Research Paper

Research on ASEAN Economic Policy Uncertainty and Chinese Manufacturing Enterprises' Direct Investment in ASEAN

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Abstract

With the increasing integration of economic development worldwide, the Association of Southeast Asian Nations (ASEAN) has emerged as a crucial trade and investment partner for China, playing a significant role in its outward direct investment (ODI) strategy. ASEAN's stable economic growth has attracted substantial foreign capital, with Chinese investments increasing significantly, from $224 million in 2003 to $16.063 billion in 2020. The Regional Comprehensive Economic Partnership (RCEP) has further expanded opportunities for economic and trade cooperation between China and ASEAN. This study examines the relationship between ASEAN's economic policy uncertainty (EPU) and Chinese ODI, utilizing data from manufacturing firms listed on China's A-share market from 2003 to 2023. An econometric model is employed to analyze the impact of EPU, considering factors such as enterprise financing constraints, ownership, industry characteristics, and time. The findings reveal that ASEAN's economic policy uncertainty negatively affects Chinese ODI, leading to a decline in investment due to increased risks and cautious investment strategies. The heterogeneity analysis highlights varying responses among different types of enterprises. Firms with lower financing constraints are more likely to invest in ASEAN when EPU decreases, as they possess greater financial flexibility. Non-state-owned enterprises exhibit a higher tendency to invest despite policy uncertainty, benefiting from their adaptability and reduced administrative restrictions. In terms of industry attributes, technology-intensive enterprises are the most likely to invest in ASEAN, leveraging their competitive advantages and innovation capacity. Capital-intensive enterprises show a moderate likelihood of investment, while labor-intensive enterprises are the least likely due to their vulnerability to external uncertainties. These findings underscore the importance of policy stability in fostering Chinese investments in ASEAN and provide insights into how different enterprise characteristics influence investment decisions under varying economic conditions.

Keywords: Economic Policy Uncertainty, Direct Investment in ASEAN, Firm Heterogeneity

1. Introduction

The 14th National Congress of the Communist Party of China and the Third Plenary Session of the 14th Central Committee proposed a comprehensive opening-up strategy for China. With the advancement of China's Belt and Road Initiative, Chinese enterprises' investment activities in ASEAN countries have become more common and diversified. When it

comes to the cooperation targets of China's outward direct investment, ASEAN countries are the first to come to mind. Geographically, many ASEAN countries are adjacent to China, especially Laos, Vietnam, and Cambodia, which are close to Yunnan's border. The innate geographical advantages have avoided many unnecessary troubles in their cooperation. The 2021 Outward Direct Investment Bulletin shows that China's direct investment flow in ASEAN reached a cumulative total of 197.3 billion US dollars, with a growth rate of 22.8%, accounting for as high as 15.4% of the investment flow in Asia. By the end of 2021, Chinese enterprises established in ASEAN had employed as many as 580,000 local staff. Such high figures are sufficient to illustrate China's enthusiasm for investment in ASEAN, and ASEAN will be one of the main battlegrounds for China's outward direct investment. Judging from the agreements signed by both sides, it can be seen that China and ASEAN possess the strongest vitality in today's world economy. Since Myanmar signed a bilateral investment agreement with China in 2001, cooperation between the two sides has reached a new level. The Comprehensive Economic Cooperation Framework Agreement signed in 2002 opened a new chapter for their cooperation, and the Goods Trade Agreement and Dispute Settlement Mechanism signed in 2003 marked the further substantive development of their cooperation. The outbreak of the 2008 financial crisis led to a sharp decline in investment between the two sides. In order to cope with the negative impact brought by the financial crisis, in 2010, the two sides jointly established the China-ASEAN Free Trade Area, which brought a qualitative leap for their investment. The free trade agreement signed between China and ASEAN will further increase China's outward investment in the region. In 2013, President Xi Jinping proposed the Belt and Road Initiative, which greatly promoted the development of regional economic integration. As one of the economies along the Belt and Road, ASEAN has expanded the scale and intensity of investment between China and ASEAN. President Xi Jinping is committed to promoting trade liberalization and investment facilitation. Further improving the investment environment is the key to the rapid development of various countries. It is necessary to vigorously promote investment facilitation, completely remove investment barriers, advance the negotiation of bilateral investment protection agreements and double taxation avoidance agreements, and further safeguard the legitimate rights and interests of investors. Although the Regional Comprehensive Economic Partnership Agreement involves 15 countries, including those in East Asia, Southeast Asia, and Oceania, ASEAN and China play an important role in the Southeast Asian region. This agreement will further promote the willingness of cooperation between China and ASEAN, strengthen investment cooperation between the two sides, promote rapid economic growth, and bring new opportunities for the development of both.

As an important trade and investment partner of China under the framework of the Belt and Road Initiative, ASEAN has an economic significance that is self-evident. With its unique geographical location, rich natural resources and huge consumer market, the ASEAN region has become an important destination for China's outward direct investment. The economic cooperation between China and ASEAN has not only promoted the growth of bilateral trade, but also promoted infrastructure construction, manufacturing development and agricultural modernization in the region, injecting strong impetus into regional economic integration. With the advancement of the Belt and Road Initiative, ASEAN, as one of the economies along the route, has become increasingly important in regional economic cooperation, and the investment scale and cooperation areas of both sides have continued to expand.

Against this background, the signing and implementation of the Regional Comprehensive Economic Partnership (RCEP) has had a profound impact on ASEAN's investment dynamics. RCEP has provided a more stable and convenient policy environment for investment cooperation in the ASEAN region by reducing trade barriers and simplifying investment approval procedures, further stimulating the enthusiasm of Chinese companies to invest in ASEAN. However, policy adjustments and changes have also brought uncertainties, such as policy differences among countries and inconsistent policy implementation, which may affect companies' investment decisions and investment returns. Therefore, in-depth research on the impact of ASEAN’s economic policy uncertainty will not only help us understand the changes in Chinese companies’ investment behavior, but also provide a scientific basis for optimizing investment strategies and coping with policy uncertainties, and provide a clear

background and theoretical support for promoting economic cooperation between China and ASEAN.

2. Literature review

2.1 Definition of Core Concepts

"Outward Foreign Direct Investment (OFDI)" refers to the business activities of Chinese multinational enterprises in which they transfer funds, machinery, technology, and management skills, among other intangible resources, to gain actual control over enterprises in the target countries. Based on the entry modes of multinational enterprises into the target country markets, this study categorizes such overseas direct investments into two main forms: one is the establishment of new enterprises, known as "Greenfeld Investment"; the other is the purchase of some or all shares of enterprises in the target country to achieve involvement or control over their operational management, referred to as "Cross-border Mergers and Acquisitions". The specific values of China's OFDI in this study are based on official data released by China's National Bureau of Statistics and Ministry of Commerce, and have been integrated by EPSDATA. According to the "2023 China Outward Direct Investment Report", any domestic multinational enterprise that directly controls or holds more than 10% equity or other equivalent rights in an overseas enterprise is considered a statistical object for outward investment enterprises. Given that China's outward direct investment activities may be restricted for various reasons, to further explore the impact of ASEAN's economic fluctuations on them, this study focuses on the role of China's economic development status and other related factors.

The concept of "uncertainty" can be traced back to Knight's (1921) book "Risk, Uncertainty, and Profit", which first introduced the two important concepts of "risk" and "uncertainty" and made a crucial distinction between them. The author argued that business profits arise from unpredictable uncertainties rather than mere risks, and that this uncertainty differs from risk in that it cannot be speculated or analyzed using existing knowledge systems. Knight believed that companies are the products of market economies solving uncertainties, and enterprises overcome or reduce management uncertainties through a "divide and conquer" organizational production strategy. Baker et al. (2016) found that economic policy uncertainty encompasses a range of difficult-to-quantify factors, including the potential impacts of fiscal and monetary policies on economic development and corporate decision-making, as well as a series of uncertain shocks brought by future economic conditions.

Tabash et al. (2022) proposed the concept of "Economic Policy Uncertainty", which refers to the ambiguity and confusion brought by unpredictable events that may hinder various business activities. This phenomenon has led to a persistent existence of production volumes and their related negative impacts. Similarly, Gülen (2015) focused on how corporate-level capital investment is affected by risk factors in future political decision-making; the definition of these so-called "Economic Policy Uncertainties" includes results produced by events such as fiscal plan disputes, national debt limit conflicts, major national elections, military actions, and financial storms. Yao, Liu, and Du (2021) believe that economic policy uncertainty refers to the information asymmetry between economic participants and government policy issuers. In this asymmetric information, investors find it difficult to discern real information, thus making it hard to estimate the future value of enterprises. Rao, Yue, and Jiang (2017) approached from the government's perspective, arguing that the uncertainty of economic policies refers to the government's difficulty in grasping the trends of market economic development at the macro level, leading to uncertainties in the direction and intensity of policies.

The uncertainty mentioned in this study mainly refers to "Economic Policy Uncertainty (EPU)", which encompasses a range of difficult-to-quantify factors, including the potential impacts of fiscal and monetary policies on economic development and corporate decision-making, as well as a series of uncertain shocks brought by future economic conditions. This uncertainty may stem from political changes, economic fluctuations, policy adjustments, and other factors, posing higher demands on corporate investment decisions and risk assessments.

Compared to other scholars' definitions, the EPU index proposed by Baker et al. (2016)

measures the instability of economic policies by analyzing the frequency of emotional expression words related to economy, policy, and uncertainty in news reports. This method can more comprehensively integrate the policy uncertainties existing in the entire economic environment. The research in this paper may, on the basis of Baker et al., combine the specific situations of China and ASEAN to make appropriate adjustments and optimizations to the measurement method of EPU, in order to more accurately reflect the economic policy uncertainties faced by Chinese enterprises in their direct investments in ASEAN.

The EPU index is widely used in many fields such as economics, finance and management. It is used to assess the impact of macroeconomic policy uncertainty on economic growth, inflation and employment. Zhang and Cai (2020) found that an increase in EPU will lead to slower economic growth, lower inflation and higher unemployment. Analyzing the impact of policy uncertainty on the stock market, bond market and foreign exchange market, Lei et al. (2018) found that increased policy uncertainty will lead to increased stock market volatility and lower investor expectations. Exploring the impact of policy uncertainty on corporate investment, financing and operational decisions, Chen and Guo (2021) found that an increase in EPU will cause companies to postpone or reduce fixed asset investment. Evaluating the impact of policy uncertainty on international trade and outbound direct investment (OFDI), Lv and Wei (2020) found that policy uncertainty will hinder international trade and investment and increase the risks and complexity of cross-border operations.

2.2 The Impact of Economic Policy Uncertainty

Due to the increased trade costs and economic uncertainty in market entry brought about by anti-dumping investigations, such investigations increase the trade costs for exporting firms in the surveyed countries, directly affecting their export capabilities and export decisions (Yan, Wu, Wang, 2024). Zhou and Wang (2024) argue that reducing cultural distance with the host country through digital cultural exports can decrease information asymmetry, which to some extent can mitigate the economic uncertainty faced by firms when engaging in outward foreign direct investment (OFDI). Chen and Guo (2021) believe that economic policy uncertainty significantly impacts firms' fixed asset investments. It increases the risks faced by firms, leading to delayed or reduced investments. Lei et al. (2018) found that financial markets are highly sensitive to policy changes, and increased uncertainty can lead to more volatile stock markets, affecting investors' expectations and behavior. Zhang and Cai (2020) conducted an in-depth analysis of the concept and measurement methods of economic policy uncertainty (EPU), summarizing its impacts on macroeconomic and microeconomic subjects, including effects on corporate investment, employment, and consumer confidence. Additionally, they explored the international transmission mechanisms of EPU, including spillover effects through trade and capital flows. Huang, Tong, and Liang (2017) reviewed the literature on the impact of economic uncertainty on financial markets from various perspectives, including its effects on corporate financial decisions, financial asset returns and volatility, and the spillover and linkage effects in financial markets. Jiang and Meng (2021) found that economic policy uncertainty may weaken consumer confidence, leading to reduced consumption of non-essential goods, thereby having a negative impact on economic growth. Du, Zhou, and Zhan (2024) conducted an empirical analysis of the impact of macro uncertainty on the transmission efficiency of China's monetary policy. They found that during periods of high uncertainty, the transmission efficiency of monetary policy may be hindered, leading to weakened policy effects. This emphasizes the need to consider the impact of economic uncertainty when formulating monetary policy. Cai et al. (2018) found that uncertainty can affect firms' hiring decisions, increasing the uncertainty in the labor market, thereby affecting employment and unemployment rates. Lv and Wei (2020) believe that economic policy uncertainty may hinder international trade and investment because it increases the risks and complexities of transnational operations. Financial institutions may become more cautious due to uncertainty, tightening credit standards, leading to increased financing costs for firms, especially small and medium-sized enterprises (Bloom, 2014; Chen et al., 2018). Economic policy uncertainty may reduce cross-border merger and acquisition activities because such decisions require a clear understanding and prediction of the economic policy environment in the target country (Blonigen et al., 2014; Jiang and Jiang, 2017). Zhang,

Jia, and Zhang (2023) used data from Chinese listed companies to examine the impact of the host country's digital economy development on China's OFDI location choices. The results showed that the development of the digital economy significantly enhances the attractiveness of the host country to China's OFDI, especially for firms with lower productivity and lower levels of digitalization.

2.3 Economic Policy Uncertainty and Outward Investment

Since the 1970s, academic research on outward foreign direct investment (FDI) has deepened, particularly focusing on how firms make investment decisions in a complex and uncertain international economic environment. Dunning's theory proposed the importance of location choice and market entry modes in outward FDI, providing a foundation for firms to formulate global strategies. However, despite extensive literature examining the basic principles of location choice, existing studies still lack sufficient discussion on how uncertainty affects the investment decisions of multinational corporations. In environments with high economic uncertainty, firms typically adopt a wait-and-see strategy to reduce short-term risks, but this strategy may also be incentivized by the value of increasing options to accelerate investment decisions. This phenomenon indicates that in highly uncertain environments, firms need to not only weigh current risks but also assess the value of future potential opportunities, making the decision-making process more cautious and flexible. The impact of uncertainty on policy and markets also affects different types of firms differently. Huang (2019) found that in the face of an uncertain economic environment, firms may delay investment decisions due to waiting, but the existence of increasing options may also prompt firms to accelerate investment to seize market opportunities early. This phenomenon is particularly evident in industries with high R&D intensity and intense competition, where firms, due to their high R&D investment and market competition, have a negative correlation between policy uncertainty and financing terms. In other words, the impact of policy uncertainty on these industries is relatively small, while for government investment projects, policy uncertainty can lead to delayed investment decisions. Governments are typically more conservative in the face of economic policy uncertainty, especially when facing political pressure, rent-seeking behavior, and bureaucratic inefficiency, which can amplify the negative impact of policy uncertainty, thereby slowing the progress of government investment projects. Financial frictions are important factors that hinder capital flows and have a profound impact on firms' financing capabilities and market operations. Chen, Sun, Wen, and Huang (2019) found that when China's economic policy uncertainty increases, firms become more cautious in their outward investment decisions because it is difficult to accurately grasp the policy intentions and their support or restrictions on investment. This requires firms to closely monitor policy changes and adjust their strategies in a timely manner to adapt to these changes. Du, Li, and Yu (2020) found that when the economic policy uncertainty in ASEAN is greater than that in China, it inhibits the outward direct investment of non-state-owned high-tech enterprises. This reflects the significant impact of ASEAN policy uncertainty on investment behavior. Ouyang and Shi (2021) found that an increase in domestic economic policy uncertainty significantly promotes the scale of firms' outward direct investment, which may be due to firms adopting more proactive investment strategies to cope with potential risks. These studies reveal the complex impact of policy and market frictions on firms' investment decisions in the international economic environment, emphasizing the important role of specific industries, firm types, and project characteristics in investment decisions.

Due to its complex economic structure and the background of multinational cooperation, the impact of economic policy uncertainty on investment is particularly complex. Blonigen et al. (2014) found that in European countries, policy uncertainty significantly inhibited cross-border M&A activities, which is an interesting contrast to the research results on ASEAN in this article. European countries generally have more mature financial markets and more transparent policy environments, but even so, policy uncertainty still has a significant impact on corporate investment decisions. In contrast, research on ASEAN reveals that in emerging markets, policy uncertainty has a more significant impact on investment, especially in countries with underdeveloped financial markets and low policy transparency (Bloom, 2014; Chen et al., 2018). These studies show that there are differences in the impact of economic policy uncertainty on

investment behavior in different regions, which is closely related to the economic structure, policy environment and market maturity of each region.

3. Research Methodology

This study employs quantitative analysis methods, utilizing data from Chinese A-share manufacturing listed companies from 2003 to 2023 to construct an econometric model. The empirical test examines the impact of ASEAN economic policy uncertainties on China's direct investment in ASEAN. The model controls for macro and micro factors such as firm size, firm value, and ownership type.

To further investigate the impact of ASEAN economic policy uncertainties on China's direct investment in ASEAN, this paper refers to the research of Qi Junyan and Ren Yida (2021) and builds an econometric model based on their work. The aim is to reveal the intrinsic connection between ASEAN economic policy uncertainties and China's direct investment in ASEAN through empirical analysis. The specific model is as follows:

$$OFDI_{i,j,t} = \alpha_0 + \alpha_1 FEPU_{j,t} + \alpha_2 CEPU_t + \alpha_3 X_{i,j,t} + \lambda_i + \eta_j + \theta_t + \varepsilon_{i,j,t}$$

In the model, *i* represents the firm, *j* represents the country, and *t* represents the year. The dependent variable *OFDI* denotes the status of Chinese enterprises' direct investment in ASEAN. *FEPU* represents the level of economic policy uncertainty in ASEAN. *X* represents a series of control variables at the firm and country levels. λ, η, θ represent firm fixed effects, country fixed effects, and year fixed effects, respectively. ε represents the random disturbance term. This paper assumes that there is correlation among ASEAN regions, hence robust standard errors clustered at the country level are used.

The hypotheses of this paper are as follows:

Hypothesis 1: There is a negative relationship between ASEAN economic policy uncertainty and firms' direct investment in ASEAN.

Hypothesis 2a: When ASEAN EPU decreases, firms with low financing constraints are more willing to engage in outward direct investment compared to those with high financing constraints.

Hypothesis 2b: When ASEAN EPU decreases, non-state-owned enterprises are more inclined to engage in outward direct investment compared to state-owned enterprises.

Hypothesis 2c: When ASEAN EPU decreases, the likelihood of technology-intensive firms engaging in direct investment in ASEAN is the highest, followed by capital-intensive firms, while the likelihood for labor-intensive firms is the lowest.

When studying the impact of ASEAN economic policy uncertainty on Chinese enterprises' OFDI in ASEAN, it is of great significance to select variables such as GDP, ROA and market size as control variables. GDP reflects the economic scale and market potential of the target country. A higher GDP level usually means a more mature market environment and a broader market space, which directly affects the investment decisions of Chinese enterprises. ROA measures the profitability of enterprises. Enterprises with high ROA usually have stronger financial strength and investment capabilities and can participate in OFDI more actively. Market size reflects the capacity and potential demand of the target market. A larger market size means more investment opportunities and higher potential returns. These control variables can help us analyze the relationship between the main variables more accurately, reduce the interference of other factors, and thus more clearly reveal the impact mechanism of ASEAN economic policy uncertainty on Chinese enterprises' OFDI.

In order to verify the reliability and stability of the research results, this paper conducted a variety of robustness tests. The endogeneity problem was tested by the instrumental variable method to ensure that the causal relationship between the main variables was not affected by omitted variables or reverse causality. The robustness of the main conclusions in different scenarios was further verified by methods such as replacement variables and group regression. These testing methods are designed to test whether the impact of ASEAN economic policy uncertainty on Chinese enterprises' OFDI is consistent under different combinations of control variables or in subsamples of different enterprise types or industry attributes. These robustness

tests not only enhance the credibility of the research conclusions, but also provide a more solid foundation for subsequent policy recommendations and theoretical research, discover and solve potential problems, and further enhance the scientificity and practicality of the research.

4. Results

4.1 Benchmark Regression

The benchmark regression model sets ASEAN Economic Policy Uncertainty (FEPU) as the independent variable and China's Outward Foreign Direct Investment (OFDI) as the dependent variable. Control variables can include ASEAN market size (GDP) and profitability (ROA). The coefficient of ASEAN economic policy uncertainty in the analysis model is assessed to determine its impact on China's OFDI. A positive coefficient indicates that an increase in ASEAN economic policy uncertainty inhibits China's direct investment in ASEAN, while a negative coefficient suggests that an increase in ASEAN economic policy uncertainty promotes China's direct investment in ASEAN. The statistical significance of the coefficient for ASEAN economic policy uncertainty is determined.

The data in the table below confirm that Hypothesis H1 is valid, i.e., there is a negative relationship between ASEAN economic policy uncertainty and firms' direct investment in ASEAN (Benchmark Regression FEPU = -0.427***; Fixed Effects Regression FEPU = -1.403***). As the degree of economic policy uncertainty in ASEAN increases, market dynamics become more frequent and unpredictable, and the future operating conditions of firms become unclear. At the same time, since investors cannot accurately estimate their expected returns, they choose to reduce their investments in the market to avoid potential market shocks and losses. For this reason, firms may significantly adjust their capital allocation directions to more economically stable and profitable places to seek new opportunities and increase their overseas business expansion efforts to achieve more profit growth targets.

The regression results for other variables show that Chinese firms' outward investment decisions are constrained by ASEAN's market environment (GDP) and the number of ASEAN labor force (POP). It is also found that the financial stress of firms is negatively correlated with China's direct investment in ASEAN, which means that if an institution faces more loan difficulties or increased borrowing difficulties, it may reduce or abandon direct investment in ASEAN to achieve its development plan.

Table 1 Benchmark Regression Results

variable	Model 1	Model 2
	ofdi	*ofdi*
fepu	-1.403*** (-12.82)	-0.427*** (0.077)
cepu	0.197*** (0.037)	0.680*** (12.83)
size	0.068*** (0.018)	0.066*** (0.018)
roa	6.862*** (0.347)	6.912*** (0.348)
gdp	46.388*** (1.810)	41.099*** (1.836)
pop	14.084*** (2.280)	15.762*** (2.317)
tra	-2.510*** (0.223)	-2.890*** (0.222)
r2_p	0.085	0.085
N	20224	20224

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

4.2 Heterogeneity Analysis

To verify Hypothesis 2, this study examines the impact of different development stages and firm characteristics through empirical research. The total sample is divided into several subsamples based on firm characteristics, and then linear probability fixed-effects regression is performed. The regression results are detailed in the table.

This study divides all cases into two subsamples based on the median of financing constraints, and the statistical analysis results are shown in the table. It can be seen that the FEPU coefficients are negative in both cases. This indicates that regardless of whether firms face high or low financing constraints, the effect of economic policy fluctuations on firms' direct investment decisions in ASEAN remains unchanged.

Observing the data analysis results of the two subsamples, it can be seen that the impact coefficient of financing constraints (SA) shows a significant negative correlation. This indicates that if firms encounter severe financing problems, their overseas investment activities will be significantly reduced. Compared to firms with high financing constraints, the regression coefficient of FEPU for firms with low financing constraints is more significant. In a stable ASEAN economic policy environment, firms with low financing pressure have a greater willingness to engage in outward investment. In both cases, when there is an increase in economic policy changes or trade policy uncertainty in ASEAN, firms choose to increase their cash reserves to reduce investment risks. At the same time, due to difficulties in obtaining loans from banks and other financial institutions, restricted financing channels, and increased financing costs, firms face stricter external financing requirements, thereby weakening their investment capabilities.

Overall, when ASEAN's EPU decreases, firms with low financing constraints are more willing to engage in outward direct investment compared to those with high financing constraints, thus verifying Hypothesis H2a.

Table 2 Heterogeneity Analysis Results of Financing Constraints Differences

variable	Model 1	Model 2	Model 3	Model 4
	Low	High	Low	High
fepu			-0.383***	-0.440***
			(0.105)	(0.117)
cepu	0.162***	0.262***		
	(0.052)	(0.055)		
size	0.056**	-0.058	0.058**	-0.064
	(0.026)	(0.044)	(0.026)	(0.044)
roa	5.081***	8.531***	5.131***	8.605***
	(0.499)	(0.506)	(0.500)	(0.509)
gdp	32.500***	66.700***	28.751***	58.961***
	(2.328)	(2.949)	(2.349)	(3.019)
pop	16.280***	9.066**	16.768***	12.512***
	(3.000)	(3.608)	(3.016)	(3.742)
tra	-2.407***	-2.455***	-2.689***	-2.981***
	(0.307)	(0.332)	(0.304)	(0.335)
_cons	-573.204***	-786.664***	-509.497***	-649.904***
	(49.825)	(61.075)	(45.672)	(55.875)
r2_p	0.056	0.124	0.056	0.124
N	10051	10173	10051	10173

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

The research subjects were divided into two categories based on ownership characteristics: one category consists of state-owned enterprises (SOEs) that are owned or controlled by the state, and the other category includes privately operated or foreign-collaborated management institutions and other non-state-owned enterprises.

In terms of data, a total of 6,212 state-owned enterprises were included in the analysis of

this paper, while another 14,012 market entities composed of non-state-owned capital or other types of mixed organizational forms were also included in the analysis. According to the regression results in Table 5.5, the core explanatory variable FEPU for both state-owned and non-state-owned enterprise samples has a significantly negative coefficient, indicating that regardless of the ownership attributes, economic policy fluctuations in China will encourage enterprises to engage in direct investment in ASEAN, and a stable policy environment in ASEAN will attract enterprises to conduct direct investment in the country.

Different ownership attributes determine the survival and growth modes of enterprises, thereby affecting their outward investment activities. Generally, state-owned enterprises are controlled by the government, so their investment decisions are not only aimed at maximizing profits but also carry certain social responsibilities and political goals. According to the research by Li and Yang (2015), firstly, SOEs, being mainly held by the government with a significant share, lack restrictions from other shareholders, making them more risk-seeking in the face of risks; secondly, SOEs exhibit stronger integrity and coordination in their direct investment activities in ASEAN, based on their social responsibilities and political missions. In contrast, private enterprises operate in a free market competition environment. Although they receive some support from the state, it is relatively small, and they hardly enjoy the investment guidance that SOEs have. Most private enterprises rely on competing in the market to promote their own development and growth. Therefore, for these private enterprises, they are more sensitive to changes in economic policies and market fluctuations, enabling them to quickly adapt to changing environments and maintain a leading position in competition.

Overall, a decrease in ASEAN EPU makes non-state-owned enterprises more inclined to engage in outward direct investment. This is consistent with Hypothesis H2b, confirming Hypothesis H2b.

Table 3 Heterogeneity Analysis Results of Ownership Differences

variable	Model 1	Model 2	Model 3	Model 4
	State-owned	Non-state-owned	State-owned	Non-state-owned
fepu			-0.048	-0.541***
			(0.164)	(0.094)
cepu	0.028	0.325***		
	(0.082)	(0.045)		
size	0.340***	0.081***	0.341***	0.077***
	(0.033)	(0.024)	(0.033)	(0.024)
roa	0.019	9.019***	0.014	9.083***
	(0.705)	(0.427)	(0.704)	(0.429)
gdp	-5.55	71.058***	-5.601	62.154***
	(3.388)	(2.342)	(3.438)	(2.370)
pop	11.328***	8.085***	11.485***	12.342***
	(4.155)	(2.861)	(4.147)	(2.935)
tra	-0.172	-3.197***	-0.16	-3.829***
	(0.445)	(0.271)	(0.441)	(0.270)
_cons	-312.712***	-842.970***	-322.202***	-680.366***
	(71.819)	(49.566)	(67.672)	(44.839)
r2_p	0.064	0.14	0.064	0.139
N	6212	14012	6212	14012

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

Referring to the research method of Lu Tong and Dang Yin (2014), this study conducted a cluster analysis based on the industry classification criteria of the China Securities Regulatory Commission (CSRC) from 2012, categorizing various industries into three types: technology-driven firms, capital-driven firms, and labor-driven firms. The detailed classification of these firms is shown in the table below.

Table 4 Industry Attribute Classification

Industry Attribute	Industry Name and Code
Labor-intensive	Agriculture, Forestry, Animal Husbandry, and Fishery (A), Mining (B), Food and Beverage, Textile, Apparel, Leather, Wood and Furniture (C3-C21), Electricity, Gas, and Water Supply (D), Construction (E), Wholesale and Retail Trade (F), Transportation (G), Culture, Sports, and Entertainment (R), Comprehensive (S)
Capital-intensive	Paper and Printing, Petrochemicals and Plastics, Metals (C22-C33), Real Estate (K70), Social Services (L, J, H, O, Q)
Technology-intensive	Electronics, Machinery and Equipment, Pharmaceutical and Biotechnology, Other Manufacturing (C34-C43), Information Services (I), Scientific Research (M)

The regression results for the three groups are shown in the table below.

According to the regression results, the FEPU coefficients for all three groups are significantly negative, indicating that regardless of whether the firms are labor-intensive, capital-intensive, or technology-intensive, the impact of ASEAN economic policy uncertainty on firms' direct investment in ASEAN remains consistent. In terms of the FEPU regression coefficients, the impact is greatest for labor-intensive firms, followed by capital-intensive firms, and smallest for technology-intensive firms. This suggests that when the policy environment in ASEAN is stable, technology-intensive firms are more willing to engage in direct investment in ASEAN, with most firms investing overseas to acquire advanced technology. Therefore, when the domestic policy environment is volatile, technology-intensive industries seek advanced foreign technology and invest in high-tech fields to gain investment returns in the future. When the ASEAN economic policy environment is more stable and mature, there is a higher likelihood of increased direct investment in foreign high-tech areas. During periods of frequent domestic policy fluctuations or when the foreign policy environment is more stable, the willingness of capital-intensive firms to invest overseas is lower than that of technology-intensive firms but higher than that of labor-intensive firms. Compared to high-tech industries, the sensitivity of natural resource-based industries to policy changes is relatively low. For capital-driven firms, a significant reason for their cross-border investment is to obtain rare materials and actively seek advanced technology. However, for labor-intensive firms, their desire for cross-border investment is relatively the weakest. This is because the overseas expansion of these firms relies more on low-cost labor, and their target markets are often in Asian countries such as Thailand, Vietnam, and India. The impact of economic policy on labor elements is relatively limited, so the reaction of these firms to policy changes is also relatively slow.

Table 5 Heterogeneity Analysis Results of Industry Attribute Differences

variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Labor	Capital	Technology	Labor	Capital	Technology
fepu				-0.404*	-0.416***	-0.452***
				(0.233)	(0.127)	(0.109)
cepu	0.029	0.163***	0.260***			
	(0.114)	(0.061)	(0.053)			
size	-0.122**	0.131***	0.068***	-0.119**	0.130***	0.064**
	(0.061)	(0.030)	(0.025)	(0.061)	(0.030)	(0.025)
roa	7.268***	8.421***	6.162***	7.296***	8.477***	6.184***
	(1.087)	(0.590)	(0.475)	(1.089)	(0.591)	(0.477)
gdp	43.980***	45.600***	48.583***	41.250***	41.333***	41.638***
	(5.378)	(2.897)	(2.601)	(5.427)	(2.924)	(2.656)
pop	9.339	16.917***	13.196***	10.786	17.927***	15.772***
	(6.991)	(3.711)	(3.218)	(7.063)	(3.750)	(3.293)
tra	-2.027***	-2.814***	-2.425***	-2.213***	-3.153***	-2.889***
	(0.693)	(0.374)	(0.308)	(0.687)	(0.372)	(0.307)
_cons	-	-	-	-	-	-

	404.153***	726.488***	748.831***	393.398***	658.447***	620.900***
	(112.593)	(60.978)	(55.428)	(103.834)	(55.881)	(50.472)
r2_p	0.094	0.1	0.081	0.095	0.1	0.08
N	2255	8080	9889	2255	8080	9889

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

4.3 Robustness Testing in Empirical Research

Robustness testing is a common and crucial step in empirical research, primarily aimed at verifying the stability and reliability of the core regression coefficient estimates after adding or removing variables. If the core coefficients remain consistent and statistically significant after variable substitution or the removal of outliers, the model's evaluation methods and interpretive capabilities become more credible.

In this paper, the instrumental variable (IV) regression method is first used to address potential endogeneity issues. As shown in the table below, LFEPU (the lagged one-period ASEAN economic uncertainty) has an impact on FEPU (the current period ASEAN economic uncertainty) of 0.531, and this impact is highly significant. This indicates that the uncertainty of the previous period significantly predicts the uncertainty of the current period. LFEPU has a significant negative impact on OFDI (the direct investment of Chinese manufacturing enterprises in ASEAN), with a coefficient of -0.015, suggesting that there is no serious endogeneity problem in this paper.

Table 6 Analysis Results of Endogeneity Issues

variable	Model 1	Model 2
	fepu	*ofdi*
lfepu	0.531***	-0.015***
	(81.124)	(0.893)
cepu		0.054***
		(7.836)
size		0.012
		(0.333)
roa		0.845***
		(13.932)
gdp		8.655***
		(27.010)
pop		2.472***
		(6.073)
tra		-0.454***
		(-11.927)
_cons	2.386***	-120.361***
	(72.459)	(-16.144)
N	17815	17815
R^2	0.293	0.109

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

5. Conclusion

This study uses a linear probability regression model to analyze A - share listed companies that made outward foreign direct investment in ASEAN from 2003 to 2023. The results show that a decrease in policy uncertainty in ASEAN may stimulate the overseas expansion behavior of Chinese enterprises. However, on the contrary, if the policy uncertainty in ASEAN increases, it will hinder Chinese enterprises from making direct investments abroad. In other words, when China's economic policies change or become turbulent, it is difficult for corporate management to predict future trends. Therefore, they feel that expanding production scale during this period may bring greater operating pressure and increase potential market risks. So their preferred strategy is to reduce their market share in this region and increase investment

in other countries to avoid the possibility of such adverse effects. Similarly, if ASEAN's economic policies are not stable or are often in a state of change, the review of transnational enterprises will become more stringent. As a result, enterprises that want to maintain sufficient cash flow naturally prefer to reduce direct investment in that country to avoid any form of investment risks.

The direct investment decisions of companies in ASEAN are not only affected by the overall economic and policy environment of the two countries, but also influenced by their own development characteristics. In comparison, if China's domestic economic policies change greatly or ASEAN's economic policies are more stable, enterprises with higher capital constraints are more inclined to invest directly in ASEAN. Compared with state - owned enterprises, non - state - owned enterprises show greater interest in making direct investments in ASEAN. In addition, companies with high technological content are the most sensitive to direct investment in ASEAN, followed by capital - intensive companies, and finally labor - intensive companies.

6. Discussion

The results of this study indicate a significant negative relationship between ASEAN economic policy uncertainty and the direct investment of Chinese manufacturing enterprises in ASEAN. This finding is consistent with the existing literature, which suggests that economic policy uncertainty increases the risks associated with cross-border investments, thereby inhibiting firms' outward direct investment behavior. Specifically, when economic policy uncertainty in ASEAN countries rises, Chinese enterprises may anticipate increased investment risks and uncertainties, leading them to reduce or delay direct investments in the ASEAN region. This reaction reflects the natural risk-averse behavior of firms, aimed at protecting corporate assets from potential adverse effects of policy changes.

This study further reveals differences in the responses of different types of firms to ASEAN economic policy uncertainty. In particular, firms with lower financing constraints are more inclined to make direct investments when ASEAN policy uncertainty decreases, compared to those with higher financing constraints. This may be because firms with lower financing constraints have more financial reserves and can better seize investment opportunities or hedge against the risks brought by policy uncertainty through financial instruments.

Moreover, non-state-owned enterprises show a higher propensity to invest in the face of ASEAN economic policy uncertainty compared to state-owned enterprises. This may be because non-state-owned enterprises typically possess greater flexibility and adaptability, and are subject to fewer administrative constraints, enabling them to respond more agilely to changes in the policy environment.

In terms of industry attributes, the technological intensity of firms significantly affects the likelihood of direct investment in ASEAN. Technology-intensive firms, with their strong competitive advantages and innovation capabilities, are better equipped to cope with the challenges brought by policy uncertainty, thus having the highest likelihood of direct investment in ASEAN. Capital-intensive firms fall in the middle, while labor-intensive firms have the lowest likelihood of investment. This result is consistent with the high sensitivity of labor-intensive firms to external environmental changes and their lower capacity for adjustment.

Chinese enterprises need to be more cautious in assessing the policy risks of the ASEAN market when formulating their overseas investment strategies. Before making investment decisions, enterprises should strengthen their research on the policy environment of ASEAN countries and assess potential policy risks in advance. This may include considerations such as familiarity with local policies and regulations, frequency of policy adjustments, and policy transparency. In order to reduce the risk of a single market, enterprises should consider diversifying their investments to multiple ASEAN countries to avoid over-concentration. Enterprises can simultaneously carry out investment projects in Vietnam, Thailand, Malaysia and other countries to disperse the risks brought by policy uncertainty. Through regular bilateral or multilateral policy dialogues, timely communication of policy changes can reduce policy uncertainty. ASEAN countries can notify policy adjustments that may affect investment in advance, and Chinese enterprises can also feedback their concerns about policy changes. By

strengthening the implementation of the Free Trade Agreement (FTA) and promoting the deepening of the Regional Comprehensive Economic Partnership (RCEP), trade and investment barriers can be further reduced and the stability of regional economic integration can be enhanced. In order to attract more Chinese investment, ASEAN countries can simplify the investment approval procedures, reduce administrative barriers faced by enterprises, and improve investment efficiency. Improve infrastructure conditions such as transportation and communications to provide better basic conditions for enterprises' investment and operations.

7. Suggestions

7.1 Theoretical Contributions

In terms of theory, this study not only enriches the theoretical framework of outward foreign direct investment but also provides new perspectives and strategic recommendations for economic cooperation between ASEAN and China. Its marginal contribution lies in deepening the understanding of the factors affecting ASEAN economic policy uncertainty and providing an empirical research foundation and policy guidance for addressing this uncertainty. By constructing a more scientific measure of economic policy uncertainty, this paper offers new tools and methodologies for economic research, which is of significant academic and practical value. This measure helps to more accurately reflect the economic policy uncertainty faced by Chinese enterprises in their direct investments in ASEAN, thereby providing a more scientific basis for decision-making.

7.2 Policy Implications

In terms of policy, in the face of potential economic policy uncertainty in ASEAN, the Chinese government should take prudent measures to guide enterprises in establishing risk monitoring and prevention systems for outward investment. It should strengthen the supervision and management of multinational corporations, helping them assess various risks in investment destinations and provide early warnings. At the same time, the government needs to formulate clear policy guidelines to encourage enterprises to avoid blindly pursuing scale expansion in outward investment and to improve investment efficiency and returns through technological innovation and management upgrades. Additionally, China should actively participate in international economic governance through multilateral and bilateral cooperation to create a stable external environment for enterprises and encourage them to engage in diversified investments in regions such as ASEAN, reducing dependence on a single market and dispersing risks. The government should also reasonably control capital flows to protect national economic security and further increase the degree of openness to attract high-quality foreign investment and promote domestic industrial upgrading. Through these measures, it is possible to protect domestic economic security while promoting outward investment by enterprises, achieving mutually beneficial and sustainable development with the ASEAN region.

7.3 Practical Implications

In practice, when facing economic policy uncertainty in ASEAN, enterprises should take specific measures such as diversified investment, enhanced risk management, and the establishment of flexible investment strategies. The Chinese government should take the lead in constructing multi-level capital markets, creating new open cooperation platforms, expanding financing channels for enterprises, and advocating diversified financing methods, moderately relaxing loan constraints for small enterprises. At the same time, the government also needs to provide policy support and protection throughout the life cycle of private enterprises, cultivating more companies capable of overseas investment. Furthermore, enterprises should fully understand and apply advanced foreign technologies, optimize and adjust them according to the country's actual situation and consumer needs, and widely apply them to the product lines of Chinese manufacturers to enhance production efficiency and increase profit margins, thereby driving the overall development of the national industry.

Develop a centralized policy monitoring platform to track policy changes in ASEAN countries in real time using natural language processing (NLP) and machine learning technologies. The platform will integrate multilingual information to ensure that companies can accurately understand the policy content. Through this platform, companies can understand

policy dynamics in real time and adjust investment strategies in a timely manner, thereby effectively reducing the uncertainty caused by policy changes. Develop an economic policy uncertainty (EPU) forecasting model based on historical and real-time data. Use time series analysis and machine learning algorithms (such as random forests, neural networks) to combine macroeconomic indicators and policy change frequency to predict policy uncertainty in advance. In addition, develop an investment risk assessment model that comprehensively considers policy uncertainty, market risk, and financial risk to provide companies with a comprehensive risk assessment. Companies can use these models to predict future policy uncertainty, adjust investment plans in advance, and optimize investment strategies, thereby reducing investment risks.

Establish a regular bilateral or multilateral policy dialogue mechanism to strengthen policy communication between China and ASEAN countries and reduce information asymmetry. ASEAN countries should reduce companies' concerns about policy changes by making policies and regulations public and notifying policy adjustments in advance. By strengthening policy communication and improving transparency, policy uncertainty can be effectively reduced and companies' confidence in the ASEAN market can be enhanced. Further deepen existing free trade agreements (such as RCEP) to reduce business operating costs and policy risks by lowering tariffs, simplifying customs procedures, and reducing non-tariff barriers. Strengthen infrastructure construction in the ASEAN region and enhance regional market connectivity through joint investment and cooperation. By deepening FTAs and strengthening infrastructure construction, trade and investment barriers can be reduced, the stability of regional economic integration can be enhanced, and a more favorable investment environment can be created for businesses.

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