Routledge
Taylor & Francis Group

Economic Research-Ekonomska Istraživanja

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rero20

Business strategy and sustainability of Chinese SMEs: determining the moderating role of environmental uncertainty

YuHang Zhang, Sultan Sikandar Mirza, Raheel Safdar, ChengMing Huang & Chengwei Zhang

To cite this article: YuHang Zhang, Sultan Sikandar Mirza, Raheel Safdar, ChengMing Huang & Chengwei Zhang (2023) Business strategy and sustainability of Chinese SMEs: determining the moderating role of environmental uncertainty, Economic Research-Ekonomska Istraživanja, 36:3, 2218468, DOI: 10.1080/1331677X.2023.2218468

To link to this article: https://doi.org/10.1080/1331677X.2023.2218468

Published online: 05 Jun 2023.

ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA
2023, VOL. 36, NO. 3, 2218468
https://doi.org/10.1080/1331677X.2023.2218468

Business strategy and sustainability of Chinese SMEs: determining the moderating role of environmental uncertainty

YuHang Zhang[a], Sultan Sikandar Mirza[a], Raheel Safdar[b], ChengMing Huang[c] and Chengwei Zhang[d]

[a]University of Waikato Institute (NZUWI), Hangzhou City University, Hangzhou, China; [b]UVAS Business School, University of Veterinary and Animal Sciences, Lahore, Pakistan; [c]Waikato Management School, University of Waikato, Hamilton, New Zealand; [d]The Krieger School of Arts and Sciences-Advanced Academic Programs, John Hopkins University, Washington, DC, USA

ABSTRACT

This paper investigates the relationship between business strategy and sustainability of Chinese SMEs and how the environmental uncertainty may affect this relationship. It analyses the impact of active and passive business strategies on firms' sustainability and tests the potential moderating role of economic policy uncertainty in this relationship. The empirical analysis is performed by employing fixed-effect and GMM estimations on data collected from 937 Chinese A-share non-financial companies listed on the Shanghai and Shenzhen stock exchanges from 2010 to 2021. The results show that the high-risk active business strategy of innovation and new market development is associated with greater business sustainability, and this relationship is stronger for SMEs than for non-SMEs in China. Moreover, higher economic policy uncertainty strengthens the positive relationship between active business strategy and firm sustainability, implying that in periods of higher environmental uncertainty firms which pursue active business strategy achieve greater business sustainability. These findings are useful for devising business strategy and can assist in formulating policy initiatives seeking to ensure sustainable development of SMEs in China.

ARTICLE HISTORY
Received 17 May 2022
Accepted 19 May 2023

KEYWORDS
Corporate business strategy; sustainability; environmental uncertainty; Chinese SMEs

JEL CODES
C23; G30; G32; L26

1. Introduction

Small and medium-sized enterprises (SMEs) are the backbone of most economies worldwide (Ren et al., 2015) and their sustainability is vital for employment generation and economic growth (Casado-Belmonte et al., 2020). In China, which is world's second-largest economy and most typical representative of the developing countries,

CONTACT Sultan Sikandar Mirza smirza@waikato.ac.nz
This article has been corrected with minor changes. These changes do not impact the academic content of the article.

SMEs account for more than 50% of GDP (Sham & Pang, 2014) and they lead in job creation. Guiding SMEs' healthy and sustainable growth is critical to increase economic, social, and environmental capital, leading to higher overall competitiveness (Schwab et al., 2017). The sustainable growth of an enterprise is affected by efficacy of its strategic decisions as well as how well it responds to challenges posed by external environment. The appropriateness of enterprise's business strategy is critical for sustainable growth, especially for SMEs considering the scarcity and limitations of their organizational resources (González-Díaz et al., 2021; Islam et al., 2020).

SMEs need to optimally utilize their existing resources and pursue appropriate business strategies to strengthen their competitiveness and to ensure sustainability (Wijethilake, 2017). Lack of strategic planning is associated with short life in Chinese SMEs (Zhang, 2021). While appropriate business strategy is critical for sustainability (Gali et al., 2020) the choice of business strategy can be related to firms' risk-bearing capacity (Miles et al., 1978). Firms pursuing high-risk (active) strategy of innovation actively seek to develop new products and markets and actively pursue new potential investment opportunities leading to stable development (Akbar et al., 2017). Zhang (2021) finds that increasing R&D reduces the fixed asset ratio, improving the company's overall financial sustainability. On the other hand, too, firms' pursuance of low risk (passive) business strategy, such as hiring more skilled employees to reduce performance risk and increase operational efficiencies, can contribute to their competitiveness and future stable growth.

Moreover, the efficacy of business strategy would be affected by the challenges posed by the external environment, such as economic policy uncertainty (EPU hereafter) and economic or political shocks, having adverse ramifications for firms' growth (Fabuš et al., 2021; Panousi & Papanikolaou, 2012). Higher environmental uncertainty can restrict firms' funding channels and hinder their economic activity and investment decisions (Baker et al., 2016; Davig & Foerster, 2019), thus diminishing the efficacy of business strategy for business sustainability. This study investigates how the business strategy may affect the sustainability of firms, particularly SMEs in China, and whether higher environment uncertainty reduces the efficacy of business strategy for firms' sustainability. The extant literature lacks, as per authors' knowledge, such a study, particularly in the context of Chinese SMEs, and there is need to understand, especially from policy perspective, how Chinese SMEs' strategy choices pan out for their sustainable growth when they face high uncertainty in their external environment.

This study finds that pursuing active business strategy (of innovation and market development) is associated with greater business sustainability, and this relationship is stronger for SMEs than for non-SMEs in China. And, in periods of higher economic policy uncertainty, the firms pursuing active business strategy are associated with greater sustainability than the firms pursuing passive business strategy. Moreover, higher economic policy uncertainty strengthens the positive relationship between active business strategy and firm sustainability, implying that in periods of higher environmental uncertainty firms which pursue active business strategy achieve greater business sustainability. The findings of this study contribute to fledgling literature on business strategy and environmental uncertainty in multiple

ways. Firstly, it offers guidance for corporations in devising effective business strategy and it underscores the importance of business strategy in navigating environmental uncertainties. Secondly, it establishes that active business strategy is more conducive for SMEs' sustainability in the face of higher external environment uncertainties in China. Thirdly, the findings of this study may guide in devising appropriate governmental policy initiatives seeking to ensure sustainable development of SMEs in China.

The rest of the paper is structured as follows: Section 2 reviews relevant literature and develop testable hypothesis. Section 3 delineates the research design of the study. Section 4 contains results and analysis. And section 5 concludes this study.

2. Literature review and hypothesis development

2.1. Corporate business strategy and sustainability

The corporate business strategy provides the direction and goal for the enterprise's future development and is an essential basis for enterprises to pursue stable growth (Parnell et al., 2015). Successful strategic behavior fortifies corporate competitiveness and financial performance (Kumar et al., 2012), and helps enterprises to adapt to the environment and deal with foreseeable difficulties. In pursuing sustainable growth firms may differ in their strategic risk tolerance. Firms with higher strategic risk tolerance pursue high-risk strategies of innovation and market expansion to get sustainable competitive advantage (Liu & Atuahene-Gima, 2018). A firm's competitive advantage, as per resource-based theory, can be associated with internal resources. However, acquiring new and inimitable resources can provide firms with a strategic edge in long-term development (Barney et al., 2021). By increasing investment in innovation and expanding into new markets firms try to enhance their performance and pursue sustainable growth (Akbar et al., 2017; Wijethilake, 2017). In contrast, enterprises with low strategic risk tolerance adopt low-risk strategies (Linton & Kask, 2017) and are more motivated to take advantage of the current product market and pay attention to services and efficiency to put themselves in an advantageous position (Bentley et al., 2013).

SMEs' strategic risk tolerance and innovation performance has recently been focused in China (Zheng et al., 2021). The high-risk strategic behavior, as manifested through higher R&D expenditure and market expansion, is conducive to improving market share and stable development of enterprises (Jankelová & Joniaková, 2022). In contrast, the strategic behavior of risk avoidance, such as by increasing the proportion of highly skilled employees, can help enterprises reduce overall performance risks by reducing human error, thus enhancing the efficiency of enterprise operations and becoming the power source of sustainable development (Bilan et al., 2020). Hence, we hypothesize that:

H1a: High-risk (active) business strategy is positively associated with the sustainability of Chinese firms.

H1b: Low-risk (passive) business strategy is positively associated with the sustainability of Chinese firms.

2.2. Environmental uncertainty, corporate business strategy, and sustainability

In an uncertain economic environment, the sustainable development of enterprises may waver due to increased probability of conflict in managerial outlook (Kaplan, 2008). Furthermore, economic policy uncertainty (EPU) increases firms financial & operational risks (Gilchrist et al., 2014) and the cost of financing (Bradley et al., 2016). According to the real-option theory, when the investment is irreversible, the uncertainty of economic policy increases the value and attractiveness of the firm's option to wait, forcing firms to halt or reduce investments (Hambrick, 1983). Therefore, it is important to consider how the interaction of environmental uncertainty and corporate strategy affects enterprise sustainability. An increase in uncertainty resulting from economic or political shocks can have a direct impact on the long-term growth and sustainability of businesses (Panousi & Papanikolaou, 2012) by raising the danger of strategy failures (Ahsan et al., 2021). Baker et al. (2016) and Xu et al. (2021) show that a higher economic policy uncertainty leads to a fall in the enterprise economy.

China is a rapidly evolving economy characterized with frequent adaptations of economic policies to the changing environment and governmental priorities (Guo et al., 2020). Mirza and Ahsan (2020) show that environmental uncertainty makes Chinese enterprises more worried about future profitability, leading them to reduce risk-taking and increase precautionary cash holdings. In conformity with real options theory, we reason that as the economy becomes more uncertain the companies which initially pursued high-risk expansion plans may be inclined to cut back on investment and hence weakening the linkage between business strategy and sustainability. Thus we hypothesize that

H2: Environmental uncertainty reduces the impact of corporate business strategy on firm sustainability.

H2a: Environmental uncertainty reduces the impact of high-risk (active) business strategy on firm sustainability.

H2b: Environmental uncertainty reduces the impact of low-risk (passive) business strategy on firm sustainability.

2.3. Environmental uncertainty, corporate business strategy and sustainability in SMEs versus Non-SMEs

The fundamental difference between SMEs and non-SMEs lies in resources (Gerlach-Kristen et al., 2013). Resource-based theory illustrates that organizational resource differences are an important factor affecting strategy and performance (Yuchen & Fangjie, 2019). Wenzel et al. (2020) find that management teams of SMEs with an entrepreneurial spirit, risk-taking, and innovation willingness are more likely to formulate tactical strategies to improve performance. The corporate risk-taking is though often considered a strategic goal in many firms, Gilmore et al. (2004) suggest that some SMEs leaders think differently and view behaviors such as investing in R&D and expanding markets as a risk rather than a strategic goal. For such small and medium-sized enterprises, although they do not actively research and develop the market, they can save resources in the value creation activities vital to the organization's survival through cost control and other means (Rosenbusch et al., 2011).

However, SMEs usually have greater flexibility and quickly respond to external shocks due to their relatively smart decision-making structures and they better optimize existing resources within the company, alleviating the challenges brought by environmental uncertainty (Gali et al., 2020). In contrast, large companies usually have more complex organizational structures, greater inertia, and have a specific decision lag. They may be slower in adapting newer technologies and methods and they may suffer from the adverse ramifications of external shocks for relatively longer periods (Aguilar-Fernández & Otegi-Olaso, 2018).

Moreover, when facing external environmental shocks, SMEs that implement low-risk strategies deliberately slow down the implementation speed due to limited resources. Their primary purpose is to overcome temporary difficulties to sustain long-term development (Cardoza et al., 2015). In contrast, large enterprises can rely on attracting institutional attention to obtain government privileges, particularly in China, when the external environment is challenging their sustainable development. Because they often exhibit the unique characteristic of being "too big to fail" (Narooz & Child, 2017). Hence, we hypothesize that.

H3: Business strategy has stronger effects on sustainability for SME's than for non-SMEs.

H4: Environmental uncertainty weakens the impact of corporate business strategy on firm sustainability more for Chinese SMEs than for non-SMEs.

3. Research design

3.1. Data and sample selection

This paper uses data from 937 Chinese non-financial companies listed on the Shanghai and Shenzhen stock exchanges between 2010 and 2021. The required financial data is sourced from the China Securities Market and Accounting Research (CSMAR) database. Firms marked as ST (special treatment), *ST (special treatment with delisting risk), and PT (particular transfer) are excluded from the sample. The small and medium-sized enterprises (SMEs) are organizations with a code beginning with "3" on the GEM (Growth Enterprise Market) board. Corporate strategy is quantified using the Bentley et al. (2013) discrete strategy comprehensive measurement model, a comprehensive index constructed utilizing six index scales, as shown in Table 1. This paper adopts the comprehensive index of sustainable growth used by Ahsan et al. (2021) and others to assess an enterprise's capacity for sustainable growth (see Table 2). And following Baker et al. (2016) and Mirza and Ahsan (2020) this study uses Economic Policy Uncertainty (EPU) as a proxy for environmental uncertainty and its standardized index is taken from www.policyuncertainty.com.

3.2. Measurement of variables

3.2.1. Firm's sustainable growth

Following Ahsan et al. (2022), this study develops a measure of company's capacity for sustainable growth by employing factor analysis. Nine financial indicators across four dimensions, i.e., profitability, operating capacity, solvency, and solvency, are

Table 1. Variable definitions.

Variable type	Variable name	Variable code	Variable description
Dependent variable	Sustainable Growth Rate	$SUST_{it}$	Firm's Sustainable Growth Evaluation Index. A firm's sustainable growth ability is measured by four dimensions (profitability, operating capacity, solvency, and development capacity) and nine financial indicators (Specific segmentation indicators are shown in Table 2)
Independent variable	Corporate Business Strategy	$STRA_{it}$	Strategic Compound Measurements Index is calculated by six indicators (See Table 3 for concrete indicators). Note: Firms with above-average index value are considered pursuing high-risk (active) strategies (ASit) and firms with below-average index value are considered pursuing low-risk (passive) strategies (PSit).
Moderating variable	Economic Policy Uncertainty	EPU_t	Economic policy uncertainty (EPU) index as employed by BBaker et al. (2016) and MMirza and Ahsan (2020) obtained from *www.policyuncertainty.com.*
Control variables	Green Office	GFi_t	Funding for green projects/firms using green business operations; take 1 if companies take the green office practice, otherwise 0
	Tobin's Q	$TOBQ_{it}$	The average of Tobin's Q of a firm
	Size	$SIZE_{it}$	The log of the total assets of a firm
	Leverage	LEV_{it}	Total liabilities divided by total assets of a firm
	State Ownership	SOE_{it}	Dummy variable assuming value 1 for state owned firms and 0 otherwise.
	Number of employees	$NUMOEM_{it}$	Total number of employees of a firm

Source: CSMAR and www.policyuncertainty.com.

Table 2. Firm's sustainable growth evaluation index.

Evaluation	Indicator	Measurement
Profitability	Return on Assets	Net income divided by total assets
	Return on Equity	Net profit divided by net asset
Operating Capacity	Total Asset Turnover	Ratio of operating income to total assets
	Accounts Receivable Turnover	Ratio of revenue to accounts receivable
Solvency	Current Ratio	Current assets divided by current liabilities
	Quick Ratio	(Current assets - Inventory) divided by current liabilities
	Cash Ratio	Cash and cash equivalents divided by current liabilities
Development Ability	Growth Rate of Total Asset	(End-of-year total assets - total assets at the start of the period) / total assets at the start of the period
	Growth Rate of Net Asset	(End-of-year net assets - net assets at the start of the period) / net assets at the start of the period

Source: CSMAR and www.policyuncertainty.com.

synthesized using factor analysis (see Table 2 for details). The higher value of thus generated factor indicates the greater capacity for sustainable growth. Kaiser–Meyer–Olkin (KMO) and Bartlett tests are used to confirm the suitability of individual variables for factor analysis.

3.2.2. Measuring corporate strategy

Corporate business strategy is measured using the discrete strategy comprehensive index developed by Bentley et al. (2013). The values of six indicators (see Table 3) are averaged over five years. Firms with index value above mean are categorized as firms pursuing high-risk (active) business strategy whereas firms with index value below mean are categorized as firms pursuing low-risk (passive) business strategy. Businesses with active strategies are continually developing new products and technology to identify new market opportunities and adapt to economic changes

Table 3. Strategic compound measurements index.

	Indicator	Description
1	The Tendency to Develop New Products	R&D Investment / Operating Income
2	Productivity	Operating Income / Number of Employees
3	Historical Growth Level	Growth Rate of Operating Income
4	Marketing Efforts	(Cost of Sales + Management Fee) / Operating Income
5	Organizational Stability	Rate of Employee Volatility
6	Intensity of Fixed Assets	Net Fixed Assets / Total Assets

Source: CSMAR and www.policyuncertainty.com.

(Liu & Atuahene-Gima, 2018). They are distinguished by their commitment to product differentiation and rapid expansion (Monios & Bergqvist, 2017). These businesses typically operate on a "high risk, high reward" basis. Companies with a passive strategy minimize risks and do not actively pursue new products or market development prospects (Linton & Kask, 2017). These firms are generally steady, and they are more likely to maintain an established product market, owing to their organizational stability (Monios & Bergqvist, 2017).

3.3. Econometric model

To examine the effect of business strategies on the sustainability of Chinese firms (i.e., to test hypotheses H1a and H1b) we estimate the following regression equation (1):

$$SUST_{it} = \beta_0 + \beta_1 STRA_{it} + \beta_2 CONT_{it} + YR_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where SUSTit denotes sustainability for the ith firm at time t, and STRAit denotes business strategy for the ith firm at time t. CONTit denotes firm-specific control variables (see Table 1) for the ith firm at time t. YR_t is the time fixed effects and μ_i is the firm fixed effects, ε_{it} accounts for the idiosyncratic effects.

Further, to investigate the moderating effects of economic policy uncertainty (EPU) on the hypothesized relationship between business strategy and sustainability of Chinese firms (i.e., to test hypotheses H2, H2a, and H2b) we estimate equation (2).

$$SUST_{it} = \beta_0 + \beta_1 SUST_{it-1} + \beta_2 SUST_{it-2} + \beta_3 STRA_{it} + \beta_4 EPU_t + \beta_5 STRA_{it} * EPU_t + \beta_6 CONT_{it} + YR_t + \mu_i + \varepsilon_{it} \quad (2)$$

Because current sustainability is likely not independent of past periods hence, we incorporate two lags of sustainability in the equation (2) and employ GMM estimations to account for endogeneity. EPU_t is economic policy uncertainty at time t. $STRA_{it} * EPU_t$ is the interaction term between strategy and EPU, capturing the moderating effects of EPU in the relationship between business strategy and sustainability. Finally, to test hypotheses H3 and H4, this study categorizes the sample firms into SMEs and non-SMEs and re-estimates equations (1) and (2) separately for each subgroup.

4. Results and analysis

4.1. Descriptive statistics

Table 4 presents descriptive statistics for overall sample in panel A and the same for subsamples of SMEs and non-SMEs are presented in panel B and panel C respectively. Corporate sustainability (SUST) has maximum and minimum values of 631.593 and −607.767 respectively, with a standard deviation of 16.328. SUST exhibit sufficient variation in overall as well as subsamples of SMEs and Non-SMEs. The average value of STRA is 2.376, with standard deviation of 0.445. Its maximum value is 3.178 and, as the variable is logarithmically transformed, its minimum value is 0. Greenoffice (GF) has an average value of 2.376, with 0 and 1 being the minimum and maximum values respectively. Tobin's Q (TOBQ) has mean value of 1.899 with a standard deviation of 1.644. Leverage (LEV) has a mean value of 0.502 with minimum and maximum values 0.012 and 1.484 respectively. The median firm in our sample has 4372 employees. The mean value of SOE is 0.22, implying that in about 22% of the observations the firms are owned by the state. The mean value of economic policy uncertainty (EPU) is 205.077, with maximum and minimum values of 390.388 and 92.114, respectively, indicating that during our sample period the environmental uncertainty was high and there was sufficient fluctuation in the level of uncertainty. The descriptive statistics for SMEs and non-SMEs also reveal sufficient variation in variables. The average value of SUST is higher (5.797) for SMEs than that in non-SMEs (4.391). SMEs on average have lower leverage (0.398) than that in non-SMEs (0.531). And SMEs on average have higher value of Tobin's Q (2.476) than those in non-SMEs (1.834). SMEs outperform non-SMEs in green energy

Table 4. Descriptive statistics.

Panel A: Complete sample: No. of firms = 937; No. of firm-year observations: 6424

	SUST	STRA	GF	TOBQ	SIZE	LEV	SOE	NUMOEM	EPU
Mean	4.913	2.376	0.321	1.899	23.229	0.502	0.224	12847.100	205.077
STD.	16.328	0.445	0.467	1.644	1.407	0.197	0.417	32840.500	112.557
Median	4.352	2.441	0.000	1.463	23.098	0.515	0.000	4372.000	129.314
Min.	−607.767	0.000	0.000	0.713	18.892	0.012	0.000	13.000	92.114
Max.	631.593	3.178	1.000	65.484	28.510	1.484	1.000	552810.000	390.388

Panel B: SMEs: No. of firms = 274; No. of firm-year observations: 1337

	SUST	STRA	GF	TOBQ	SIZE	LEV	SOE	NUMOEM	EPU
Mean	5.797	2.559	0.447	2.476	22.510	0.398	0.358	6579.055	234.502
STD.	8.739	0.398	0.497	1.544	1.098	0.183	0.480	16497.630	115.671
Median	4.508	2.639	0.000	2.015	22.440	0.390	0.000	2911.000	206.639
Min.	−30.482	0.000	0.000	0.789	19.852	0.012	0.000	110.000	92.114
Max.	142.187	3.178	1.000	14.609	26.309	0.847	1.000	229154.000	390.388

Panel C: non-SMEs: No. of firms = 171; No. of firm-year observations: 1306

	SUST	STRA	GF	TOBQ	SIZE	LEV	SOE	NUMOEM	EPU
Mean	4.113	2.355	0.312	1.834	23.534	0.531	0.191	13197.050	192.729
STD.	23.856	0.460	0.463	2.418	1.290	0.207	0.394	18201.960	109.204
Median	4.391	2.398	0.000	1.368	23.439	0.562	0.000	5846.500	125.715
Min.	−607.767	0.000	0.000	0.734	19.648	0.016	0.000	13.000	92.114
Max.	76.471	3.178	1.000	65.484	28.214	1.484	1.000	134897.000	390.388

Source: CSMAR and www.policyuncertainty.com.

Table 5. Pairwise correlation.

Variables	SUST	STRA	GF	TOBQ	SIZE	LEV	SOE-NonSOE	NUMOEM	EPU	VIF
SUST	1									
STRA	0.0767***	1								1.0000
GF	0.0192	0.1378***	1							1.0200
TOBQ	0.0688	0.1646***	0.0627***	1						1.0400
SIZE	0.0343***	0.0376***	0.0171	−0.3705***	1					1.1100
LEV	−0.0707***	0.1014***	−0.0183	−0.3339***	0.4949***	1				1.0900
SOE	0.024	0.1025***	0.0739***	0.1109***	0.1869***	0.0903***	1			1.0400
NUMOEM	0.0112	0.0136***	0.0178	−0.1176***	0.53***	0.1568***	0.093***	1		1.0400
EPU	−0.0219***	−0.0132	0.0402***	−0.0788***	0.1379***	−0.0608***	0.0464***	0.0096	1	1.0300

Note: This table presents pairwise correlation results. SUST is the firm's sustainable growth evaluation index. STRA is a strategic compound measurements index. GF is 1 if the companies take green office practice, otherwise takes 0. TOBQ is the Tobin's Q of a firm. SIZE is the natural log of a company's total assets. LEV is total liabilities to total assets of a firm. SOE is a dummy variable and takes 1 if the companies are state-owned, otherwise takes 0. NUMOEM is the total number of employees of a firm. EPU is the economic policy uncertainty (EPU) index following Baker et al. (2016) and Mirza and Ahsan (2020).
*$p < 0.100$ ** $p < 0.05$ *** $p < 0.01$.
Source: CSMAR and www.policyuncertainty.com.

conservation and industrial return on investment. Non-SMEs have a larger scale (SIZE) and more employees (NUMOEM) than SMEs. Finally, the EPU on average has lower value (192.729) in subsample of non-SMEs than that for SMEs (234.502). It implies that in subsample analysis more observations of non-SMEs belong to periods of lower economic policy uncertainty.

4.2. Pairwise correlation matrix

Table 5 presents the pairwise Pearson correlation among variables. As expected, sustainability (SUST) has significantly positive correlation with strategy (STRA). And SUST has significantly negative correlation with economic policy uncertainty (EPU), indicating that external uncertainty adversely affects the business sustainability. Moreover, SUST is significantly positively correlated with SIZE and significantly negatively correlated with leverage (LEV). Interestingly, strategy (STRA) is not significantly correlated with economic policy uncertainty. The maximum value of VIF is 1.11, suggesting that all variables are suitable for regression estimation and face no risk of autocorrelation.

4.3. Regression analysis

4.3.1. Firm business strategy and sustainability

Table 6 presents the regression estimations of equation (1) for entire sample (in columns 1 to 3) as well as for the subsamples of SMEs (in columns 4 to 6), and non-SMEs (in columns 7 to 9). The business strategy, which is our primary independent variable, is used in three forms. Firms having value of business strategy index (Baker et al., 2016) above the mean value are categorized as having high-risk active business strategy (AS) and firms having value of business strategy index below mean are categorized as having low-risk passive business strategy (PS). Moreover, an overall measure of business strategy is computed by logarithmic transformation of firms business strategy index score (LNS).

Column 1 in Table 6 tabulates regression results for overall sample where AS (active strategy) is employed as measure of business strategy. The coefficient on AS

Table 6. Impact of corporate business strategy on the sustainability of companies.

	Overall			SMEs			Non-SMSs		
Dependent Variable: SUST	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GF	−0.349	−0.0526	−0.0851	−0.366	−0.746	−0.158	0.875	−0.122	0.729
	(0.684)	(1.054)	(0.649)	(1.030)	(0.867)	(0.690)	(2.814)	(0.982)	(1.890)
TOBQ	0.562***	2.694***	0.770***	2.170***	2.652***	2.266***	0.245	2.685***	0.0041
	(0.157)	(0.597)	(0.197)	(0.365)	(0.360)	(0.239)	(0.347)	(0.604)	(0.327)
SIZE	1.558	−3.408**	1.259	−7.028***	1.951	−0.925	7.930**	−0.788	13.09***
	(0.992)	(1.386)	(0.812)	(1.636)	(1.215)	(0.916)	(3.318)	(1.272)	(2.140)
LEV	−0.461	2.743	−17.90***	−0.633	−16.07***	−7.109**	0.925	−18.63***	−68.31***
	(3.408)	(4.366)	(2.789)	(5.249)	(3.506)	(3.057)	(14.13)	(3.792)	(7.525)
SOE	0.157	1.725	0.0751	−0.942	−1.114 (0.997)	−1.685	1.040	2.725	−0.15
	(1.379)	(2.340)	(1.306)	(2.141)		(1.027)	(5.433)	(2.258)	(3.731)
NUMOEM	−0.0001*	−0.0001	−0.0000	0.0001**	0.0002	0.0001*	−0.0002	0.0000	−0.0001
	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0002)	(0.0000)	(0.0001)	(0.0001)	(0.0001)
AS	0.536***			0.974***			1.105**		
	(0.133)			(0.252)			(0.525)		
PS		0.651***			0.413**			0.13	
		(0.216)			(0.161)			(0.201)	
LNS			2.632***			4.955***			−2.409
			(0.914)			(1.203)			(2.425)
Observations	3212	3216	6424	707	630	1337	639	667	1,305
No. of firms	714	606	937	190	166	274	131	127	171
Constant	−34.86	72.62**	−18.4	139.0***	−41.31	13.61	−188.0**	28.63	−246.3***
	(21.68)	(31.04)	(17.75)	(35.13)	(25.86)	(19.46)	(73.35)	(28.83)	(47.32)
R2	0.0304	0.0282	0.0227	0.1874	0.2163	0.1406	0.0389	0.1582	0.1037
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The table presents the regression analysis results to investigate the impact of corporate business strategy on the sustainability of Chinese firms and the different effects corporate business strategy has on SME companies and non-SME companies. SME companies are small and medium enterprises. SUST is the firm's sustainable growth evaluation index. STRA is a strategic compound measurement index. GF is 1 if the companies take green office practice, otherwise takes 0. TOBQ is the average of Tobin's Q of a firm. SIZE is the natural log of a company's total assets. LEV is total liabilities to the total assets of a firm. SOE-non-SOE takes 1 if the companies are state-owned, otherwise takes 0. NUMOEM is the total number of employees of a firm. AS is the active strategy of companies. PS is the passive strategy of companies. LNS is the logarithm of the comprehensive strategy.
*$p < 0.100$, **$p < 0.05$, ***$p < 0.01$.
Source: CSMAR and www.policyuncertainty.com.

(0.536) is significantly positive, suggesting that the higher intensity of pursuing active business strategy is associated with greater business sustainability. Next, in column 2, where we employ passive strategy (PS) to represent business strategy the coefficient on PS is positive and highly significant. As the lower values of PS represent the passiveness of business strategy, the positive (0.651) coefficient on PS suggests that lower passiveness is associated with higher business sustainability. These findings support our first hypothesis (H1a) that high-risk (active) business strategy is positively associated with business sustainability. These findings are corroborated when we use LNS as measure of business strategy (the results are reported in column 3 of Table 6). The significantly positive coefficient on LNS (2.632) suggest that firms' pursuance of active business strategy (i.e., innovation and new markets development) is associated with greater firm sustainability.

Next, the results from subsample analysis of SMEs and non-SMEs suggest that overall business strategy (LNS) is significantly positively associated with greater firm sustainability in SMEs (see column 6 in Table 6) but the same is insignificant for non-SMEs (see column 9 in Table 6). This lends support to our hypothesis (H3), i.e., *business strategy has stronger effects on sustainability for SME's than for non-SMEs.* The results are similar when we us PS as measure of business strategy. However, when we use AS as measure of business strategy, the coefficient on AS is also significant (though on 5%) for non-SOEs. In overall, we conclude that business strategy is more strongly associated with sustainability in SMEs than in non-SMEs.

4.3.2. Firm business strategy, environmental uncertainty, and sustainability

Table 7 presents the GMM estimations for equation (2) which aim to test the moderating effect of environmental uncertainty, as measured through economic policy uncertainty (EPU), on the relationship between business strategy and firm sustainability. The results are reported for overall sample (in columns 1 to 3) as well as for subsamples of SMEs (in columns 4 to 6) and non-SMEs (in columns 7 to 9).

The coefficient on the interaction term between business strategy and environmental uncertainty (LNS*EPU) is of major concern as it captures the hypothesized moderating effect of EPU in the relationship between business strategy and sustainability. The reported coefficients (see column 3) on overall business strategy (STRA), economic policy uncertainty (EPU), and their interaction (LNS*EPU) are all significantly positive. It suggests that higher EPU strengthens the positive relationship between LNS and SUST. It implies that in periods of higher environmental uncertainty firms who pursue business strategy of innovation and new market development are associated with higher business sustainability. This goes against our hypothesis (H2), i.e., environmental uncertainty reduces the impact of corporate business strategy on firm sustainability. Instead, it suggests that pursuing high-risk business strategies of innovation and market development increases the likelihood of business sustainability in periods of higher environmental uncertainty.

However, when we categorize business strategy into active (high-risk) strategy (AS) and passive (low-risk) strategy (PS), the coefficients on the interaction of business strategy and EPU (AS*EPU in column 1 and PS*EPU in column 2) are significantly negative. The significantly negative coefficient on AS*EPU (-0.0014) in column 1

Table 7. The moderating impact of EPU on the relationship between corporate business strategy and sustainability.

	Overall			SMEs			Non-SMEs		
Dependent Variable: SUST	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GF	−0.222	0.0774	0.046	−0.487*	−1.610***	−1.142***	−0.535***	−1.107***	2.348***
	(0.240)	(0.345)	(0.191)	(0.275)	(0.454)	(0.416)	(0.144)	(0.364)	(0.587)
TOBQ	0.0329	2.454***	0.253	1.211***	0.826***	0.919***	0.0180	1.581***	0.196***
	(0.0323)	(0.446)	(0.160)	(0.102)	(0.127)	(0.175)	(0.0175)	(0.306)	(0.0394)
SIZE	−1.787***	−10.70***	−3.609***	−2.984***	2.654***	−2.413***	−2.406***	−2.132***	18.59***
	(0.544)	(0.986)	(0.582)	(0.480)	(0.658)	(0.623)	(0.121)	(0.374)	(1.223)
LEV	2.034	58.38***	19.81***	1.769	−20.42***	1.865	11.68***	0.716	−92.26***
	(2.240)	(3.786)	(2.075)	(1.852)	(2.271)	(2.475)	(0.890)	(1.213)	(2.630)
SOE	−0.591	−2.153	0.0029	−2.451**	−3.660***	−3.621***	−0.489***	−0.990**	−0.819
	(0.554)	(1.795)	(0.694)	(0.971)	(0.630)	(0.803)	(0.131)	(0.392)	(1.105)
NUMOEM	0.0000	0.0000	0.0001*	0.0001	0.0006***	0.0000	0.0000	0.0004***	−0.0001
	(0.0000)	(0.0000)	(0.0001)	(0.0002)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(-0.0001)
STRA	0.612***	0.772***	4.432***	0.0011	−0.163	4.854***	0.118***	−0.110	5.323***
	(0.111)	(0.259)	(0.789)	(0.139)	(0.121)	(1.105)	(0.0416)	(0.0769)	(1.376)
EPU	0.0228**	0.0377***	0.0225***	−0.0042	−0.0063	0.0392***	−0.0317***	0.0028	0.0540***
	(0.0095)	(0.0078)	(0.0065)	(0.0096)	(0.0038)	(0.0127)	(0.0030)	(0.0019)	(0.0129)
Lag1-SUST	0.0670***	−0.0104***	0.0494***	0.457***	0.248***	0.549***	0.0843***	0.0011	0.243***
	(0.0093)	(0.0016)	(0.0026)	(0.0276)	(0.0175)	(0.0240)	(0.0165)	(0.0015)	(0.0094)
Lag2-SUST	0.0345***	−0.0046***	−0.158***	0.0066	−0.131***	−0.0233**	−0.0863***	0.0144***	−0.246***
	(0.0046)	(0.0016)	(0.0040)	(0.0093)	(0.0139)	(0.0095)	(0.0034)	(0.00228)	(0.0090)
AS*EPU	−0.0014**			0.0004			0.0020***		
	(0.0006)			(0.0005)			(0.0002)		
PS*EPU		−0.0024***			0.0003			0.0007**	
		(0.0009)			(0.0004)			(0.0003)	
LNS*EPU			0.0076***			0.0136***			0.0425***
			(0.0027)			(0.0051)			(0.0060)
Constant	35.36***	209.9***	67.12***	66.89***	−47.56	41.68***	55.84***	45.73***	−390.5***
	(12.64)	(23.50)	(13.84)	(11.50)	(14.86)	(14.92)	(3.006)	(8.611)	(27.69)
Observations	1,985	2099	5142	407	366	983	395	438	1,079
No. of firms	514	466	863	137	119	246	92	101	158
Firm effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The table presents the results of regression analysis to investigate the impact of corporate business strategy on the sustainability of Chinese firms and the different effects corporate business strategy has on SME companies and Non-SME companies. SME companies are small and medium enterprises. GF is 1 if the companies take green office practice, otherwise takes 0. TOBQ is the average of Tobin's Q of a firm. SIZE is the natural log of a company's total assets. LEV is total liabilities to the total assets of a firm. SOE-non-SOE takes 1 if the companies are state-owned, otherwise takes 0. NUMOEM is the total number of employees of a firm. STRA is a strategic compound measurements index. EPU is the economic policy uncertainty (EPU) index followed by Baker et al. (2016) and Mirza and Ahsan (2020). Lag1-SUST and Lag2-SUST are the first and second-order lag terms of SUST, respectively. AS*EPU is the interaction term of the active strategy with the Economic Policy Uncertainty (EPU) Index. PS*EPU is the interaction term of the passive strategy with the EPU index. LNS*EPU is the interaction term of the logarithm of the comprehensive strategy with the EPU index.

*$p < 0.100$, **$p < 0.05$, ***$p < 0.01$.

Source: CSMAR and www.policyuncertainty.com.

implies that, for subgroup of firms pursuing active (high-risk) business strategy, the relationship between business strategy and sustainability weakens in periods of high economic policy uncertainty. This is in line with our expectations in hypothesis H2a, i.e., environmental uncertainty reduces the impact of high-risk (active) business strategy on firm sustainability. Next, the significantly negative coefficient on PS*EPU (-0.0024) in column 2 implies that, for subgroup of firms pursuing passive (low-risk) business strategy, in periods of high economic policy uncertainty the relationship between business strategy and sustainability weakens. This also is in line with our expectations in hypothesis H2b, i.e., Environmental uncertainty reduces the impact of low-risk (passive) business strategy on firm sustainability.

In overall, the results in columns 1 to 3 of Table 7 suggest that the effects of both the active business strategy and passive business strategy weakens for business sustainability in periods of higher economic policy uncertainty, but the firms pursuing active business strategy of innovation and new market development are associated with greater sustainability than firms pursuing passive business strategy in periods of higher economic policy uncertainty.

The results from subsample analysis of SME and non-SMEs (see columns 6 and 9 in Table 7) also report significantly positive coefficient on LNS*EPU. It implies that in periods of high economic policy uncertainty pursuing active business strategy of innovation and market development is conducive for business sustainability of SMEs as well as non-SMEs. However, when we categorize business strategy into active (high-risk) strategy (AS) and passive (low-risk) strategy (PS), the coefficients on the interaction of business strategy and EPU (AS*EPU and PS*EPU) are significantly positive for non-SMEs but are insignificant for SMEs. It implies that environmental uncertainty does not moderate the effects of Active (or passive) business strategy for sustainability in subgroup of SMEs. However, for subgroup of non-SMEs, higher environmental uncertainty accentuates the role of active (or passive) business strategy for business sustainability. It does not lend empirical support to our hypothesis H4, i.e., environmental uncertainty weakens the impact of corporate business strategy on firm sustainability more for Chinese SMEs than for non-SMEs. In overall, the moderation analysis suggests that, contrary to our expectations, the economic policy uncertainty magnifies the positive effects of active business strategy for firms' sustainability in China. To ensure the robustness of our findings we performed analysis using alternate estimation techniques and an alternate measure of business sustainability (obtained from CSMAR). The unreported results conform largely to our reported findings.

5. Conclusion

This study explores the impact of active and passive business strategies on firms' sustainability and analyses how external environment uncertainty may affect this relationship. Based on data of 937 Chinese A-share non-financial companies listed on the Shanghai and Shenzhen stock exchanges from 2010 to 2021 this study finds that active business strategy of innovation and new market developments is positively associated with firms sustainability. And this positive relationship is stronger for

SMEs than for non-SMEs in China. However, the passiveness of business strategy is negatively associated with firms' sustainability in Chinese SMEs. Next, the moderation analysis finds that economic policy uncertainty strengthens the positive relationship between active business strategy and firms sustainability in China. It implies that in periods of high economic policy uncertainty pursuing active business strategy of innovation and market development is conducive for business sustainability. The findings of this study are important as it may offer guidance in devising appropriate business strategy to navigate environmental uncertainties, and it may guide in devising appropriate governmental policy initiatives seeking to ensure sustainable development of SMEs in China. Further, given the prevalence of state-owned enterprises in China, the future studies may investigate how state-ownership may affect the efficacy of business strategy for firms sustainability in periods of high external uncertainties.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Aguilar-Fernández, M. E., & Otegi-Olaso, J. R. (2018). Firm size and the business model for sustainable innovation. *Sustainability*, *10*(12), 4785. https://doi.org/10.3390/su10124785

Ahsan, T., Al-Gamrh, B., & Mirza, S. S. (2022). Economic policy uncertainty and sustainable financial growth: Does business strategy matter? *Finance Research Letters*, *46*, 102381. https://doi.org/10.1016/j.frl.2021.102381

Ahsan, T., Mirza, S. S., Al-Gamrh, B., Bin-Feng, C., & Rao, Z.-U.-R. (2021). How to deal with policy uncertainty to attain sustainable growth: The role of corporate governance. *Corporate Governance: The International Journal of Business in Society*, *21*(1), 78–91. https://doi.org/10.1108/CG-04-2020-0121

Akbar, S., Kharabsheh, B., Poletti-Hughes, J., & Shah, S. Z. A. (2017). Board structure and corporate risk taking in the UK financial sector. *International Review of Financial Analysis*, *50*, 101–110. https://doi.org/10.1016/j.irfa.2017.02.001

Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, *131*(4), 1593–1636. https://doi.org/10.1093/qje/qjw024

Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-based theory and the value creation framework. *Journal of Management*, *47*(7), 1936–1955. https://doi.org/10.1177/01492063211021655

Bentley, K. A., Omer, T. C., & Sharp, N. Y. (2013). Business strategy, audit fees and financial reporting irregularities. *Contemporary Accounting Research*, *30*(2), 780–817. https://doi.org/10.1111/j.1911-3846.2012.01174.x

Bilan, Y., Mishchuk, H., Roshchyk, I., & Joshi, O. (2020). Hiring and retaining skilled employees in SMEs: Problems in human resource practices and links with organizational success. *Business: Theory and Practice*, *21*(2), 780–791. https://doi.org/10.3846/btp.2020.12750

Bradley, D., Pantzalis, C., & Yuan, X. (2016). Policy risk, corporate political strategies, and the cost of debt. *Journal of Corporate Finance*, *40*, 254–275. https://doi.org/10.1016/j.jcorpfin.2016.08.001

Cardoza, G., Fornes, G., Li, P., Xu, N., & Xu, S. (2015). China goes global: Public policies' influence on small-and medium-sized enterprises' international expansion. *Asia Pacific Business Review*, *21*(2), 188–210. https://doi.org/10.1080/13602381.2013.876183

Casado-Belmonte, M. d. P., Marín-Carrillo, G. M., Terán-Yépez, E., & Capobianco-Uriarte, M. d. l. M. (2020). What is going on with the research into the internationalization of small

and medium-sized enterprises (SMEs)? An intellectual structure analysis into the state-of-the-art (1990–2018). *Publications*, *8*(1), 11. https://doi.org/10.3390/publications8010011

Davig, T., & Foerster, A. (2019). Uncertainty and fiscal cliffs. *Journal of Money, Credit and Banking*, *51*(7), 1857–1887. https://doi.org/10.1111/jmcb.12562

Fabuš, M., Dudáš, T., & Cihelková, E. (2021). Business environment analysis based on the Doing Business: Case study Slovakia. *Insights into Regional Development*, *3*(3), 56–65. https://doi.org/10.9770/IRD.2021.3.3(3)

Gali, N., Niemand, T., Shaw, E., Hughes, M., Kraus, S., & Brem, A. (2020). Social entrepreneurship orientation and company success: The mediating role of social performance. *Technological Forecasting and Social Change*, *160*, 120230. https://doi.org/10.1016/j.techfore.2020.120230

Gerlach-Kristen, P., O'Connell, B., & O'Toole, C. (2013). *SME credit constraints and macroeconomic effects*.

Gilchrist, S., Sim, J. W., & Zakrajšek, E. (2014). *Uncertainty, financial frictions, and investment dynamics*.

Gilmore, A., Carson, D., & O'Donnell, A. (2004). Small business owner-managers and their attitude to risk. *Marketing Intelligence & Planning*, *22*(3), 349–360. https://doi.org/10.1108/02634500410536920

González-Díaz, R. R., Guanilo-Gómez, S. L., Acevedo-Duque, Á. E., Campos, J. S., & Cachicatari Vargas, E. (2021). Intrinsic alignment with strategy as a source of business sustainability in SMEs. *Entrepreneurship and Sustainability Issues*, *8*(4), 377–388. https://doi.org/10.9770/jesi.2021.8.4(22)

Guo, A., Wei, H., Zhong, F., Liu, S., & Huang, C. (2020). Enterprise sustainability: Economic policy uncertainty, enterprise investment, and profitability. *Sustainability*, *12*(9), 3735. https://doi.org/10.3390/su12093735

Hambrick, D. C. (1983). Some tests of the effectiveness and functional attributes of Miles and Snow's strategic types. *Academy of Management Journal. Academy of Management*, *26*(1), 5–26. https://doi.org/10.5465/256132

Islam, D. M. Z., et al. (2020). COVID-19 and Financial Performance of SMEs: Examining the nexus of entrepreneurial self-efficacy, entrepreneurial resilience and innovative work behavior. *Revista Argentina de Clínica Psicológica*, *29*(3), 587. https://doi.org/10.24205/03276716.2020.761

Jankelová, N., & Joniaková, Z. (2022). Strategic decision making and innovative performance of micro and small enterprises. *Entrepreneurship and Sustainability Issues*, *9*(3), 242–264. https://doi.org/10.9770/jesi.2022.9.3(15)

Kaplan, S. (2008). Framing contests: Strategy making under uncertainty. *Organization Science*, *19*(5), 729–752. https://doi.org/10.1287/orsc.1070.0340

Kumar, K., Boesso, G., Favotto, F., & Menini, A. (2012). Strategic orientation, innovation patterns and performances of SMEs and large companies. *Journal of Small Business and Enterprise Development*, *19*(1), 132–145. https://doi.org/10.1108/14626001211196442

Linton, G., & Kask, J. (2017). Configurations of entrepreneurial orientation and competitive strategy for high performance. *Journal of Business Research*, *70*, 168–176. https://doi.org/10.1016/j.jbusres.2016.08.022

Liu, W., & Atuahene-Gima, K. (2018). Enhancing product innovation performance in a dysfunctional competitive environment: The roles of competitive strategies and market-based assets. *Industrial Marketing Management*, *73*, 7–20. https://doi.org/10.1016/j.indmarman.2018.01.006

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational strategy, structure, and process. *The Academy of Management Review*, *3*(3), 546–562. https://doi.org/10.5465/amr.1978.4305755

Mirza, S. S., & Ahsan, T. (2020). Corporates' strategic responses to economic policy uncertainty in China. *Business Strategy and the Environment*, *29*(2), 375–389. https://doi.org/10.1002/bse.2370

Monios, J., & Bergqvist, R. (2017). Identifying competitive strategies for each phase of the intermodal terminal life cycle. *Research in Transportation Business & Management*, *23*, 97–105. https://doi.org/10.1016/j.rtbm.2017.02.007

Narooz, R., & Child, J. (2017). Networking responses to different levels of institutional void: A comparison of internationalizing SMEs in Egypt and the UK. *International Business Review*, *26*(4), 683–696. https://doi.org/10.1016/j.ibusrev.2016.12.008

Panousi, V., & Papanikolaou, D. (2012). Investment, idiosyncratic risk, and ownership. *The Journal of Finance*, *67*(3), 1113–1148. https://doi.org/10.1111/j.1540-6261.2012.01743.x

Parnell, J. A., Long, Z., & Lester, D. (2015). Competitive strategy, capabilities and uncertainty in small and medium sized enterprises (SMEs) in China and the United States. *Management Decision*, *53*(2), 402–431. https://doi.org/10.1108/MD-04-2014-0222

Ren, S., Eisingerich, A. B., & Tsai, H.-T. (2015). How do marketing, research and development capabilities, and degree of internationalization synergistically affect the innovation performance of small and medium-sized enterprises (SMEs)? A panel data study of Chinese SMEs. *International Business Review*, *24*(4), 642–651. https://doi.org/10.1016/j.ibusrev.2014.11.006

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, *26*(4), 441–457. https://doi.org/10.1016/j.jbusvent.2009.12.002

Schwab, L., Gold, S., Kunz, N., & Reiner, G. (2017). Sustainable business growth: Exploring operations decision-making. *Journal of Global Responsibility*, *8*(1), 83–95. https://doi.org/10.1108/JGR-11-2016-0031

Sham, T., & Pang, I. (2014). China's SMEs development. *Monthly economic newsletter*.

Wenzel, M., Stanske, S., & Lieberman, M. B. (2021). Strategic responses to crisis. *Strategic Management Journal*, *42*(2). https://doi.org/10.1002/smj.3161

Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of Environmental Management*, *196*, 569–582. https://doi.org/10.1016/j.jenvman.2017.03.057

Xu, Y., Wang, J., Chen, Z., & Liang, C. (2021). Economic policy uncertainty and stock market returns: New evidence. *The North American Journal of Economics and Finance*, *58*, 101525. https://doi.org/10.1016/j.najef.2021.101525

Yuchen, Z., & Fangjie, W. (2019). R&D cooperation: A perspective based on transaction cost and resource-based theory. *Science Research Management*, *40*(8), 1.

Zhang, D. (2021). Corporate innovativeness and risk management of small firms–evidences from start-ups. *Finance Research Letters*, *42*, 102374. https://doi.org/10.1016/j.frl.2021.102374

Zheng, Y., Li, C., & Liu, Y. (2021). Impact of environmental regulations on the innovation of SMEs: Evidence from China. *Environmental Technology & Innovation*, *22*, 101515. https://doi.org/10.1016/j.eti.2021.101515