

# When to go abroad: Economic Policy Uncertainty and Chinese Firms' Overseas Investment

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# **When to go abroad: Economic Policy Uncertainty and Chinese Firms' Overseas Investment**

**Abstract:** We study how economic policy uncertainty (EPU) influences firms' overseas investment in Chinese listed companies. We find a significant negative relationship between EPU and firms' overseas investment after controlling for firm characteristics and macroeconomic variables. Chinese firms seem to reduce their overseas investment on fixed income securities when facing a policy uncertainty. The negative relationship is more pronounced for financially constrained firms relying on government subsidies and have low overseas revenues and SOEs. Firms located in high marketization regions can mitigate the negative effect of EPU on firms' overseas investment. Our results remain significant when considering endogeneity problems. We contribute to the literature focusing on the interaction between EPU and corporate investment.

**Keywords:** economic policy uncertainty, overseas investment, China

**JEL Codes:** G18, G30, G32

## **1. Introduction**

Macroeconomic environment is the core factor in influencing corporate financing and investment decisions (Gulen and Ion, 2015; Wang, Chen, and Huang, 2014; Wang, Wei, and Song, 2016; Yang and Li, 2015). Under an imperfect competition, strategic growth option theory suggests firms facing uncertainty may increase investment when product markets are not monopolistic. Otherwise, potential competitors can seize growth opportunities (Kulatilaka and Perotti, 1998; Vo and Le, 2017). However, most literature suggests a negative effect between uncertainty and firms' investment (Marcus, 1981; Dixit, 1989; Aizenman and Marion, 1993; Dixit and Pindyck, 1994; Abel and Eberly, 1996; Bloom et al., 2007; Li et al., 2016). According to real options theory, uncertainty increases the waiting value and causes firms cautiously making investment decisions. Therefore, the optimal decision for firms facing high uncertainty can be to reduce investments and increase cash holdings in preparation for investments postponed to the next period (Bernanke, 1983; Brenner and Schwartz, 1985; McDonald and Siegel, 1986; Pindyck, 1988; Dixit and Pindyck, 1994; Abel and Eberly, 1996; Bloom et al., 2007).

Making precise predictions becomes difficult for firms because of economic policy uncertainty (EPU). Therefore, it can have a tremendously significant effect on firms' future investment. In a policy uncertainty environment, firms are unclear as to what economic policy the government is going to choose. Many sources of uncertainty are available from the economic environment. Most researchers believe EPU is the primary factor for corporate development (An, Chen, Luo, and Zhang, 2016; Wang et al., 2014; Yang and Li, 2015). The existence of EPU can have considerable effects on macroeconomic development and corporate behavior (Baker et al., 2016). Baker et al. (2016) developed an index to measure EPU for the US and other countries, such as China, Australia, Canada, and UK. Their EPU index has been tested and proven to be a good proxy for real EPU. They reported that an increase in policy uncertainty equal to the actual change between 2006 and 2011 indicate a sharp and sustained decline in the overall results with peak declines of 3.2% in the real GDP, 16% in private investment, and 2.3 million in aggregate employment. Gulen and Ion (2015) conclude that a high-level EPU can restrict corporate investment, and this effect is strong for firms that depend heavily on governments for their sales. Thus, investments of firms operating in industries that depend heavily on government spending are negatively affected by EPU. Gulen and Ion (2015) also found that the EPU-investment relationship weakens after a period of prolonged and persistently high policy uncertainty.

Several countries promote economic development, utilizing international capital flows by way of outward foreign direct investment (OFDI). Yeaple (2003) suggests the OFDI of the US is one of the important sources of the comparative advantage based on country skilled labor abundance and industry skilled labor intensity. Herzer and Schrooten (2008) further find a significant positive relationship between OFDI and local investment for an extended period in the US but not in Germany. OFDI also plays an increasingly important role in emerging markets with their economic development. Emerging markets rely on OFDI to enhance its competitiveness and integration into the worldwide economy. OFDI fortifies the aggressiveness of domestic enterprises by providing access to advanced innovation, abilities, natural resources, and marketing, as well as expanding their proficiency. Luo et al. (2010) state that governments decide the development strategies for OFDI in emerging countries. Huang and Zhang (2017) report that governments in emerging countries prefer to solve their enterprise competitiveness through OFDI and its strategies for acquiring propelled innovation. Moreover, investing in developed countries is significant. Therefore, changes in economic policy are vital for firms' overseas investment.

For the past 30 years of reform and opening-up, China's economy has changed dramatically. China provides an ideal setting for testing the relationship between firms' overseas investment and EPU. First, the central government of China has significant influence on the national economic growth. The central government represented by the Central Political Bureau of the Communist Party of China, including 25 Communist Party members, has absolute power in formulating economic policies. Chinese firms lack channels to influence governments' economic decisions. Therefore, any introduction of new economic policies can shock Chinese firms. Second, China became a net capital exporter in 2015, marking that Chinese investments overseas exceeded foreign ones in China for the first time (Blue Book of Chinese Enterprise Globalization: Report on Chinese Enterprises Globalization, 2016). The report also shows Chinese companies invested a record of \$145.6 million abroad in 2015. Nowadays, under the phenomenon of global economy integration, the global market is becoming increasingly complicated and uncertain. Finally, the "go global" strategy has been further promoted by the "One Belt One Road" (OBOR) initiative, the hallmark economic policy introduced by Present Xi Jinping in 2013. One of the Chinese think tanks suggested that outbound investment in China has entered a "golden era" of growth (China.com, 2016) despite the rise of trade protectionism in various parts of the world. Therefore, understanding

how Chinese firms' overseas investment are determined is significant to academic and global investors.

To measure EPU, we adopt Baker et al.'s (2016) monthly China EPU Index (hereafter, BBD index) and aggregate to the annual level by calculating the average, median, and geometric average values of the BBD index in a year. Baker et al. (2016) construct the index by weighted averaging three types of underlying components: news-based (one-half), tax (one-sixth), and forecaster disagreement (one-third) components. The BBD index has been widely used in recent literature to measure EPU, such as in Kang et al. (2014), Wang et al. (2014), Brogaard and Detzel (2015), Gulen and Ion (2016), and Husted and Saffar (2016). We use total overseas investment divided by its total assets to measure firms' overseas investment. Using a panel of Chinese listed firms from 2007 to 2016, we examine the effects of EPU on firms' overseas investment and find a significant negative relationship between China EPU and firms' overseas investment after controlling other firms' heterogeneous characteristics and macroeconomic variables. We further find the reason behind the negative relationship between firms' overseas investment and China EPU is that Chinese firms reduce overseas investment in fixed income securities. Our main results are robust to SOEs, financial constraint firms, as well as firms with government subsidies and low overseas incomes. The negative relationship between China EPU and firms' overseas investment is significant only for firms with returnee directors and located in low marketization regions. Finally, our main findings are robust when we use different measures to proxy China EPU.

We employed several methods to mitigate potential endogeneity problems, such as reverse causality effect, omitted variables, or measurement errors. First, we control for the reverse causality effect by performing our main tests separately in large- and small-size firm groups. Second, we run a 2SLS regression by using IV, which is a dummy variable (POL\_TURNOVER) of 1 representing after the year of 2013 when XI Jinping took the role of the President of Communist Party of China, otherwise is 0. Third, we followed Gulen and Ion's (2015) method to mitigate endogeneity problem in our main findings. We extracted the component of China EPU index orthogonal to either US, AUS, or European EPU index. We used residuals to represent a pure measure of China EPU and replicated our main test. Our main results are still robust after alleviating potential endogeneity problems.

We contribute to literature in three aspects. First, to the best of our knowledge, this study is the first to deliver an empirical analysis of how EPU affects firms' foreign investment in the world's

largest emerging economy. While existing works focus mainly on the effect of policy uncertainty on domestic capital investments (Bloom et al., 2007; Julio and Yook, 2012; Gulen and Ion, 2016) and stock return in domestic financial markets (Boutchkova et al., 2012; Pástor and Veronesi, 2013), the current study emphasizes the effect of EPU in domestic countries on firms' foreign investment. Moreover, few studies have focused on the relationship between EPU and firms' foreign investment in developed countries (Asiedu, 2006; Root and Ahmed, 1978). With emerging countries such as China, outward foreign investment from emerging to developed markets plays an increasingly important role in the global economy, which motivates the current research question. Findings of this study can shed new light on this research area.

Second, this study contributes to the literature on real options theory. We provide empirical evidence on whether the “option to wait” dominates the “option to grow” or vice versa in the event of uncertainty. Our findings support the debate of real options theory (Abel, 1983; Bernanke, 1983; McDonald and Siegel, 1986). We find that Chinese firms can reduce their overseas investment during the high EPU period. Our results indicate Chinese companies may hold their investment until the economic policy becomes stable, which can help increase the value of their investment.

Finally, compared with several Chinese studies that used the government turnover to measure EPU, this study uses Baker et al.'s (2016) China EPU index to proxy EPU. The BBD index is a time-series index covering the time-series variation of significant events for political and economic aspects during sample periods. Therefore, our findings should be more accurate to reflect Chinese firms' foreign investment behavior when they face EPU than other studies.

Section 2 reviews relevant literature in the field. Section 3 discusses the research hypotheses. The methodology is discussed in Section 4, including data collection, China EPU construction, variable definition, and the model. Section 5 presents the empirical results. Finally, Section 6 concludes the research.

## **2. Literature Review**

### **2.1 Concept of EPU**

The concept of EPU maintains that policy uncertainty exists (Baker et al., 2016). Different parties hold different ruling concepts. Thus, the turnover of a top local government official can increase policy uncertainty and cause “bad news” (Julio and Yook, 2012). For example, Australian federal election uncertainty has a significant effect on Australian stock market uncertainty (Smales, 2016). Pástor and Veronesi (2013) developed a general equilibrium model of government policy choice

and reported that policy uncertainty reduces the protection value provided by the government for markets, causing the stocks to become volatile. Therefore, political uncertainty is on average higher in an election year relative to a non-election year. Durnev (2010) finds that investment is 40% less sensitive to stock prices during election years compared to non-election years. Liu, Shu, and Wei (2016) report that the Bo Xilai political scandal in 2012 in China caused a significant drop in stock prices, especially for politically sensitive firms. In general, EPU involves the following details: who makes economic policy decisions, what and when economic policy is applied, how policy actions affect the economy, and where the uncertainty occurs.

However, in certain cases, policy change outcome can be considered as “good news,” regardless of who wins in the end (Julio and Yook, 2012). Political connections can help firms achieve a favorable policy outcome and reduce EPU. Firms exposed to significant EPU can have a strong incentive to increase their political connectedness (Francis, Hasan, and Sun, 2009; Li and Zhao, 2015; Pan and Tian, 2017; Schweizer, Walker, and Zhang, 2017). This connectedness is a coexistence between SOEs and non-SOEs, which provides a unique institutional environment to examine the effect of political connection on corporate investment decisions. For example, Chinese SOEs are naturally connected to either the central government or local government/s, with their political connection being a kind of resource for these SOEs. However, most non-SOEs do not have political connections. Thus, they have incentives to build a connection with the government to gain access to valuable resources (Li and Zhao, 2015). Under an uncertain policy environment, SOEs and non-SOEs may be affected differently. For example, taking advantage of ongoing corruption scandals in China, Pan and Tian (2017) find that after the ousting of politicians, investment efficiency improves for event SOEs but declines for event non-SOEs when compared with their non-event counterparts. They identify the ousting of corrupt politicians and define event firms as those firms connected with these politicians through bribery and personal relationships.

Since the 2008 financial crisis, governments have adjusted their economic policy frequently to smooth economic fluctuations and avoided recession, which has focused attention on EPU. One of the main challenges in this line of research is to find an appropriate EPU measurement. Defining the shock of pure economic policy volatility on corporate investment accurately is difficult. Thus, researchers have begun to search for an efficient proxy of real EPU. Julio and Yook (2012) report that the level of uncertainty around an election is higher than that in non-election years. Thus, a political election can be used as an EPU measure. Jens (2017) uses a sample, including all US

gubernatorial elections from 1984 to 2008 as a source of plausibly exogenous variation in uncertainty and finds that investment decreases 5% before all elections and by up to 15% for subsamples of firms particularly susceptible to political uncertainty. However, using a specific policy event as a proxy of EPU has flaws because it can exhibit substantial variation over time (Gulen and Ion, 2015). Election indicators do not capture the variation in EPU in non-election years, which may be significant in certain countries and can strongly bias inferences when investigating the country-level effect of EPU on corporate decisions because firm-level investment exhibits considerable variation in non-election years.

Other than using a policy event as a proxy of EPU, many variables have been used to measure the overall uncertainty faced by firms, such as turnover of government officials, volatility of stock returns, input and output prices, or firm fundamentals. However, measuring the portion of this uncertainty attributed to political and economic changes is an arduous task. Certain studies have focused on certain policy types (fiscal, trade, monetary), and significantly few works have measured the overall level of policy-related economic uncertainty.

Baker et al. (2016) fill this gap in the literature by building an overall EPU index. For the current study, we adopt their China news-based index as a proxy for EPU. The BBD index has facilitated EPU research for the following studies. Jones and Olson (2013) use a DCC-GARCH model to evaluate the time-varying correlation between the BBD index, inflation, and output. Their study reveals that the correlation sign between EPU and inflation changes from negative to positive during the late 1990s, whereas the correlation between EPU and output is consistently negative. The uncertainty effect on inflation is unclear. One explanation is the crude oil price shocks or other international shocks (Jones and Olson, 2013). Gulen and Ion (2015) argue that the increase of EPU can restrict US firm investment. Wang et al. (2014) report a robust negative relationship between China EPU and Chinese capital investment. Moreover, non-SOE firms can mitigate the negative effect of policy uncertainty on corporate investment. Yang and Li (2015) further find evidence that investment irreversibility, learning ability, ownership nature, and institutional ownership can influence the restraining effect of China EPU on Chinese corporate investment.

## **2.2 Effect of EPU on Corporate Investment**

The conclusion on the exploration of the connection between EPU and the corporate venture is in disparity. Two different viewpoints on how EPU affects the corporate investment exist. On the one hand, researchers who support growth option theory posited that the increase of EPU can affect



firms' investment positively (Abel, 1983; Hartman, 1972; Oi, 1961; Vo and Le, 2017). Knight (1921) believes corporates can perceive and grab investment opportunity in an uncertain economic environment and make profits through resource integration. Investors tend to be considerably worried about potential opportunities and rewards, making an increment in the investment at the time of increasing uncertainty. On the other hand, the opposite camp based on real options theory argued that policy uncertainty influences corporate investment negatively (Durnev, 2010; Julio and Yook, 2012; Narayan, Paresh, Narayan, Seema, and Tran, 2017; Wang et al., 2014; and Wang et al., 2016). The investment irreversible and sunk cost make firms cautious in making investment decisions (Bernanke, 1983). The higher the degree of uncertainty, the more the return on the wait for the future investment, and hence a high value on the option of waiting. Consequently, companies reduce their current investment spending.

The following two aspects can likewise show the effects of EPU on corporate investment. First, from enterprise management, the increase in EPU can make judging the future economic policy performance difficult for company management, thereby affecting firms' investment decision (Stokey, 2014). The rise of EPU shatters firms' investment willingness because of managerial risk aversion, reducing risks that companies may face in the future. Stokey (2014) further reports that policy changes induce firms to stop investing to adopt a wait-and-see policy temporarily. Utilizing the national election in 48 countries between 1980 and 2005, Julio and Yook (2012) conclude that amid the election years' corporate investment, expenditures can drop 4.8% on average as compared to non-election years.

From stakeholders' point of view, investors are unable to check the future growth of companies and further decrease direct investments on corporate because of increased EPU. EPU and stock volatility are positively related (Aabo, Pantzalis, and Park, 2016; Antonakakis et al., 2013; Frijns, Tourani-Rad, and Indriawan, 2012), which can influence investors' general corporate assessment. Investors value continuity and stability in the political environment and dislike changes.

### **2.3 Benefits of OFDI**

Several countries promote economic development by utilizing international capital flows through OFDI. According to the research done by Yeaple (2003), the OFDI of the US is consistent with a chain of comparative advantage based on country skilled labor abundance and industry skilled labor intensity. According to them, US multinationals put more money in skilled scarce countries than in skilled labor abundant countries in the least skilled labor intensive industries. According to

the discovery of Herzer and Schrooten (2008), OFDI has a positive effect on local investment for an extended period in the US, but only for a short period in Germany.

Advanced nations have been given comparatively low consideration to OFDI primarily because it was recently inappreciable. The OFDI of emerging economies plays an increasingly important role in enhancing its competitiveness and integration into the worldwide economy. OFDI fortifies the aggressiveness of domestic enterprises by providing access to advanced innovation, abilities, natural resources, and marketing, as well as expanding their proficiency. OFDI development strategies, as figured by emerging market governments, are economically fundamental and institutionally correlative to balance the competitive disadvantages of emerging market corporates in the global competition (Luo et al., 2010). Furthermore, OFDI strategies for acquiring propelled innovation and investing in developed countries fundamentally reinforce the own-firm effect (Huang and Zhang, 2017). In this manner, governments of some emerging market countries are presently considering solving their enterprise competitiveness through OFDI.

Given its market size and growth rate, China is the world's leading developing economy, which makes it an exceptionally decent test case. Cozza et al. (2015) study the effects on Chinese firms of OFDI of advanced European countries. Their outcomes propose that Chinese OFDI has positive effect domestic activities in upgrading firms' productivity and operation sizes. Buckley et al. (2007) investigate their hypotheses utilizing official Chinese OFDI data collected between 1984 and 2001. They hypothesize that Chinese OFDI is related contrarily with rising levels of host country political risk. Nonetheless, they discover no proof to support this hypothesis in their study. This outcome runs counter to typical discoveries for this variable and requires discussion. Based on their study, our motivation is to test further the connection between EPU and Chinese OFDI.

### **3. Hypothesis Development**

Literature suggests that EPU has a significant effect on firms' investment. However, whether EPU in domestic countries can affect firms' overseas investment remains unclear. According to real options theory, uncertainty can dampen firms' enthusiasm for any kinds of investment. Empirical research has proved that EPU can reduce corporate investment expenditures (Baker et al., 2016; Durnev, 2010; Gulen and Ion, 2015; Julio and Yook, 2012; Wang et al., 2014; Wang et al., 2016). EPU negatively influences firms' investment in two ways. On the one hand, waiting value motivates firms to wait until the surrounding environment is certain or delay their investment to obtain precise information. On the other hand, investment irreversibility or a high sunk cost causes

firms to think over their investment decisions (Bernanke, 1983; McDonald and Siegel, 1986). Based on the analysis in previous sections, we formulate our hypothesis as follows.

**H1A:** *A negative relationship exists between China EPU and Chinese firms' overseas investment.*

However, the opposition camp suggested that firms should increase their investment in a period of uncertainty similar to what real options theory suggests (Abel, 1983; Segal, Shaliastovich, and Yaron, 2015; Vo and Le, 2017). Knight (1921) views profit to be a reward for uncertainty, which means profit is a residual return for bearing the uncertainty in business. Knight (1921) also emphasizes that firms can recognize and grab investment opportunities in an uncertain economic environment and make profits through resource integration. Under a period of uncertainty, investment decision-makers become risk-seeking and tend to be particularly keen on potential investment opportunities and rewards, thereby increasing investment. If firms reduce their overseas investment during a period of high uncertainty, then market occupation is lost and firms' current benefits and expected return decrease (Vo and Le, 2017). Hence, we present an alternative hypothesis.

**H1B:** *A positive relationship exists between China EPU and Chinese firms' overseas investment.*

## **4. Data and Method**

### **4.1 Data Collection**

Our sample consists of all A-shares listed on the Shenzhen and Shanghai Stock Exchanges. We obtain sample firms' foreign investment, financial and ownership data from the CSMAR database. The sample period is from 2007 to 2016, which matches the availability of sample firms' overseas investment data. Our sample excludes financial firms, such as commercial banks, investment trusts, and mutual funds. We also exclude over-investment companies, which are defined as firms' total overseas investments over their total assets. Finally, a total of 8,223 annual firm observations remain in the sample. All data have been winsorized at the 1% and 99% levels to minimize the influence of outliers.

### **4.2 EPU Index**

We measure China EPU by using Baker et al.'s (2016) China EPU index, which has been widely used in the literature to measure EPU, such as Gulen and Ion (2015), Wang et al. (2014), and Yang and Li (2015). Baker et al. (2016) frame a scaled frequency count of articles about policy-related economic uncertainty in a leading English-language newspaper in Hong Kong, the South China Morning Post (SCMP) to construct an EPU index for China. First, the authors recognize all SCMP

articles related to at least one key term from the following. China, Chinese, economic, economy, uncertain, and uncertainty. Second, they identify whether sample articles involve any keywords related to policy terms, such as policy, spending, budget, political, interest rate, reform, government, Beijing, tax, regulation, the central bank, People’s Bank of China, PBOC, and WTO. Last, authors divide the number of monthly filtered articles by the total number of all SCMP articles in the same month and ultimately obtain the China EPU index. Because firms’ overseas investment data are the annual basis, we convert this monthly EPU data to a yearly basis by using mean, median, and geometric mean methods.

### 4.3. Model

We use Equation (1) to examine the effect of EPU on firms’ overseas investment.

$$\frac{\text{Overseas Investment}}{\text{Total Assets}}_{i,t} = \alpha + \beta_1 \ln EPU_t + \beta_{\text{controls}} \sum \text{Control Variable} + \sum \text{Industry dummies} + \sum \text{Provincial dummies} + \varepsilon_{i,t} \quad (1)$$

where  $\frac{\text{oversea investment}}{\text{total assets}}$  represents firms’ overseas investment. The explanatory variable  $\ln EPU_t$  is the natural logarithm of the annualized China EPU index in year  $t$ . Our control variables include firms’ financial information (e.g., Tobin’s q, company size, leverage ratio, ROA, PPE/at, Capex/at, and financial constraint), China macroeconomic variables (e.g., China GDP growth rate), corporate governance (e.g., independent director percentage and board size), ownership information (e.g., institutional ownership and top five concentration), and director information (e.g., overseas background). All control variables are defined in the Appendix.  $t$  is the index year.  $i$  is the index firm, and  $\varepsilon_{i,t}$  is the associated error term.

### 4.4 Summary Statistics

Table 1 shows the descriptive statistics for each variable. The average overseas investment for Chinese listed firms is about 0.095 on their total assets with a standard deviation of 0.163. The mean, median, and geometric mean of the China EPU log are 4.876, 4.818, and 4.796 on average, respectively. The annualized China GDP growth rate is 8.9% on average from 2007 to 2016, ranging from 6.9% in 2015 to 14.2% in 2007. The average firm size in our sample is 9.648 measured by the log value of total assets, and the average value of Tobin’s q is 2.46, which indicates our sample is dominated by large size and well-performing firms. The average leverage ratio is 47.9%, and ranges from 12.7% to 83.6%, which is of a similar magnitude to Wang et al.’s (2014) results. The average ROA is 3.9%, with a minimum value of -16.6% and a maximum of

20%. The average board size is around nine members, and on average, 36.9% of board members are independent. Moreover, 74.4% of directors in our sample firms have overseas experiences. Institutional investors hold 7.122% of shares on average, but these shares can be as high as 58.58%. On average, the top five concentrations hold 17.4% of the total outstanding shares. The state dummy shows SOEs occupying 53.1% in our sample.<sup>6</sup>

[Insert Table 1 About Here]

## **5. Empirical Result**

### **5.1 Main Result**

Table 2 reports the main results of our OLS regression. The dependent variable is firms' overseas investment. The main independent variables in the three models are the natural logarithms of the annualized mean, median, and geometric mean of EPU index. All three EPU measures have a significant negative relationship with Chinese firms' overseas investment. The coefficients of the three main independent variables, the mean, median, and geometric mean of EPU are -0.018, -0.021, and -0.011, respectively. Moreover, they are all statistically significant at 1% level. Our results indicate Chinese firms tend to reduce their overseas investment in a period with a high degree of EPU. Our results are consistent with previous findings from other developed countries, in which a negative relationship exists between EPU and firms' domestic investment (Baker et al., 2016; Durnev, 2010; Gulen and Ion, 2015). Therefore, our empirical results support real options theory (McDonald and Siegel, 1986; Dixit and Pindyck, 1994).

For our control variables, we use GDP growth rate to measure the degree of economic development. Berthelemy and Demurger (2000) argue that firms' investment is negatively related to regional economic growth in China. Our result also indicates a significant negative relationship between China's GDP growth and firms' overseas investment. We use Tobin's q to control for investment opportunities, which are measured by markets to book the value of firms' assets. The strong positive coefficient on Tobin's q value suggests firms' overseas investment depends largely on their investment opportunities (Lang et al. 1996). Table 2 shows a significant negative relationship between board size and firms' overseas investment, which means firms with large board size may tend to reduce overseas investment during a period of uncertainty. Nakano and Nguyen (2012) find a negative relationship between board size and firm risk-taking, especially for firms with few

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<sup>6</sup> We do not report the correlation matrix results between each variable because of space limitations. Such results are available upon request.

investment opportunities. Corporations with large boards can be more encumbered when making investment decisions than those with small boards. In large boards, board members hold their own opinion and foster careful and conservative investment decision-making policy. Because firms' overseas investment is a risk-taking behavior, our results support Nakano and Nguyen's (2012) argument. Table 2 also shows a significant negative relationship between the leverage ratio and firms' overseas investment. When the leverage ratio is high, companies reduce their foreign investment by considering their debt situation. However, no significant relationship is observed between firms' company size, top concentration, ROA, and firms' overseas investment. Irreversibility is an essential characteristic of the EPU-investment model, which makes reverse investment costly and increases the waiting value (Bernanke, 1983; McDonald and Siegel, 1986). We use PPE/at variables (plant, property, and equipment over total assets) to measure the investment irreversibility by following Gulen and Ion (2015), who assumed that the higher the ratio of firms suggesting, the higher the adjustment cost they have. Results in Table 2 suggest a significant negative relationship between PPE/at and firms' overseas investment, indicating that firms with higher investment irreversibility of may have low foreign investment.

[Insert Table 2 About Here]

We decompose firms' overseas investment into four sub-categories, namely, fixed income securities, wealth management, non-financial and financial firm shares. We further examine the sources of the negative relationship between EPU<sup>7</sup> and firms' overseas investment. Table 3 shows the negative relationship between EPU and firms' overseas investment is only significant for firms' investment of fixed income securities but not for other three insignificant categories. Results suggest Chinese firms that face domestic policy uncertainty reduce their foreign investments on fixed income securities. The reason can be because fixed income securities are the most liquid securities and are converted quickly to cash for firms.

[Insert Table 3 About Here]

## **5.2 Testing the Effect of EPU on Firm Heterogeneity**

First, we test whether the significant negative effect between EPU and firms' overseas investment is due to their political status. By deepening its transformation, Chinese economy is moving from

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<sup>7</sup> To save space, we only report the results for the median of EPU and four sub-categories' overseas investment. The results for the mean and geometric mean of EPU and four sub-categories' overseas investment are similar qualitatively to reported results. Other results are upon request.

a central planned economy to a market economy. China provides a unique institutional environment for SOEs and non-SOEs but explicitly favors SOEs. SOEs are naturally connected with the government through their government ownership and are likely favored by the government regarding financing and investment (Pan and Tian, 2017). The “natural relation” between SOEs and government tends to make their investment behavior “pro-policy.” Thus, SOEs can obtain up-to-date policy information more than non-SOEs. Wang et al. (2014) report that SOEs in China are affected significantly by EPU because they rely mainly on government lending policies. Therefore, we expect the overseas investment of SOEs is more sensitive to EPU than non-SOEs.

To test the effect of SOEs on the relationship between firms’ overseas investment and EPU, we employ interaction terms between EPU and a dummy variable of 1 for SOEs, and 0 otherwise. Table 4 reports the results. The negative effect on firms’ overseas investment is still significant in all three EPU measures. Moreover, all three interaction terms are significantly negative at the 5% level, which are -0.0256, -0.0286, and -0.0166 for mean, median, and geometric mean of EPU, respectively<sup>8</sup>, and are greater than their counterpart results shown in Table 2. Therefore, Table 4 implies the negative effect of EPU on firms’ overseas investment is stronger for SOEs than for non-SOEs.

[Insert Table 4 About Here]

Second, we test whether the significant negative relationship between EPU and firms’ overseas investment is because of the degree of marketization. The economic development of China is extremely asymmetrical. For example, four tier-one cities, Beijing, Shanghai, Guangzhou, and Shenzhen, are in a more advanced economic development than other cities in China. Examining whether firms with their head office located in a city with high marketization can be affected by EPU more than firms located in cities with low marketization rankings is interesting. We expect a rational decision-maker can choose a region with excellent fiscal position and stable market environment to implement policies with the aim of minimizing the negative effect of EPU on corporations. Corporate managers in regions with high degree of marketization follow the rule of general market operation. They may mitigate the negative effects of policy uncertainty on

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<sup>8</sup> The mean of state is 0.531 as shown in Table 1. The interaction term coefficient in Model (1) is -0.003.  $-0.003 \times 0.531 + (-0.024)$  equals -0.0256. Models (2) and (3) use the same method, and we obtain -0.0286 and -0.0166 for median and geometric mean, respectively.

corporate investment. Adversely, firms in low levels of marketization regions may react aggressively to economic policy changes (Li and Zhao, 2015). Furthermore, regions with high marketization are frequently connected to global trade. Wang et al. (2014) report that firms in regions with a high degree of marketization are sensitive to EPU. Economic shocks in uncertainty arising from economic/monetary policies may have a significant effect on firms' investment in high marketization regions.

In this section, we employ Fan et al.'s (2016) index to measure the degree of marketization in China. We use an interaction term between EPU and marketization variables to test the above argument. Table 5 shows that the negative relationship between the EPU and firms' overseas investment is still significant at the 1% level, regardless of all three EPU measures. However, the interaction term shifts to being significantly positive at the 5% level for all three models. This finding suggests the negative relationship between EPU and firms' overseas investment is mitigated for firms in high marketization regions.

[Insert Table 5 About Here]

Third, we examine whether government subsidies can alter our main findings. Government subsidies play an essential role in the government's economy regulation in developing countries. Hence, firms receiving government subsidies may have closer political connections than those without. This "special relationship" can make firms' investment behavior "pro-policy." For example, central and local governments can directly influence firms' investment decisions through the grant of government subsidies (Pan and Tian, 2017). Therefore, we expect firms with government subsidies are more sensitive to economic policy changes than those without.

Table 6 presents the effects of governments' subsidies on the main findings by sorting all sample firms into two groups, firms with and without government subsidies. Models (1)–(3) in Table 5 show the regression results for firms with government subsidies. Three EPU measures are negative and significant at the 1% level. As expected, three EPU coefficients in Models (4)–(6) are statistically insignificant but are positive. Table 6 suggests the negative relationship between EPU and firms' overseas investment exists only in the group of firms with government subsidies.

[Insert Table 6 About Here]

Fourth, cross-border operations play an increasingly important role in the traditional business model. Foreign business is vital for enterprises not only in exploring the international market to realize high growth rates but also in diversifying its income to seize opportunities to create



substantial values. Osnago et al. (2015) find that trade policy uncertainty has a negative effect on the probability of exporting and capital export.

Table 7 presents the effect of EPU on firms' overseas investment, which are sorted into a different level of overseas revenues. We divide our sample into two groups of firms with high (above median) and low (below median) overseas revenues. Models (1)–(3) in Table 7 show the regression results for firms with low overseas revenues. All three EPU measures are negatively significant at 1% level. However, all EPU measures in Models (4)–(6) are positively insignificant. These models are for firms with high overseas revenues. Firms with high overseas income are not that affected by changes in the domestic economic policy on their overseas investment because these firms can rely on their overseas revenues to realize their foreign investment decisions (Berthou and Vicard, 2013; Kazuo and Ichiro, 2015). Firms with lesser overseas revenues are easily affected by economic policy changes, especially the capital control policy.

[Insert Table 7 About Here]

Fifth, we examine whether the background experience of firms' director also affects the relationship between EPU and firms' overseas investment. Literature suggests directors with foreign experience can significantly enhance firms' financial performance (Dai, Kong, and Liu, 2016; Giannetti et al., 2012; Zhang, Kong, and Wu, 2016). Directors with overseas experiences may make more overseas investment decisions than those without. Therefore, we expect our main findings only remain significant in firms that have directors with overseas experiences.

Models (1)–(3) in Table 8 show the regression results for firms' directors with overseas experiences. Results reveal that EPU still has a significant negative effect on firms' overseas investment regardless of the EPU measure. However, Models (4)–(6) in Table 8 shows all three EPU measures are negatively related to firms' overseas investment for firms' directors without overseas experiences, but none of the three coefficients is statistically significant.

[Insert Table 8 About Here]

Finally, we examine whether our main results are affected by the level of firms' financial constraints. Im et al. (2017) found that firms facing high uncertainty tend to hold more than twice as much cash as firms facing low uncertainty, especially for financially constrained firms (Gulen and Ion, 2015; Han and Qiu, 2007). Thus, firms may reduce their investment when they are in a

period of high EPU. We measure firms' financial constraint by using Whited and Wu's (2006) method to construct an index of constraints for our sample firms<sup>9</sup>.

Table 9 examines our main findings in high- and low financial constraint groups separately. We only observe a significant negative relationship between three EPU measures and firms' overseas investment in the high financial constraint group, but the negative relationship between the three EPU measures and firms' overseas investment in the low financial constraint group all turn negatively insignificant. Results suggest firms with high financial constraints reduce their overseas investment when they face a high policy uncertainty period.

[Insert Table 9 About Here]

### **5.3 Mitigating Endogeneity**

In this section, we control for multiple endogeneity sources, such as measurement errors' bias, omitted variables, or self-selection errors. We employ three methods to alleviate endogeneity problems in our main findings: (1) the method of controlling for the reversal causality effect; (2) instrumental variable estimation; and (3) the residual of EPU index.

#### **5.3.1 Control for Reverse Causality**

We address the reverse causality effect in our main findings reported in Table 2 in this section. Demsetz (1973) suggested that large firms have strong incentives to ask policymakers to favor them when introducing new policies, especially when these firms are in monopoly industries. If true, then we should observe the negative relationship between EPU and firms' overseas investment for large firms but not for small ones. To alleviate this potential reverse causality problem, we sort our sample firms into two groups, large (firm size above the median value in the sample) and small firms (firm size below the median value in the sample).

Table 10 shows three of our EPU measures remain significantly negative in the group of small size firms. However, none of the EPU coefficients is statistically significant for large firms. This result indicates our main findings are free of the reverse causality problem.

[Insert Table 10 About Here]

#### **5.3.2 2SLS Test**

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<sup>9</sup> Whited-Wu index:  $ww = -0.091 * CF - 0.062 * DIVPOS + 0.021 * TLTD - 0.044 * LNTA + 0.102 * ISG - 0.035 * SG$ , where CF is the ratio of cash flows to total assets; DIVPOS is an indicator equal to one if firms pay cash dividends; TLTD is the ratio of debt to total assets; LNTA is the natural log of total assets; ISG is firms' three-digit industry sales growth; and SG is firms' sales growth.

In this section, we employ 2SLS method by using an instrument variable to mitigate potential endogeneity problems, such as omitted variables, measurement errors, and self-sections.

Prior work suggests that political election and economic policy uncertainty are highly correlated (Julio and Yook, 2012; Bhattacharya et al., 2015; Jens, 2017). The only nationwide political election in our sample period is the 18<sup>th</sup> National Congress of the Communist Party of China in 2012, when the China Communist Party selected their new general secretary. President Xi Jinping officially took office after the election. We apply the dummy variable (*POL\_TURNOVER*) to indicate the election year as our instrument variable in a 2SLS regression.

Table 10 presents the 2SLS regression results. The first stage result shows a significant positive relationship between our IV and the mean of EPU. The result indicates that our IV is relevant to economic policy changes. The result of the second stage shows our main finding of the negative relationship between EPU and firms' overseas investment remains significant after controlling for endogeneity concerns.

[Insert Table 11 About Here]

### 5.3.3 Test to Mitigate Endogeneity Concerns

In this section, we further examine whether other economic policy sources may affect policy-driven uncertainty. One concern in using the BBD index is that it may capture economic uncertainty but not policy uncertainty, which affects corporate investment (Gulen and Ion, 2015; Wang et al., 2014). If such a problem exists, then our main finding may be affected by error bias in the measurement. Therefore, we attempt to alleviate the measurement error bias further by leveraging the similarities between China and three other economic markets (Australia, the US, and Europe). A wide range of international trade activities between China and these three countries/regions have established close ties between these economies.

The EPU measurement used in the current study may contain certain policy-unrelated economic uncertainty. To eliminate this element contaminating EPU measure, we resort to Gulen and Ion's (2015) method by extracting the component of the China EPU index orthogonal to the US EPU index by running the following annual time-series regression:

$$\ln EPU_{China,t} = \alpha + \beta_1 \ln EPU_{i,t} + \beta_{controls} \sum \text{Control Variable} + \sum \text{Industry dummies} + \sum \text{Provincial dummies} + \varepsilon_{i,t}, \quad (2)$$

where  $EPU_{i,t}$  is the news-based policy uncertainty measure for either the US, or the Australian, or the European union developed by Baker et al. (2016), as well as the  $EPU_{China,t}$  represented by

China. We collect residual term  $\varepsilon_{i,t}$  to present a pure measure of China EPU, which is a real factor of general uncertainty affecting both countries.

Table 12 shows positive signs between the EPU index of these three countries/regions and China EPU in Models (1), (3), and (5), which suggests policy uncertainty in three countries/regions are highly related to China EPU. We replicate our main test by using the pure measure of China EPU in Models (2), (4), and (6) and find that our main finding on the negative relationship between EPU and firms' overseas investment remains significant for all three models.

[Insert Table 12 About Here]

## 6. Conclusion

The current study investigates how EPU affects Chinese firms' overseas investment by using a sample of 8,223 firm-year observations from 2007 to 2016. We define Chinese firms' overseas investment by using its total amount divided by its total asset value. We adopt Baker et al.'s (2016) monthly China EPU index. We also use mean, median, and geometric mean methods to transform their monthly index into annualized data to measure EPU. We find a significant negative relationship between EPU and Chinese firms' overseas investment during the study period. Such relationship is caused by a reduction on Chinese firms' investment of foreign fixed income securities. The underlying mechanism indicates that EPU has a stronger effect on SOEs' overseas investment than that of non-SOEs. We further determine that such negative relationship is pronounced to firms more financially constrained, more reliable on government subsidies, and having lower overseas revenues than other firms. We also find the negative effect is only for firms with returnee directors but not for firms without returnee directors. Moreover, if firms' head offices are in high marketization regions, then the negative influence of EPU on firms' overseas investment may be mitigated. Finally, our results remain robust even when we use different measures to proxy China EPU and after alleviating potential endogeneity problems and controlling for reverse causality effect.

To the best of our knowledge, this study is the first to investigate the effect EPU on firms' overseas investment in emerging markets. Our results suggest EPU affects firms' domestic and overseas investments. Chinese firms appear to hold their overseas investment when domestic policy is unstable. Therefore, our results support real options theory. We shed light on the driver of firms' overseas investment. Our study implies the Chinese government should increase transparency of its government policies and its stability, which can help firms plan their investment policy.



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**Table 1. Summary statistics**

| Variable              | Obs  | Mean   | Std.Dev. | Min      | Max    |
|-----------------------|------|--------|----------|----------|--------|
| Oversea investment    | 8223 | 0.095  | 0.163    | 1.99e-05 | 0.994  |
| LEPU_mean             | 8223 | 4.876  | 0.356    | 4.294    | 5.499  |
| LEPU_median           | 8223 | 4.818  | 0.363    | 4.243    | 5.478  |
| LEPU_geomean          | 8223 | 4.796  | 0.353    | 4.229    | 5.472  |
| China GDP growth      | 8223 | 0.089  | 0.019    | 0.069    | 0.142  |
| Tobin's q             | 8223 | 2.460  | 1.794    | 0.901    | 11.360 |
| Company size          | 8223 | 9.648  | 0.576    | 8.555    | 11.360 |
| Board size            | 8223 | 9.043  | 1.850    | 5.000    | 15.000 |
| Independent%          | 8223 | 0.369  | 0.053    | 0.286    | 0.571  |
| Leverage              | 8223 | 0.479  | 0.203    | 0.127    | 0.836  |
| ROA                   | 8223 | 0.039  | 0.052    | -0.166   | 0.200  |
| PPE/at                | 8223 | 0.236  | 0.169    | 0.003    | 0.716  |
| Capex/at              | 8223 | 0.052  | 0.049    | 2.50e-04 | 0.235  |
| State                 | 8223 | 0.531  | 0.499    | 0.000    | 1.000  |
| Institution ownership | 8223 | 0.071  | 0.104    | 0.001    | 0.586  |
| Top5con               | 8223 | 0.174  | 0.125    | 0.013    | 0.572  |
| Overseas background   | 8223 | 0.744  | 0.437    | 0.000    | 1.000  |
| Financial constrain   | 7324 | -1.022 | 0.661    | -53.280  | -0.362 |

**Table 2 Overseas Investment and Economic Policy Uncertainty**

The table shows the relationship between firms' overseas investment and economic policy uncertainty. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | (1)                   | (2)                   | (3)                   |
|-----------------------|-----------------------|-----------------------|-----------------------|
| LEPU_mean             | -0.018***<br>(-4.24)  |                       |                       |
| LEPU_median           |                       | -0.021***<br>(-4.84)  |                       |
| LEPU_geomean          |                       |                       | -0.011***<br>(-2.62)  |
| China GDP growth      | -2.717***<br>(-14.16) | -2.726***<br>(-14.26) | -2.644***<br>(-14.08) |
| Tobin's q             | 0.009***<br>(4.23)    | 0.009***<br>(4.12)    | 0.009***<br>(4.29)    |
| Company size          | 0.004<br>(0.70)       | 0.004<br>(0.63)       | 0.005<br>(0.76)       |
| Board size            | -0.004***<br>(-2.94)  | -0.004***<br>(-2.92)  | -0.004***<br>(-2.99)  |
| Independent%          | 0.027<br>(0.54)       | 0.028<br>(0.57)       | 0.025<br>(0.51)       |
| Leverage              | -0.227***<br>(-11.43) | -0.226***<br>(-11.41) | -0.227***<br>(-11.48) |
| ROA                   | -0.006<br>(-0.11)     | -0.004<br>(-0.07)     | -0.009<br>(-0.16)     |
| PPE/at                | -0.096***<br>(-5.83)  | -0.096***<br>(-5.85)  | -0.095***<br>(-5.81)  |
| Capex/at              | -0.081<br>(-1.68)     | -0.080<br>(-1.66)     | -0.082<br>(-1.69)     |
| Institution ownership | -0.000<br>(-0.36)     | -0.000<br>(-0.38)     | -0.000<br>(-0.34)     |
| Top5con               | 0.013<br>(0.54)       | 0.013<br>(0.57)       | 0.012<br>(0.51)       |
| Overseas background   | -0.006<br>(-1.12)     | -0.006<br>(-1.08)     | -0.006<br>(-1.20)     |
| Financial constrain   | 0.002<br>(1.86)       | 0.002<br>(1.89)       | 0.002<br>(1.78)       |
| Constant              | 0.523***<br>(7.75)    | 0.541***<br>(7.94)    | 0.478***<br>(7.24)    |
| Industry fixed effect | Yes                   | Yes                   | Yes                   |
| Province fixed effect | Yes                   | Yes                   | Yes                   |
| Observations          | 7,309                 | 7,309                 | 7,309                 |
| Adjusted R-squared    | 0.219                 | 0.219                 | 0.218                 |

**Table 3 Overseas Investment and Economic Policy Uncertainty  
Using Alternative Measures of Firms' Overseas Investment**

The table shows the relationship between firms' overseas investment and economic policy uncertainty. The dependent variables are alternative measures of firms' overseas investment, such as investment of fixed income securities, wealth management, non-financial firms' shares or financial firms' shares. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | (1)                     | (2)                  | (3)                         | (4)                     |
|-----------------------|-------------------------|----------------------|-----------------------------|-------------------------|
|                       | Fixed Income Securities | Wealth management    | Non-financial firms' shares | Financial firms' shares |
| LEPU_median           | -0.008***<br>(-3.81)    | 0.003<br>(0.25)      | 0.001<br>(0.44)             | 0.006<br>(1.78)         |
| China GDP growth      | -0.337***<br>(-2.81)    | -4.434***<br>(-6.64) | 0.063<br>(0.84)             | 0.329<br>(1.84)         |
| Tobin's q             | 0.001<br>(1.31)         | 0.005<br>(1.29)      | 0.004<br>(1.43)             | -0.003<br>(-0.94)       |
| Company size          | -0.001<br>(-0.31)       | -0.056***<br>(-4.10) | -0.003<br>(-0.70)           | 0.012<br>(1.37)         |
| Board size            | -0.001<br>(-1.15)       | -0.004<br>(-1.23)    | -0.002***<br>(-2.82)        | -0.001<br>(-0.68)       |
| Independent%          | -0.002<br>(-0.10)       | 0.027<br>(0.25)      | -0.026<br>(-1.03)           | -0.029<br>(-0.53)       |
| Leverage              | -0.026**<br>(-2.39)     | -0.254***<br>(-6.71) | -0.037***<br>(-3.02)        | -0.189***<br>(-5.32)    |
| ROA                   | -0.003<br>(-0.09)       | 0.170<br>(1.42)      | 0.004<br>(0.11)             | -0.131<br>(-1.89)       |
| PPE/at                | -0.016**<br>(-2.01)     | -0.155***<br>(-3.85) | -0.007<br>(-0.76)           | -0.059***<br>(-2.70)    |
| Capex/at              | -0.078***<br>(-3.30)    | 0.016<br>(0.13)      | -0.093***<br>(-4.05)        | -0.168***<br>(-3.31)    |
| Institution ownership | -0.000<br>(-1.09)       | 0.000<br>(0.47)      | -0.000**<br>(-2.36)         | 0.000<br>(0.27)         |
| Top5con               | -0.026***<br>(-2.66)    | 0.105**<br>(2.52)    | -0.001<br>(-0.11)           | -0.032<br>(-1.05)       |
| Oversea background    | -0.006**<br>(-2.10)     | -0.002<br>(-0.17)    | 0.002<br>(0.74)             | -0.008<br>(-1.34)       |
| Financial constrain   | 0.001**<br>(2.05)       | -0.012<br>(-0.92)    | 0.004<br>(0.83)             | 0.008<br>(0.53)         |
| Constant              | 0.126***<br>(3.72)      | 1.187***<br>(7.45)   | 0.109***<br>(2.89)          | 0.025<br>(0.32)         |
| Industry fixed effect | 2,006                   | 2,339                | 3,581                       | 2,538                   |
| Province fixed effect | Yes                     | Yes                  | Yes                         |                         |
| Observations          | Yes                     | Yes                  | Yes                         |                         |
| Adjusted R-squared    | 0.0936                  | 0.173                | 0.149                       | 0.199                   |

**Table 4 Overseas Investment and Economic Policy Uncertainty in SOEs versus non-SOEs**

The table shows how firm's political status impact on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | (1)                   | (2)                   | (3)                   |
|-----------------------|-----------------------|-----------------------|-----------------------|
| LEPU_mean             | -0.024***<br>(-4.43)  |                       |                       |
| LEPU_median           |                       | -0.027***<br>(-4.95)  |                       |
| LEPU_geomean          |                       |                       | -0.015***<br>(-2.95)  |
| LEPU_mean×State       | -0.003**<br>(-2.00)   |                       |                       |
| LEPU_median×State     |                       | -0.003**<br>(-1.99)   |                       |
| LEPU_geomean×State    |                       |                       | -0.003**<br>(-2.02)   |
| China GDP growth      | -3.548***<br>(-14.04) | -3.553***<br>(-14.10) | -3.454***<br>(-13.94) |
| Tobin's q             | 0.012***<br>(4.14)    | 0.011***<br>(4.03)    | 0.012***<br>(4.20)    |
| Company size          | 0.001<br>(0.18)       | 0.001<br>(0.10)       | 0.002<br>(0.24)       |
| Board size            | -0.004**<br>(-2.35)   | -0.004**<br>(-2.32)   | -0.004**<br>(-2.39)   |
| Independent%          | 0.060<br>(0.89)       | 0.062<br>(0.91)       | 0.058<br>(0.87)       |
| Leverage              | -0.280***<br>(-11.48) | -0.280***<br>(-11.46) | -0.281***<br>(-11.53) |
| ROA                   | -0.051<br>(-0.72)     | -0.048<br>(-0.67)     | -0.055<br>(-0.77)     |
| PPE/at                | -0.128***<br>(-6.21)  | -0.129***<br>(-6.24)  | -0.128***<br>(-6.19)  |
| Capex/at              | -0.126**<br>(-2.13)   | -0.125**<br>(-2.10)   | -0.127**<br>(-2.14)   |
| Institution ownership | -0.000<br>(-0.20)     | -0.000<br>(-0.21)     | -0.000<br>(-0.18)     |
| Top5con               | 0.040<br>(1.29)       | 0.041<br>(1.31)       | 0.039<br>(1.26)       |
| Oversea background    | -0.007<br>(-0.97)     | -0.006<br>(-0.93)     | -0.007<br>(-1.05)     |
| Financial constrain   | 0.003***<br>(3.14)    | 0.003***<br>(3.17)    | 0.003***<br>(3.07)    |
| Constant              | 0.708***<br>(7.94)    | 0.729***<br>(8.08)    | 0.652***<br>(7.46)    |

|                       |       |       |       |
|-----------------------|-------|-------|-------|
| Industry fixed effect | Yes   | Yes   | Yes   |
| Province fixed effect | Yes   | Yes   | Yes   |
| Observations          | 7,436 | 7,436 | 7,436 |
| Adjusted R-squared    | 0.211 | 0.212 | 0.211 |

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**Table 5 Overseas Investment and Economic Policy Uncertainty  
under different degree of Marketization**

The table shows how regional marketization level impacts on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES                  | (1)                   | (2)                   | (3)                   |
|----------------------------|-----------------------|-----------------------|-----------------------|
| LEPU_mean                  | -0.032***<br>(-5.34)  |                       |                       |
| LEPU_median                |                       | -0.036***<br>(-5.80)  |                       |
| LEPU_geomean               |                       |                       | -0.023***<br>(-4.05)  |
| LEPU_mean×Marketization    | 0.001**<br>(2.33)     |                       |                       |
| LEPU_median×Marketization  |                       | 0.001**<br>(2.31)     |                       |
| LEPU_geomean×Marketization |                       |                       | 0.001**<br>(2.34)     |
| China GDP growth           | -3.700***<br>(-14.59) | -3.705***<br>(-14.65) | -3.607***<br>(-14.51) |
| Tobin's q                  | 0.012***<br>(4.15)    | 0.011***<br>(4.03)    | 0.012***<br>(4.21)    |
| Company size               | -0.003<br>(-0.36)     | -0.003<br>(-0.43)     | -0.002<br>(-0.29)     |
| Board size                 | -0.005***<br>(-2.78)  | -0.005***<br>(-2.75)  | -0.005***<br>(-2.83)  |
| Independent%               | 0.058<br>(0.84)       | 0.060<br>(0.86)       | 0.056<br>(0.81)       |
| Leverage                   | -0.279***<br>(-11.32) | -0.279***<br>(-11.29) | -0.280***<br>(-11.36) |
| ROA                        | -0.045<br>(-0.61)     | -0.042<br>(-0.57)     | -0.048<br>(-0.66)     |
| PPE/at                     | -0.137***<br>(-6.65)  | -0.137***<br>(-6.67)  | -0.136***<br>(-6.62)  |
| Capex/at                   | -0.102<br>(-1.73)     | -0.100<br>(-1.71)     | -0.102<br>(-1.74)     |
| Institution ownership      | -0.000<br>(-0.43)     | -0.000<br>(-0.44)     | -0.000<br>(-0.41)     |
| Top5con                    | 0.031<br>(1.00)       | 0.031<br>(1.03)       | 0.030<br>(0.97)       |
| Oversea background         | -0.008<br>(-1.16)     | -0.008<br>(-1.13)     | -0.009<br>(-1.25)     |
| Financial constrain        | 0.002***<br>(2.70)    | 0.002***<br>(2.73)    | 0.002***<br>(2.59)    |
| Constant                   | 0.748***<br>(9.00)    | 0.769***<br>(9.13)    | 0.691***<br>(8.52)    |



|                       |       |       |       |
|-----------------------|-------|-------|-------|
| Industry fixed effect | Yes   | Yes   | Yes   |
| Observations          | 7,436 | 7,436 | 7,436 |
| Adjusted R-squared    | 0.203 | 0.204 | 0.203 |

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**Table 6 Overseas Investment and Economic Policy Uncertainty  
for Firms with/without Governments' Subsidies**

The table shows how firms' government subsidies impact on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | with GS               | with GS               | with GS               | without GS           | without GS           | without GS           |
|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
|                       | (1)                   | (2)                   | (3)                   | (4)                  | (5)                  | (6)                  |
| LEPU_mean             | -0.019***<br>(-4.29)  |                       |                       | 0.008<br>(0.50)      |                      |                      |
| LEPU_median           |                       | -0.022***<br>(-4.81)  |                       |                      | 0.005<br>(0.32)      |                      |
| LEPU_geomean          |                       |                       | -0.011***<br>(-2.65)  |                      |                      | 0.008<br>(0.49)      |
| China GDP growth      | -2.710***<br>(-13.98) | -2.713***<br>(-14.06) | -2.635***<br>(-13.90) | -1.850***<br>(-3.28) | -1.888***<br>(-3.33) | -1.872***<br>(-3.41) |
| Tobin's q             | 0.009***<br>(4.12)    | 0.009***<br>(3.99)    | 0.009***<br>(4.21)    | 0.006**<br>(2.03)    | 0.007**<br>(2.06)    | 0.006**<br>(2.02)    |
| Company size          | 0.005<br>(0.71)       | 0.004<br>(0.63)       | 0.005<br>(0.78)       | 0.003<br>(0.17)      | 0.003<br>(0.18)      | 0.002<br>(0.17)      |
| Board size            | -0.004***<br>(-2.98)  | -0.004***<br>(-2.95)  | -0.004***<br>(-3.03)  | -0.001<br>(-0.22)    | -0.001<br>(-0.20)    | -0.001<br>(-0.22)    |
| Independent%          | 0.027<br>(0.53)       | 0.028<br>(0.55)       | 0.026<br>(0.50)       | 0.111<br>(0.84)      | 0.111<br>(0.84)      | 0.110<br>(0.84)      |
| Leverage              | -0.235***<br>(-11.38) | -0.235***<br>(-11.36) | -0.236***<br>(-11.43) | -0.119***<br>(-3.77) | -0.119***<br>(-3.77) | -0.119***<br>(-3.76) |
| ROA                   | -0.012<br>(-0.20)     | -0.009<br>(-0.16)     | -0.015<br>(-0.25)     | 0.151<br>(1.42)      | 0.152<br>(1.42)      | 0.152<br>(1.43)      |
| PPE/at                | -0.096***<br>(-5.55)  | -0.097***<br>(-5.57)  | -0.096***<br>(-5.52)  | -0.116***<br>(-3.46) | -0.116***<br>(-3.45) | -0.116***<br>(-3.46) |
| Capex/at              | -0.088<br>(-1.73)     | -0.087<br>(-1.70)     | -0.090<br>(-1.75)     | -0.020<br>(-0.15)    | -0.022<br>(-0.17)    | -0.021<br>(-0.16)    |
| Institution ownership | -0.000<br>(-0.45)     | -0.000<br>(-0.46)     | -0.000<br>(-0.43)     | -0.000<br>(-0.03)    | -0.000<br>(-0.05)    | -0.000<br>(-0.04)    |
| Top5con               | 0.025<br>(1.01)       | 0.026<br>(1.03)       | 0.024<br>(0.97)       | -0.091**<br>(-2.00)  | -0.090**<br>(-1.99)  | -0.090**<br>(-1.99)  |
| Oversea background    | -0.006<br>(-1.08)     | -0.006<br>(-1.04)     | -0.006<br>(-1.17)     | 0.005<br>(0.31)      | 0.005<br>(0.31)      | 0.005<br>(0.30)      |
| Financial constrain   | 0.002**<br>(2.03)     | 0.002**<br>(2.06)     | 0.002<br>(1.94)       | 0.027<br>(0.35)      | 0.026<br>(0.34)      | 0.026<br>(0.35)      |
| Constant              | 0.540***<br>(7.49)    | 0.557***<br>(7.67)    | 0.490***<br>(6.97)    | 0.204<br>(1.30)      | 0.219<br>(1.39)      | 0.207<br>(1.35)      |
| Industry fixed effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |
| Province fixed effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |
| Observations          | 6,719                 | 6,719                 | 6,719                 | 541                  | 541                  | 541                  |
| Adjusted R-squared    | 0.221                 | 0.222                 | 0.220                 | 0.276                | 0.276                | 0.276                |

**Table 7 Overseas Investment and Economic Policy Uncertainty  
under Different Level of Oversea revenue**

The table shows how firms' overseas income impacts on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | Low<br>oversea<br>revenue | Low<br>oversea<br>revenue | Low<br>oversea<br>revenue | High oversea<br>revenue | High oversea<br>revenue | High oversea<br>revenue |
|-----------------------|---------------------------|---------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
|                       | (1)                       | (2)                       | (3)                       | (4)                     | (5)                     | (6)                     |
| LEPU_mean             | -0.027***<br>(-3.92)      |                           |                           | 0.009<br>(0.67)         |                         |                         |
| LEPU_median           |                           | -0.031***<br>(-4.30)      |                           |                         | 0.008<br>(0.60)         |                         |
| LEPU_geomean          |                           |                           | -0.017**<br>(-2.51)       |                         |                         | 0.012<br>(0.85)         |
| China GDP growth      | -3.045***<br>(-10.28)     | -3.044***<br>(-10.36)     | -2.949***<br>(-10.13)     | -2.073***<br>(-5.02)    | -2.091***<br>(-5.11)    | -2.072***<br>(-5.07)    |
| Tobin's q             | 0.011***<br>(3.40)        | 0.011***<br>(3.26)        | 0.012***<br>(3.49)        | 0.020***<br>(2.61)      | 0.021***<br>(2.63)      | 0.020***<br>(2.60)      |
| Company size          | 0.001<br>(0.11)           | 0.001<br>(0.06)           | 0.002<br>(0.14)           | -0.015<br>(-1.11)       | -0.014<br>(-1.10)       | -0.015<br>(-1.11)       |
| Board size            | -0.007***<br>(-3.00)      | -0.007***<br>(-2.98)      | -0.007***<br>(-3.04)      | -0.002<br>(-0.64)       | -0.002<br>(-0.63)       | -0.002<br>(-0.65)       |
| Independent%          | 0.029<br>(0.35)           | 0.031<br>(0.37)           | 0.027<br>(0.32)           | -0.305***<br>(-3.57)    | -0.304***<br>(-3.57)    | -0.305***<br>(-3.58)    |
| Leverage              | -0.229***<br>(-8.22)      | -0.229***<br>(-8.21)      | -0.230***<br>(-8.26)      | -0.126***<br>(-3.19)    | -0.126***<br>(-3.19)    | -0.126***<br>(-3.20)    |
| ROA                   | 0.039<br>(0.43)           | 0.040<br>(0.45)           | 0.038<br>(0.42)           | -0.061<br>(-0.44)       | -0.062<br>(-0.44)       | -0.062<br>(-0.44)       |
| PPE/at                | -0.134***<br>(-5.05)      | -0.135***<br>(-5.08)      | -0.133***<br>(-5.01)      | -0.092**<br>(-2.49)     | -0.092**<br>(-2.49)     | -0.092**<br>(-2.50)     |
| Capex/at              | -0.079<br>(-1.07)         | -0.077<br>(-1.05)         | -0.081<br>(-1.11)         | 0.176<br>(1.49)         | 0.175<br>(1.48)         | 0.177<br>(1.50)         |
| Institution ownership | -0.000<br>(-0.57)         | -0.000<br>(-0.58)         | -0.000<br>(-0.54)         | 0.001<br>(1.38)         | 0.001<br>(1.38)         | 0.001<br>(1.38)         |
| Top5con               | 0.026<br>(0.65)           | 0.027<br>(0.67)           | 0.025<br>(0.62)           | 0.062<br>(1.57)         | 0.062<br>(1.56)         | 0.062<br>(1.56)         |
| Oversea background    | -0.010<br>(-1.23)         | -0.010<br>(-1.21)         | -0.010<br>(-1.30)         | -0.026**<br>(-2.17)     | -0.026**<br>(-2.16)     | -0.026**<br>(-2.17)     |
| Financial constrain   | -0.026<br>(-0.96)         | -0.026<br>(-0.95)         | -0.026<br>(-0.98)         | 0.006<br>(0.23)         | 0.006<br>(0.23)         | 0.006<br>(0.22)         |
| Constant              | 0.617***<br>(5.23)        | 0.637***<br>(5.37)        | 0.554***<br>(4.78)        | 0.560***<br>(3.53)      | 0.567***<br>(3.60)      | 0.551***<br>(3.53)      |
| Industry fixed effect | Yes                       | Yes                       | Yes                       | Yes                     | Yes                     | Yes                     |
| Province fixed effect | Yes                       | Yes                       | Yes                       | Yes                     | Yes                     | Yes                     |

|                    |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|
| Observations       | 3,015 | 3,015 | 3,015 | 684   | 684   | 684   |
| Adjusted R-squared | 0.235 | 0.236 | 0.233 | 0.244 | 0.244 | 0.244 |

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**Table 8 Overseas Investment and Economic Policy Uncertainty  
under Different Director's Background**

The table shows how firms' directors' overseas background impacts on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES                | Oversea<br>background | Oversea<br>background | Oversea<br>background | Non-Oversea<br>background | Non-Oversea<br>background | Non-Oversea<br>background |
|--------------------------|-----------------------|-----------------------|-----------------------|---------------------------|---------------------------|---------------------------|
|                          | (1)                   | (2)                   | (3)                   | (4)                       | (5)                       | (6)                       |
| LEPU_mean                | -0.019***<br>(-3.93)  |                       |                       | -0.014<br>(-0.98)         |                           |                           |
| LEPU_median              |                       | -0.023***<br>(-4.52)  |                       |                           | -0.016<br>(-1.16)         |                           |
| LEPU_geomean             |                       |                       | -0.012***<br>(-2.63)  |                           |                           | -0.003<br>(-0.25)         |
| China GDP growth         | -2.628***<br>(-12.63) | -2.646***<br>(-12.74) | -2.550***<br>(-12.59) | -3.435***<br>(-8.55)      | -3.405***<br>(-8.59)      | -3.420***<br>(-8.56)      |
| Tobin's q                | 0.011***<br>(4.65)    | 0.011***<br>(4.57)    | 0.011***<br>(4.67)    | 0.001<br>(0.29)           | 0.001<br>(0.24)           | 0.001<br>(0.39)           |
| Company size             | 0.009<br>(1.37)       | 0.008<br>(1.31)       | 0.009<br>(1.40)       | -0.012<br>(-0.90)         | -0.012<br>(-0.94)         | -0.011<br>(-0.83)         |
| Board size               | -0.004***<br>(-2.90)  | -0.004***<br>(-2.87)  | -0.004***<br>(-2.95)  | -0.005<br>(-1.79)         | -0.005<br>(-1.78)         | -0.005<br>(-1.80)         |
| Independent%             | 0.032<br>(0.63)       | 0.033<br>(0.65)       | 0.031<br>(0.60)       | 0.034<br>(0.32)           | 0.035<br>(0.32)           | 0.033<br>(0.31)           |
| Leverage                 | -0.224***<br>(-10.93) | -0.223***<br>(-10.91) | -0.224***<br>(-10.97) | -0.242***<br>(-6.67)      | -0.241***<br>(-6.66)      | -0.242***<br>(-6.69)      |
| ROA                      | -0.071<br>(-1.24)     | -0.068<br>(-1.20)     | -0.073<br>(-1.28)     | 0.266**<br>(2.24)         | 0.268**<br>(2.26)         | 0.263**<br>(2.22)         |
| PPE/at                   | -0.080***<br>(-4.71)  | -0.081***<br>(-4.74)  | -0.080***<br>(-4.70)  | -0.166***<br>(-5.22)      | -0.167***<br>(-5.23)      | -0.165***<br>(-5.20)      |
| Capex/at                 | -0.099**<br>(-2.06)   | -0.099**<br>(-2.05)   | -0.099**<br>(-2.05)   | -0.041<br>(-0.33)         | -0.038<br>(-0.31)         | -0.047<br>(-0.37)         |
| Institution<br>ownership | -0.000<br>(-0.25)     | -0.000<br>(-0.26)     | -0.000<br>(-0.23)     | -0.000<br>(-0.01)         | -0.000<br>(-0.02)         | 0.000<br>(0.02)           |
| Top5con                  | -0.004<br>(-0.18)     | -0.004<br>(-0.15)     | -0.005<br>(-0.20)     | 0.070<br>(1.49)           | 0.071<br>(1.50)           | 0.069<br>(1.46)           |
| Financial constrain      | 0.003***<br>(3.99)    | 0.003***<br>(4.06)    | 0.003***<br>(3.87)    | -0.005<br>(-0.85)         | -0.005<br>(-0.85)         | -0.005<br>(-0.90)         |
| Constant                 | 0.466***<br>(6.74)    | 0.486***<br>(6.95)    | 0.424***<br>(6.28)    | 0.732***<br>(4.71)        | 0.742***<br>(4.87)        | 0.671***<br>(4.40)        |
| Industry fixed<br>effect | Yes                   | Yes                   | Yes                   | Yes                       | Yes                       | Yes                       |

|                       |       |       |       |       |       |       |
|-----------------------|-------|-------|-------|-------|-------|-------|
| Province fixed effect | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Observations          | 5,897 | 5,897 | 5,897 | 1,412 | 1,412 | 1,412 |
| Adjusted R-squared    | 0.220 | 0.220 | 0.219 | 0.199 | 0.199 | 0.199 |

**Table 9 Overseas Investment and Economic Policy Uncertainty  
under Different Level of Financial Constrain**

The table shows how firms' financial constraint impacts on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES                | high<br>finconstrain  | high<br>finconstrain  | high<br>finconstrain  | low<br>finconstrain  | low<br>finconstrain  | low<br>finconstrain  |
|--------------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
|                          | (1)                   | (2)                   | (3)                   | (4)                  | (5)                  | (6)                  |
| LEPU_mean                | -0.022***<br>(-4.33)  |                       |                       | -0.012<br>(-1.38)    |                      |                      |
| LEPU_median              |                       | -0.025***<br>(-4.78)  |                       |                      | -0.016<br>(-1.75)    |                      |
| LEPU_geomean             |                       |                       | -0.015***<br>(-3.07)  |                      |                      | -0.004<br>(-0.48)    |
| China GDP growth         | -2.466***<br>(-11.57) | -2.462***<br>(-11.64) | -2.394***<br>(-11.46) | -3.175***<br>(-8.81) | -3.213***<br>(-8.86) | -3.088***<br>(-8.82) |
| Tobin's q                | 0.007**<br>(2.24)     | 0.007**<br>(2.10)     | 0.008**<br>(2.34)     | 0.011***<br>(4.19)   | 0.011***<br>(4.16)   | 0.011***<br>(4.19)   |
| Company size             | 0.000<br>(0.00)       | -0.000<br>(-0.06)     | 0.000<br>(0.06)       | 0.014<br>(0.67)      | 0.013<br>(0.66)      | 0.014<br>(0.69)      |
| Board size               | -0.003**<br>(-2.06)   | -0.003**<br>(-2.03)   | -0.003**<br>(-2.11)   | -0.005**<br>(-2.34)  | -0.005**<br>(-2.33)  | -0.005**<br>(-2.35)  |
| Independent%             | 0.038<br>(0.68)       | 0.039<br>(0.69)       | 0.037<br>(0.66)       | 0.039<br>(0.48)      | 0.040<br>(0.50)      | 0.038<br>(0.47)      |
| Leverage                 | -0.221***<br>(-9.26)  | -0.221***<br>(-9.24)  | -0.222***<br>(-9.30)  | -0.209***<br>(-7.17) | -0.209***<br>(-7.16) | -0.210***<br>(-7.19) |
| ROA                      | 0.039<br>(0.49)       | 0.045<br>(0.55)       | 0.034<br>(0.43)       | -0.070<br>(-1.09)    | -0.068<br>(-1.06)    | -0.072<br>(-1.13)    |
| PPE/at                   | -0.096***<br>(-5.33)  | -0.096***<br>(-5.37)  | -0.095***<br>(-5.29)  | -0.082***<br>(-2.78) | -0.082***<br>(-2.78) | -0.083***<br>(-2.79) |
| Capex/at                 | -0.076<br>(-1.36)     | -0.075<br>(-1.34)     | -0.078<br>(-1.39)     | -0.079<br>(-0.97)    | -0.080<br>(-0.97)    | -0.078<br>(-0.96)    |
| Institution<br>ownership | -0.000<br>(-0.11)     | -0.000<br>(-0.12)     | -0.000<br>(-0.09)     | -0.000<br>(-0.57)    | -0.000<br>(-0.58)    | -0.000<br>(-0.56)    |
| Top5con                  | 0.007<br>(0.27)       | 0.007<br>(0.30)       | 0.006<br>(0.23)       | 0.037<br>(0.80)      | 0.038<br>(0.81)      | 0.036<br>(0.78)      |
| Oversea<br>background    | -0.012**<br>(-2.08)   | -0.012**<br>(-2.04)   | -0.013**<br>(-2.18)   | 0.011<br>(1.03)      | 0.011<br>(1.04)      | 0.011<br>(1.02)      |
| Financial constrain      | 0.002**<br>(2.16)     | 0.002**<br>(2.18)     | 0.002**<br>(2.08)     | -0.168<br>(-1.21)    | -0.166<br>(-1.19)    | -0.167<br>(-1.20)    |
| Constant                 | 0.560***<br>(6.70)    | 0.576***<br>(6.84)    | 0.513***<br>(6.30)    | 0.269<br>(1.64)      | 0.296<br>(1.79)      | 0.222<br>(1.35)      |
| Industry fixed<br>effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |
| Province fixed<br>effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |

|                    |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|
| Observations       | 5,111 | 5,111 | 5,111 | 2,198 | 2,198 | 2,198 |
| Adjusted R-squared | 0.214 | 0.215 | 0.213 | 0.242 | 0.243 | 0.242 |

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**Table 10 Control for Reverse Causality**

The table shows the results of controlling for the reverse causality effect on the relationship between the firm's overseas investment and the EPU. The dependent variable is firms' overseas investment. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | Small                 | Small                 | Small                 | Big                  | Big                  | Big                  |
|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
|                       | (1)                   | (2)                   | (3)                   | (4)                  | (5)                  | (6)                  |
| LEPU_mean             | -0.029***<br>(-3.65)  |                       |                       | -0.002<br>(-0.46)    |                      |                      |
| LEPU_median           |                       | -0.032***<br>(-4.20)  |                       |                      | -0.005<br>(-1.05)    |                      |
| LEPU_geomean          |                       |                       | -0.019**<br>(-2.42)   |                      |                      | 0.001<br>(0.20)      |
| China GDP growth      | -3.401***<br>(-12.96) | -3.418***<br>(-13.09) | -3.279***<br>(-12.66) | -1.403***<br>(-5.73) | -1.421***<br>(-5.83) | -1.381***<br>(-5.77) |
| Tobin's q             | 0.008**<br>(4.99)     | 0.007**<br>(4.75)     | 0.008***<br>(5.11)    | 0.006<br>(1.43)      | 0.006<br>(1.39)      | 0.006<br>(1.44)      |
| Company size          | 0.005<br>(0.48)       | 0.004<br>(0.37)       | 0.007<br>(0.57)       | -0.013<br>(-1.43)    | -0.013<br>(-1.44)    | -0.013<br>(-1.41)    |
| Board size            | -0.004*<br>(-1.97)    | -0.004<br>(-1.95)     | -0.004**<br>(-2.02)   | -0.005***<br>(-3.03) | -0.005***<br>(-3.00) | -0.005***<br>(-3.05) |
| Independent%          | 0.043<br>(0.75)       | 0.045<br>(0.78)       | 0.041<br>(0.71)       | -0.030<br>(-0.47)    | -0.030<br>(-0.47)    | -0.031<br>(-0.48)    |
| Leverage              | -0.214***<br>(-13.20) | -0.214***<br>(-13.19) | -0.215***<br>(-13.22) | -0.210***<br>(-6.26) | -0.209***<br>(-6.24) | -0.211***<br>(-6.29) |
| ROA                   | -0.046<br>(-0.87)     | -0.043<br>(-0.81)     | -0.051<br>(-0.95)     | 0.108<br>(1.20)      | 0.111<br>(1.22)      | 0.107<br>(1.18)      |
| PPE/at                | -0.111***<br>(-5.67)  | -0.112***<br>(-5.71)  | -0.110***<br>(-5.62)  | -0.070***<br>(-3.38) | -0.070***<br>(-3.39) | -0.070***<br>(-3.38) |
| Capex/at              | -0.166***<br>(-2.76)  | -0.163***<br>(-2.72)  | -0.168***<br>(-2.80)  | -0.116**<br>(-1.98)  | -0.116**<br>(-1.98)  | -0.115**<br>(-1.97)  |
| Institution ownership | -0.000<br>(-0.47)     | -0.000<br>(-0.49)     | -0.000<br>(-0.42)     | 0.000<br>(0.04)      | 0.000<br>(0.04)      | 0.000<br>(0.05)      |
| Top5con               | 0.024<br>(0.93)       | 0.025<br>(0.97)       | 0.023<br>(0.87)       | -0.026<br>(-0.92)    | -0.026<br>(-0.91)    | -0.027<br>(-0.93)    |
| Oversea background    | 0.002<br>(0.23)       | 0.002<br>(0.24)       | 0.001<br>(0.17)       | -0.009<br>(-1.47)    | -0.009<br>(-1.43)    | -0.010<br>(-1.52)    |
| Financial constrain   | 0.002<br>(0.65)       | 0.002<br>(0.67)       | 0.002<br>(0.62)       | -0.002<br>(-0.34)    | -0.002<br>(-0.33)    | -0.002<br>(-0.34)    |
| Constant              | 0.594***<br>(4.68)    | 0.621***<br>(4.89)    | 0.524***<br>(4.18)    | 0.511***<br>(4.96)   | 0.528***<br>(5.07)   | 0.493***<br>(4.90)   |
| Industry fixed effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |
| Province fixed effect | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  | Yes                  |
| Observations          | 4,011                 | 4,011                 | 4,011                 | 3,298                | 3,298                | 3,298                |

|                    |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|
| Adjusted R-squared | 0.228 | 0.229 | 0.226 | 0.203 | 0.203 | 0.203 |
|--------------------|-------|-------|-------|-------|-------|-------|

**Table 11 Overseas Investment and Economic Policy Uncertainty in 2SLS regression**

This table shows the 2SLS regression results. We used a dummy variable to represent the instrument variable (POL\_TURNOVER), which equals 1 representing the year after the XI Jinping taking the role of the President of Communist Party of China, otherwise is 0. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES             | 1 <sup>st</sup> stage of OBOR    | 2 <sup>nd</sup> stage of OBOR     |
|-----------------------|----------------------------------|-----------------------------------|
| POL_TURNOVER          | 0.169 <sup>***</sup><br>(39.96)  |                                   |
| LEPU_mean             |                                  | -0.112 <sup>***</sup><br>(-38.25) |
| Tobin's q             | -0.012 <sup>***</sup><br>(-5.86) | -0.001 <sup>***</sup><br>(-5.97)  |
| Company size          | -0.026 <sup>***</sup><br>(-4.55) | -0.005 <sup>***</sup><br>(-7.69)  |
| Board size            | 0.006 <sup>***</sup><br>(4.34)   | 0.001 <sup>***</sup><br>(5.53)    |
| Independent%          | 0.159 <sup>***</sup><br>(3.01)   | 0.018 <sup>***</sup><br>(3.07)    |
| Leverage              | 0.051 <sup>***</sup><br>(3.13)   | 0.011 <sup>***</sup><br>(6.18)    |
| ROA                   | 0.218 <sup>***</sup><br>(3.03)   | 0.038 <sup>***</sup><br>(4.81)    |
| PPE/at                | -0.033 <sup>**</sup><br>(-2.00)  | -0.001<br>(-0.76)                 |
| Capex/at              | -0.010<br>(-0.15)                | 0.002<br>(0.20)                   |
| Institution ownership | -0.001 <sup>***</sup><br>(-3.78) | -0.000 <sup>**</sup><br>(-2.46)   |
| Top5con               | 0.087 <sup>***</sup><br>(4.46)   | 0.010 <sup>***</sup><br>(4.47)    |
| Oversea background    | 0.043 <sup>***</sup><br>(4.56)   | 0.006 <sup>***</sup><br>(6.31)    |
| Financial constrain   | 0.009 <sup>***</sup><br>(7.14)   | 0.001 <sup>***</sup><br>(6.28)    |
| Constant              | 4.959 <sup>***</sup><br>(95.98)  | 0.661 <sup>***</sup><br>(46.55)   |
| Industry fixed effect | Yes                              | Yes                               |
| Province fixed effect | Yes                              | Yes                               |
| Observations          | 7,309                            | 7,309                             |

**Table 12 Overseas Investment and Economic Policy Uncertainty  
Controlling for Common Economic Shocks Between U.S., AUS, and Euro, and China**

This table examines whether the other sources of economic policy uncertainties may affect policy-driven uncertainty in China. We follow Gulen and Ion's (2016) method to mitigate endogeneity problem in our main findings. We extract the component of China EPU index orthogonal to either U.S., or AUS, or European EPU index. And then we collect residuals to represent a purer measure of policy uncertainty in China and replicate our main test. All variables are defined in Appendix I. We control industry fixed effect and province fixed effect to adjust the standard errors. We adopt the robust standard errors clustered at the firm level in the regression. Robust t-statistics in parentheses. \*\* and \*\*\* indicate statistical significance at the 5%, and 1% level respectively.

| VARIABLES      | (1)                  | (2)                   | (3)                  | (4)                   | (5)                 | (6)                   |
|----------------|----------------------|-----------------------|----------------------|-----------------------|---------------------|-----------------------|
|                | LEPU_China_mean      | Oversea<br>Investment | LEPU_China_mean      | Oversea<br>Investment | LEPU_China_mean     | Oversea<br>Investment |
| LEPU_AUS_mean  | 0.630***<br>(118.32) |                       |                      |                       |                     |                       |
| LEPU_mean_AUS  |                      | -0.006***<br>(-20.09) |                      |                       |                     |                       |
| LEPU_EURO_mean |                      |                       | 0.750***<br>(84.46)  |                       |                     |                       |
| LEPU_mean_EURO |                      |                       |                      | -0.031***<br>(-73.30) |                     |                       |
| LEPU_US_mean   |                      |                       |                      |                       | 0.927***<br>(94.40) |                       |
| LEPU_mean_US   |                      |                       |                      |                       |                     | -0.005***<br>(-12.68) |
| Tobin's q      | 0.016***<br>(10.25)  | -0.001***<br>(-9.62)  | 0.003<br>(1.46)      | -0.001***<br>(-9.04)  | 0.019***<br>(10.46) | -0.001***<br>(-9.59)  |
| Company size   | 0.027***<br>(4.13)   | -0.007***<br>(-18.26) | -0.052***<br>(-6.92) | -0.006***<br>(-17.66) | 0.033***<br>(4.69)  | -0.007***<br>(-18.21) |
| Board size     | -0.001<br>(-0.78)    | 0.001***<br>(9.04)    | 0.008***<br>(4.18)   | 0.001***<br>(9.58)    | -0.001<br>(-0.60)   | 0.001***<br>(8.96)    |
| Independent%   | -0.002<br>(-0.04)    | 0.003<br>(1.11)       | 0.048<br>(0.77)      | 0.007**<br>(2.27)     | 0.003<br>(0.04)     | 0.003<br>(1.03)       |
| Leverage       | -0.041**<br>(-2.29)  | 0.011***<br>(11.03)   | 0.081***<br>(3.96)   | 0.011***<br>(11.48)   | -0.044**<br>(-2.26) | 0.011***<br>(10.94)   |

|                       |                                 |                                 |                                |                                 |                                 |                                 |
|-----------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| ROA                   | -0.272 <sup>**</sup><br>(-4.68) | 0.034 <sup>***</sup><br>(10.54) | 0.114<br>(1.71)                | 0.035 <sup>***</sup><br>(10.54) | -0.293 <sup>**</sup><br>(-4.61) | 0.034 <sup>***</sup><br>(10.42) |
| PPE/at                | 0.026<br>(1.35)                 | 0.001<br>(1.31)                 | 0.040<br>(1.81)                | 0.001<br>(0.85)                 | 0.022<br>(1.06)                 | 0.001<br>(1.33)                 |
| Capex/at              | -0.194 <sup>**</sup><br>(-3.14) | 0.027 <sup>**</sup><br>(8.66)   | 0.055<br>(0.79)                | 0.021 <sup>**</sup><br>(6.67)   | -0.217 <sup>**</sup><br>(-3.27) | 0.028 <sup>**</sup><br>(8.67)   |
| Institution ownership | -0.000<br>(-0.71)               | 0.000 <sup>**</sup><br>(4.39)   | 0.000<br>(0.83)                | 0.000 <sup>**</sup><br>(2.52)   | -0.000<br>(-1.09)               | 0.000 <sup>**</sup><br>(4.46)   |
| Top5con               | -0.032<br>(-1.31)               | 0.009 <sup>**</sup><br>(7.16)   | 0.082 <sup>**</sup><br>(2.99)  | 0.009 <sup>**</sup><br>(7.86)   | -0.035<br>(-1.30)               | 0.009 <sup>**</sup><br>(7.09)   |
| Oversea background    | 0.002<br>(0.21)                 | 0.006 <sup>**</sup><br>(19.39)  | 0.070 <sup>**</sup><br>(8.76)  | 0.006 <sup>**</sup><br>(15.38)  | 0.005<br>(0.64)                 | 0.006 <sup>**</sup><br>(19.41)  |
| Financial constrain   | 0.000<br>(0.06)                 | 0.000<br>(0.43)                 | 0.003<br>(1.16)                | 0.000 <sup>**</sup><br>(2.98)   | 0.001<br>(0.26)                 | 0.000<br>(0.29)                 |
| Constant              | 1.650 <sup>**</sup><br>(25.66)  | 0.165 <sup>**</sup><br>(42.07)  | 1.444 <sup>**</sup><br>(19.15) | 0.283 <sup>**</sup><br>(81.91)  | 0.092<br>(1.17)                 | 0.158 <sup>**</sup><br>(38.66)  |
| Industry fixed effect | Yes                             | Yes                             | Yes                            | Yes                             | Yes                             | Yes                             |
| Province fixed effect | Yes                             | Yes                             | Yes                            | Yes                             | Yes                             | Yes                             |
| Observations          | 7,309                           | 7,309                           | 7,309                          | 7,309                           | 7,309                           | 7,309                           |

## Appendix: Variable Definition

| Variables               | Definition   | Data Source                          |
|-------------------------|--|--------------------------------------|
| Oversea investment      | Oversea investment/ Total Assets   | CSMAR                                |
| EPU <sub>.mean</sub>    | The simple average of the Economic Policy Uncertainty Index in a calendar year                               | Baker, Bloom, and Davis's website    |
| EPU <sub>.median</sub>  | The median of the Economic Policy Uncertainty Index in a calendar year                                       |                                      |
| EPU <sub>.geomean</sub> | The geometric mean of the Economic Policy Uncertainty Index in a calendar year                               |                                      |
| China GDP Growth        | The real GDP growth for China  | CSMAR                                |
| Tobin's Q               | Market Value/ Total Assets   | CSMAR                                |
| Company size            | The natural log of total assets  | CSMAR                                |
| Board Size              | The board size of the firm   | CSMAR                                |
| Independent%            | The percentage of the independent director in the board  | CSMAR                                |
| Leverage                | Total debt/ Total Assets   | CSMAR                                |
| ROA                     | The return on assets   | CSMAR                                |
| PPE/at                  | The value of a firm's plant, property, and equipment over total asset  | CSMAR                                |
| Capex/at                | A firm's capital expenditure divided by total asset  | CSMAR                                |
| State                   | The company is categorized as a state-owned is 1, otherwise a non-SOE is 0.                                  | CSMAR                                |
| Institution ownership   | Total number of shares held by institution over the total number outstanding shares of the firm              | CSMAR                                |
| Top5con                 | The total number of shares held by the top 5 shareholders divided by the total number of shares outstanding; | CSMAR                                |
| Marketization           | An index on the degree of marketization of Chinese Provinces   | Fan, G., Wang, X., and Ma, G. (2016) |
| Oversea Background      | A dummy variable defined as 1 if a firm has at least one director with oversea experience, otherwise is 0    | CSMAR                                |
| Financial constrain     | An index to measure firm's financial constrain   | Whited, T. M., and Wu, G. (2006)     |