

# Research on Economic Policy Uncertainty and Import Trade

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**Abstract:** This paper uses the economic policy uncertainty and total import volume of 20 countries including the United States and China and the European Union from 2007 to 2021 and related data, and uses a fixed-effect model to study the impact of economic policy uncertainty on import trade. The results show that internal economic policy uncertainty significantly inhibits import trade, while global economic policy uncertainty has no significant impact on import trade. Maintaining good international relations with other countries and avoiding trade frictions is a Sensible way to promote import trade.

**Keywords:** Import trade, Fixed-effect model, Economic policy uncertainty.

## 1. Introduction

Economic policy uncertainty means that people inability to predict changes in certain economic policies, resulting in participants' predictions not matching with actual changes. Since the 2008 financial crisis, affected by a series of events such as the European debt crisis, Brexit, Sino-US trade frictions, and the new crown pneumonia epidemic, the uncertainty of economic policies of various countries has shown a growing trend and fluctuated, affecting the foreign trade of various countries. And international trade can help the exchange of products across the world, diversifies products in the domestic market, meets the different consumption needs of consumers, and improves the quality of life of citizens. As the world's major trading countries, the United States and China also have an increasing trend in economic policy uncertainty index and are extremely unstable. The total import volume of the United States has fluctuated since 2008, and even has experienced negative growth for many years, and import trade plays an irreplaceable role in making up for the lack of domestic resources and maintaining the comprehensive and balanced development of the national economy[1]. As the largest partner of the United States, China has huge trade exchanges with the United States, accounting for 13.49% of the US import and export market share in 2019, affected by the US economic sanctions against China, the total import volume of China decreased by 17.62% compared with 2018, and the total import value decreased by 1.5% compared with 2018. It can be seen that how to deal with international relations and stabilize economic policy uncertainty is crucial to import trade.

The impact of economic policy uncertainty on international trade has been studied by many scholars, but most of them are studying export trade and focusing on the issue of China's trade, this paper takes 20 countries and the European Union as the main body to study the impact of economic policy uncertainty on import trade, including OECD countries, non-OECD countries, developed countries and developing countries, on the one hand, expand the breadth of the scope of research, which is conducive to avoiding the survivorship bias of a single country. On the other hand, studying the sensitivity of import trade of various countries to economic policy uncertainty is conducive to helping countries better choose

trade partners and trade volume when conducting international trade.

This paper uses a fixed-effect model, national fixed time and country individuals, and uses GDP, total population, real effective exchange rate, etc. as control variables to study the influence of economic policy uncertainty on total import trade.

## 2. Literature Review

As far as the influence of economic policy uncertainty on international trade is concerned, many scholars have made relevant studies. For export trade, fluctuations in economic policy uncertainty can curb the technological complexity of exports[2], and economic policy uncertainty on the degree of inhibition of different commodity trade volume is also different, some commodity trade volume will decline significantly with the increase of economic policy uncertainty, some will not[3], And state-owned, high-quality enterprises are more sensitive to economic policy uncertainty[4]. The decline in technological complexity is not conducive to the research and development of high and new technologies, resulting in a decline in the total amount and quality of export commodities, thereby inhibiting imports. In addition, the uncertainty of external economic policies also has a negative impact on the stability of the currency exchange rate, and affects China's export trade through the import demand path[5], For example, economic policy uncertainty in the United States has a short-term negative impact on the stability of the RMB[6], The decline in the RMB exchange rate will inevitably inhibit the development of import trade. From the perspective of consumers, economic policy uncertainty has a significant negative impact on household consumption, with residents with high wealth effects being the most negatively affected[7], The decline in consumption quotas will in turn affect the quota of imported goods.

## 3. Research Methods

### 3.1. Research hypotheses

As shown in Figure 1, from 2007 to 2020, the uncertainty of world economic policy in China, the United States and the United States has fluctuated, and the increase from 2014 to 2020 is more significant.

This paper makes the following assumptions:  
Hypothesis H1: Internal economic policy uncertainty will dampen import trade

Hypothesis H2: Global economic policy uncertainty will dampen import trade

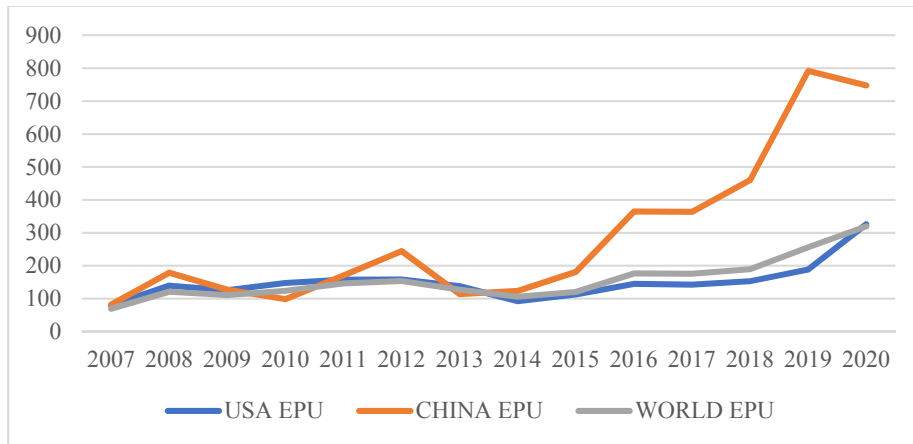


Figure 1. 2007-2020 USA, China and world EPU

### 3.2. Model building

#### 3.2.1. Data sources

This paper uses sample data from 2007 to 2021 for research, of which the import trade volume data as an explanatory variable comes from the official website of UN Com trade Database, the degree of increase or decrease of import volume can intuitively reflect the import trade status of the country, the countries and the world economic policy uncertainty index EPU from Baker and other research data, the GDP data of each country comes from the World Bank's WDI database, and the GDP reflects a country's economic situation. The size of the country's GDP can be seen in the strength of the country's consumption power, thus affecting import trade. Data on total population, trade openness and real effective exchange rates all of them come from the World Bank's WDI database. The number of the total population of each country also reflects to a certain extent the strength of a country's consumption power and demand. Trade openness can indicate how dependent a country is on international trade, the greater the openness of trade, the greater a country's demand for international trade, trade openness has a positive impact on import trade.

#### 3.2.2. Model settings

In order to examine the impact of economic policy uncertainty on import trade of various countries, this paper introduces variables such as economic policy uncertainty and population size, trade openness, real effective exchange rate, and GDP in each country, and constructs the following model on the influence of domestic economic policy uncertainty on

import trade(1) and models of the influence of world economic policy uncertainty on import trade (2)

$$\ln im_{it} = \alpha_0 + \alpha_1 \ln epu_{it} + \alpha_2 \ln gdp_{it} + \alpha_3 \ln pop_{it} + \alpha_4 \ln open_{it} + \alpha_5 \ln rate_{it} + \varepsilon_{it} \quad (1)$$

$$\ln im_{it} = \beta_0 + \beta_1 \ln epu_{itw} + \beta_2 \ln gdp_{it} + \beta_3 \ln pop_{it} + \beta_4 \ln open_{it} + \beta_5 \ln rate_{it} + \varepsilon_{it} \quad (2)$$

Among them:  $im_{it}$  represents the import value of t year i country,  $epu_{it}$  represents the t year i economic policy uncertainty index,  $epu_{itw}$  represents the T year I global economic policy uncertainty index,  $gdp_{it}$  represents t year i country GDP,  $pop_{it}$  represents the total population of t year i,  $open_{it}$  represents the trade openness of t year i country, measured by the proportion of a country's total foreign trade to its GDP[8], and  $rate_{it}$  represents the real effective exchange rate of t year i country.  $\alpha_0$  and  $\beta_0$  are constant terms, and  $\alpha_n, \beta_n$  are coefficients for each influencing factor, respectively.  $\varepsilon_{it}$  is a random interference term.

### 3.3. Empirical analysis

#### 3.3.1. Descriptive statistical analysis

Based on the econometric model constructed in this paper, the maximum, minimum, mean and standard deviation of each variable are shown in Table 1, and the economic policy uncertainty index of different countries has a large gap and obvious fluctuation range.

Table 1. Descriptive statistics for each data

	N	min	max	average value	standard deviation
import	315	25565851005	2932976075226	636373741629.70	657036472380.344
EPU	315	27.001	791.874	151.27199	89.957
GDP	315	121373602348.679	2299610000000.000	3442520208123.466	4904046126330.225
open	315	0.184	3.430	0.588	0.494
population	315	4223800	1412360000	204907989.94	381470170.992
effective rate	285	69.424	152.993	99.489	12.378
WORLD EPU	315	69.823	319.998	160.786	62.368
cons	285				

### 3.3.2. Model selection

In this paper, the F-test, LM test and Hausman test are performed on model (1) (2) to determine whether to choose which of mixed-effects models, random-effects models, and fixed-effect models is selected, and the test results are shown in Table 2, and the P value of F test in model (1) and model (2) are less than 0.005, showing that the fixed-effect model prefers to the mixed-effect model. Model (1) and Model (2) LM test p-values less than 0.005 indicate that the random-effects model is superior to the mixed-effects model, the P value of Hausman test in model (1) is 0.0007, and the P value of Hausman test in model (2) is less than 0.005. Both indicating that the fixed-effect model is better than the random-effects model. In summary, both model (1) and model (2) are analyzed using a fixed-effect model.

**Table 2.** Three test results

TEST		Model (1)	Model (2)
F test	test value	102.18	96.97
	P value	<0.005	<0.005
LM test	test value	1264.93	1267.22
	P value	<0.005	<0.005
Hausman test	test value	19.26	50.60
	P value	0.0007	<0.005

### 3.3.3. Regression analysis

Model (1) and model (2) were analyzed using fixed effects, and the results are shown in Table 3. From the results of model (1), we can see that the uncertainty of domestic economic policies significantly suppresses the total import trade, and with the increase of economic policy uncertainty, domestic imports will decline, which may be due to foreign export operators choosing to avoid risks and reduce trade with countries with high economic policy uncertainty, and domestic import operators are also affected by economic policies and dare not import significantly. Among the control variables, the total GDP is positively significant on the significance level of 1% of total imports, indicating that as

GDP increases, a country's operating conditions will also improve, and foreign trade and imports will also increase relatively. The reason for the negative significance of the total population to the total import volume is 5% significantly, which may be that with the increase of population, labor force and demand also rise, but the increase of labor force is greater than the increase in demand, so the population rise inhibits imports. The real effective exchange rate is negative to the 1% significant level of total imports, indicating that import trade will be suppressed as the national currency depreciates. The degree of trade openness to the total import volume is positive and significant at the 1% significant level, indicating that the greater the degree of trade openness, the relative increase in the country's foreign trade quota, and the total import volume will also increase. From the regression results of model (2) in Table 3, we can conclude that the influence of global economic policy uncertainty on total exports is not significant.

**Table 3.** Regression results

		Model (1)		Model (2)	
EPU <sub>ti</sub>		-0.00023***		EPU <sub>ti</sub>	-0.00007
lnGDP <sub>ti</sub>		1.04920***		lnGDP <sub>ti</sub>	0.99639***
lnPOP <sub>ti</sub>		-0.41407**		lnPOP <sub>ti</sub>	-0.33687*
Rat <sub>ti</sub>		-0.00497***		Rat <sub>ti</sub>	-0.00439***
Op <sub>ti</sub>		0.53187***		Op <sub>ti</sub>	0.54332***

**Note:** \*\*\*, \*\*, \* indicate significance levels of 1%, 5% and 10%, respectively. Same below

### 3.3.4. Robustness test

To make the conclusions of the study more robust, this paper draws on the treatment method[9] and uses the method of shortening the sample period to test the results, the specific method is to eliminate the first phase sample data, that is, the 2007 sample, the first two period sample data, that is, 2007-2008, and the first three phase sample data, that is, 2007-2009, and use the fixed-effect model to analyze the remaining samples, the specific analysis results are shown in Table 4, Table 5 and Table 6. The results of the three analyses were all significantly consistent with those before the shortened sample period, and the results were also highly consistent, indicating that the empirical results in this paper have strong confidence.

**Table 4.** Regression results after excluding 2007 data

		Model (1)		Model (2)	
EPU <sub>ti</sub>		-0.00023***		EPU <sub>ti</sub>	-0.00003
lnGDP <sub>ti</sub>		1.09515***		lnGDP <sub>ti</sub>	1.04270***
lnPOP <sub>ti</sub>		-0.56155***		lnPOP <sub>ti</sub>	-0.52041*
Rat <sub>ti</sub>		-0.00533***		Rat <sub>ti</sub>	-0.00473***
Op <sub>ti</sub>		0.56985***		Op <sub>ti</sub>	0.57992***

**Table 5.** Regression results after excluding 2007, 2008 data

		Model (1)		Model (2)	
EPU <sub>ti</sub>		-0.00022***		EPU <sub>ti</sub>	0.00001
lnGDP <sub>ti</sub>		1.14060***		lnGDP <sub>ti</sub>	1.08183***
lnPOP <sub>ti</sub>		-0.50189***		lnPOP <sub>ti</sub>	-0.50797**
Rat <sub>ti</sub>		-0.00539***		Rat <sub>ti</sub>	-0.00472***
Op <sub>ti</sub>		0.69112***		Op <sub>ti</sub>	0.71025***

**Table 6.** Regression results after excluding 2007, 2008, 2009 data

Model (1)		Model (2)	
EPU <sub>ti</sub>	-0.00024***	EPU <sub>ti</sub>	-0.00005
lnGDP <sub>ti</sub>	1.09732***	lnGDP <sub>ti</sub>	1.02829***
lnPOP <sub>ti</sub>	-0.69664***	lnPOP <sub>ti</sub>	-0.65008***
Rat <sub>ti</sub>	-0.00523***	Rat <sub>ti</sub>	-0.00453***
Op <sub>ti</sub>	0.61901***	Op <sub>ti</sub>	0.64586***

#### 4. Conclusions and recommendations

This paper studies the influence of economic policy uncertainty index on import trade by using data such as economic policy uncertainty and total import trade from 20 countries and the EU from 2007 to 2021. The results of the study draw the main conclusions: domestic economic policy uncertainty can significantly dampen import trade, while global economic policy uncertainty has no significant impact on import trade. From the conclusions obtained, we can see that with the gradual severity of the international situation in recent years, many countries have started trade wars or even wars because of their interests, making the uncertainty of economic policies of various countries rising and erratic, which will inevitably inhibit trade between countries and affect the global economy. The policy recommendations in this article are as follows:

Stabilizing the economic policy environment is the basic guarantee for promoting the country's foreign trade. If a country's economic policy uncertainty is at its peak for a long time, its import trade will inevitably be suppressed, and each country must properly stabilize its own internal economic policy uncertainty if it wants to recover quickly from the new crown pneumonia epidemic, create a good national relationship, less than other countries have too much friction, and avoid unnecessary risks is the way to do it for a long time.

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