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# MONETARY POLICY UNCERTAINTY AND BANK CREDIT DECISION

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**Abstract:** Based on the text analysis of online news reports to measure the uncertainty of China's monetary policy, and using the data of China's listed commercial banks from 2008 to 2017 to empirically examine the impact of China's monetary policy uncertainty on bank credit decision-making, the research results show that monetary policy does not Certainty has a significant inhibitory effect on bank credit supply. When the uncertainty of monetary policy increases, commercial banks will reduce credit supply, and at the same time reduce credit risk by adjusting the credit structure, and tend to issue short-term loans and guaranteed loans with lower risks. Monetary authorities should maintain the stability of monetary policy, actively prevent and resolve the negative impact of policy shocks, in order to better promote a virtuous financial cycle and maintain sustained and healthy economic development.
**Keywords:** Monetary policy; Policy uncertainty; Bank credit supply; Bank credit structure

## 1 INTRODUCTION

The financial crisis in 2008 brought serious damage to the economies of countries all over the world. At the same time, bank credit risk management has also aroused widespread concern in the theoretical and practical circles. In the credit market, the main cause of bank credit risk is the problem of information asymmetry, which is mainly manifested as adverse selection before the transaction and moral hazard after the transaction. Commercial banks will use loan terms, loan guarantees, and restrictive clauses to ease information. Adverse selection and moral hazard problems brought about by asymmetry, therefore, how to control credit risk has become an important part of commercial bank credit decision-making. At present, bank loans are still the main source of financing for China's real economy, and credit channels are an important channel for monetary policy transmission. Since the financial crisis, whether the uncertainty caused by frequent adjustments in China's monetary policy will affect bank credit decision-making depends on monetary policy. How do banks adjust credit supply and credit structure in an environment of certainty? Discussing these issues has strong practical significance for the policy effectiveness of the monetary policy transmission mechanism.

IMF pointed out in the "World Economic Outlook" that the uncertainty of monetary, fiscal and regulatory policies is one of the reasons for the huge destructive effect of the financial crisis and the slow economic recovery. policy distortions[1]. For the research on policy uncertainty, domestic and foreign literatures mainly focus on the economic consequences of economic policy uncertainty, arguing that economic policy uncertainty has a negative impact on consumption, credit supply, investment, and exports, which is not conducive to economic growth. In recent years, some scholars have also discussed the impact of economic policy uncertainty on bank credit [2-3]. Regarding the issue of monetary policy uncertainty[4-5] studied the impact of monetary policy uncertainty on inflation and unemployment. Sinha constructed a DSGE model to discuss the impact of monetary policy uncertainty on output, inflation and asset prices [6]. Kaminska and Roberts-Sklar discussed the relationship between monetary policy uncertainty and financial industry systemic risk [7]. Wang Bo et al. constructed a DSGE model to explore the impact of monetary policy uncertainty on default risk and macroeconomics [8]. Zhong Kai et al. discussed the impact of monetary policy uncertainty on the speed of capital structure adjustment [9]. Sun Jian et al. (2017) discussed the relationship between monetary policy uncertainty and accounting information quality[10]. Yang Zhonghai and Xie Hongshuang investigated the relationship among monetary policy

uncertainty, accounting information quality and capital structure adjustment speed [11]. Yang Mingjing et al. discussed the impact of equity pledge on corporate innovation under the background of monetary policy uncertainty [12]. At present, there are not many studies on the uncertainty of domestic monetary policy. The credit channel is an important channel for monetary policy transmission, and bank loans play a vital role in the real economy. The credit decision of commercial banks will be affected by the bank's external policies and macroeconomic environment, and the uncertainty of monetary policy will affect the bank's expectation of future liquidity demand, thus affecting the bank's credit decision [13]. Therefore, exploring the impact of monetary policy uncertainty on bank credit decision-making can not only understand the response of monetary policy uncertainty at the bank level, but also improve the effect of monetary policy macro-control, better promote a virtuous financial cycle and maintain economic sustainability. Healthy development has important policy implications.

How to measure the uncertainty of monetary policy is a key issue in the study of monetary policy uncertainty. In the existing literature, there are mainly two methods to measure monetary policy uncertainty: First, the volatility of monetary policy variables or the deviation degree of variable forecasts As a proxy variable of monetary policy uncertainty, the volatility and variability of policy variables increase the difficulty of forecasting. Creal and Wu and Huang use interest rate volatility as a measure of monetary policy uncertainty. Domestic scholars Sun Jian et al., Zhong Kai et al., Yang Zhonghai and Xie Hongshuang and Yang Mingjing et al. used the standard deviation of the 7-day Shanghai Interbank Offered Rate as the monetary policy uncertainty Measuring indicators, Wang Bo et al. use the volatility of China's monetary policy and macroeconomic variables to measure monetary policy uncertainty; second, measure monetary policy uncertainty with the implicit uncertainty of media reports, fresh or abnormal After the event happened, the more media reports covered, different views and opinions would be widely disseminated in the media and the public. Uncertainty was generated and strengthened in the process. Baker et al. constructed the U.S. Economic Policy Uncertainty Index by counting the number of "economy + policy + uncertainty" news reports in the top ten newspapers in the United States at the same time, and provided 11 economies including China [14]. Economic policy uncertainty index, but did not provide a detailed policy uncertainty index. For this reason, domestic scholars Zhu Jun and Cai Tiantian and Huang and Luk borrowed their methods from Chinese local media news Reports to build China's monetary policy uncertainty index. Today is the era of Internet big data [15-16]. Obtaining the required information from massive amounts of information is crucial, and it is also the current trend. The method of constructing the monetary policy uncertainty index combined with media reports provides a new way of thinking. China’s monetary policy is not The construction of the certainty index still needs to be improved in terms of keyword selection and composition methods.

Therefore, this paper will empirically analyze the impact of monetary policy uncertainty on bank credit decision-making on the basis of constructing China's monetary policy uncertainty index, and try to achieve the following two innovations: First, in terms of monetary policy uncertainty index, This paper mainly improves the previous index from the aspects of keyword selection and composition methods to construct China's monetary policy uncertainty index, and obtains news reports through web crawlers for text analysis to construct monetary policy uncertainty index; second, this paper systematically discusses The impact of monetary policy uncertainty on bank credit decision-making, the previous research on policy uncertainty mainly focused on the study of economic policy uncertainty, and this paper mainly focuses on the impact of monetary policy uncertainty on bank credit decision-making. The research conclusions not only enrich the theoretical research on the economic consequences of monetary policy uncertainty and bank credit decision-making, but also provide reference value for the formulation and implementation of monetary policy and the financing of the real economy.

## 2 THEORETICAL BASIS AND CONSTRUCTION OF CHINA'S MONETARY POLICY UNCERTAINTY INDEX

### 2.1 Theoretical Basis

Regarding the construction of the monetary policy uncertainty index combined with news reports, domestic scholars Zhu Jun and Cai Tiantian and Huang and Luk used Baker et al. method to compile

China's monetary policy uncertainty index by counting the number of news reports that also contain keyword combinations. A key point in the index construction process is whether the keyword selection and composition method can fully reflect the uncertainty. The issues worth noting are: First, the appearance of words such as monetary policy or deposit reserve in news reports does not necessarily mean that the news reports are describing monetary policy adjustments, and more monetary policy adjustments do not necessarily mean that The higher the degree of uncertainty in monetary policy, because there is a part of monetary policy adjustment that can be expected. Zhu Jun and Cai Tiantian combined the keywords as "China" + "economy" + "monetary policy/deposit reserve/rediscount/open market business/interest rate liberalization/interest rate reform/exchange rate reform/inflation/money supply" part. If a news report has the keyword combination of "China + economy + monetary policy/deposit reserve/open market business, etc." at the same time, it does not necessarily mean that the news report is describing the adjustment of monetary policy, and relevant words should be added to modify the monetary policy Adjusted, such as "increasing the deposit reserve ratio"; the more news reports on monetary policy adjustments, the more difficult it is to predict monetary policy. To a certain extent, it can measure the uncertainty of monetary policy, but because some monetary policy adjustments can be expected , therefore, when measuring monetary policy uncertainty, the part of monetary policy adjustment that can be expected should be excluded. Second, eligible news reports should describe uncertainty about China's monetary policy. The keyword combination of Huang and Luk is "economy/finance" + "monetary policy/relevant monetary policy tools such as deposit reserve ratio" + "unclear/uncertain/unpredictable and other implicit uncertainties related expressions in Chinese "Three parts, if the qualified news report content contains three parts of keywords at the same time, then the three parts of the keyword combination can be distributed in the full text of the news report, and there is no restriction that the news report is describing about China. Therefore, news reports that include these three keywords do not necessarily describe the uncertainty of China’s monetary policy, but may describe the uncertainty of monetary policy in other countries, or describe other uncertainties. For example, the content of a report contains "economy/finance (in one sentence)" + "monetary policy (in another sentence)" + "China's economic policy uncertainty/US monetary policy is unpredictable, etc. (in the third sentence)" , this news report describes the uncertainty of China's economic policy or the uncertainty of US monetary policy, not the uncertainty of China's monetary policy. Therefore, the keyword combination selected in this paper is "China/China" + "economy/finance" + "implied monetary policy uncertainty related index combination", mainly in the "implied monetary policy uncertainty related index combination "Selection and composition methods, the following improvements are made to the above two problems: First, in order to solve the first problem, this paper will add related words and monetary policy (monetary policy tools) to modify monetary policy uncertainty, such as "Deposit reserve ratio + increase/decrease/adjustment", etc. To exclude the part of monetary policy adjustment that can be expected. Second, in order to solve the second problem, when screening news reports, the third part “Implicit Monetary Policy Uncertainty-Related Index Combinations” must appear in a sentence in the news report, and this sentence must contain There is no relevant description about China or there is no relevant description about other countries and regions (Table 1).

**Table 1** Related description

| Chinese related description | Description of other countries (regions) |
|---|---|
| China/my country/Central Politburo/Central Economic Work Conference/People's Bank/State Council/National People's Congress/People's Congress | Asia/ Europe/ Europe/Australia/ Federal Reserve/ United States/ Powell/ Bernanke/ Yellen/ Central America/ Canada/ Mexico/ Brazil/ Argentina/ France/ Germany/ Sweden/ Russia/ Iceland/ Poland/ Switzerland/ Serbia/ Netherlands/ Italy Li/Portugal/Spain/Ukraine/Greece/Australia/New Zealand/Egypt/Japan/Korea/Philippines/ Singapore/ Hong Kong/ Taiwan region/ India/ Indonesia/ Thailand/ Pakistan/ Mongolia/ Iran/ Syria Syria/Afghanistan/Israel/Arabia/Turkey/USD/JPY/AUD/HKD/HKD/CAD/Rupee/ British Pound/ Franc/ Korean Won/ Euro |

## 2.2 Index Construction

*2.2.1 Select news media source*

This article will select news reports from China News Network and Sina News from January 2008 to December 2018 as the source of news reports for constructing China's monetary policy uncertainty index, and select a central-level key authoritative network media and a people-friendly network media as news reports. The source of the report is more comprehensive, and the arithmetic mean of the monetary policy uncertainty index of China News Network and Sina News is used as the measurement index of the analysis.

*2.2.2 Data acquisition method*

This paper uses Python crawler software to analyze the text of news reports and select news reports that meet the following two conditions. (1) Also includes the keyword combination "China/my country" + "economy/finance" + "combination of indicators related to implicit monetary policy uncertainty". (2) The keyword in the third part, "Implicit Monetary Policy Uncertainty Related Index Combination" must appear in a sentence in a news report, and this sentence has a description about China or no description about other countries and regions.

*2.2.3 Python crawler software*

Obtain news reports and conduct text analysis to screen out eligible news reports, then score the corresponding news reports, and finally calculate the monetary policy uncertainty index based on the total monthly statistical score. Specific steps are as follows. Search the official websites of China News.com and Sina.com① to obtain news reports on monetary policy, interest rate liberalization reform, exchange rate reform, deposit reserve ratio, and benchmark interest rate. Based on the selection of news media sources, news reports containing both "China/my country" and "economy/finance" were screened out. On the basis of the data acquisition method, the Python crawler software screens one sentence according to the keywords in Table 1: A monetary policy, B: interest rate marketization reform, C: exchange rate reform, D: deposit reserve ratio, and E: benchmark interest rate, and includes corresponding combinations of related indicators news reports, and this sentence must contain relevant descriptions about China or no relevant descriptions about other countries and regions (Table 1), and then number the selected news reports accordingly A1, A2, A3, A4, A5, B , C, D, E, and score the news reports within the numbers, and score 1 point for news reports involving implicit monetary policy uncertainty (numbers A1, A3, B, C, D, E), which can reduce News reports on monetary policy uncertainty are -1 points (codes A2, A4, A5). For codes D and E, if the central bank adjusts the deposit reserve ratio and the benchmark interest rate regularly, the third adjustment month and Then adjust the monthly score to 0 points. (4) Summarize the scores in (3) on a monthly basis, and calculate the total score of the monthly reports of the two news media's implied monetary policy uncertainty. (5) Calculate the uncertainty index of China's monetary policy according to the formula.

Among them, Hi, t represents the total score of reports containing monetary policy uncertainty in period t (monthly) of the i media (i = 1, 2 represent China News Network and Sina News respectively); T represents the total score in the time sample interval The number of months (T = 11* 12 = 132); Yi means normalizing the average to 100, MPUt means the monetary policy uncertainty index, and takes the arithmetic mean of the two news media monetary policy uncertainty indices.

## 2.3 Basic Results

The change trend of the monetary policy uncertainty index is shown in Figure 1, which is calculated by the arithmetic mean of the monetary policy uncertainty index of Sina News and China News. It can be seen from Figure 1 that the peak and valley of the monetary policy uncertainty index are more consistent with the economic reality. In October 2008, in response to the international financial crisis, the People's Bank of China implemented a series of monetary policies; in 2009, the package plan to deal with the international financial crisis took initial effect, and the People's Bank of China emphasized the continued implementation of moderately loose monetary policy tone and the maintenance of policy continuity and stability , so the uncertainty of monetary policy in 2009 was low, or even negative; in 2010, affected by loose global liquidity and China's surplus in the balance of payments, the overall supply of liquidity in the

banking system was still relatively large in 2010. In December 2010, both the benchmark interest rate and the deposit reserve ratio were adjusted; from 2011 to 2012, the economic environment at home and abroad was very complicated, the international economic recovery was generally weak, and the prospects were still uncertain. The financial market is volatile, the direction of capital flow is changeable, and there are many unstable and uncertain factors. The People's Bank of China dynamically optimizes and counter-cyclically adjusts according to the development and changes of the situation, and moderately smoothes the cyclical fluctuations of the economy. During 2011~2012, the central bank A series of monetary policies have been implemented, and the overall uncertainty of monetary policy is relatively high; in November 2014, the central bank adjusted the benchmark deposit and loan interest rates after more than two years; "The formation mechanism of the central parity rate of the RMB against the US dollar (8.11 exchange rate reform); August 2018 was affected by Sino-US trade frictions. Therefore, in general, the monetary policy uncertainty index reflects the uncertainty caused by the frequent adjustment of monetary policy due to the impact of changes in the domestic and external environment.

## 3 THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

As a provider of funds in the financial market, banks are concerned about whether the funds currently provided can be recovered in time and in full in the future when making credit decisions. In the credit market, asymmetry is the main cause of bank credit risk. How to identify and control credit risk is an important consideration in bank credit decision-making. The credit decision-making behavior of commercial banks is affected by external policies and regulations of the bank and the macroeconomic environment. Uncertainty in the macroeconomic environment and policies will exacerbate information asymmetry between banks and enterprises and increase bank credit risk. Therefore, banks will consider policy uncertainty when making credit decisions.

Bank credit supply is an important medium for monetary policy to affect the macro economy, and macro uncertainty has a negative impact on bank credit supply. The higher the degree of macroeconomic uncertainty, the bank will start a self-insurance mechanism to reduce credit supply [17-20]. Economic policy uncertainty also has an inhibitory effect on bank credit supply. First, the higher the degree of macro uncertainty, on the one hand, it will intensify the degree of information asymmetry between banks and enterprises, and possible large deviations will lead to serious losses for banks; There may be mistakes in the direction, which will increase the risk of bank default and the probability of bank bankruptcy; second, the higher the degree of macro uncertainty, the more difficult it is for market participants to form stable expectations for future earnings, and banking companies also Lack of judgment on future earnings expectations will reduce credit extension [21]. Therefore, when faced with rising uncertainties, commercial banks are more inclined to adopt a cautious and conservative credit strategy, thereby reducing credit growth [22-23]. Monetary policy uncertainty is a kind of macro uncertainty. On the one hand, monetary policy uncertainty will aggravate the degree of information asymmetry between banks and enterprises, which may lead to mistakes in bank investment decisions and business operations, and increase bank credit risk; On the one hand, the higher the degree of uncertainty in monetary policy, it means that it is difficult to predict whether the monetary policy will be adjusted in the future, the direction of the adjustment, and the intensity of the adjustment. Therefore, banks will adopt prudent and conservative credit strategies, which will reduce credit supply. Based on the above analysis, this paper proposes Hypothesis 1.

Hypothesis 1: The higher the degree of monetary policy uncertainty, the commercial banks will reduce the credit supply.

As the main body of China's financial institution system, how commercial banks allocate credit resources in an environment of macro uncertainty is related to the sustainable and healthy development of the economy. This paper mainly discusses the impact of monetary policy uncertainty on the maturity structure and credit structure of bank loans. According to the term structure, bank loans can be divided into short-term loans and medium- and long-term loans; according to the credit structure, bank loans can be divided into credit loans and secured loans (guarantee, pledge and mortgage loans). Macro uncertainty has exacerbated the degree of information asymmetry between banks and enterprises, leading to an increase in credit risk, which will make Chinese commercial banks face severe tests in credit risk

prevention and control [24]. Frequent adjustment of monetary policy will threaten financial stability through the channel of bank risk-taking, and attention should be paid to the role of monetary policy adjustment on bank risk-taking [25]. Therefore, when banks face uncertainties, their willingness to take risks becomes lower [26], and banks' motivation to avoid credit risks may increase, thereby avoiding high -risk, high-yield loan types, tending to Choose a more conservative loan type. From the perspective of credit structure, compared with credit loans, secured loans are loans issued on the condition that the borrower or a third party provide corresponding guarantees. Due to the collateral or guarantor, the bank can force the auction of the collateral or submit the loan to the bank when the loan cannot be recovered. The guarantor's recovery has a high rate of capital recovery, which can effectively reduce the moral hazard and adverse selection problems caused by information asymmetry, and the credit risk is relatively low. Therefore, in an environment of monetary policy uncertainty, commercial banks will be more inclined to issue guaranteed loans. From the perspective of term structure, compared with medium and long-term loans, short-term loans have a shorter term, are easier to recover the principal, and have a stronger supervisory role, which helps to alleviate the information asymmetry between banks and enterprises and ensure that banks can recover in full in a timely manner The principal, the credit risk faced by the bank is relatively low. Therefore, in an environment of monetary policy uncertainty, commercial banks are more inclined to issue short-term loans. Based on the above analysis, this paper proposes Hypothesis 2 and Hypothesis 3.

Hypothesis 2: The higher the degree of monetary policy uncertainty, the more inclined commercial banks are to issue guaranteed loans. Hypothesis 3: The higher the degree of monetary policy uncertainty, the more inclined commercial banks are to issue short-term loans.

## 4 RESEARCH DESIGN AND EMPIRICAL ANALYSIS

### 4.1 Model Setting and Variable Selection

This paper establishes regression equation (2), formula (3) and formula (4) to test hypothesis 1, hypothesis 2 and hypothesis 3 respectively.

$$RLOAN_{i,t} = \beta 0 + \beta 1\ MPU_t + \beta 2\ CVA_{i,t} + \beta 3\ CVI_{i,t-1} + c_{i,t}$$
$$GCG_{i,t} = \beta 0 + \beta 1\ MPU_t + \beta 2\ CVA_{i,t} + \beta 3\ CVI_{i,t-1} + c_{i,t}$$
$$SLS_{i,t} = \beta 0 + \beta 1\ MPU_t + \beta 2\ CVA_{i,t} + \beta 3\ CVI_{i,t-1} + c_{i,t}$$

Among them, i = 1, 2, 3... N represents individual bank; t = 1, 2, 3... T represents the year; RLOAN, GCG and SLS represent bank credit supply (bank loan growth rate), loan credit structure (guaranteed loan proportion) and term structure (short-term loan proportion) respectively; MPU represents monetary policy uncertainty, which is determined by The calculation of the arithmetic mean of the 12-month monetary policy uncertainty index constructed in the second section shows that the larger the MPU, the higher the degree of monetary policy uncertainty; CVA is a macro-level control variable, including Shanghai Interbank Interbank Offered Rate (SHIBOR), Gross Domestic Product (RGDP) and Broad Money Supply (RM2); CVI is a bank-level control variable, including customer deposits, operating efficiency, profitability, loan quality, bank asset size, and capital adequacy Ratio, using customer deposit growth rate (RDOPE), cost-income ratio (CI), return on total assets (ROA), non-performing loan ratio (NPL), natural logarithm of total bank assets (LNASSET) and equity-to-asset ratio (EA) to measure; ε represents the random disturbance term. In order to reduce the endogeneity problem in the model, all control variables at the bank level are lagged by one period (Zhang Lin et al., 2015). The specific definition of each variable is shown in Table 2.

**Table 2** variable definition

| variable name | variable symbol | Variable definitions |
|---|---|---|
| Bank credit supply | RLOAN | Bank Loan Growth Rate |

| | | |
|---|---|---|
| loan credit structure | GCG | Proportion of guaranteed loans = guaranteed loans/(credit loans + guaranteed loans) |
| Loan Maturity Structure | SLS | Proportion of short-term loans = short-term loans/(short-term loans + medium and long-term loans) |
| monetary policy uncertainty | MPU | Arithmetic mean of monetary policy uncertainty index for 12 months of the year |
| Shanghai Interbank Offered Rate | SHIBOR | The arithmetic mean of the 7-day Shanghai Interbank Offered Rate |
| gross domestic product | RGDP | real GDP growth rate |
| broad money supply | RM2 | broad money supply growth rate |
| customer deposit | RDOPE | Growth rate of customer deposits |
| operating efficiency | CI | Operating Costs/ Operating Income |
| Profitability | ROA | return on total assets |
| loan quality | NPL | Non-performing loan ratio |
| Bank assets | LNASSET | Natural logarithm of total bank assets |
| capital adequacy ratio | EA | Equity-to-asset ratio = shareholder's equity/total assets |

### 4.2 Sample Selection

This paper selects the annual data of 22 listed commercial banks from 2008 to 2017 as the research sample. According to the classification standard of China Banking and Insurance Regulatory Commission, the research samples include 5 large commercial banks, 8 national joint-stock commercial banks and 9 city commercial banks. ①. The bank data mainly comes from the wind database, and the bank's annual report is consulted for correction and filling. The macro-level data comes from the China Statistical Yearbook and the official website of the People's Bank of China.

### 4.3 Analysis of Regression Results

Choose an appropriate estimation method.

*4.3.1 Analysis of regression results of monetary policy uncertainty on bank credit supply*

The regression results of monetary policy uncertainty on bank credit supply are shown in column (1) of Table 4. According to column (1) of Table 4, R2 reaches 0.6355, indicating that the fitting degree of the regression model is relatively high. The regression coefficient of monetary policy uncertainty (MPU) is negative and significant at the 1% level, indicating that monetary policy uncertainty is negatively correlated with bank credit supply, which means that monetary policy uncertainty has a negative impact on bank credit supply.

Supply has a significant inhibitory effect. The higher the degree of monetary policy uncertainty, the more prudent and conservative credit strategies commercial banks will adopt, which will reduce bank credit supply. Hypothesis 1 is verified.

*4.3.2 Analysis of the regression results of monetary policy uncertainty on bank credit structure*

The regression results with credit structure variables and term structure variables as dependent variables are shown in column (2) and column (3) of Table 4 respectively. According to column (2) of Table 4, the regression coefficients of monetary policy uncertainty (MPU) are all positive, and significant at the 1% level, indicating that monetary policy uncertainty is positively correlated with the proportion of guaranteed loans, which means that monetary policy The higher the uncertainty, the more banks are inclined to issue guaranteed loans, because compared with credit loans, guaranteed loans have guarantee behavior, the bank's capital recovery rate will be higher, the credit risk is relatively lower, and the bank is more Preferring to grant secured loans, hypothesis 2 is verified. According to column (3) of Table 4, the regression coefficient of monetary policy uncertainty (MPU) is positive and significant at the 5% level, indicating that monetary policy uncertainty is positively correlated with the short-term loan ratio, which means that monetary policy does not The higher the certainty, the more inclined banks are to grant short-

term loans, because compared with medium and long-term loans, short-term loans have faster recovery of funds and relatively lower credit risk.
Banks are more inclined to issue short-term loans, Hypothesis 3 is verified.

### 4.4 Robustness Check

In order to further enhance the credibility of the conclusions of this paper, this paper will conduct the following robustness tests.
*4.4.1 Different calculation methods of monetary policy uncertainty*
In the model, this paper uses the arithmetic mean of the monetary policy uncertainty index in the 12 months of the current year as the annual index measure. In order to ensure the validity and scientificity of the empirical results, this paper uses two other methods for testing. (1) The median value of monetary policy uncertainty in the 12 months of the year is used to measure the annual monetary policy uncertainty index. (2) Referring to Gulen and Ion [27], 1/24, 2/24, 3/24, 1/24, 2/24, 3/24, 1/24, 2/24, 3 /24, Jan.
The weight coefficient of the certainty index, using the weighted average method to calculate the monetary policy uncertainty index of the year. No matter which method is adopted, the test results are consistent with the conclusions of this paper.
*4.4.2 Discussion on endogeneity*
The bank-level control variables of the previous regression model are all lagged one period, which can largely avoid the endogenous problem of reverse causality, and the selected bank-level control variables can well measure the bank-level variables. Therefore, this article only needs to explore the impact of missing variables at the macro level on the regression results. This paper uses the macroeconomic prosperity index consensus index and consumer confidence index to replace the actual GDP growth rate to test, and the test results are consistent with the conclusions of this paper.

## 5 CONCLUSIONS AND RECOMMENDATIONS

Will monetary policy uncertainty affect bank credit decision-making, and then affect the effectiveness of the monetary policy credit transmission mechanism? Effectiveness? To solve this problem, this paper first uses web crawlers to obtain news reports from Sina News and China News Network for text analysis to construct China’s monetary policy uncertainty index. The index results show that the monetary policy uncertainty index reflects domestic The impact of changes in the external environment brings uncertainty caused by frequent monetary policy adjustments. Based on this, the impact of monetary policy uncertainty on bank credit supply and credit structure is empirically analyzed using data from China's listed commercial banks from 2008 to 2017. The research results show that when the degree of monetary policy uncertainty increases, banks will adopt a cautious and conservative credit strategy: First, monetary policy uncertainty has a significant inhibitory effect on bank credit supply, and when monetary policy uncertainty increases, banks will reduce Credit supply; Second, the higher the degree of monetary policy uncertainty, commercial banks will adjust the credit structure to reduce credit risk, and tend to issue short-term loans and guaranteed loans with lower risks.
At present, the main source of corporate financing in China is still bank loans. Bank credit has a vital impact on macroeconomic development. However, under the environment of monetary policy uncertainty, banks adopt cautious and conservative credit strategies, which endangers the healthy development of the real economy. To this end, the monetary authorities should pay attention to the uncertainty brought about by frequent policy adjustments during macro-control, maintain the stability of monetary policy as much as possible, and actively prevent and resolve the negative impact of policy shocks; they should strengthen communication with the market and broaden their cooperation with the market. Channels of market communication and rich communication content to improve the transparency of monetary policy, especially focusing on pre-communication and ex-post explanation of monetary policy operations, and timely announcement of monetary policy-related operations and intentions to avoid market misunderstanding and reduce monetary policy uncertainty , improve the transmission efficiency of monetary policy, in order to better promote the financial virtuous cycle and maintain the sustained and healthy economic development.

## COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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