

Will the Economic Policy Uncertainty of Trading Countries Affect China's Export Trade?

-- Research based on Data from 18 Trading Countries

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Abstract

Under the macro background of greatly increasing global economic policy uncertainty, this paper studies the impact of economic policy uncertainty in 18 trading countries on China's exports based on the Gracity database of CEPII, UNCOMTRADE database and economic policy uncertainty indicators constructed by Baker and other scholars. The study found that the increase of economic policy uncertainty in trading countries has significantly inhibited the development of China's export trade. Moreover, the impact of economic policy uncertainty on China's export trade is heterogenous. Therefore, this paper suggests that China should strengthen international cooperation, create a good and healthy development environment for China's export trade, and establish an economic policy information sharing platform, which is conducive to enterprises to quickly collect the changes in the economic and trade policies of the host country and adjust their export strategies in time.

Keywords

Uncertainty of Economic Policy; Gracity Database; Export Trade; UNCOMTRADE Database.

1. Introduction

Economic policy is the most commonly used means to adjust macro and micro economy in the country. The unpredictability of policy will lead to the increase of market risks, but the uncertainty of policy was not paid enough attention at the end of the 20th century. In the 21st century, the world economic and trade environment is unpredictable. Especially after the financial crisis, the economies of all countries have been greatly impacted, the international market has been depressed, and the global trade has shrunk severely, with a 20% decline in less than a year. Therefore, in order to stimulate economic recovery, countries have introduced a series of economic policies such as trade policies and monetary policies, and the uncertainty of global economic policies has been significantly increased. The uncertainty of economic policy has gradually become a hot topic among scholars around the world. Bloom [1] suggested that economic policy uncertainty is an important factor in the recession. Acemoglu[2] We believe that economic policy is an important means for a country to build an external economic environment and plays a pivotal role in the national economic development. However, most of the research focuses on the impact of economic policy uncertainty on enterprises. Wei Youyue and Liu Hongduo [16] found that economic policy uncertainty will reduce the export interest of enterprises and reduce the number of export types. Most scholars believe that economic policy uncertainty will inhibit corporate investment, while Wang Hongjian and other [17] believe that with the increase of economic policy uncertainty, enterprises are more inclined to hold cash and reduce research investment.

Since the reform and opening up, the connection between China and the world economy has been deepening, and China's economic growth depends on the international market to some extent. The dependence on foreign trade has increased from 9.65% in 1978 to 33.89% in 2018, and reached 64% in 2006. But since then, especially since the financial crisis, the growth rate of China's export trade has slowed down significantly, even showing negative growth. Traditional theory holds that macroeconomic policy is conducive to ironing the economic cycle and promoting the steady economic growth, but frequent changes in economic policy will improve the uncertainty of economic policy. Previous studies have shown that the improvement of the uncertainty of China's economic policy will significantly inhibit China's export trade, but will the uncertainty of the economic policy of the trade objects affect the development of China's export trade? Is it an inhibitory effect or a promoting effect? Therefore, this paper will explore the impact of the economic policy uncertainty of the destination country on China's export trade of goods to the country by using the Gracity database and UNCOMTRADE database of CEPII.

2. Literature References

2.1. Overall Study of Policy Uncertainty

Policy uncertainty includes the uncertainty of monetary policy, fiscal policy, tax policy and regulatory policy. At first, scholars mostly focused on the impact of a single policy on macro and microeconomic variables. For example, Herro [3] et al. use the deviation of the federal funds rate from the estimated interest rate in the Taylor rule formula to measure the uncertainty of monetary policy. Bartolomco And Giuli [4] found that only monetary policy had an impact on economic output and that fiscal policy did not cause inflation. Niemann[5] Research has found that when tax policy uncertainty is low, the increase in tax uncertainty will accelerate corporate investment.

Until 2012, Baker, Bloom and Davis [6], scholars from the University of Chicago and Stanford University, first compiled and released the EPU to measure macroeconomic policy uncertainty, addressing the gap in how to quantify macroeconomic policy uncertainty, and was widely recognized. Baker et al. used text-mining technology to extract keywords like "economy", "uncertainty" and "policy" from the top 10 major news newspapers in the United States. The information is divided into three categories. The first is the report of economic uncertainty news, the second is the number of tax law failure, and the third is the difference between the predicted value and the actual value of macroeconomic variables, which calculates the EPU index of China, the United States, Japan and other countries. Later, most scholars conducted detailed studies based on the above EPU index, and Brogaard and Detzel expanded the database and keywords on this basis. On the basis of Brogaard and Detzel, Chinese scholars took the monthly value of the proportion of news with economic policy uncertainty to the total number as the monthly EPU value of China. With the development of computer technology, many domestic scholars use machine learning, text mining and other technologies to construct more consistent with China's EPU index. Lin Shan [18] applies the naive Bayesian method to construct the EPU index in China. The naive Bayesian method is one of the commonly used methods of text mining. It is usually used to extract the mood and tone information in financial texts, such as investor sentiment in stock forums and sentiment in analyst reports. The index covers range from 2006 to 2016, and it is basically in line with the China EPU index released by Baker. Huang and Luk[7] Using Chinese mainland's ten major newspapers such as People's Daily (Overseas Edition), Southern Metropolis Daily, Jiefang Daily, and increased to 114 newspapers in the robustness test, so that their calculated indicators can better depict the uncertainty of China's monetary policy. However, relatively speaking, the economic policy uncertainty index compiled by Baker can measure the changing characteristics of economic

policy uncertainty from multiple dimensions, so it is widely recognized by scholars. This paper also studies and analyzes it based on this index.

2.2. Economic Policy Uncertainty and Exports

Domestic economic policies will directly affect the export distribution and market expansion of enterprises. For example, when export subsidies, tax rebates and other policies are uncertain, enterprises tend to wait for the new policies to adjust the export plan, and then affect the enthusiasm of enterprises to develop overseas business. Melitz[8] It is pointed out that sunk cost investment is an important factor affecting the export of enterprises, and only enterprises with higher production efficiency can be able to carry out export trade. Bernanke[9] It is believed that the investment is irreversible, and the economic policy uncertainty will especially affect the short-term investment of enterprises. The policy uncertainty increases the cost of "waiting for new news", and significantly suppresses the investment level of enterprises. Liu Qingzhu, Tong Jiadong [19] Based on China's export trade data from 1997 to 2012 proved that China's economic policy uncertainty has a restraining effect on export trade. Xu Ruixiang [20] et al. pointed out that in terms of the export binary margin, the economic policy uncertainty of the exporting country has a significant inhibitory effect on the expansion margin of the country, and the impact on the intensive margin is not clear.

The uncertainty of foreign economic policies will also have the impact on the export of enterprises, and the policy changes will actually increase the expectations of the sunk costs of the market. Tybout[10] Found that the uncertainty in a country's exchange rate policy will hinder its foreign export trade. Feng et al[11] Using the tariff data of China on the United States from 2000 to 2006, and studying at the enterprise-product level, we found that the increase of US economic policy uncertainty has significantly increased the export of Chinese enterprises to the United States and reduced the withdrawal of Chinese enterprises from the export market to the United States. Other studies show that since China's accession to the WTO, the 22% to 30% growth of China's exports to the US is caused by the reduced uncertainty of trade policy. Crowley[12] And others show that China's annual exports will also increase by 2% if it can be eliminated by the uncertainty of trade and economic policies. Osnago[13] et al. expanded the study sample to 149 countries, and showed that every 1% drop in trade policy uncertainty would increase exports by 12%. Tong Jiadong and Li Shengqi [21] found from the micro level that after joining the WTO organization, the reduction of trade policy uncertainty has a significant promotion effect on the innovation of Chinese export enterprises, especially for foreign enterprises and processing trade enterprises. Zhang Ying and Zhu Xiaoming [22] found from the perspective of trade competition strength that both the uncertainty of domestic economic policy and the uncertainty of the exporting country will have a restraining effect on export price and export quality by affecting the fixed cost input and institutional quality channels. However, most studies only consider the uncertainty of trade policy. Baker pointed out that the uncertainty of trade policy only accounts for 1% -7% of the uncertainty of economic policy, and fiscal policy and monetary policy are all important factors affecting export trade. Therefore, this paper puts forward the following hypothesis: Hypothesis 1: Increasing economic policy uncertainty in the destination countries will restrain China's exports to their goods.

2.3. The Current Development Status of China's Foreign Trade

On the whole, China's exports of foreign goods are on the rise, rising from us \$84.9 billion in 1992 to us \$2,590.6 billion in 2020. As can be seen from Figure 1, after China's accession to the WTO in 2001, China's foreign commodity export trade has entered a period of rapid development. Export volume growth rates in 2002-2007 averaged 29% annually, and export growth rates were negative for the first time after the 2008 financial crisis. However, China actively responded to the impact of the financial crisis, and its export trade picked up rapidly.

In 2013, China surpassed the United States for the first time and became the world's largest trading country of goods. However, in the environment of sluggish internal and external demand, weakening traditional advantages and continuous decline in commodity prices, China's commodity export trade market continues to be depressed, and policies were released almost every month in 2015. After 2016, China's export trade has rebounded, but with the impact of international events such as the trade war and the COVID-19 epidemic, the prospect of China's commodity export trade has also become unclear.

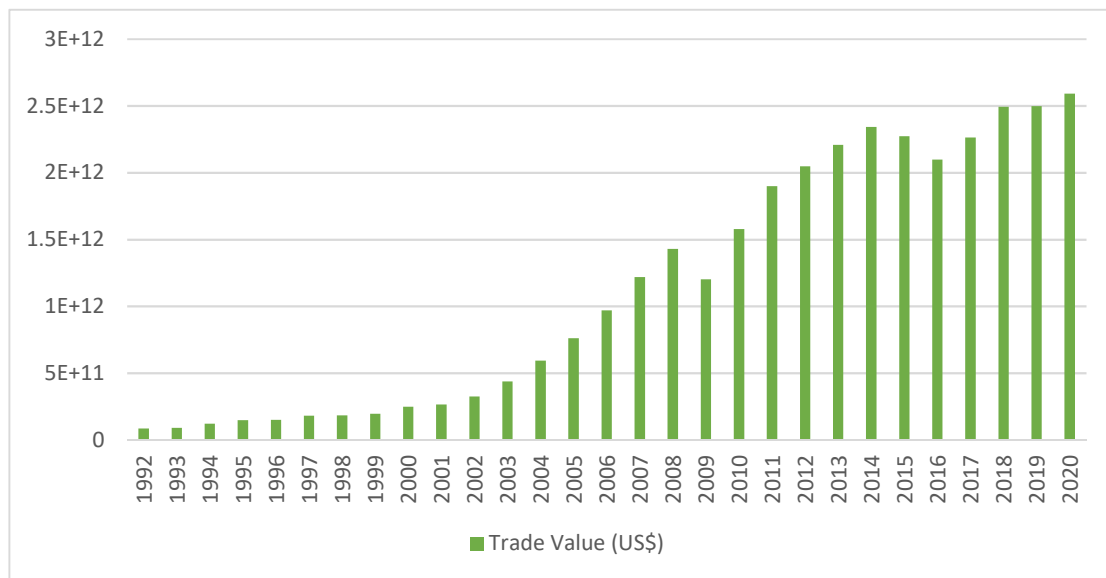


Figure 1. China's export trade volume from 1992 to 2020

Table 1. China's top 10 export trade markets

Country area	Exports (US \$ billion)			Proportion (%)		
	2018	2019	2020	2018	2019	2020
World	24942.3	24985.70	25906.0	100	100	100
America	4797.02	4185.84	4525.76	19.2	16.8	17.47
Hong Kong	3029.02	2796.17	2726.51	12.1	11.2	10.52
Japan	1472.35	1432.24	1426.41	5.9	5.7	5.51
Korea	1090.29	1109.85	1125.04	4.4	4.4	4.34
Vietnam	840.16	980.04	1138.13	3.4	3.9	4.39
Germany	779.09	797.06	868.24	3.1	3.2	3.35
India	768.81	749.24	667.27	3.1	3.0	2.58
Holland	731.24	739.45	790.1	2.9	3.0	3.05
Britain	569.88	622.76	726.05	2.3	2.5	2.80
Singapore	498.18	539.64	575.02	2.0	2.2	2.22

From the market perspective, China has trading partners around the world, In 2020, China has trade with more than 220 countries around the world, Among them, the top 10 countries and regions in exports were the US \$452.576 billion, Hong Kong, China US \$272.651 billion, In Japan, US \$142.641 billion, Vietnam, US \$113.813 billion, Of South Korea, US \$112.504 billion, Germany, at \$86.824 billion, The Netherlands, \$79.01 billion, UK at \$72.605 billion, India, US

\$66.727 billion, In Singapore, at US \$57.502 billion, Accounting for 56.23% of China's total exports, The United States is China's first national exporter, Accounting for 17.47% of the total exports. Pastor[14] et al. believe that regions with weak marketization are more strongly affected by economic policy uncertainty, while Cespedes et al. [15] point out that there is heterogeneity in the impact of uncertainty on developing and developed countries. We will study them into the European and American markets, the BRICS markets and other markets. At the same time, because of the counter-cyclical economic policy uncertainty, the impact of economic policy uncertainty on export trade varies in different periods, so we put forward the following hypothesis:

Hypothesis 2: China's commodity export trade has different feedback on the economic policy uncertainty in different export trade markets.

3. Model Setting and Data Description

3.1. Model Specification

To examine the impact of the economic policy uncertainty of trading partners on China's exports, this paper sets up the following measurement model:

$$\ln exp_{it} = \beta_1 + \beta_2 epu_{it} + \beta_3 \ln dist_i + \gamma Control_{i,t} + \mu_t + \varepsilon_{i,t} \quad (1)$$

The subscripts i and t indicate the destination country and the year, respectively. The dependent variable $\ln exp_{it}$ is the value of China's exports to country i or region in t year; epu_{it} is the economic policy uncertainty of country or region i in t year divided by 100; $dist_i$ is the geographical distance between country i and China after population weighted treatment; $Control_{i,t}$ is a commonly used control variable; μ_t is a fixed effect; $\varepsilon_{i,t}$ is a random disturbance item.

3.2. Variable Declaration

3.2.1. Explained Variables

The impact of economic policy uncertainty of trading partners on China's exports to them is the focus of this paper. Due to the large value of data items, in order to avoid the deviation of coefficient estimation, we take the logarithm to facilitate the calculation.

3.2.2. Interpreted Variables

Economic policy uncertainty is the core variable of the model. The database jointly released by Stanford University and University of Chicago scholar Baker contains monthly economic policy uncertainty indicators in more than 20 countries and regions. This paper selects Australia, Canada, Chile, France, Germany, Ireland, India, Italy, Brazil, the Netherlands, Japan, Korea, Japan, Spain, Sweden, Singapore, Russia, the United Kingdom and the United States for the research object, they throughout North America, Europe, southeast Asia, South America and other regions, accounting for more than 55% of China's export trade, can better reflect the characteristics of China's exports. To match the other annual indicators, we used arithmetic averaging to convert the monthly data into annual data to obtain $epu1$. Where j , t , m indicate the destination country, year and month, respectively.

$$epu1_{jt} = \frac{\sum_{m=1}^{12} epu_{jm}}{12} \quad (2)$$

3.2.3. Distance Factor

The distance factor between countries measures the cost of bilateral trade between the two countries. Drawing on the research of Mayer et al., this paper uses the weighted trade distance of major population or economic agglomeration areas. The calculation formula is as follows:

$$d_{ij} = [\sum_{k \neq i} \frac{pop_k}{pop_i} \cdot \sum_{l \neq j} \frac{pop_l}{pop_j} \cdot d_{kl}^\eta] \quad (3)$$

Where d_{ij} and d_{kl}^η represent the trade distance between the two countries and the distance between the two countries; pop_i and pop_j represent the main population or economic population of countries i and j ; η indicates the distance elasticity of bilateral trade. Mayer takes 1.

3.2.4. Other Control Variables

1) Per capita GDP ratio: Per capita GDP is an indicator to measure the quality of living standards of local residents, and the per capita GDP ratio can be used to measure the approximate degree of national income and consumption preferences of the two countries. The more the national income and consumption preferences, the lower the cost of export spending such as information search. In addition, the similarity and substitutability of the products between the two countries have also increased, which will intensify the market competition and make it more difficult for the products to enter the target market.

2) Whether the two countries are both members of the WTO, if 1 and 0 if not.

3) Regional trade agreement (RTA): regional trade agreement refers to two or more countries, or between different tariff areas, in order to eliminate all kinds of trade barriers between members, regulate trade cooperation between each other and concluded international treaty, if the source and destination countries in any type of regional trade agreement (source: wto), the virtual value is equal to 1.

4) China's per capita GDP purchasing power parity (GDPPPP).

3.3. Data Source and Sample Selection

The time sample of this paper is from 1996 to 2020, covering the key events affecting China's accession to the WTO and the development of China's export trade. The research subjects were 18 countries with close trade with China, including the United States, Japan and Brazil. Policy uncertainty is measured by the economic policy uncertainty index jointly issued by Stanford University and the University of Chicago scholar Baker. The data of commodity exports is taken from the UNCOMTRADE database, which provides bilateral trade data on SITC six-digit products in more than 200 countries around the world, and provides basic trade data for this paper. The remaining variables were derived from CEPII's Gracity database, which provides 252 national and regional trade flows as well as geographic, cultural, trade facilitation and macroeconomic variables. Gracity The database is obtained by pooling data from many different sources, such as data generated by CEPII, and data from institutional sources such as the World Bank, the WTO and the International Monetary Fund. This paper integrates the data based on the original data to remove samples with severely missing data.

4. Empirical Analysis

4.1. Descriptive Analysis

Table 2. Table of the descriptive analysis of the variables

Variable	Minimum	Maximum	Mean value	Variance
DIST	0.00700	4.439	1.547	0.823
GDPPPP	2.071	17.21	8.911	5.038
RTA	0	1	0.177	0.382
EPU1	37.60	490.7	124.8	62.37
EXP	0.917	4,797	422.2	689.8
WTO	0	1	0.819	0.386
RENGDP	0.106	58.21	7.815	10.28

Table 2 shows the descriptive statistical results of each variable. As can be seen from the table, China's average export trade to 18 countries from 1996 to 2020 was \$42.22 billion, the maximum value was \$479.7 billion, and the minimum value was \$91.7 million, indicating significant differences in China's export trade to other countries. The maximum value of economic policy uncertainty is 490.7, the minimum value is 37.6, and the average value is 124.8, indicating that the index of economic policy uncertainty is very different and there are large fluctuations. The average value of RTA index is 0.177, indicating that a few countries have concluded regional trade agreements with China, and the average value of WTO index is 0.819, indicating that most of the trade sides have joined the WTO. The maximum value of per capita GDP ratio is 58.21, the minimum value is 0.106, and the average value is 7.815, indicating that there is a significant difference between the national income and consumption preference of China and trading countries. China's per capita GDP purchasing power parity The maximum is \$17,210 and a minimum is \$2,071.

4.2. Base Regression

The economic policy uncertainty is used to regression the export trade volume, and the results show that the regression coefficient of economic policy uncertainty is significantly negative at the level of 1%, and R-squared is 0.847, which confirms the previous hypothesis 1 that the increase of policy uncertainty will inhibit export trade activities. On average, for every 10% increase in economic policy uncertainty, China's export volume of trade drops by about 1.33%. Therefore, we should pay attention to the changes in the uncertainty of foreign economic policies, which will help us maintain and develop our export trade.

At the same time, we find that the distance factor is negatively correlated with the export trade volume, that is, the farther the distance, the weaker the export trade vitality, which is in line with common sense. Distance factor is also a major factor restricting export trade. On the one hand, long-distance transportation will increase the export cost and limit the choice of transportation. On the other hand, many goods are not suitable for remote transportation, such as fresh food and living animals, and many commodities have strict requirements on transportation conditions, such as dangerous chemicals and mineral resources. So every 10% reduction in the weighted trade distance increases China's export trade by about 2.16%.

Regional trade agreements have a significant and positive correlation with export trade volume, that is, the signing of regional trade agreements between the two sides is conducive to export trade activities, which is also in line with common sense. Regional trade agreements reduce tariff reduction and non-tariff barriers to form a regional unified market, which is conducive to

the trade transfer of members and greatly increases the opportunities for members' goods to enter each other's markets, thus expanding trade liberalization to varying degrees. Therefore, the signing of more regional trade agreements with trade partners is of great significance to promote the growth of China's export trade.

Table 3. Base regression results table

Variable	Model
EPU1	-0.133*** (-3.04)
LNDIST	-0.216*** (-4.53)
GDPPPP	0.150*** (21.21)
RTA	0.370*** (3.37)
WTO	0.931*** (13.95)
RENGDP	-0.019*** (-3.68)
Constant	3.307*** (52.62)
R-squared	0.847
Fixed effect	yes

The ratio of per capita GDP has a negative effect on China's foreign export trade. When the ratio of China's per capita GDP to foreign per capita GDP is smaller, China's export trade will increase, indicating that the smaller the economic scale gap between the two countries is, China's export trade volume will be promoted.

4.3. Robustness Test

Table 4. Regression Results of EPU with a Lag of One Period

Variable	Model
EPU1_LAG	-0.111** (-2.29)
Controls	yes
R-squared	0.833
Fixed effect	yes

At the same time, considering that the policy often has a lag effect, that is, it takes time for the introduction and implementation of the policy, the uncertainty of the economic policy of the current target country will affect the amount of China's exports to it in the next period. After the introduction of the policy, most enterprises will choose to wait and see, and the policy will

affect the future production plan of enterprises. Therefore, we replace the core explanatory variable with the economic policy uncertainty of the first phase, while other indicators remain unchanged and return again. The results are shown in Table 4. As above, the replacement did not affect the research results, that is, the economic policy uncertainty of the destination countries in the previous period will affect China's export trade in the current period, inhibiting the export trade at a significant level of 5%.

4.4. Analysis of Heterogeneity

This paper selects China's export trade to 18 countries as the research object. However, these 18 countries have great differences in the stage of economic development, economic policy adjustment, trade structure and other aspects. According to their economic development and dependence on Chinese export trade, this paper distinguishes three export markets: European and American markets (including Canada, the United States, Britain, France, Germany, Ireland, Italy, Spain, Sweden, the Netherlands), "BRICS" market (including Russia, Brazil and India) and other markets (including Japan, South Korea, Singapore, Australia, Chile), and the results are shown in Table 5.

Table 5. Table of sub market regression results

Variable	Model1	Model2	Model 3
EPU11	-0.152***	-0.065	-0.153**
	(-2.87)	(-0.64)	(-2.01)
Controls	yes	yes	yes
R-squared	0.872	0.895	0.903
Fixed effect	yes	yes	yes

Models 1,2, and 3 represent the European and American markets, the BRICS markets, and other markets, respectively. From the results, the first and third columns were significantly negative at the 1% and 5% levels, respectively, while the second column coefficient was negative but not significant. Specifically, the increase of economic policy uncertainty in European and American markets and other markets has hindered China's export trade to European and American markets. It is worth noting that in the second column, the estimated coefficient of foreign policy uncertainty is not significant but the coefficient is negative, indicating that the increasing policy uncertainty in the BRICS market has no impact on the development of China's export trade to the BRICS market. This paper believes that the result is understandable, China's export trade development for more than 30 years, Europe and the American market as China's traditional export market, often consistent with China's economic operation cycle, when China to stimulate economic growth, regulation policy, domestic policy uncertainty, European and American market economic operation is often not ideal, seriously restrict the development of China's export trade. However, relatively speaking, the "BRICS" market and other emerging markets or developing markets are the current export target markets that the Chinese government and enterprises are trying to expand, and they are also the key development market of enterprises' "going out" strategy. The BRICS countries have many strategic cooperation in economy, trade, finance, political security and human exchanges, so even if the economic policy uncertainties change significantly, it will not have much impact on the trade between the two countries. When the export trade situation to traditional markets such as Europe and America deterior, the "BRICS" market may also be used as a better "alternative" to develop its export trade.

5. Conclusion

Economic policy is an important factor affecting the macro and micro economic environment. Since the financial crisis, the international market has been depressed, the uncertainty of global economic policy has been increased significantly, and the policy uncertainty has gradually become a topic of discussion among scholars. However, the research on the impact of economic policy uncertainty of the destination country on domestic exports is relatively insufficient. Therefore, this paper uses the Gracity database, UNCOMTRADE database and the economic policy uncertainty indicators constructed by Baker and other scholars to explore the impact of the economic policy uncertainty of the destination country on China's goods export trade to the country. This paper selected 1996-2020 China of 18 countries trade data and other indicators for the measurement test, the regression found that the destination economic policy uncertainty does significantly inhibited China's export scale, in order to ensure the results of the authentic, this paper using lag economic policy uncertainty data robust test, test results prove that the basic conclusion of this paper is more reliable. Expansion research found the heterogeneity of economic policy uncertainty on export in different target markets. In the European and American markets and other markets, the regression results and basic conclusions are consistent, and the conclusion of the BRICS market is different from the previous one. Due to the particularity of the BRICS market, China has a strong international connection with other countries, and the economic policy uncertainty will affect China's trade exports to China. Therefore, China should strengthen international cooperation, create a good and healthy development environment for China's export trade, and establish an economic policy information sharing platform, which is conducive to enterprises to quickly collect the changes in economic and trade policies of host countries and timely adjust their export strategies.

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