical areas. Therefore, a more in-depth study will be conducted in future research.

References

Arbogast, S. V., & Kumar, P. (2018). Financial flexibility and opportunity capture: bridging the gap between finance and strategy. Journal of Applied Corporate Finance, 30(1), 23+. https://doi.org/10.1111/jacf.12272

Arslan-Ayaydin, Ö., Florackis, C., & Ozkan, A. (2013). Financial flexibility, corporate investment and performance: evidence from financial crises. Review of Quantitative Finance and Accounting, 42(2), 211–250. https://doi.org/10.1007/s11156-012-0340-x

Bui, H. T. M., Nguyen, H. T. M., & Chau, V. S. (2019). Strategic agility orientation? the impact of CEO duality on corporate entrepreneurship in privatized vietnamese firms. Journal of General Management, 45(2), 107–116. https://doi.org/10.1177/0306307019886170

Byoun, S. (2021). Financial flexibility demand and corporate financial decisions. Financial Review, 56(3), 481–509. https://doi.org/10.1111/fire.12258

Ceng, A., Fu, Y., & Wei, Z. (2011). Financial crisis shocks, financial flexibility reserves and corporate financing behaviour - empirical evidence from chinese listed companies. Journal of Financial Research, 10, 155–169.

Chen, J., Shu, W., Wang, X., Sial, M. S., Sehleanu, M., & Badulescu, D. (2021). The impact of environmental uncertainty on corporate innovation: empirical evidence from an emerging economy. International Journal of Environmental Research and Public Health, 19(1), 334. https://doi.org/10.3390/ijerph19010334

Chen, L., Zhai, L., Zhu, W., Luo, G., Zhang, J., & Zhang, Y. (2021). Financial performance under the influence of the coronavirus disease 2019: effects of strategic flexibility and environmental dynamics in big data capability. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.798115

Chod, J., & Lyandres, E. (2021). A theory of icos: diversification, agency, and information asymmetry. Management Science, 67(10), 5969–5989. https://doi.org/10.2139/ssrn.3159528

Choi, S., Liu, H., Yin, J., Qi, Y., & Lee, J. Y. (2021). The effect of political turnover on firms' strategic change in the emerging economies: the moderating role of political connections

and financial resources. Journal of Business Research, 137, 255–266. https://doi.org/10.1016/j.jbusres.2021.08.034

Chortareas, G., & Noikokyris, E. (2021). Investment, firm-specific uncertainty, and financial flexibility. Journal of Economic Behavior & Organization, 192, 25–35. https://doi.org/10.1016/j.jebo.2021.09.042

Coad, A., Holm, J. R., Krafft, J., & Quatraro, F. (2017). Firm age and performance. Journal of Evolutionary Economics, 28(1), 1–11. https://doi.org/10.1007/s00191-017-0532-6

Cui, A. S., Calantone, R. J., & Griffith, D. A. (2010). Strategic change and termination of interfirm partnerships. Strategic Management Journal, 32(4), 402–423. https://doi.org/10.1002/smj.881

DeAngelo, H., DeAngelo, L., & Whited, T. M. (2011). Capital structure dynamics and transitory debt. Journal of Financial Economics, 99(02), 235–261. https://doi.org/10.2139/ssrn.1262464

Denis, D. J., & McKeon, S. B. (2012). Debt financing and financial flexibility evidence from proactive leverage increases. Review of Financial Studies, 25(6), 1897–1929. https://doi.org/10.1093/rfs/hhs005

Dutt, N., & Mitchell, W. (2020). Searching for knowledge in response to proximate and remote problem sources: evidence from the u.s. renewable electricity industry. Strategic Management Journal, 41(8), 1412–1449. https://doi.org/10.1002/smj.3159

Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2020). How valuable is financial flexibility when revenue stops? evidence from the covid-19 crisis. The Review of Financial Studies. https://doi.org/10.1093/rfs/hhaa134

Fan, S., Chen, Z., & Shen, L. (2018). Effect of enterprises' financial flexible policies on innovation efficiency — based on the empirical evidence in the context of new normal economy. Journal of Northeastern University (Social Science), 20(01), 36–43. https://doi.org/10.15936/j.cnki.1008-3758.2018.01.006

Ferreira, M. A., & Vilela, A. S. (2004). Why do firms hold cash? evidence from emu countries. European Financial Management, 10(2), 295–319. https://doi.org/10.1111/j.1354-7798.2004.00251.x

Finkelstein, S., & Hambrick, D. C. (1990). Top-management-team tenure and organizational outcomes: the moderating role of managerial discretion. Administrative Science Quarterly, 35(3), 484. https://doi.org/10.2307/2393314

Fogel, K., Ma, L., & Morck, R. (2021). Powerful independent directors. SSRN Electronic Journal, 50(4), 935–983. https://doi.org/10.2139/ssrn.2377106

Fu, Y., Zhang, L., & Li, W. (2019). Macroeconomic uncertainty, diversification and financial flexibility. Collected Essays on Finance and Economics, 01, 61–70. https://doi.org/10.13762/j.cnki.cjlc.2019.01.006

Gamba, A., & Triantis, A. (2008). The value of financial flexibility. The Journal of Finance, 63(5), 2263–2296. https://doi.org/10.1111/j.1540-6261.2008.01397.x

Ge, J., & Zhan, M. (2008). Some financial information must be emphasized on analysis of financial report of enterprises. Accounting Research, 05, 3-9+95.

Gottschalg, O., & Zollo, M. (2007). Interest alignment and competitive advantage. Academy of Management Review, 32(2), 418–437. https://doi.org/10.5465/amr.2007.24351356

Gu, X., Hasan, I., & Zhu, Y. (2019). Political influence and financial flexibility: evidence from china. Journal of Banking & Finance, 99, 142–156. https://doi.org/10.1016/j.jbankfin.2018.12.002

Guo, Z., Hou, S., & Li, Q. (2020). Corporate social responsibility and firm value: the moderating effects of financial flexibility and r&d investment. Sustainability, 12(20), 8452. https://doi.org/10.3390/su12208452

Hrebiniak, L. G., & Joyce, W. F. (1985). Organizational adaptation: strategic choice and environmental determinism. Administrative Science Quarterly, 30(3), 336. https://doi.org/10.2307/2392666

Khan, A., Bibi, S., Lyu, J., Garavelli, A. C., Pontrandolfo, P., & Perez Sanchez, M. de A. (2020). Uncovering innovativeness in spanish tourism firms: the role of transformational leadership, ocb, firm size, and age. Sustainability, 12(10), 3989. https://doi.org/10.3390/su12103989

Labianca, G., Gray, B., & Brass, D. J. (2000). A grounded model of organizational schema change during empowerment. Organization Science, 11(2), 235–257. https://doi.org/10.1287/orsc.11.2.235.12512

Lan, H., Zhang, M., & Song, T. (2019). Crossing the river by feeling the stones: the new interpretation of strategic management under dynamic and complex environment. Chinese Journal of Management, 16(03), 317–324. https://doi.org/10.3969/j.issn.1672-884x.2019.03.001

Li, C., Huo, M., Li, C., Li, G., & Liu, R. (2023). Economic policy uncertainty and enterprise strategic change: evidence from china. Strategic Change-Briefings in Entrepreneurial Finance, 32(4–5), 125–137. https://doi.org/10.1002/jsc.2549

Li, X., & Shiu, Y.-M. (2020). Reinsurance, debt capacity and financial flexibility. The Geneva Papers on Risk and Insurance - Issues and Practice. https://doi.org/10.1057/s41288-020-00190-7

Liu, M., Shadbegian, R., & Zhang, B. (2022). Environmental regulation, compliance strategies, and productivity: evidence from china. Land Economics, 98(1), 41–61. https://doi.org/10.3368/le.98.1.073020-0118r1

Mahmood, Y., Rashid, A., & Rizwan, M. F. (2022). Do corporate financial flexibility, financial sector development and regulatory environment affect corporate investment decisions? Journal of Economic and Administrative Sciences, 38(3), 485–508. https://doi.org/10.1108/jeas-10-2019-0109

Mani, V., Jabbour, C. J. C., & Mani, K. T. N. (2020). Supply chain social sustainability in small and medium manufacturing enterprises and firms' performance: empirical evidence from an emerging asian economy. International Journal of Production Economics, 227, 107656. https://doi.org/10.1016/j.ijpe.2020.107656

Matloob, S., Limón, M. L. S., Montemayor, H. M. V., Raza, A., & Rodriguez, J. C. C. (2023). Does strategic change enhance the relationship between firms' resources and smes performance in pakistan? Sustainability, 15(3), 1808. https://doi.org/10.3390/su15031808

Nan, L., & Wen, X. (2023). Financial leverage, information quality, and efficiency. Contemporary Accounting Research, 40(2), 1082–1106. https://doi.org/10.1111/1911-3846.12845

Ning, Y., Li, L., Xu, S. X., & Yang, S. (2022). How do digital technologies improve supply chain resilience in the covid-19 pandemic? evidence from chinese manufacturing firms. Frontiers of Engineering Management, 10(1), 39–50. https://doi.org/10.1007/s42524-022-0230-4

Nobari, N., Mobini Dehkordi, A., Akbari, M., & Padash, H. (2020). Innovation intelligence and its role in environmental uncertainty management: a conceptual framework. VINE Journal of Information and Knowledge Management Systems, ahead-of-print(ahead-of-print). https://doi.org/10.1108/vjikms-06-2020-0109

Paswan, R. K. (2021). Analysis of leverage and profitability of indian cement industry. In Pacific Business Review International (Vol. 14, Issue 6, pp. 25–30).

Peterson, C. A., & Philpot, J. (2013). The finance committee of the board and financial performance: a resource dependence perspective. Journal of Leadership Accountability & Ethics, 10(2), 16–34.

Posen, H. E., Yi, S., & Lee, J. (2019). A contingency perspective on imitation strategies: when is "benchmarking" ineffective? Strategic Management Journal, 41(2), 198–221. https://doi.org/10.1002/smj.3101

Schneider-Petsinger, M., Wang, J., Jie, Y., & Crabtree, J. (2019). US–china strategic competition: the quest for global technological leadership. Asia-Pacific Programme and the US and the Americas Programme, 1–45.

Shaikh, I. (2022). On the relationship between policy uncertainty and sustainable investing. Journal of Modelling in Management, 17(4), 1504–1523. https://doi.org/10.1108/jm2-12-2020-0320

Shen, H., Yu, P., & Wu, L. (2012). State ownership, environment uncertainty and investment efficiency. Economic Research Journal, 47(07), 113–126.

Song, M., Yang, M. X., Zeng, K. J., & Feng, W. (2020). Green knowledge sharing, stakeholder pressure, absorptive capacity, and green innovation: evidence from chinese manufacturing firms. Business Strategy and the Environment, 29(3), 1517–1531. https://doi.org/10.1002/bse.2450

Su, F., & Mao, J. (2019). Strategic path transformation in response to environmental changes: the influence of external and internal positive feedbacks and deliberate managerial actions. Journal of Management World, 35(10), 172-185+220. https://doi.org/10.19744/j.cnki.11-1235/f.2019.0140

Tang, J., Crossan, M., & Rowe, W. G. (2011). Dominant ceo, deviant strategy, and extreme performance: the moderating role of a powerful board. Journal of Management Studies, 48(7), 1479–1503. https://doi.org/10.1111/j.1467-6486.2010.00985.x

Triana, M. del C., Richard, O. C., & Su, W. (2019). Gender diversity in senior management, strategic change, and firm performance: examining the mediating nature of strategic change in high tech firms. Research Policy, 48(7), 1681–1693. https://doi.org/10.1016/j.respol.2019.03.013

Wang, H., Jiao, S., Bu, K., Wang, Y., & Wang, Y. (2023). Digital transformation and manufacturing companies' esg responsibility performance. In FINANCE RESEARCH LETTERS (Vol. 58, Issue B). https://doi.org/10.1016/j.frl.2023.104370

Wang, K., Pellegrini, M. M., Xue, J., & Wang, C. (2019). Environment uncertainty and a firm's strategic change the moderating role of political connection and family ownership. Journal of Family Business Management, 10(4), 313–327. https://doi.org/10.1108/jfbm-06-2019-0041

Wen, H., Zhong, Q., & Lee, C.-C. (2022). Digitalization, competition strategy and corporate innovation: evidence from chinese manufacturing listed companies. In International Review of Financial Analysis (Vol. 82, p. 102166). https://doi.org/10.1016/j.irfa.2022.102166

Withers, M. C., Drnevich, P. L., & Marino, L. (2011). Doing more with less: the disordinal implications of firm age for leveraging capabilities for innovation activity. Journal of Small Business Management, 49(4), 515–536. https://doi.org/10.1111/j.1540-627x.2011.00334.x

Xiao, J., Wu, X., Xie, K., & Wu, Y. (2021). IT-driven transformation of Chinese manufacturing: a longitudinal case study on leap-forward strategic change of Midea intelligent manufacturing. Journal of Management World, 37(03), 161-179+225+11. https://doi.org/10.19744/j.cnki.11-1235/f.2021.0041

Xiao, Z., Lin, L., Chen, Z., & Xu, D. (2020). Financial flexibility and the innovation sustainability of listed companies in china — concurrent discussion on the coordinated innovation effect and adaptive effect. Statistical Research, 37(05), 82–93. https://doi.org/10.19343/j.cnki.11-1302/c.2020.05.007

Xie, K., Wu, Y., Xiao, J., & Liao, X. (2016). Strategic risk control in organizational change: a multi case-study of organizational transformation towards internet. Management World, 2, 133–148. https://doi.org/10.19744/j.cnki.11-1235/f.2016.02.014

Xu, J., & Li, J. (2022). The interrelationship between intellectual capital and firm performance: evidence from china's manufacturing sector. Journal of Intellectual Capital, 23(2), 313–341. https://doi.org/10.1108/jic-08-2019-0189

Yang, L., & Pan, Z. (2019). Dynamic relationship between financial flexibility and performance — moderating effect of financing constraint and agency cost. Research on Economics and Management, 40(04), 125–144. https://doi.org/10.13502/j.cnki.issn1000-7636.2019.04.010

Yang, Q., Yao, Y., & Liu, Y. (2018). Empirical analysis on the performance model of financial listed companies-from the financial data verification of financial listed companies in the financial industry in 2017. DEStech Transactions on Economics, Business and Management, 125–136.

Yung, K., Li, D. D., & Jian, Y. (2015). The value of corporate financial flexibility in emerging countries. Journal of Multinational Financial Management, 32–33, 25–41. https://doi.org/10.1016/j.mulfin.2015.07.001

Zhang, M. (2020). Does resource bricolage inhibit entrepreneurship? — the moderating effect test based on environmental uncertainty and government-business relation. Studies in Science of Science, 38(05), 886–894. https://doi.org/10.16192/j.cnki.1003-2053.2020.05.014

Zhao, H., & Zhang, D. (2010). A research on the essential characteristics of corporate financial flexibility. Accounting Research, 06, 62-69+96.

Zhou, X., Cai, Z., Tan, K. H., Zhang, L., Du, J., & Song, M. (2021). Technological innovation and structural change for economic development in china as an emerging market. Technological Forecasting and Social Change, 167, 120671. https://doi.org/10.1016/j.techfore.2021.120671

Zhou, Y., Zhu, H., Yang, J., & Zou, Y. (2021). Does ceo power backfire? the impact of ceo power on corporate strategic change. Sustainability, 13(16), 8847. https://doi.org/10.3390/su13168847