

Economic policy uncertainty and merger activity in China



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ABSTRACT

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The paper intends to analyze the effect of Economic Policy Uncertainty (EPU) on merger and acquisition (M&A) deals, scale, and payment method in China. Based on 3183 M&A deals from 2007 to 2019 in the Chinese financial market, the paper builds some regression models to test the impact of EPU on merger activities. The empirical results imply that M&A deals have a positive relationship with EPU, and state-owned enterprises (SOEs) are more likely to make M&As during periods of high EPU than non-SOEs. Besides, the Belt and Road Initiative significantly promotes M&A activities. EPU has a significant negative effect on the transaction scale of M&A deals, while there is no evidence that it has significant influence on the payment method. The findings provide further evidence of EPU's relationship with M&A and enrich the discussion of EPU's impact on corporate decisions.

JEL Classification:

G34; G38.

Contribution/ Originality: This study uses real-world data to look into how EPU affects Chinese companies' M&A activities, such as deals, the size and method of payment for M&A, and the role of the Belt and Road Initiative.

1. INTRODUCTION

Numerous studies have identified that EPU has a significant impact on asset pricing in financial markets and also influences corporate decisions. For instance, Al-Thaqeb and Algharabali (2019) review the massive research that uses the EPU index of Baker, Bloom, and Davis (2016) to summarize the effect of EPU. For instance, EPU has remarkable influence on stock markets (Pastor & Veronesi, 2012, 2013) bond markets (Li, Zhang, & Gao, 2015), risk management (Bernal, Gnabo, & Guilmin, 2016), and corporate behavior (Kahle & Stulz, 2013). To be more specific, EPU may decelerate firms' investments (Gulen & Ion, 2016) reduce IPOs (Colak, Durnev, & Qian, 2017), lower capital structure (Im, Kang, & Shon, 2020) increase cash holding (Feng, Lo, & Chan, 2022; Phan, Nguyen, Nguyen, & Hegde, 2019; Zhao & Niu, 2023) cut the innovation (Bhattacharya, Hsu, Tian, & Xu, 2017), impact credit spreads (Kaviani, Kryzanowski, Maleki, & Savor, 2020), and affect trade credit and firm value (Jory, Khieu, Ngo, & Phan, 2020), etc.

Since the previous empirical literature has proved the effect of EPU on corporate investment, and as one of the most important forms of corporate investment, M&As will therefore inevitably be affected by EPU. In existing literature, there is also much evidence that shows the impact of uncertainty on M&A activity.

Firstly, EPU has negative effects on M&As. For example, Bonaime, Gulen, and Ion (2018) analyze how the EPU affects M&A activity using a dataset of 151,925 M&A deals from 1985 to 2014. They find that the EPU has a negative impact on M&A activity at both the macro and micro levels through the real options channel, and types of policy uncertainty have the most significant negative impact on M&A probability. Borthwick, Ali, and Pan (2020) replicate the work of Bonaime, et al. (2018) using M&A samples from US companies and Chinese companies between 2003 and 2017. They find that EPU hurts M&As in both the US and China. Adra, Barbopoulos, and Saunders (2020) use the dataset of 12,350 M&As in the U.S. between 1986 and 2017 to analyze the influences of monetary policy on M&A performances and find that M&As are accompanied by lower acquirer value when the monetary policy uncertainty is high, and the decline in M&As is highly related to monetary contraction. However, they limit their sample to US public firms. Wang, Shen, Tang, Wu, and Ma (2021) explore the effect of trade policy uncertainty on firm risk-taking by using Chinese listed firm data from 2007 to 2019 and find that trade policy uncertainty has a significantly negative correlation with firm risk-taking, which implies that firms may shrink M&As during high EPU periods. Their work only discusses the role of trade policy in China, not EPU's total effect.

Secondly, EPU promotes M&As. For instance, Sha, Kang, and Wang (2020) choose 4188 M&A deals for listed Chinese companies from 2001 to 2018 and discover that Chinese companies tend to buy more during times of high EPU. Besides, SOEs are less likely to make M&A deals than non-SOEs, and SOEs are also less likely to only pay cash for their acquisitions. However, their research fails to consider the influence of the Belt and Road Initiative.

Thirdly, EPU's effect depends on the types of M&As. Gregoriou, Nguyen, Nguyen, Le, and Hudson (2021) examine the impact of EPU on cross-border M&As using a sample of 23 countries from 2003 to 2016. They find a negative correlation between EPU and inbound acquisitions, but a positive correlation with outbound deals. They also discover that acquirers are more likely to use stock as a payment method and offer lower acquisition premiums to target firms at higher EPU levels. Zhou, Kumar, Yu, and Jiang (2021) discuss how EPU affects the entry mode choice of Chinese OFDI. They use data from 2000 to 2013 to show that EPU does play a big role in the entry mode, and as EPU goes down, cross-border M&As go up. Even though their work includes data from China, their papers mainly talk about the cross-border M&As.

Based on these results, the literature doesn't agree on how EPU affects M&As. For example, some scholars think that EPU encourages M&A deals, while others believe that they are negatively related. Besides, the research works care more about EPU's influence on M&A scale and payment method, while the analysis on the influence of The Belt and Road Initiative is very limited. Considering the fact that plenty of M&As occurred in China's financial market in the past few years, this paper tries to examine the relation between EPU and M&As in China.

The aim and contribution of the paper is to empirically clarify the following important research questions: (1) How does EPU affect the M&A deals (both domestic M&As and cross-border M&As)? (2) How does EPU affect M&A scale and payment method? (3) What is the Belt and Road Initiative's effect on M&As? This paper uses data from listed Chinese companies from 2007 to 2019 to add to the current research and finds that (1) EPU does improve the likelihood of M&As; (2) EPU has a significant negative impact on the size of M&As, and there is no significant connection between EPU and the method of payment; and (3) the Belt and Road Initiative greatly encourages M&As.

The paper is organized as follows: Section 2 presents the hypothesis, the data, and the variables; Section 3 displays the empirical results; Section 4 describes the robustness tests; Section 5 concludes the paper.

2. HYPOTHESIS, DATA AND VARIABLES

2.1 Hypothesis

Based on the existing literature, the Hypothesis are proposed as follows.

With high policy uncertainty, firms may choose to cut down the budget for investment and reserve more cash within the firm in order to cope with future unclear situations. In this way, firms may make less M&As to keep more resources inside the corporations for normal operations. I propose the first hypothesis:

Hypothesis 1. Firms Make Less M&As During High EPU Periods.

Central or local governments typically provide stronger support to SOEs, thereby heavily influencing their decisions. During periods of high policy uncertainty, SOEs may become more conservative compared with non-SOEs, which will lead to less M&A activities. The second hypothesis takes the following form:

Hypothesis 2. SOEs Make Less M&As During High EPU Periods.

In view of the lower probability of M&As during a higher uncertainty phase, the transaction scale will definitely reduce to some extent. So, I put forward the third hypothesis:

Hypothesis 3. M&A Transaction Scale is Lower During High EPU Periods.

Firms can use cash, stock, bonds, assets, or debt as payment methods for M&A deals. In high-uncertainty circumstances, firms tend to hold more cash to respond to unexpected situations, which reduces the chance of using only cash payments for M&A deals and increases the possibility of other payment methods. The fourth hypothesis is offered as:

Hypothesis 4. Acquirers use Less Cash for M&A Deals During High EPU Periods.

After the Belt and Road Initiative was proposed in 2013, more Chinese corporations tried to expand overseas markets under the policy incentives in order to respond positively to the calls. The fifth hypothesis is set as:

Hypothesis 5. The Belt and Road Initiative promotes M&A Deals Regardless of the Policy Uncertainty.

2.2. Sample Data

The China Accounting Standards Committee promulgated new accounting standards in 2006, and they began implementation in 2007. In order to avoid the statistical error caused by the change in accounting standards and evade the huge shock of COVID-19, this paper collects the M&A deals in the Chinese market from January 2007 to December 2019 from WIND and CSMAR (China Stock Market & Accounting Research Database), and all acquirers are listed Chinese companies on Shanghai Stock Exchanges or Shenzhen Stock Exchanges.

If an acquirer is in the financial industry, they are not included in the sample. Also, M&A deals that are not completed or were unsuccessful are not included. Acquirers with incomplete accounting data are deleted. Only the first M&A deal is considered if an acquirer makes multiple deals within a year. Finally, M&A deals that involve selling assets, replacing assets, restructuring debt, buying back shares, or dealings with related parties are not included. To avoid the effects of extreme values, the 1% and 99% quantiles of variables are tailed using the winsorize method. After selecting the M&A deals, the sample contains 3183 M&A deals and 27722 firm-year observations.

Panels A, B, and C of Table 1 show the distribution of M&A deals by industry, year, and payment method, respectively.

It can be seen from Table 1 that the number of M&A deals is mainly in the manufacturing industry, among which 90% are domestic, while only a few occurred in the accommodation and education industries. M&A deals increase numerously from 2007 to 2019, with a sharp increase from 2012 to 2015, but a slight decrease since 2016. Moreover, cash payments account for nearly 80% of M&A deals.

Table 1. The distribution of M&A deals.

	Total M&A deals	Domestic M&As (Both the acquirer and the target are domestic companies)	Cross-border M&As (The acquirer is domestic companies, and the target is foreign firms)
Panel A: The distribution of M&As by industry			
1 Mining	49	41	8
2 Utilities	80	79	1
3 Real estate	58	56	2
4 Architecture	74	70	4
5 Transportation	34	34	0
6 Education	7	7	0
7 Research and technology service	47	46	1
8 Agriculture, forestry, animal husbandry and fishery	40	37	3
9 Wholesale and retail	102	96	6
10 Water conservancy, environment and public facilities management	81	78	3
11 Health and social work	66	63	3
12 Culture, sports and entertainment	59	58	1
13 Information transmission, software and information technology services	411	395	16
14 Manufacturing	2011	1914	97
15 Accommodation and catering	5	4	1
16 Leasing and business services	59	56	3
Total	3183	3034	149
Panel B: The distribution of M&As by year			
2007	15	14	1
2008	21	18	3
2009	33	32	1
2010	19	19	0
2011	79	75	4
2012	165	158	7
2013	226	221	5
2014	332	314	18
2015	546	519	27
2016	520	488	32
2017	499	476	23
2018	409	389	20
2019	319	311	8
Total	3183	3034	149
Panel C: The distribution of M&As by payment method			
Asset	3	3	0
Cash	2659	2515	144
Stock	111	110	1
Bond	0	0	0
Debt	1	1	0
Cash and asset	2	2	0
Cash and stock	391	389	2
Cash and debt	12	10	2
Others	4	4	0
Stock and asset	0	0	0
Total	3183	3034	149

2.3. Variables

According to Zhou, Guo, Hua, and Doukas (2015); Nguyen and Phan (2017); Bonaime et al. (2018) and Sha et al. (2020) the following key variables are chosen for this study.

2.3.1. Dependent Variables

- (1) M&A deals: Dummy variable; value equals 1 if there is a completed M&A deal, otherwise 0.
- (2) M&A scale: The natural logarithm of the trading expense of the M&A deal.

(3) M&A payment method: Dummy variable; value equals 1 if the acquirer uses only cash as a payment method, otherwise 0.

2.3.2. Independent Variables

EPU: The natural logarithm of the average of the EPU index of Baker et al. (2016) over the last year of an M&A announcement. The EPU index built by Huang and Luk (2020) will be used in robust analysis.

2.3.3. Control Variables

This paper uses firm size, market-to-book ratio, leverage, return on asset, firm age, cash to assets, financing constraints, ownership concentration, SOE, and overconfidence as control variables.

The detailed definition of all variables is shown in Table 2.

Table 2. Variable descriptions.

Variables	Symbol	Description
M&A deals	mae	Dummy variable, value equals 1 if there are completed M&A deals, otherwise 0.
M&A scale	mas	The natural logarithm of the trading expense of the deal.
M&A payment method	mpay	Dummy variable, value equals 1 if the acquirer uses only cash as a payment method, otherwise 0.
Economic policy uncertainty	epu	The natural logarithm of the average of the EPU index of Baker et al. (2016) over the last year of an M&A announcement.
Firm size	size	The natural logarithm of the market value of assets, which equals (Book value of assets + market value of equity – book value of equity)
Market-to-book ratio	mb	Market-to-book ratio = (Market value of equity + book value of assets – book value of equity) / Book value of assets.
Leverage	lev	Book value of debt divided by market value of assets.
Return on asset	roa	Net income divided by book value of assets.
Age	age	Length of years that the acquirer gets listed till the M&A announcement.
Cash to assets	cash	Operating cash holding divided by book value of assets.
Financing constraints	sa	Follow Hadlock and Pierce (2010) use SA index represents the extent of financing constraints, which is $ -0.737 \times \text{size} + 0.043 \times \text{size}^2 - 0.040 \times \text{age} $
Ownership concentration	chold	Shareholding ratio of the largest shareholder.
SOE	soe	Dummy variable, value equals 1 if the acquirer is SOE, otherwise 0.
Overconfidence	overcon	Dummy variable, value equals 1 if management (including board of directors)'s shareholding increases, otherwise 0.
The belt and road initiative	obor	Dummy variable, value equals 1 if the acquisition occurs after 2013, otherwise 0.

3. EMPIRICAL ANALYSIS

3.1. Regression Model

To investigate the impact of EPU on M&A deals, the following panel probit model is built:

Model 1:

$$\begin{aligned} mae_{i,t} = & \alpha_0 + \alpha_1 epu_{i,t-1} + \alpha_2 size_{i,t-1} + \alpha_3 mb_{i,t-1} + \alpha_4 lev_{i,t-1} + \alpha_5 roa_{i,t-1} + \alpha_6 age_{i,t-1} + \alpha_7 cash_{i,t-1} \\ & + \alpha_8 sa_{i,t-1} + \alpha_9 chold_{i,t-1} + \alpha_{10} soe_{i,t-1} + \alpha_{11} epu_{i,t-1} * soe_{i,t-1} + \alpha_{12} overcon_{i,t-1} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

To examine the impact of EPU on the scale of M&As, the following panel regression model is used:

Model 2:

$$\begin{aligned} mas_{i,t} = & \beta_0 + \beta_1 epu_{i,t-1} + \beta_2 size_{i,t-1} + \beta_3 mb_{i,t-1} + \beta_4 lev_{i,t-1} + \beta_5 roa_{i,t-1} + \beta_6 age_{i,t-1} + \beta_7 cash_{i,t-1} \\ & + \beta_8 sa_{i,t-1} + \beta_9 chold_{i,t-1} + \beta_{10} soe_{i,t-1} + \beta_{11} epu_{i,t-1} * soe_{i,t-1} + \beta_{12} overcon_{i,t-1} + \xi_{i,t} \end{aligned} \quad (2)$$

To analyze the impact of EPU on payment method of M&As, the following panel probit model is proposed:

Model 3:

$$mpay_{i,t} = \gamma_0 + \gamma_1 epu_{i,t-1} + \gamma_2 size_{i,t-1} + \gamma_3 mb_{i,t-1} + \gamma_4 lev_{i,t-1} + \gamma_5 roa_{i,t-1} + \gamma_6 age_{i,t-1} + \gamma_7 cash_{i,t-1} \\ + \gamma_8 sa_{i,t-1} + \gamma_9 chold_{i,t-1} + \gamma_{10} soe_{i,t-1} + \gamma_{11} epu_{i,t-1} * soe_{i,t-1} + \gamma_{12} overcon_{i,t-1} + \eta_{i,t} \quad (3)$$

3.2. Empirical Results

3.2.1. Descriptive Statistics

According to the summary statistics of the variables for full sample shown in Table 3, some of the variables have a higher difference among the samples. For instance, the average market-to-book ratio for the full sample is 2.927, with the highest level of 13.879 and the lowest level of 0.905. The average leverage ratio is 23.2%, with the highest level of 79.6% and the lowest level of 0.9%. The average return on assets is 3.5%, with the highest level being 19.9% and the lowest level being -33.6%. Similarly, the average financing constraints level is 4.956, with the highest level of 9.594 and the lowest level of 2.774. The average shareholding ratio of the largest shareholder is 34.9%, with the highest level of 74.9% and the lowest level of 8.8%.

Table 3. Summary statistics for full sample.

Variables	Obs.	Mean	Std. dev.	Min	Max
mae	27722	0.115	0.319	0	1
epu	27722	5.195	0.572	4.229	6.000
size	27722	22.816	1.047	20.937	26.142
mb	27722	2.927	2.193	0.905	13.879
lev	27722	0.232	0.192	0.009	0.796
roa	27722	0.035	0.070	-0.336	0.199
age	27722	10.346	6.999	1	26
cash	27722	0.044	0.074	-0.194	0.249
sa	27722	4.956	1.319	2.774	9.594
chold	27722	0.349	0.149	0.088	0.749
soe	27722	0.391	0.488	0	1
overcon	27722	0.493	0.500	0	1

According to Table 4, which shows a summary of the variables for the M&A subsample, the average market-to-book ratio for this subsample is 3.404, with a high point of 13.879 and a low point of 0.905. The average leverage ratio is 18.2%, with the highest level of 79.6% and the lowest level of 0.9%. The average return on assets is 4.5%, with the highest level being 19.9% and the lowest level being -33.6%. Similarly, the average financing constraints level is 5.244, with the highest level of 9.594 and the lowest level of 2.774. The average shareholding ratio of the largest shareholder is 32.8%, with the highest level of 74.9% and the lowest level of 8.8%. These variables also have a higher difference among the samples.

Table 4. Summary statistics for M&A subsample.

Variables	Obs.	Mean	Std. dev.	Min	Max
mas	3183	18.165	1.923	1.909	25.193
mpay	3183	0.706	0.456	0	1
epu	3183	5.285	0.522	4.229	6.000
size	3183	23.010	0.930	20.937	26.142
mb	3183	3.404	2.397	0.905	13.879
lev	3183	0.182	0.156	0.009	0.796
roa	3183	0.045	0.051	-0.336	0.199
age	3183	8.304	6.396	1	26
cash	3183	0.035	0.068	-0.194	0.249
sa	3183	5.244	1.241	2.774	9.594
chold	3183	0.328	0.140	0.088	0.749
soe	3183	0.179	0.384	0	1
overcon	3183	0.693	0.461	0	1

By comparing the summary statistics in Table 3 and Table 4, i.e., between the full sample and M&A subsample, it can be seen that firms that made acquisitions usually have larger size, higher market-to-book ratio, lower leverage, higher return on assets, and lower ownership concentration. Besides, M&As seem to tend to occur during high EPU periods.

3.2.2. Correlation Test

In Table 5, Table 6, and Table 7, you can see the results of the correlation test between M&A deals, the size of M&A transactions, and the way M&A payments are made, along with the variables that help explain them.

Table 5. Correlation test results of M&A deals.

Variables	mae	epu	size	mb	lev	roa	age	cash	sa	chold	soe	overcon
mae	1.000											
epu	0.057 (0.000)	1.000										
size	0.067 (0.000)	0.111 (0.000)	1.000									
mb	0.079 (0.000)	-0.101 (0.000)	-0.109 (0.000)	1.000								
lev	-0.093 (0.000)	0.054 (0.000)	0.387 (0.000)	-0.564 (0.000)	1.000							
roa	0.050 (0.000)	-0.026 (0.001)	0.131 (0.000)	0.117 (0.000)	-0.284 (0.000)	1.000						
age	-0.105 (0.000)	0.095 (0.000)	0.197 (0.000)	-0.166 (0.000)	0.358 (0.000)	-0.196 (0.000)	1.000					
cash	-0.041 (0.000)	0.030 (0.000)	0.114 (0.000)	0.015 (0.629)	-0.083 (0.000)	0.295 (0.000)	-0.036 (0.000)	1.000				
sa	0.079 (0.000)	0.060 (0.000)	0.881 (0.000)	-0.104 (0.000)	0.326 (0.000)	0.141 (0.000)	0.114 (0.000)	0.119 (0.000)	1.000			
chold	-0.051 (0.000)	-0.072 (0.000)	0.201 (0.000)	-0.091 (0.000)	0.092 (0.000)	0.129 (0.000)	-0.094 (0.000)	0.098 (0.000)	0.236 (0.000)	1.000		
soe	-0.156 (0.000)	-0.154 (0.000)	0.206 (0.000)	-0.231 (0.000)	0.337 (0.000)	-0.077 (0.000)	0.417 (0.000)	0.029 (0.000)	0.209 (0.000)	0.216 (0.000)	1.000 (0.000)	
overcon	0.144 (0.000)	0.126 (0.000)	-0.058 (0.000)	0.143 (0.000)	-0.252 (0.000)	0.117 (0.000)	-0.424 (0.000)	-0.003 (1.000)	-0.044 (0.000)	-0.155 (0.000)	-0.416 (0.000)	1.000 (0.000)

Note: The value in () is the p-test value of correlation coefficient.

Table 6. Correlation test results of M&A scale.

Variables	mas	epu	size	mb	lev	roa	age	cash	sa	chold	soe	overcon
mas	1.000											
epu	-0.080 (0.000)	1.000										
size	0.255 (0.000)	-0.020 (1.000)	1.000									
mb	-0.008 (1.000)	-0.203 (0.000)	0.156 (0.000)	1.000								
lev	0.117 (0.000)	0.155 (0.000)	0.222 (0.000)	-0.584 (0.000)	1.000							
roa	-0.001 (1.000)	-0.045 (0.537)	0.106 (0.000)	0.228 (0.000)	-0.297 (0.000)	1.000						
age	-0.013	0.123	-0.061	0.031	-0.012	-0.048	1.000					

Variables	mas	epu	size	mb	lev	roa	age	cash	sa	chold	soe	overcon
	(1.000)	(0.000)	(0.037)	(0.996)	(1.000)	(0.357)						
cash	0.017 (1.000)	-0.020 (1.000)	0.011 (1.000)	0.018 (1.000)	-0.002 (1.000)	-0.006 (1.000)	-0.040 (0.792)	1.000				
sa	-0.053 (0.170)	0.063 (0.026)	-0.072 (0.004)	0.080 (0.000)	-0.123 (0.000)	0.016 (1.000)	0.170 (0.000)	0.037 (0.903)	1.000			
chold	-0.011 (1.000)	-0.046 (0.475)	-0.067 (0.009)	0.011 (1.000)	-0.023 (1.000)	0.016 (1.000)	-0.094 (1.000)	0.091 (0.000)	0.039 (0.854)	1.000		
soe	-0.044 (0.593)	-0.035 (0.970)	-0.093 (0.000)	-0.050 (0.283)	-0.006 (1.000)	-0.006 (1.000)	0.399 (0.000)	0.004 (1.000)	0.196 (0.000)	0.091 (0.000)	1.000	
overcon	0.012 (1.000)	0.036 (0.941)	0.077 (0.001)	-0.006 (1.000)	0.016 (1.000)	0.008 (1.000)	-0.405 (0.000)	0.007 (1.000)	-0.037 (0.915)	-0.144 (0.000)	-0.392 (0.000)	1.000

Note: The value in () is the p-test value of correlation coefficient.

Table 7. Correlation test results of M&A payment method.

Variables	mpay	epu	size	mb	lev	roa	age	cash	sa	chold	soe	overcon
mpay	1.000											
epu	0.092 (0.000)	1.000										
size	-0.011 (1.000)	-0.020 (1.000)	1.000									
mb	-0.118 (0.000)	-0.203 (0.000)	0.156 (0.000)	1.000								
lev	0.122 (0.000)	0.155 (0.000)	0.222 (0.000)	-0.584 (0.000)	1.000							
roa	0.031 (0.996)	-0.045 (0.537)	0.106 (0.000)	0.228 (0.000)	-0.297 (0.000)	1.000						
age	0.007 (1.000)	0.123 (0.000)	-0.061 (0.037)	0.031 (0.996)	-0.012 (1.000)	-0.048 (0.357)	1.000					
cash	-0.024 (1.000)	-0.020 (1.000)	0.011 (1.000)	0.018 (1.000)	-0.002 (1.000)	-0.006 (1.000)	-0.040 (0.792)	1.000				
sa	-0.023 (1.000)	0.063 (0.026)	-0.072 (0.004)	0.080 (0.000)	-0.123 (0.000)	0.016 (1.000)	0.170 (0.000)	0.037 (0.903)	1.000			
chold	0.022 (1.000)	-0.046 (0.475)	-0.067 (0.009)	0.011 (1.000)	-0.023 (1.000)	0.016 (1.000)	-0.094 (0.000)	0.091 (0.000)	0.039 (0.854)	1.000		
soe	0.041 (0.740)	-0.035 (0.970)	-0.093 (0.000)	-0.050 (0.283)	-0.006 (1.000)	-0.006 (1.000)	0.399 (0.000)	0.004 (1.000)	0.196 (0.000)	0.091 (0.000)	1.000	
overcon	-0.018 (1.000)	0.036 (0.941)	0.077 (0.001)	-0.006 (1.000)	0.016 (1.000)	0.008 (1.000)	-0.405 (0.000)	0.007 (1.000)	-0.037 (0.915)	-0.144 (0.000)	-0.392 (0.000)	1.000

Note: The value in () is the p-test value of correlation coefficient.

3.2.3. Regression Analysis

According to Hausman Test results, Random effect models are more suitable for the regression analysis. The following discussion will describe the empirical evidence of EPU's effect on the likelihood, transaction scale, and payment method of M&As in China.

3.2.3.1. EPU and the Likelihood of Making M&As

The empirical results shown in Panel A of Table 8 indicate that the coefficients of EPU are positive and significant, which means that firms make more acquisitions when EPU is high, and thus against Hypothesis 1. This finding is the same as Sha et al. (2020) who also find that firms in China are more likely to make M&As at a high EPU stage. But the result is contrary to Nguyen and Phan (2017) and Borthwick et al. (2020) who identify that EPU has a negative relation with M&As. The SOE dummy has a negative and significant coefficient, but the interaction between EPU and the SOE dummy is positive. This means that EPU has a bigger effect on the M&A deals of SOEs than on deals involving non-SOEs, which goes against Hypothesis 2. Firms' policy environment changed after the Belt and Road Initiative was proposed in 2013, which may affect the result, so I divide the sample into two stages, before 2013 and after 2013, and also use a year dummy variable (OBOR, dummy variable, value equals 1 if the acquisition is after 2013, otherwise 0). Panel B of Table 8 shows the regression results that prove the Belt and Road Initiative does, in fact, make M&As more likely. This supports Hypothesis 5.

Table 8. EPU and the likelihood of making M&As.

Panel A									
mae	Coef.	z	P> z	Coef.	z	P> z			
epu	0.390**	2.06	0.040	0.363*	1.92	0.055			
size	0.037**	2.22	0.027	0.038**	2.24	0.025			
mb	-0.014**	-2.28	0.022	-0.014**	-2.35	0.019			
lev	-0.679***	-7.69	0.000	-0.683***	-7.73	0.000			
roa	0.621***	3.24	0.001	0.605***	3.15	0.002			
age	-0.015***	-7.75	0.000	-0.015***	-7.85	0.000			
cash	-1.551***	-9.95	0.000	-1.544***	-9.89	0.000			
sa	0.129***	10.77	0.000	0.129***	10.78	0.000			
chold	-0.412***	-5.25	0.000	-0.415***	-5.28	0.000			
soe	-0.362***	-12.19	0.000	-0.813***	-3.33	0.001			
epu*soe				0.086**	1.86	0.063			
overcon	0.141***	5.42	0.000	0.140***	5.41	0.000			
_cons	-4.340***	-4.26	0.000	-4.198***	-4.14	0.000			
	LR test of rho=0: Chibar2(01) = 697.04 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 675.50 Prob >= Chibar2 = 0.000					
Panel B									
mae	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z
	Before 2013			After 2013			Year dummy		
epu	0.647***	2.59	0.009	-0.216***	-3.94	0.000	0.099	0.62	0.533
size	-0.012	-0.35	0.727	0.054***	2.76	0.006	0.036**	2.16	0.031
mb	-0.034**	-1.98	0.047	-0.010	-1.55	0.121	-0.014**	-2.31	0.021
lev	-0.767***	-4.23	0.000	-0.644***	-6.23	0.000	-0.676***	-7.65	0.000
roa	1.110**	2.25	0.024	0.627***	2.99	0.003	0.627***	3.27	0.001
age	-0.023***	-5.08	0.000	-0.013***	-5.84	0.000	-0.015***	-7.78	0.000
cash	-0.854***	-2.90	0.004	-1.881***	-10.12	0.000	-1.553***	-9.95	0.000
sa	0.110***	4.54	0.000	0.130***	9.36	0.000	0.129***	10.77	0.000
chold	-0.214	-1.40	0.161	-0.454***	-4.92	0.000	-0.411***	-5.23	0.000
soe	-0.124**	-2.24	0.025	-0.453***	-12.73	0.000	-0.362***	-12.18	0.000
overcon	0.026	0.51	0.612	0.174***	5.70	0.000	0.140***	5.40	0.000
obor							0.618***	3.47	0.001
_cons	-4.604***	-3.35	0.001	-1.249**	-2.50	0.012	-3.135***	-3.73	0.000
N	11062			16,660			27,722		
	LR test of rho=0: Chibar2(01) = 97.27 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 15.68 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 339.58 Prob >= Chibar2 = 0.000		

Note: ***p<0.01, **p<0.05, *p<0.1.

3.2.3.2. EPU and the Transaction Scale of M&As

Table 9 shows the relationship between EPU and the transaction scale for M&A deals. The results indicate that EPU has a significant negative effect on the transaction scale of M&A deals, i.e., M&A deals' transaction scale is lower during periods of high EPU. Other significant impact factors are firm size, market-to-book ratio, and leverage. The results therefore support Hypothesis 3. The SOE dummy coefficient and the interaction between EPU and the SOE dummy are not significant. This means that when EPU is high, there is no significant difference in the transaction scale between SOEs and non-SOEs.

Table 9. EPU and the transaction scale of M&As.

mas	Coef.	z	P> z	Coef.	z	P> z
epu	-0.252*	-1.80	0.073	-0.377***	-5.23	0.000
size	0.474***	11.31	0.000	0.506***	12.75	0.000
mb	-0.035*	-1.90	0.057	-0.029	-1.58	0.114
lev	0.766***	2.61	0.009	0.641**	2.19	0.028
roa	0.086	0.13	0.900	-0.208	-0.30	0.760
age	0.008	1.32	0.187	0.009	1.50	0.133
cash	0.452	0.93	0.352	0.408	0.84	0.401
sa	-0.040	-1.42	0.155	-0.030	-1.09	0.274
chold	0.151	0.62	0.536	0.110	0.45	0.651
soe	-0.130	-1.30	0.194	-1.077	-1.27	0.206
epu*soe				0.169	1.05	0.294
overcon	-0.054	-0.65	0.515	-0.031	-0.38	0.706
_cons	8.621***	7.29	0.000	8.600***	8.77	0.000
			R-sq: Within = 0.064, between = 0.415, overall = 0.077			
						R-sq: Within = 0.062, between = 0.470, overall = 0.079

Note: ***p<0.01, **p<0.05, *p<0.1.

3.2.3.3. EPU and the Payment Method of M&As

Table 10 shows the regression results of the relationship between EPU and the possibility of using cash as the only instrument of payment. The significant impact factors are leverage and return on assets; however, consistent results based on the assumption that EPU has a significant effect on the means of payment could not be found, and thus the results refute Hypothesis 4.

Table 10. EPU and the payment method of M&As.

mpay	Coef.	z	P> z	Coef.	z	P> z
epu	-0.295	-1.19	0.236	-0.281	-1.12	0.262
size	0.030	0.93	0.350	0.030	0.94	0.347
mb	-0.008	-0.64	0.525	-0.008	-0.63	0.527
lev	0.866***	3.74	0.000	0.867***	3.74	0.000
roa	1.517***	2.99	0.003	1.518***	2.99	0.003
age	0.001	0.28	0.779	0.001	0.29	0.768
cash	-0.479	-1.31	0.190	-0.480	-1.31	0.190
sa	0.008	0.35	0.727	0.008	0.35	0.727
chold	0.097	0.53	0.594	0.097	0.54	0.592
soe	0.038	0.51	0.613	0.263	0.38	0.703
epu*soe				-0.043	-0.33	0.743
overcon	0.045	0.73	0.465	0.046	0.74	0.459
_cons	1.398	0.96	0.337	1.317	0.90	0.371
			LR test of rho=0: Chibar2(01) = 91.84 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 87.25 Prob >= Chibar2 = 0.000

Note: ***p<0.01.

4. ROBUSTNESS TEST

The robustness test will mostly use different proxy variables, such as a different EPU index, a different market value of equity for figuring out firm size, a market-to-book ratio, and leverage, as well as a different return on equity.

4.1. Alternative EPU Index

Huang and Luk (2020) construct a monthly index of EPU for China in 2000–2018 based on multiple local Chinese newspapers, and they also develop a daily uncertainty index and several policy-specific uncertainty indices¹. I retest the hypotheses using this alternative EPU index (epu(hl)), in the following analysis.

4.1.1. Alternative EPU Index and the Likelihood of Making M&As

The results shown in Table 11 indicate that the EPU index proposed by Huang and Luk (2020) is not significant, which is not consistent with our previous findings. Then I use several policy-specific uncertainties, which include fiscal policy uncertainty (epu_f), monetary policy uncertainty (epu_m), trade policy uncertainty (epu_t), and exchange rate policy uncertainty (epu_e), to further test the results.

Table 11. Alternative EPU index and the likelihood of making M&As.

mae	Coef.	z	P> z	Coef.	z	P> z
epu (hl)	0.510	1.12	0.261	0.480	1.08	0.281
size	0.037**	2.23	0.026	0.038**	2.25	0.025
mb	-0.014**	-2.30	0.021	-0.014**	-2.36	0.018
lev	-0.679***	-7.69	0.000	-0.683***	-7.73	0.000
roa	0.619***	3.23	0.001	0.603***	3.14	0.002
age	-0.015***	-7.73	0.000	-0.015***	-7.83	0.000
cash	-1.549***	-9.93	0.000	-1.541***	-9.88	0.000
sa	0.129***	10.77	0.000	0.129***	10.78	0.000
chold	-0.413***	-5.25	0.000	-0.415***	-5.28	0.000
soe	-0.363***	-12.22	0.000	-0.834***	-3.42	0.001
epu*soe				0.090*	1.95	0.052
overcon	0.141***	5.44	0.000	0.141***	5.43	0.000
_cons	-4.809**	-2.19	0.028	-4.662**	-2.16	0.031
	LR test of rho=0: Chibar2(01) = 703.59 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 661.16 Prob >= Chibar2 = 0.000		

Note: ***p<0.01, **p<0.05, *p<0.1.

The results shown in Table 12 suggest that the conclusion regarding the likelihood of making acquisitions remains intact with Table 11 and thus imply that the EPU index proposed by Huang and Luk (2020) could not verify its effect on the likelihood of making M&As.

¹ EPU index proposed by Huang and Luk (2020) includes fiscal policy uncertainty, monetary policy uncertainty, trade policy uncertainty, and exchange rate policy uncertainty.

Table 12. Alternative specific EPU index and the likelihood of making M&As.

mae	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z
epu_f	0.139	0.40	0.689									
epu_m				0.229	0.76	0.449						
epu_t							0.192	0.60	0.550			
epu_e										0.189	0.53	0.593
size	0.037**	2.22	0.026	0.037**	2.22	0.026	0.037**	2.22	0.026	0.037**	2.22	0.026
mb	-0.014**	-2.30	0.021	-0.014**	-2.30	0.021	-0.014**	-2.30	0.022	-0.014**	-2.30	0.021
lev	-0.679***	-7.69	0.000	-0.679***	-7.69	0.000	-0.679***	-7.69	0.000	-0.679***	-7.69	0.000
roa	0.620***	3.24	0.001	0.620***	3.23	0.001	0.621***	3.24	0.001	0.620***	3.24	0.001
age	-0.015***	-7.73	0.000	-0.015***	-7.73	0.000	-0.015***	-7.74	0.000	-0.015***	-7.73	0.000
cash	-1.550***	-9.94	0.000	-1.550***	-9.93	0.000	-1.551***	-9.94	0.000	-1.550***	-9.94	0.000
sa	0.129***	10.77	0.000	0.129***	10.77	0.000	0.129***	10.77	0.000	0.129***	10.77	0.000
chold	-0.413***	-5.25	0.000	-0.413***	-5.25	0.000	-0.413***	-5.25	0.000	-0.413***	-5.25	0.000
soe	-0.363***	-12.21	0.000	-0.363***	-12.22	0.000	-0.363***	-12.21	0.000	-0.363***	-12.22	0.000
overcon	0.141***	5.44	0.000	0.141***	5.44	0.000	0.141***	5.43	0.000	0.141***	5.44	0.000
_cons	-3.040*	-1.78	0.075	-3.481**	-2.31	0.021	-3.272**	-2.11	0.035	-3.285*	-1.88	0.059
	LR test of rho=0: Chibar2(01) = 714.50 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 713.04 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 698.54 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 717.64 Prob >= Chibar2 = 0.000		

Note: ***p<0.01, **p<0.05, *p<0.1.

4.1.2. Alternative EPU Index and the Transaction Scale of M&As

Table 13 shows that the EPU index proposed by Huang and Luk (2020) has no significant effect on the transaction scale of M&A deals. The main influence factors are firm size and leverage.

Table 13. Alternative EPU index and the transaction scale of M&As.

mas	Coef.	z	P> z	Coef.	z	P> z
epu (hl)	0.002	0.01	0.994	-0.023	-0.11	0.916
size	0.509***	12.74	0.000	0.510***	12.77	0.000
mb	-0.014	-0.79	0.428	-0.015	-0.84	0.402
lev	0.569*	1.94	0.052	0.577**	1.97	0.049
roa	-0.303	-0.44	0.659	-0.301	-0.44	0.662
age	0.004	0.71	0.478	0.005	0.85	0.397
cash	0.429	0.88	0.379	0.413	0.85	0.397
sa	-0.041	-1.48	0.138	-0.040	-1.43	0.152
chold	0.120	0.49	0.623	0.120	0.49	0.624
soe	-0.141	-1.42	0.156	0.826	1.06	0.288
epu*soe				-0.185	-1.25	0.210
overcon	-0.054	-0.65	0.517	-0.046	-0.56	0.579
_cons	6.603***	4.59	0.000	6.677***	4.64	0.000
	R-sq: Within= 0.062, between = 0.357, overall = 0.071			R-sq: Within = 0.061, between = 0.463, overall = 0.071		

Note: ***p<0.01, **p<0.05, *p<0.1.

Table 14 shows that trade policy uncertainty has a significant negative effect on the transaction scale of M&A deals, i.e., firms' M&A scale gets lower during periods of high trade policy uncertainty.

Table 14. Alternative specific EPU index and the transaction scale of M&As.

mas	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z
epu_f	-0.234	-1.54	0.123									
epu_m				0.082	0.67	0.503						
epu_t							-0.507***	-5.88	0.000			
epu_e										-0.205	-0.98	0.328
size	0.494***	12.09	0.000	0.510***	12.79	0.000	0.490***	12.34	0.000	0.475***	11.39	0.000
mb	-0.017	-0.93	0.352	-0.015	-0.80	0.422	-0.027	-1.49	0.137	-0.032*	-1.76	0.079
lev	0.575**	1.96	0.050	0.579**	1.97	0.049	0.700**	2.39	0.017	0.740**	2.52	0.012
roa	-0.153	-0.22	0.825	-0.327	-0.48	0.634	-0.112	-0.16	0.870	0.078	0.11	0.910
age	0.003	0.51	0.608	0.005	0.81	0.416	0.009	1.49	0.136	0.007	1.08	0.282
cash	0.405	0.83	0.406	0.443	0.91	0.364	0.587	1.21	0.226	0.438	0.90	0.367
sa	-0.049*	-1.73	0.083	-0.040	-1.45	0.146	-0.042	-1.54	0.123	-0.042	-1.49	0.137
chold	0.140	0.57	0.566	0.115	0.47	0.640	0.135	0.56	0.578	0.160	0.66	0.512
soe	-0.129	-1.29	0.197	-0.147	-1.47	0.141	-0.157	-1.59	0.113	-0.115	-1.15	0.249
overcon	-0.064	-0.77	0.441	-0.050	-0.60	0.550	-0.032	-0.39	0.700	-0.064	-0.78	0.436
_cons	8.110***	6.12	0.000	6.175***	5.55	0.000	9.378***	9.26	0.000	8.307***	5.91	0.000
	R-sq: Within = 0.062 Between = 0.472 Overall = 0.071			R-sq: Within = 0.062 Between = 0.254 Overall = 0.071			R-sq: Within = 0.063 Between = 0.541 Overall = 0.081			R-sq: Within = 0.064 Between = 0.397 Overall = 0.068		

Note: ***p<0.01, **p<0.05, *p<0.1.

4.1.3. Alternative EPU Index and the Payment Method of M&As

Table 15 shows that EPU has no significant effect on the payment method, which is consistent with the above regression results.

Table 15. Alternative EPU index and the payment method of M&As.

mpay	Coef.	z	P> z	Coef.	z	P> z
epu (hl)	0.036	0.06	0.953	0.058	0.10	0.923
size	0.030	0.92	0.356	0.030	0.93	0.351
mb	-0.008	-0.61	0.540	-0.008	-0.61	0.541
lev	0.865***	3.73	0.000	0.868***	3.74	0.000
roa	1.515***	2.98	0.003	1.516***	2.99	0.003
age	0.001	0.23	0.816	0.001	0.26	0.797
cash	-0.479	-1.31	0.190	-0.480	-1.31	0.189
sa	0.007	0.33	0.744	0.007	0.33	0.743
chold	0.097	0.54	0.591	0.098	0.54	0.587
soe	0.042	0.55	0.583	0.385	0.56	0.574
epu*soe				-0.065	-0.50	0.614
overcon	0.043	0.69	0.492	0.044	0.70	0.482
_cons	-0.269	-0.09	0.929	-0.391	-0.13	0.895
	LR test of rho=0: Chibar2(01) = 105.65 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 105.80 Prob >= Chibar2 = 0.000		

Note: ***p<0.01.

Table 16 also verifies that the specific policy uncertainty index has no significant effect on the payment method; the main influence factors are firm leverage and return on assets.

Table 16. Alternative specific EPU index and the payment method of M&As.

mpay	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z	Coef.	z	P> z
epu_f	0.292	0.69	0.488									
epu_m				0.145	0.39	0.699						
epu_t							0.187	0.53	0.598			
epu_e										0.230	0.56	0.577
size	0.030	0.94	0.348	0.030	0.93	0.354	0.029	0.91	0.362	0.030	0.92	0.357
mb	-0.008	-0.61	0.544	-0.008	-0.61	0.540	-0.008	-0.61	0.545	-0.008	-0.61	0.541
lev	0.866***	3.73	0.000	0.865***	3.73	0.000	0.866***	3.74	0.000	0.866***	3.74	0.000
roa	1.506***	2.97	0.003	1.511***	2.98	0.003	1.517***	2.99	0.003	1.512***	2.98	0.003
age	0.001	0.23	0.821	0.001	0.24	0.814	0.001	0.21	0.833	0.001	0.24	0.812
cash	-0.478	-1.31	0.191	-0.479	-1.31	0.190	-0.481	-1.32	0.188	-0.478	-1.31	0.191
sa	0.007	0.34	0.735	0.007	0.32	0.746	0.007	0.31	0.754	0.007	0.31	0.755
chold	0.097	0.54	0.592	0.097	0.53	0.593	0.098	0.54	0.590	0.096	0.53	0.595
soe	0.043	0.56	0.573	0.042	0.55	0.582	0.043	0.57	0.571	0.042	0.55	0.583
overcon	0.042	0.67	0.500	0.042	0.68	0.494	0.041	0.67	0.505	0.042	0.68	0.494
_cons	-1.521	-0.69	0.487	-0.804	-0.41	0.684	-0.969	-0.53	0.594	-1.206	-0.57	0.571
	LR test of rho=0: Chibar2(01) = 90.40 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 106.06 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 55.84 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 105.25 Prob >= Chibar2 = 0.000		

Note: ***p<0.01.

4.2. Alternative Calculation Method for Control Variables

When figuring out firm size, market-to-book ratio, and leverage, the market value of equity is based on the stock price at the end of the last trading day. For the robustness test, however, the annual average stock price is used. The related variables are marked with (R) in order to distinguish.

4.2.1 Alternative Calculation Method and the Likelihood of Making M&As

Table 17 indicates that the conclusion regarding EPU's effect on the likelihood of making acquisitions remains intact.

Table 17. Alternative calculation method and the likelihood of making M&As.

mae	Coef.	z	P> z	Coef.	z	P> z
e pu	0.369*	1.95	0.051	0.340*	1.81	0.071
size (R)	0.010	0.64	0.521	0.011	0.65	0.514
mb (R)	-0.024***	-4.57	0.000	-0.024***	-4.62	0.000
lev (R)	-0.636***	-7.64	0.000	-0.639***	-7.68	0.000
roa	0.698***	3.54	0.000	0.680***	3.44	0.001
age	-0.012***	-5.92	0.000	-0.012***	-6.03	0.000
cash	-1.576***	-10.05	0.000	-1.567***	-9.99	0.000
sa (R)	0.134***	11.89	0.000	0.134***	11.91	0.000
chold	-0.414***	-5.27	0.000	-0.417***	-5.30	0.000
soe	-0.375***	-12.61	0.000	-0.874***	-3.57	0.000
e pu*soe				0.096**	2.06	0.040
overcon	0.146***	5.64	0.000	0.146***	5.63	0.000
_cons	-3.686***	-3.65	0.000	-3.528***	-3.51	0.000
LR test of rho=0: Chibar2(01) = 686.85 Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 666.34 Prob >= Chibar2 = 0.000			

Note: ***p<0.01, **p<0.05, *p<0.1.

4.2.2. Alternative Calculation Method and the Transaction Scale of M&As

Table 18 indicates that EPU also has a significant negative effect on the transaction scale of M&As, and other significant impact factors are firm size and leverage.

Table 18. Alternative calculation method and the transaction scale of M&As.

mas	Coef.	z	P> z	Coef.	z	P> z
e pu	-0.235	-1.43	0.153	-0.334***	-4.60	0.000
size (R)	0.503***	12.19	0.000	0.535***	13.92	0.000
mb (R)	-0.025	-1.45	0.148	-0.019	-1.09	0.275
lev (R)	0.630**	2.30	0.021	0.497*	1.85	0.065
roa	-0.177	-0.25	0.799	-0.486	-0.71	0.479
age	0.007	1.13	0.260	0.008	1.37	0.172
cash	0.424	0.88	0.381	0.338	0.70	0.485
sa (R)	-0.031	-1.27	0.206	-0.023	-0.94	0.345
chold	0.138	0.57	0.568	0.097	0.40	0.691
soe	-0.116	-1.16	0.246	-0.876	-1.03	0.303
e pu*soe				0.133	0.83	0.409
overcon	-0.057	-0.69	0.491	-0.034	-0.41	0.683
_cons	7.848***	6.25	0.000	7.718***	7.88	0.000
R-sq: Within = 0.069, between = 0.450, overall = 0.084			R-sq: Within = 0.068, between = 0.505, overall = 0.085			

Note: ***p<0.01, **p<0.05, *p<0.1.

4.2.3. Alternative Calculation Method and the Payment Method of M&As

Table 19 also indicates that EPU has no significant effect on the payment method; the main influence factors are still leverage and profitability.

Table 19. Alternative calculation method and the payment method of M&As.

mpay	Coef.	z	P> z	Coef.	z	P> z
epu	-0.281	-1.15	0.250	-0.267	-1.08	0.279
size (R)	0.015	0.48	0.632	0.015	0.48	0.628
mb (R)	-0.004	-0.35	0.729	-0.004	-0.35	0.728
lev (R)	0.869***	3.99	0.000	0.870***	4.00	0.000
roa	1.567***	3.05	0.002	1.568***	3.05	0.002
age	0.001	0.29	0.772	0.001	0.30	0.761
cash	-0.460	-1.26	0.208	-0.460	-1.26	0.208
sa (R)	-0.005	-0.26	0.796	-0.005	-0.27	0.791
chold	0.103	0.57	0.571	0.103	0.57	0.568
soe	0.049	0.65	0.514	0.280	0.41	0.685
epu*soe				-0.044	-0.34	0.737
overcon	0.049	0.80	0.427	0.050	0.80	0.421
_cons	1.698	1.18	0.237	1.616	1.11	0.265
	LR test of rho=0: Chibar2(01) = 86.68, Prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 82.53, Prob >= Chibar2 = 0.000		

Note: ***p<0.01.

4.3. Alternative Profitability

The above analysis mainly uses return on asset as one of the control variables; the robustness test will replace it with return on equity (roe).

4.3.1. Alternative Profitability and the Likelihood of Making M&As

The results shown in Table 20 suggest that the conclusion regarding the likelihood of making acquisitions remains intact.

Table 20. Alternative profitability and the likelihood of making M&As.

mae	Coef.	z	P> z	Coef.	z	P> z
epu	0.388**	2.06	0.040	0.361*	1.92	0.054
size	0.042**	2.53	0.011	0.042**	2.54	0.011
mb	-0.012**	-2.05	0.041	-0.013**	-2.11	0.035
lev	-0.746***	-8.79	0.000	-0.747***	-8.81	0.000
roe	0.464***	3.31	0.001	0.452***	3.22	0.001
age	-0.015***	-7.95	0.000	-0.016***	-8.04	0.000
cash	-1.479***	-9.70	0.000	-1.473***	-9.66	0.000
sa	0.130***	10.84	0.000	0.130***	10.84	0.000
chold	-0.405***	-5.16	0.000	-0.407***	-5.19	0.000
soe	-0.362***	-12.20	0.000	-0.810***	-3.32	0.001
epu*soe				0.086*	1.85	0.065
overcon	0.144***	5.54	0.000	0.143***	5.53	0.000
_cons	-4.422***	-4.37	0.000	-4.279***	-4.24	0.000
	LR test of rho=0: Chibar2(01) = 692.66, prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 671.83, prob >= Chibar2 = 0.000		

Note: ***p<0.01, **p<0.05, *p<0.1.

4.3.2. Alternative Profitability and the Transaction Scale of M&As

Table 21 indicates that EPU also has a significant negative effect on the transaction scale of M&As, and other significant impact factors are firm size and leverage.

Table 21. Alternative profitability and the transaction scale of M&As.

mas	Coef.	z	P> z	Coef.	z	P> z
epu	-0.346***	-5.29	0.000	-0.378***	-5.24	0.000
size	0.505***	12.85	0.000	0.504***	12.80	0.000
mb	-0.029	-1.55	0.122	-0.029	-1.57	0.116
lev	0.667*	2.36	0.018	0.664**	2.35	0.019
roe	0.011	0.02	0.987	0.024	0.03	0.973
age	0.010	1.59	0.112	0.009	1.52	0.129
cash	0.400	0.83	0.409	0.410	0.84	0.399
sa	-0.030	-1.08	0.281	-0.030	-1.09	0.276
chold	0.109	0.45	0.654	0.109	0.45	0.654
soe	-0.191	-1.93	0.054	-1.082	-1.27	0.204
epu*soe				0.170	1.05	0.292
overcon	-0.026	-0.31	0.753	-0.031	-0.37	0.708
_cons	8.426***	8.82	0.000	8.639***	8.84	0.000
R-sq: Within = 0.063, between = 0.454, overall = 0.079			R-sq: Within = 0.063, between = 0.464, overall = 0.079			

Note: ***p<0.01, **p<0.05, *p<0.1.

4.3.3. Alternative profitability and the payment method of M&As

Table 22 indicates that EPU has no significant effect on the M&As payment method; the main influence factor is still firm leverage.

Table 22. Alternative profitability and the payment method of M&As.

mpay	Coef.	z	P> z	Coef.	z	P> z
epu	-0.297	-1.18	0.239	-0.284	-1.12	0.265
size	0.047	1.48	0.139	0.047	1.49	0.137
mb	-0.006	-0.43	0.664	-0.006	-0.43	0.665
lev	0.689***	3.09	0.002	0.690***	3.09	0.002
roe	0.630	1.22	0.224	0.631	1.22	0.223
age	0.001	0.22	0.827	0.001	0.23	0.816
cash	-0.490	-1.34	0.180	-0.491	-1.34	0.179
sa	0.010	0.44	0.663	0.010	0.44	0.662
chold	0.097	0.53	0.594	0.097	0.54	0.591
soe	0.038	0.51	0.611	0.258	0.37	0.708
epu*soe				-0.042	-0.32	0.749
overcon	0.047	0.75	0.450	0.047	0.76	0.445
_cons	1.097	0.75	0.455	1.018	0.69	0.493
LR test of rho=0: Chibar2(01) = 98.15, prob >= Chibar2 = 0.000			LR test of rho=0: Chibar2(01) = 93.44, prob >= Chibar2 = 0.000			

Note: ***p<0.01.

5. CONCLUSIONS

This paper examines the relationship between EPU and M&As in China by using companies listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange with 3183 M&A deals from 2007 to 2019.

The panel data regression results indicate that Chinese firms make more acquisitions when EPU is high, which is different from the M&A strategic decision in the US and many other countries. Besides, this paper also confirms that SOEs are more likely to make M&As at a higher EPU stage than non-SOEs, probably because the SOEs play a more important role in the implementation of policies in China. This finding is a little different from [Sha et al. \(2020\)](#). Since its proposal in 2013, the Belt and Road Initiative has indeed increased the likelihood of M&A for Chinese firms.

When looking at the relationship between EPU and the transaction scale of M&A deals, the paper found that EPU has a big negative impact on the transaction scale of M&A deals. This means that the size of M&A deals becomes lower when EPU is high, i.e., even though M&A deals arise during high EPU, the transaction scales

decline. The finding is consistent with Adra et al. (2020) to some extent. It reflects that firms' managements do appear more conservative in higher EPU periods when making M&A decisions. Other significant impact factors are firm size, market-to-book ratio, and leverage. SOEs and non-SOEs have no difference in transaction scale when making M&As with a higher EPU level.

However, this paper does not consistently find evidence that EPU significantly affects the payment instrument. The significant impact factors are leverage and return on assets. This implies that firms usually don't take EPU as a key factor in their payment methods when making M&A policies.

Based on the results above, policymakers should work to keep economic policies stable. For example, while the Belt and Road Initiative encourages mergers and acquisitions, policymakers should also help these businesses with their strategies and give them advice on how to handle risks.

This paper definitely has some disadvantages. Further research may extend the analysis of EPU's effect on M&A outcomes, the differences in the impact between the home country and the host country's EPU, and the manager's behavioral effect during higher EPU periods.

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