

Economic Policy Uncertainty and Bank Lending

Meili Shi^{1,*}

¹College of Economics and Institute of Finance, Jinan University, Guangdong, 510632, China

Abstract

Based on the panel data of 218 commercial banks in China from 2009 to 2019, this paper studies the impact of economic policy uncertainty on bank lending, and explores the impact paths of economic policy uncertainty on bank credit from the perspective of credit demand and supply. We find that the uncertainty of economic policy will increase the growth rate of bank loans. Further research confirms that the credit demand path of economic policy uncertainty is not smooth, but the loan supply willingness volatility is a significant mediator in the process by which economic policy uncertainty affects bank loans. In addition, bank competition intensifies the impact of economic policy uncertainty on bank credit. Banks with higher competition are more sensitive to economic policy uncertainty. Our findings have important implications for policymakers who seek to develop more efficient and resilient banking sectors. We propose that the government should attach more importance to the role of banks' loan supply willingness in policy transmission, and strengthen the risk control of the banking system, thus enhancing the ability of commercial banks to resist shocks.

Keywords

Economic policy uncertainty; Bank lending; Loan supply willingness; Bank competition.

1. INTRODUCTION

In recent years, facing with the shocks of economic restructuring, declining economic growth, the international financial crisis and international trade frictions, Chinese government has taken a number of measures, including monetary policy, fiscal policy and industrial policy, aimed at smoothing the economic cycle fluctuations and maintaining steady and rapid economic development. However, when macroeconomic objectives become diversified, economic policy uncertainty appears to be an inevitable problem [1]. The uncertainty of economic policy will affect the decision-making of families, enterprises and financial intermediaries [2]. In a financial system dominated by indirect financing, bank credit plays an important role in supporting the development of economy and alleviating the corporates' financing constraints. Therefore, it is particularly important to study the impact of economic policy uncertainty on bank credit and clarify its impact mechanism to maintain the stable operation of the economy.

Exploring the role of economic policy uncertainty (EPU) on banking system has become an emerging field in recent years, especially on bank credit and risk. For instance, Gu Haifeng and Yu Jiajun [3] used the data of Chinese commercial banks from 2006 to 2017 to study the impact of economic policy uncertainty on two types of bank risk-taking behavior and bankruptcy risk. Their results show that the increase of economic policy uncertainty will weaken the bank's active risk-taking, but will aggravate the passive risk-taking and bankruptcy risk. In the existing literature on the relationship between economic policy uncertainty and bank credit, most of them found that economic policy uncertainty has negative effects on bank credit [2, 4-8]. For examples, Bordo et al. [2] found that the increase of economic policy uncertainty will inhibit the

growth of bank credit, and the inhibition is more obvious in large scaled banks, banks with weak capital and less cash. Hu and Gong [4] made the same conclusions with the bank level data of 19 major economies, and they particularly found that macro and micro prudential policies alleviate the inhibitory effect of economic policy uncertainty on bank credit. Chi and Li [5] used the data of Chinese commercial banks to study the role of economic policy uncertainty on bank credit risk and credit decision-making, and found that economic policy uncertainty is positively correlated with bank credit risk but negatively correlated with credit scale. Moreover, they found that these relations are magnified in banks with low proportion of state-owned shares [5]. Based on the TVP-VAR model, He Fumei et al. [6] found that the inhibitory effect of economic policy uncertainty on bank credit was affected by the macroeconomic environment. During the period of steady economic growth, the effect was relatively weak, while when the macroeconomic deteriorated, it was significantly amplified [6]. Whereas, when it comes to the positive impact of policy uncertainty on bank credit, less literature can be found. Hao Weiya et al. [7] believed that the uncertainty of economic policy makes enterprises and families reduce investment and increase the digit on their bank account, which influences the net liquidity position of banks and promotes their motivation to increase loans. Using the data of 22 Chinese listed banks, Liu Yang and Hou Mengqi [8] found that there is a significant positive relationship between economic policy uncertainty and bank loan growth, and the bank risk-taking enhances the marginal impact of economic policy uncertainty on bank credit. These previous researches empirically proved that economic policy uncertainty does affect bank credit, but the conclusions are still controversial. This paper will provide more evidence for research in this field by investigating the impact with Chinese data at the micro level.

Taking the data of 218 Chinese banks from 2009 to 2019 as a sample, this paper mainly studies the impact of economic policy uncertainty on bank credit. For further investigation, we employ the mediate effect methodology to explore how economic policy uncertainty makes influence, or namely, what are the paths of economic policy uncertainty to bank credit. Finally, we split the sample to evaluate whether bank competition affects the relationship between economic policy uncertainty and bank credit (see Figure 1). Regarding to the influence channels of economic policy uncertainty on bank credit, our study focuses on two aspects: credit demand and loan supply, and use the overall loan demand and bank loan approval volatility to reflect them. Economic policy uncertainty will affect employment and output [9, 10] and inhibit enterprise investment activities [11], and thus reduce credit demand. This is the "EPU - corporate credit demand - bank credit" channel. As for loan supply, the uncertainty of economic policy reduces the bank stability and increases bank risk [3], and finally affects bank credit supply. Additionally, the uncertainty of economic policy may affect the risk identification ability of banks, or banks may be willing to take more risks under the pressure of profit objectives [8], so as to expand credit supply. We call it "EPU - bank loan supply - bank credit" channel. Therefore, we conjecture that economic policy uncertainty can affect corporates credit demand and bank credit supply, and then influence the level of bank lending. Less scholars have discussed the credit demand and supply channels. Although He Fumei et al. [6] had studied the impulse response of credit demand and bank loan supply to economic policy uncertainty, they didn't specify the paths. Our study is an important supplement to the path analysis of economic policy uncertainty.

According to the investigation of Li Shuangjian and Tian Guoqiang [12], which analyzed the influence of bank competition on bank risk-taking channel of monetary policy, the bank competition will be superimposed with monetary policy to amplify the marginal effects of monetary policy on bank risk-taking. Furthermore, Gu Haifeng and Yu Jiajun [3] also found that the increase of bank concentration will aggravate the positive effect of economic policy uncertainty on bank risk taking. Following these studies, our research will further discuss the role of bank competition in the impact of economic policy uncertainty on bank credit.

Our study makes three contributions to existing literature. Firstly, our research is based on the Chinese data and includes all types of banks in China except the central bank and policy banks. It's the comprehensive data that make the empirical results more representative. Our result provides new evidence for the positive impact of economic policy uncertainty. Secondly, we discuss the corporates credit demand and bank lending supply channels, which provides a new perspective for the research on economic policy uncertainty and bank credit. Thirdly, we examine whether bank competition intensifies the impact of economic policy uncertainty on bank credit, and this expands the relevant research on bank competition.

The conclusion of this paper can be summarized as follows. Firstly, the uncertainty of economic policy has significantly improved the growth of bank loans. Secondly, using the intermediary effect model, we find that the economic policy uncertainty significantly reduces the fluctuation of loan demand, but the fluctuation of loan demand has no significant impact on bank credit, indicating that the transmission channel of "EPU - corporates credit demand - bank credit" is invalid. The uncertainty of economic policy leads to bank credit expansion mainly through the high fluctuation of bank loan approval conditions, which presents the fluctuation of bank risk perception. Finally, the impact of economic policy uncertainty on bank credit is more significant in the case of fierce bank competition.

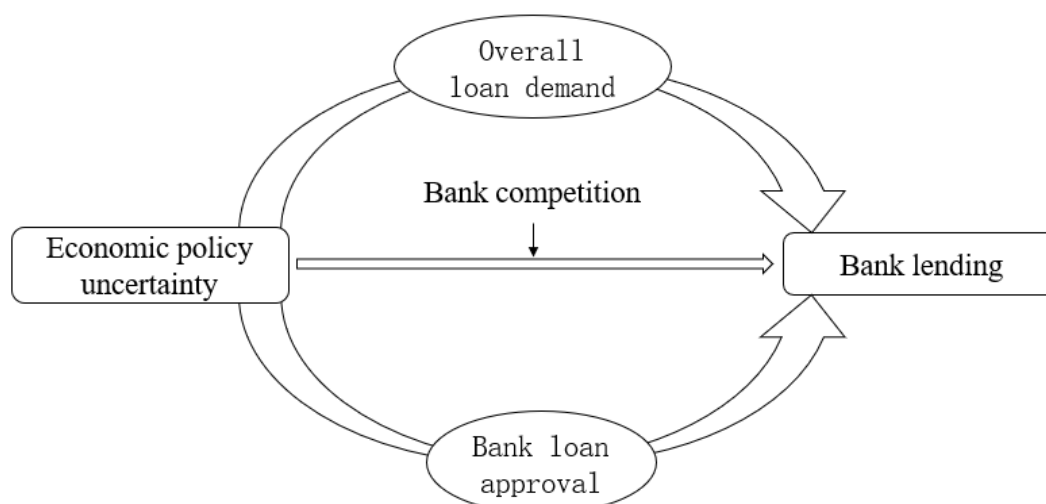


Figure 1. The influence of EPU to bank lending

2. DATA

2.1. Sample Selection and Data Sources

Our sample covers the period from 2009 to 2019. Banks without 3 years of data are excluded, and there are 218 banks in the end, including large state-owned commercial banks, joint-stock commercial banks, urban commercial banks and rural commercial banks. Following Baker et al. [13], we use the EPU index to measure economic policy uncertainty. In the robustness test, we also use the China economic policy uncertainty index constructed by Huang and Luk [14]. The bank financial data comes from CSMAR database, GDP and M2 from the National Bureau of Statistics of China, and the intermediary variable comes from the banker questionnaire published on the website of The People's Bank of China. In order to avoid the possible influence of extreme values on the regression results, we winsorise the variables at the 1% and 99% level.

2.2. Variables and Summary Statistics

Bank credit can be measured in both dynamic and static aspects [5]. We take the bank loan growth rate (GLOAN) as the proxy variable of bank credit to measure the dynamic change of

loan scale, and uses the bank loan scale (The ratio of total loans to total assets) to measure the static stock of loan scale for robustness checks.

The measurement methods of economic policy uncertainty can be divided into three categories. The first is to take the frequency of political elections and changes of local officials in the sample period as the proxy index. The second kind takes the volatility of monetary policy or fiscal and tax policy as the proxy index. The third one is the economic policy uncertainty index based on news content [6]. This paper will adopt the third way, using the EPU index constructed by Baker et al. [13] as the proxy variable of economic policy uncertainty. They constructed the monthly Chinese economic policy uncertainty index according to the proportion of relevant articles containing "China, economy, policy and uncertainty" in the news content of South China Morning Post of Hong Kong, to the total number of articles in that month. The larger the index, the higher the uncertainty of economic policy.

In order to control the impact of other factors on bank lending, we introduce multiple control variables from the macro and micro level. The bank level control variables include bank size (SIZE), return on assets (ROA) and cost income ratio (CTI). The macro control variables are per capita GDP growth rate (GDP) and broad money growth rate (M2).

As for mediating variables, we follow the methods of He Fumei et al. [6] to adopt the loan demand index (The banker questionnaire index of The People's Bank of China. The index reflects the bankers' judgment on the overall demand for loans. The calculation method is to calculate the proportion of "growth" and "basically unchanged" of the banks' loan demand in this quarter among all the bankers surveyed, and then add the weights of 1 and 0.5 respectively.) and bank loan approval index (The banker questionnaire index of The People's Bank of China. The index reflects the bankers' tightening of loan approval conditions. The calculation method is to calculate the proportion of "relaxed" and "basically unchanged" approval conditions of the bank in this quarter among all the bankers surveyed, and then add the weights of 1 and 0.5 respectively.) to reflect the enterprise credit demand and bank loan supply intention respectively, and then calculates the quarterly standard deviation to represent the annual fluctuation of credit demand and supply intention. In addition, we take the bank net interest margin as the proxy variable of bank competition. Net interest margin measures the degree of bank market competition and efficiency. Some literatures confirmed that the lower net interest margin means the higher bank competition [15, 16]. The definition and summary statistics of the variables are presented in Table 1.

Table 1. Summary statistics

Variables	Mean	Sd	Max	Min	Obs	Definition
GLOAN	0.198	0.141	0.909	-0.075	1511	Growth rate of bank loan
BEPU	2.112	1.033	4.605	0.989	1511	Economic policy uncertainty
SIZE	0.254	0.019	0.306	0.212	1511	Logarithm of total assets
ROA	0.010	0.004	0.022	0.001	1505	Net income divided by total assets
CTI	0.558	0.152	0.934	0.112	1505	Cost to income ratio
GDP	1.071	0.012	1.101	1.056	1511	GDP per capita growth
M2	0.128	0.044	0.285	0.081	1511	Annual growth rate of broad money
Loan Demand	3.407	1.710	5.964	0.810	1511	Overall loan demand volatility
Loan Supply	1.441	0.934	3.825	0.332	1511	Bank loan approval volatility
Bank Competition	0.029	0.010	0.069	0.007	993	Net interest margin

3. EMPIRICAL METHOD AND RESULT

3.1. Baseline Model

To take a first overall analysis on the relationship between economic policy uncertainty and bank credits, we specify the panel fixed effect baseline model as equation (1):

$$\text{Lending}_{i,t} = \alpha_0 + \alpha_1 \text{EPU}_{t-1} + \alpha_2 \text{Bank}_{i,t} + \alpha_3 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t} \quad (1)$$

In equation 1, i and t represent the specific bank and time respectively. $\text{Lending}_{i,t}$ denotes bank loans, we measure it by loan growth rate (GLOAN). EPU_{t-1} denotes the one year lagged uncertainty index of Chinese economic policy. The reason for delaying the economic policy uncertainty by one period is to avoid the reverse causal impact of bank credit on the policy uncertainty in the same period. $\text{Bank}_{i,t}$ and Macro_t denote bank-level and country-level control variables respectively. ω_i and γ_t represent the bank individual effect and time effect respectively. By controlling the two-way fixed effect, the bank individual heterogeneity and macro cycle that do not change with time can be eliminated. $\varepsilon_{i,t}$ is the random disturbance term. For controlling the potential autocorrelation and heteroscedasticity problem of panel data, we cluster the standard error of regression coefficient to the bank level.

The results of the baseline model are summarized in Table 2, which shows that economic policy uncertainty (EPU) has a positive impact on bank credit, that is, the uncertainty of economic policy intensifies bank credit expansion, and the impact is significant at the 1% confidence level. According to the estimated coefficient of EPU in column (4), for each unit of economic policy uncertainty, the bank loan growth rate will increase by 0.0248 units. This conclusion is consistent with the research of Hao Weiya et al. [7] and Liu Yang and Hou Mengqi [8], and they both found that the increasing of economic policy uncertainty increased bank loans.

Table 2. EPU to the growth of banking loan

VARIABLES	Model 1 GLOAN	Model 2 GLOAN	Model 3 GLOAN	Model 4 GLOAN
BEPU	0.0241*** (5.5586)	0.0252*** (5.8313)	0.0252*** (5.8678)	0.0248*** (5.7143)
SIZE		0.0262 (1.1485)	0.0290 (1.2364)	0.0340 (1.4624)
ROA			1.5464 (0.9791)	3.0525* (1.6849)
CTI				0.0583 (1.3161)
GDP	-0.0000 (-0.0103)	0.0012 (0.2689)	0.0028 (0.5410)	0.0030 (0.5838)
M2	0.0071*** (3.9634)	0.0074*** (4.1773)	0.0080*** (4.0970)	0.0083*** (4.2552)
Constant	20.4826** (2.4521)	27.3308*** (2.7766)	23.6022** (2.1119)	23.9876** (2.1675)
Observations	1,505	1,505	1,505	1,505
R-squared	0.1302	0.1316	0.1325	0.1343
Number of banks	218	218	218	218
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Robust t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

As for control variables, we find that the impact of bank size on bank credit growth rate is not significant. According to the "Too big to fail" hypothesis, large banks will bear excessive risks under the expectation of government rescue [17]. On the basis of this theory, the larger banks will lend more money. However, with the expansion of bank scale, the banking business is more diversified, and not limited to the traditional deposit and loan business. In the end, the hedging of the above two factors make the size not significant. The results also shows that the higher the ROA, the higher the loan growth rate. Because ROA is a trade-off between risk and return [18]. Institutions with higher ROA may bear higher risks, so the loan growth is faster [19]. Moreover, the empirical results find that the growth rate of broad money (M2) also has a positive and significant impact on bank credit, indicating that the expanded monetary policy provides a relatively loose policy environment for banks, which will make them increase credit supply.

3.2. The Mediating Role of Overall Loan Demand and Bank Loan Approval Volatility

In order to investigate the influence paths of economic policy uncertainty on bank credit, we use the mediating effect model, which is shown in equation (1)-(3):

$$\text{Lending}_{i,t} = \alpha_0 + \alpha_1 \text{EPU}_{t-1} + \alpha_2 \text{Bank}_{i,t} + \alpha_3 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t} \quad (1)$$

$$\text{Media}_{i,t} = \beta_0 + \beta_1 \text{EPU}_{t-1} + \beta_2 \text{Bank}_{i,t} + \beta_3 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t} \quad (2)$$

$$\text{Lending}_{i,t} = \theta_0 + \theta_1 \text{EPU}_{t-1} + \theta_2 \text{Media}_{i,t} + \theta_3 \text{Bank}_{i,t} + \theta_4 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t} \quad (3)$$

$\text{Media}_{i,t}$ denotes the mediating variable, it represents the volatility of loan demand and credit supply willingness. To become a valid mediating variable of economic policy uncertainty and bank credit, the following three conditions should be met: Firstly, economic policy uncertainty has a significant impact on bank credit, that is α_1 is significant. Secondly, the uncertainty of economic policy will affect the volatility of credit demand or credit supply willingness, that is β_1 is significant. Thirdly, the volatility of credit demand or credit supply will affect bank credit, that is θ_2 is significant.

Columns 1 to 3 of Table 3 show the mediating effect of credit demand, and columns 1, 4 and 5 show the mediating effect of credit supply. According to the results of column 1 (Same as the baseline model), the uncertainty of economic policy will significantly increase the bank credit, which is a necessary premise for the validity of the mediating model. Column 2 shows that economic policy uncertainty has a significant negative impact on the fluctuation of credit demand, indicating that economic policy uncertainty reduces the volatility of corporates loan demand, that is, economic policy uncertainty will not cause drastic changes in credit demand. This is consistent with the reality. The uncertainty of economic policy will inhibit the vitality of enterprises, make enterprises shelve investment [20], and there is no demand for new loans. Therefore, the volatility of loan demand is low. In column 3, the impact of loan demand fluctuation on bank credit is not significant, indicating that the transmission channel of "EPU – corporate credit demand - bank credit" is invalid.

The results of credit supply are quite different from that of credit demand. From columns 4 and 5, we can find that economic policy uncertainty will significantly increase the volatility of bank loan approval, and the volatility of bank loan approval conditions also has a positive and significant impact on the growth rate of bank credit. It means that the fluctuation of bank loan willingness is an important path for economic policy uncertainty to affect bank credit. The

volatility of bank loan willingness reflects the fluctuation of bank risk-taking willingness [21]. The uncertainty of economic policy leads to the deviation of bank risk prediction, which causes the failure of bank credit constraint mechanism [8]. Furthermore, Shen Yu et al. [1] believe that the motivation to hide risks may enable banks to reduce the loan loss provision when the uncertainty of economic policies increases, so as to promote banks to improve their risk-taking level and increase their willingness to supply credit [1]. In brief, the results prove the validity of the "EPU - bank loan willingness - bank credit" channel. This conclusion is line with Pan Pan et al. [21], who found that economic policy uncertainty prompted banks to relax loan approval conditions and increase loan scale, so as to stimulate enterprise investment. The uncertainty of economic policy mainly affects the banks' loan supply (risk-taking) intention directly, and then affects their lending behavior.

Table 3. Mediating effect

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5
	GLOAN	Loan Demand	GLOAN	Loan Supply	GLOAN
BEPU	0.0248*** (5.7143)	-1.4188*** (-86.8904)	0.0267*** (4.1411)	0.3052*** (26.4549)	0.0196*** (4.4302)
Loan Demand			0.0013 (0.4428)		
Loan Supply					0.0170*** (3.0854)
Constant	23.9876** (2.1675)	-124.4525** (-2.4565)	24.1548** (2.1803)	-651.1821*** (-16.9282)	35.0548*** (3.0495)
Micro control	YES	YES	YES	YES	YES
Macro control	YES	YES	YES	YES	YES
Observations	1,505	1,505	1,505	1,505	1,505
R-squared	0.1343	0.6632	0.1344	0.6323	0.1407
Number of banks	218	218	218	218	218
Bank FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.3. The Role of Bank Competition

In order to test the role of bank competition in the impact of economic policy uncertainty on bank credit, we firstly employ the opposite number of bank net interest margin to describe bank competition, and then split the sample into two groups according to bank competition degree. If the bank competition is above the median, it is the high competition group (dum =1), otherwise it is the low competition group (dum =0). The model is specified as equation (4):

$$\begin{cases} \text{Lending}_{i,t} = \alpha_0 + \alpha_1 \text{EPU}_{t-1} + \alpha_2 \text{Bank}_{i,t} + \alpha_3 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t}, & \text{if dum}=1 \\ \text{Lending}_{i,t} = \alpha_0 + \alpha_1 \text{EPU}_{t-1} + \alpha_2 \text{Bank}_{i,t} + \alpha_3 \text{Macro}_t + \omega_i + \gamma_t + \varepsilon_{i,t}, & \text{if dum}=0 \end{cases} \quad (4)$$

Table 4 shows the results of bank competitiveness. According to the results in columns 1 and 2, we can find that under the situation of high bank competition, economic policy uncertainty has a significant positive impact on bank credit growth rate. The results in columns 3 and 4 show that in the situation of low bank competition, the impact of economic policy uncertainty

on bank credit growth rate is not significant. Overall, the results of splitting sample test show that bank competition is an important factor affecting economic policy uncertainty and bank credit. Fierce bank competition makes bank credit more sensitive to economic policy uncertainty. Commercial banks are more vulnerable to fierce competition because market competition improves the risk-taking level of banks. On the one hand, the fierce bank competition will reduce the franchise value of banks [22], and the decline of franchise value will increase the risk-taking motivation of them [23]. On the other hand, according to the "Structure - conduct - performance (SCP)" hypothesis proposed by Bain [24], fierce bank competition will lead to the decline of loan interest rate and bank income, and the sticky income goal of banks will urge them to relax loan restrictions. Combined with the conclusion of the previous section, we can infer that the uncertainty of economic policy affects the risk assessment level of banks, making the highly competitive banks more radical in the lending process. This conclusion was confirmed in the research of Li Shuangjian and Tian Guoqiang [12], who found that bank competition amplified the impact of economic policy on bank risk-taking.

Table 4. Splitting the sample according to the degree of bank competition

VARIABLES	Model 1	Model 2	Model 3	Model 4
	High bank competition		Low bank competition	
	GLOAN	GLOAN	GLOAN	GLOAN
BEPU	0.0295*** (3.4852)	0.0270*** (3.0854)	0.0015 (0.3103)	0.0022 (0.4394)
Constant	34.0910* (1.7026)	16.0440 (0.6602)	34.2623*** (2.7620)	63.8405*** (3.3636)
Micro control	NO	YES	NO	YES
Macro control	YES	YES	YES	YES
Observations	496	496	497	497
R-squared	0.2415	0.2609	0.1506	0.1898
Number of banks	147	147	155	155
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Robust t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

3.4. Robustness Checks

We carry out the conventional robustness checks by replacing the key explanatory variables and the explained variables. Since the EPU index constructed by Baker et al. [13] is based on the South China Morning Post, which is more popular in Hong Kong, some scholars believe that the newspaper may deliberately exaggerate the situation when reporting Chinese mainland news, and a single newspaper will be inevitably biased. To solve the problem, Huang and Luk [14] and Steven et al. [25] created an economic policy uncertainty index specifically for China, which is based on the estimation method of Baker et al. [13] and reflects the actual situation of China. Ten newspapers in Chinese mainland were contained to construct the index, such as Beijing Youth Daily, Guangzhou Daily and Southern Metropolis Daily et al. The trend comparison of the two indexes is shown in Figure 2. Consequently, we replace BEPU with SEPU for robustness checks. Additionally, the growth rate of bank loans (GLOAN) measures the dynamic changes of

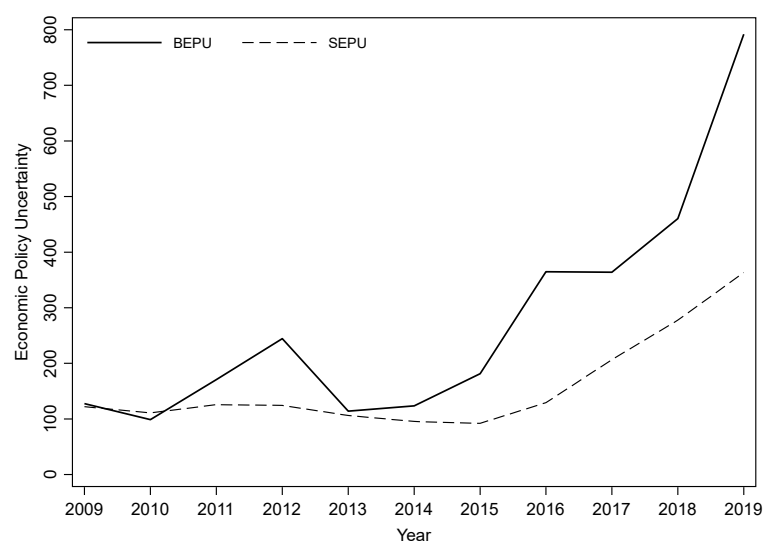
bank credit. In this section, we will measure the bank credit by the bank loan scale to test the robustness of our results.

Table 5. Robustness checks

	Model 1	Model 2	Model 3	Model 4
	Replace BEPU with SEPU		Replace GLOAN with Loan	
Panel A: EPU to bank lending				
	GLOAN	GLOAN	Loan	Loan
SEPU	0.0440*** (4.4086)	0.0454*** (4.0656)		
BEPU			0.0142*** (6.6211)	0.0077*** (4.5184)
Micro control	NO	YES	NO	YES
Macro control	YES	YES	YES	YES
Observations	1,505	1,505	1,503	1,503
R-squared	0.1228	0.1257	0.1182	0.3046
Number of banks	218	218	218	218
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Panel B: Mediating effect				
	Loan Supply	GLOAN	Loan Supply	Loan
SEPU	0.9811*** (12.6912)	0.0271** (2.4392)		
BEPU			0.3041*** (26.3791)	0.0056*** (3.1811)
Loan Supply		0.0187*** (3.5071)		0.0070*** (3.4132)
Micro control	YES	YES	YES	YES
Macro control	YES	YES	YES	YES
Observations	1,505	1,505	1,503	1,503
R-squared	0.6765	0.1326	0.6322	0.3088
Number of banks	218	218	218	218
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Panel C: Splitting the sample according to bank competition				
Bank competition:	High	Low	High	Low
	GLOAN	GLOAN	Loan	Loan
SEPU	0.1220*** (4.1759)	0.0275 (0.7994)		
BEPU			0.0095** (2.5198)	0.0010 (0.3326)
Micro control	YES	YES	YES	YES
Macro control	YES	YES	YES	YES
Observations	496	497	496	497
R-squared	0.2623	0.1909	0.4035	0.3772
Number of banks	147	155	147	155
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1



Note: BEPU is from Baker et al. [13] and SEPU is from Steven et al. [25]

Figure 2. BEPU and SEPU

The results of robustness checks are shown in Table 5. Columns 1 and 2 are the results of the replacement of key explanatory variables, which replace BEPU with SEPU. Columns 3 and 4 are the results of the replacement of explanatory variables. From the results in Table 5, we can confirm that the uncertainty of economic policy has a significant positive impact on bank credit, which is consistent with the baseline model. At the same time, the supply of bank loans is the main transmission channel of economic policy uncertainty, and bank competition intensifies the impact of economic policy uncertainty on bank credit. To sum up, the regression results keep consistent with our main conclusions, and the empirical conclusions of this paper are robust.

4. CONCLUSION

Using the data of 218 banks in China from 2009 to 2019, this paper studies the impact of economic policy uncertainty on bank credit and tests its potential paths of credit demand and loan supply willingness, and examines the role of bank competition. We draw the following conclusions: Firstly, economic policy uncertainty has a significant positive impact on bank credit growth rate. Secondly, by using the mediating effect model, we find that the credit demand path of economic policy uncertainty is not smooth. The fluctuation of loan supply approval is the main path of economic policy uncertainty affecting bank credit, and the economic policy uncertainty increases bank loans by increasing the fluctuation of loan supply intention. Finally, using the splitting sample, our results show that compared with low bank competition, commercial banks are more sensitive to the economic policy uncertainty in highly competitive situation.

Our findings have some implications for policymakers concerned about Economic policy uncertainty. First of all, in order to cope with the adverse impact of the global epidemic on economic growth, relevant economic policies have been issued intensively. Policymakers should estimate the stability, consistency and enforceability of economic policies, and value the potential channel of "EPU - bank loan supply willingness - bank credit". Secondly, compared with monitoring the response of enterprises to an economic policy, policymakers may take the role of bank loan supply willingness in policy transmission seriously, taking care of the policy feelings of financial institutions and attaching importance to the policy implementation of the

banking system. Finally, with the rapid development of banking system and the intensification of market competition, banks will expand their credit to obtain profits and improve their market share and competitiveness, even in the case of policy fluctuations. Therefore, the regulatory authorities are supposed to formulate a comprehensive regulatory framework in advance, to strengthen supervision on the risk control of the banking system, and thereby ensure the stable operation of banks.

REFERENCES

- [1] Y. Shen, M. Ren and J. Zhao (2020). Economic policy uncertainty and bank loan loss provision. *China Industrial Economics*, vol.4, p.154-173. (in Chinese)
- [2] M.D. Bordo, J. V. Duca and C. Koch (2016). Economic Policy Uncertainty and the Credit Channel: Aggregate and Bank Level US Evidence over Several Decades. *Journal of Financial Stability*, vol.26, p.90-106.
- [3] H. Gu and J. Yu (2019). China' s Economic policy uncertainty and bank' s risk-taking. *The Journal of World Economy*, vol.42, no.11, p.148-171. (in Chinese)
- [4] Q. Chi and W. Li (2017). Economic policy uncertainty, credit risks and banks' lending decisions: Evidence from Chinese commercial banks. *China Journal of Accounting Research*, vol.10, no.1, p.33-50.
- [5] S. Hu and D. Gong (2019). Economic policy uncertainty, prudential regulation and bank lending. *Finance Research Letters*, vol.29, p.373-378.
- [6] F. He, Z. Ouyang and Z. Dou (2019). Whether economic policy uncertainty inhibit China' s bank credit. *Contemporary Finance & Economics*, vol.12, p.61-72. (in Chinese)
- [7] W. Hao, W. Wei and X. Zhou (2017). The impact of economic policy uncertainty on bank risk-taking. *Inquiry Into Economic Issues*, vol.2, p.151-159. (in Chinese)
- [8] Y. Liu and M. Hou (2020). Empirical evidence of economic policy uncertainty, bank credit behavior and risk-taking. *Statistics & Decision*, vol.36, no.1, p.141-145. (in Chinese)
- [9] G. Caggiano, E. Castelnuovo and J.M. Figueres (2017). Economic policy uncertainty and unemployment in the United States: A nonlinear approach. *Economics Letters*, vol.151, p.31-34.
- [10] V. Colombo (2013). Economic policy uncertainty in the US: Does it matter for the Euro area? *Economics Letters*, vol.121, no.1, p.39-42.
- [11] W. Kang, K. Lee and R.A. Ratti (2014). Economic policy uncertainty and firm-level investment. *Journal of Macroeconomics*, vol.39, p.42-53.
- [12] S. Li and G. Tian (2020). Bank competition and bank risk-taking channel of monetary policy: Theoretical and empirical analysis. *Management World*, vol.36, no.4, p.149-168. (in Chinese)
- [13] S.R. Baker, N. Bloom and S.J. Davis (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, vol.131, no.4, p.1593-1636.
- [14] Y. Huang and P. Luk (2020). Measuring economic policy uncertainty in China. *China Economic Review*, vol.59, 101367.
- [15] H.H. Khan, R.B. Ahmad and S.G. Chan (2018). "Market structure, bank conduct and bank performance: Evidence from ASEAN." *Journal of Policy Modeling*, vol.40, no.5, p.934-958.
- [16] W. Chen, S. Hamori and T. Kinkyo (2019). "Complexity of financial stress spillovers: Asymmetry and interaction effects of institutional quality and foreign bank ownership." *The North American Journal of Economics Finance*, vol.48, p.567-581.

- [17] E. Farhi and J. Tirole (2012). Collective Moral Hazard, Maturity Mismatch and Systemic Bailouts. *American Economic Review*, vol.12, no.1, p.60-93.
- [18] H.F. Mendonça and R.B. Silva (2018). "Effect of banking and macroeconomic variables on systemic risk: An application of Δ COVAR for an emerging economy." *The North American Journal of Economic Finance*, vol.43, p.141-157.
- [19] H. Gunji and Y. Yuan (2010). Bank profitability and the bank lending channel: Evidence from China. *Journal of Asian Economics*, vol.21, no.2, p.129-141.
- [20] F. Li and M. Yang (2015). Can economic policy uncertainty influence corporate investment? The empirical research by using China economic policy uncertainty index. *Journal of Financial Research*, vol.4, p.115-129. (in Chinese)
- [21] P. Pan, C. Deng and Y. Qiu (2020). Economic policy uncertainty, bank risk-taking and corporate investment. *Journal of Finance and Economics*, vol.46, no.2, p.67-81. (in Chinese)
- [22] A.J. Marcus (1984). Deregulation and Bank Financial Policy. *Journal of Banking and Finance*, vol.8, no.4, P.557-565
- [23] M.C. Keeley (1990). Deposit Insurance, Risk and Market Power in Banking. *American Economic Review*, p.1183-1200.
- [24] J.S. Bain (1951). Relation of profit rate to industry concentration: American manufacturing, 1936–1940. *The Quarterly Journal of Economics*, vol.65, no.3, p.293-324.
- [25] J.D. Steven, L. Dingqian and S.S. Xuguang (2019). Economic Policy Uncertainty and Trade Policy Uncertainty for China Based on Mainland Newspapers.
http://www.policyuncertainty.com/china_epu.html.