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IMPACT OF NETWORK FINANCE DEVELOPMENT ON INFLATION: EVIDENCE FROM CHINESE MARKET

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ABSTRACT

With the rapid development of computer, communications, Internet and database technology, the society entered the era of the Internet economy. At present, as the impacts on the development of network finance, the three elements of technology, economic and social are in rapid change and development, at the same time, the financial network has also been considerable development, a variety of online banking, so-and-so Bao everywhere, P2P net loan platform as sprung up in public view. The flourishing financial network has attracted a lot of money from reality to the network platform, the currency in circulation had seen a considerable impact, as a monetary phenomenon whether this change will have an impact on inflation, this article is to discuss the problem. This article from the perspective of a qualitative and quantitative study of the network of financial development of inflation, respectively, will eventually make some recommendations lying on the conclusions of this paper to the monetary policy under the influence of the inflationary effects.

Contribution/Originality: This study uses new estimation methodology to analyze and study the quantitative and qualitative factors affecting the inflation of financial network, and finds out the operating mechanism inside. Finally, according to the research content, the study puts forward some suggestions on monetary policy under the influence of inflation.

1. INTRODUCTION

With the development of economy and finance, the form of currency changes from tangible things like shell and coins to virtual numbers, like bitcoin. After 1990's, the innovation in IT, communication and finance contribute to the generation of network finance. Innovation in finance rapidly raises the operation efficiency of the market and institutes, also strengthens the impact of financial system in the whole economy. While IT and communication propel the change of currency form, that is, more digital. Then, services generated from the development of network finance like third-party payment, network banks increasingly have more impacts on the supply and demand of currency, so on the price level of the economy, which also means: the inflation.

Besides, inflation is always a hot topic in macro-economics and the research on it has never stopped. Many papers tried to find the formation mechanism of inflation from different aspects. The Monetarists hold that inflation is a pure monetary phenomenon, and that means if the central bank increases the issue of currency, the price level will then increase too. While Keynesian classify the reasons as below: demand-pull inflation, cost-push inflation and inherent inflation raised by reasonable expectation. But, as the development of network finance, numerous e-coins

and massive online transactions has partly substituted the traditional monetary aggregate, and has effluence on the formation mechanism of inflation. So, here is why we must research and measure the network finance's impacts on inflation by certain criterion.

The generation of network finance on foreign lands is earlier than that domestically, thus from 1990's, several papers have analyzed the impact of e-coins on many economic phenomena (macro-economic, effectiveness of monetary policy etc.) either in a qualitative or quantitative manner.

BIS (1999) expounded on some legal issues about e-coins and net&mobile payment in the report < Implications for central banks of the development of electronic money >, analyzing the effects of net payment and e-coins on the monetary multiplier, velocity of circulation and effectiveness of monetary policy plus the solutions. Michael (2003) raised that central bank can keep monetary policy effective without altering the monetary supplier. Palley (2001) considered the demand of 5 different transactions on the base of the non-cash transaction model. Hebbink (1996) thinks that as the development of network finance and e-coins, it would be more difficult for central bank to have control on commercial bank's behavior, so the ability of monetary control by monetary base and supplier. Solomon (1997) points out that 'If monetary aggregates include the issued e-coins, then the monetary supplier will be expanded'. But sill some scholars like Friedman (1999) holds the opinion that though there are effects, and can further influence the effectiveness of central bank's control on the transactions by public and enterprise, the effect is still limited after all. Meanwhile, he Friedman (2000) also acknowledged that replacement of cash by e-coins used in mobile payment and finance service seriously affects the effectiveness, and it's predictable that people's need of central currency will constantly decrease while seignior age earnings will also be lower, which can weaken the independence of central bank. Elham (2003) regards that the price is inevitably affected by the generation and circulation of e-coins, so the central bank should take it into consideration when formulating policy.

In contrast, the network finance boom in our country is far later, but sill grows rapidly. Some of the scholars mainly work on how e-coins influence monetary supply through different pipeline, and then on the monetary policy; besides, some analyze the direct effect.

Whereas so much research on the relation between network finance, inflation and monetary policy, the concept of network finance is still undefined, Xie (2012) gave a definition in his subject <Research on network finance models>, that is, a third way of financing different from direct financing and indirect financing, so the meaning of 'financing' expanded. Regarding the classification of network finance, He (2015) sorted it into two kinds: networked finance to increase efficiency of current business; active application of funds like transaction, settlement and agency service during internet enterprises. With regard to thousands kinds of Internet MMF (money management fund) like the sun at high noon, He (2015) doesn't take it as a long-lasting thing, once the financial revolution guided by interest rate liberalization has succeeded, the very reason MMF is so hot will be gone too. Ou (2014) discussed this problem from 3 aspects: monetary supply, monetary demand & velocity of money, so that the rapid development of network finance and e-coins can arouse the ascent of price level. Zhang (2014) also had the similar result. Besides, Zhou and Xu (2011) raised 2 effects leading to inflation by empirical tests on velocity of money. Among them, Zhou (2005) pointed out the impacts e-coins have on monetary policy from the diamond of money creation that traditional currency arrangement is no longer suitable for the new circumstance, which makes monetary measurement more difficult and meanwhile brings about the 'deposit-to-cash' phenomenon, and this makes banks harder to create deposit for the monetary policy. Tan (2003); Tan (2004) reached similar results respectively from the aspect of intermediate target and monetary supply formula. Shang (2013); Hu (2015) put seignior age earnings into consider and Shangzhifeng pointed out further that use interest rate as intermediate target in the future could be more effective.

This paper combines the research of former scholars, focus on the method how network finance influence inflation and discuss the consequence of such inflation. As for the empirical part, I also update the data and add lag

length to the model which proves to be helpful. In the last part, the paper will offer several suggestions for monetary policy effectiveness based on the model.

2. THE ROLE OF NETWORK FINANCE PLAYS IN INFLATION

Considering the character of inflation, this paper will discuss from 2 aspects: money demand & supply and velocity of money.

2.1. Aspect of Monetary Demand & Supply

As the development of network finance and widely use of electronic transaction, monetary endogenous has been more noteworthy. In modern monetary theory, money supply equals money multiplier multiplies monetary base, that is: M=m*B, among which, B represents monetary base, m represents money multiplier. Normally B = required reserves rate (R) + cash in circulation (C). In our country, different kinds of deposit have a general required reserves rate, and now MMF (like Yu'EBao) doesn't have to hold required reserves, so the amount of required reserves isn't susceptible to e-coins. In contrast, money multiplier is an endogenous variable, mainly depends on the behavior of public and commercial banks, nearly independent of central bank.

Although electronic money is only a virtual currency, but from past studies, it can also have a substitution effect on the real currency in circulation. In order to verify the conclusion, corresponding monetary statistics were obtained from the official website of the People's Bank of China. From the first quarter of 2008 to the first quarter of 2016, the money supply at all levels showed an upward trend over time. It can be seen from the Figure 2.1 that the proportion of cash in circulation (M0) to the narrow money (M1) decreased from 21.83% in 2008 to 16.97% in the first quarter of 2016, a decrease of about 5%. Meanwhile, the share of M0 in the broad money (M2) dropped from 7.88% to 4.81%, a decrease of about 3 percentage points, meaning that the proportion of currency in circulation to the general currency is decreasing. So, despite the existence of a variety of other factors, it can be assumed that electronic money has a certain substitution effect on the physical currency in circulation. Due to the above-mentioned online financial services such as MMF, public deposits in banks and even in some institutions are transferred from banks to the electronic money, and the popularization of third-party payment means that electronic money replace cash for people's demand, and the convenience of paying and withdraw makes people spontaneously shift their demand, therefore, the demand of the general circulation of the currency (mainly real money) will decline.

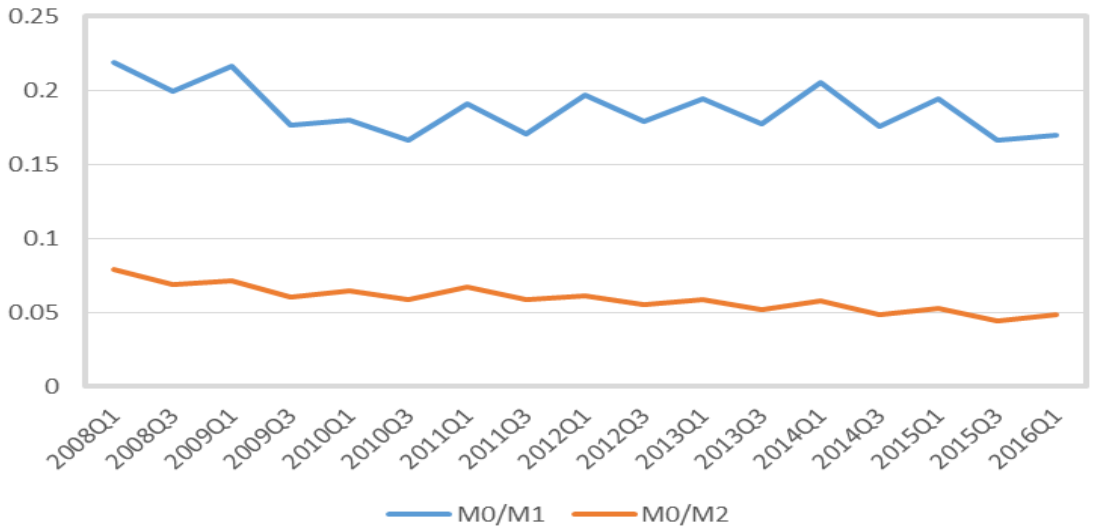

Figure-2.1. 2008—2016Q1 Proportion of M0 to M1 and M2.

The monetary multiplier, also known as the monetary expansion multiplier, is a multiple of expansion or contraction of the money supply used by the central bank's 1 unit of base currency formed through the asset business in the description of the money supply. According to the general currency multiplier formula, there is:

$$m=\frac{1+k}{r_d+r_t*t+e+k} \tag{0.1}$$

m in formula Equation 1.1 means the money multiplier, r_d means the statutory reserve ratio of demand deposits as stipulated by the central bank, r_t means the statutory reserve ratio of time deposits, t is the fixed deposit ratio, the ratio of fixed deposits to demand deposits, e is the excess reserve ratio of commercial banks, that is, the ratio of excess reserves to current deposits, k is the ratio of cash to current deposits in circulation, that is, the cash leakage rate. First of all, as mentioned above, the electronic money generated by the development of network finance has a substitution effect on the cash in circulation, thus reducing k. However, under normal circumstances, the money multiplier $k>1$. Therefore:

$$r_d+r_t*t+e+k-1-k<0,\ \text{即}\ r_d+r_t*t+e-1<0 \tag{0.2}$$

Again:

$$\frac{\partial m}{\partial k}=\frac{r_d+r_t*t+e-1}{(r_d+r_t*t+e+k)^2} \tag{0.3}$$

From Equation 1.2 and 1.3, so a decrease in k will increase the money multiplier. Second, both r_d and r_t are determined by the central bank. They are not affected by people's choices in economy and society and are exogenous variables. Therefore, they have little to do with the development of network finance. Moreover, because of the high degree of liquidity, people can transfer, pay and withdraw on the Internet very easily, so the demand for time deposits will rise, causing t to increase, which in turn will cause a decrease in m. Finally, due to the high degree of liquidity, commercial banks also reduce the excess reserve ratio so that e decreases and the monetary multiplier m increases. Taken together, the change of m is influenced by different factors in different directions. Therefore, the concrete result needs to look at the comprehensive change caused by the decrease of k, the rise of t, and the decrease of e, so an accurate conclusion is still needed for empirical analysis.

To sum up, the impact on the money supply is a multiplication of the base money multiplied by the money multiplier, in which the base money is constantly increasing, and the money multiplier is determined by the dual influence of increasing and decreasing. However, the general trend of money supply is still increasing, which can be drawn from the above data.

According to Keynes' theory of liquidity preference, people's demand for money is divided into three types: trading motivation, prevention motivation and speculative motivation. Among them, the demand for transaction motivation and motivation to prevent is described by income, and the demand for speculative motivation is described by interest rate. Therefore, the demand function of money can be expressed as:

$$\frac{M_d}{P}=L(Y,i) \tag{0.4}$$

In formula Equation 2.1, M_d is the nominal money demand, P is the price, $\frac{M_d}{P}$ is the actual money demand, Y is the income, i is the nominal interest rate, and the money demand is positively correlated with the income, negatively related to the interest rate and negatively related to the interest rate, namely

$$\frac{dL}{dY}>0,\ \frac{dL}{di}<0 \tag{0.5}$$

From Equation 2.2, we can see that on the one hand, the development of network finance reduces the demand for money generated by trading motivation and prevention motivation. Due to the rapid and convenient online service in the information age, the transaction costs of online services have dropped dramatically. Nowadays, numerous online P2P companies also make it very convenient for financial intermediation and the relative increase of MMF and time deposits (see above, Due to the increased efficiency of payment and settlement of funds) makes the opportunity cost of holding cash also get smaller and smaller, which means that the transaction income and the demand for prevention of money will be less sensitive to income.

On the other hand, it is precisely because through the current network it can be very quickly and easily to achieve the conversion of different financial assets which greatly increases the demand for speculation. Moreover, speculation in different markets means that investment outcomes are closely linked to changes in interest rates. People are expected to hold more bank deposits when interest rates rise and to deposit more quickly through online channels monetary assets when interest rates decrease. Therefore, the speculative demand for money is more sensitive to the interest rate, that is to say, $\frac{dL}{di}$ decreases.

When the money market is balanced, the money supply is equal to the money demand, namely:

$$\frac{M_s}{P}=L(Y,i) \tag{0.6}$$

In Equation 3.1, M_s stands for money supply and P stands for price. Then take the natural logarithm of (3.1), then transportation and differential can be obtained:

$$\frac{dP}{P}=\frac{dM_s}{M_s}-\frac{\frac{\partial L}{\partial Y}*dY+\frac{\partial L}{\partial i}*di}{L(Y,i)} \tag{0.7}$$

In Equation 3.2, $\frac{dP}{P}$ represents the current rate of price volatility, that is, the rate of inflation (tightening), and the indices P and M, $L(Y,i)$ are base period levels. It can be seen that the inflation rate is determined by the growth rate of money supply and demand for money.

Since the money supply is determined jointly by the monetary multiplier and the base currency, the general trend is expanded in the light of the foregoing analysis and so dM_s increased. At the same time, because of the lower sensitivity of income to currency trading and prevention needs and the increased sensitivity of interest rates to the speculative demand for money, namely

$$\frac{\partial L}{\partial Y}*dY+\frac{\partial L}{\partial i}*di \tag{0.8}$$

decrease. Thus, we can get: Inflation rate

$$\frac{dP}{P}=\frac{dM_s}{M_s}-\frac{\frac{\partial L}{\partial Y}*dY+\frac{\partial L}{\partial i}*di}{L(Y,i)} \tag{0.9}$$

will increase, that means the extent to which online financial development will increase inflation through electronic money. This is what we call the amplification effect.

2.2. Aspect of Money Velocity

On the one hand, the development of network finance has led to financial innovation products such as credit cards, ATMs and electronic payment & settlement services, greatly reducing the cost of fund transfer and transaction. Moreover, the more efficient transaction and payment methods make this part of the capital circulation less time and location-consuming, individuals and businesses are able to access information faster and convert it to earnings or hedging operations, the immediate result of which is an increase in the speed of money circulation; on the other hand, a thriving network financial so that more people have more opportunities to access a variety of online financial products, such as people can be very convenient online view the market, buying and selling stocks, but also through the MMF and other means to achieve the purpose of asset hedging, which makes with the closely linked industries such as the stock market and the futures market are more prosperous and have such an impact that the number of speculative transactions in the market has greatly increased. In the event of a profit-taking opportunity, the public will have to make use of various channels (the existence of network finance makes the channel more standardized) to speculate, it will also lead to currency flow periodic speed greatly improved.
Then the effect of currency velocity on inflation can be found by studying the famous Fisher trading equation:

$$M_s V = PY \tag{0.10}$$

In Equation 4.1, P represents the price level, Y represents the total real output, V represents the average turnover of the unit of currency over a given period, i.e. the velocity of money, and Ms represents the total amount of money. It can be seen that when PY is constant for a certain period of time, Ms becomes larger and V becomes smaller correspondingly. Differential on both sides of the equation obtained:

$$\frac{dP}{P} = \frac{dM_s}{M_s} + \frac{dV}{V} - \frac{dY}{Y} \tag{0.11}$$

In Equation 4.2, $\frac{dP}{P}$ is the rate of inflation (deflation), indicators P, Ms, V, Y are the base level. We can know that the rate of inflation is in the same direction as the rate of increase in the money supply and the rate of change in the velocity of money, the rate of inflation is constantly rising as the velocity of money flows accelerates. However, according to the relevant websites of the central bank and China Statistical Yearbook, China is currently in a stage of declining currency circulation speed, which keeps our country's inflation rate in a relatively stable state. The reason for this phenomenon may be that the mentioned currency substitution effect is stronger than the accelerated circulation effect. As the electronic money keeps increasing, the cash in circulation gradually decreases, leading to the status quo. It can also be seen that the development of various financial industries in our country is still at a relatively early stage.

3. EMPIRICAL TESTS

Through the above description, it can be determined that the index to be selected will center on the demand and supply of money, the velocity of money and the scale indicators related to network finance, and establish an empirical model for explaining inflation based on this. In order to ensure the test results, this paper intends to use the latest Eviews8.0 software for empirical analysis.

3.1. Factor Definition and Data Set

This paper studies the impact of the development of network finance on inflation. Therefore, taking inflation index as an explained variable, the choice of explanatory variables should be related to inflation on the one hand, and to some extent can affect inflation on the other.

First, CPI, PPI and RPI are generally used to measure inflation. Here CPI index that can show the final price level of goods and services through social production is selected, and CPI is also the index unified by all countries in the world to represent the price fluctuation with higher versatility. From the above conclusion, we also choose the narrow money multiplier m (= narrow money supply / base money) and the narrow money velocity v (= nominal GDP / narrow money supply) to describe the effect of network finance on inflation from both sides: the money supply and demand and currency circulation speed, among which m has an amplification effect on inflation. The narrow money multiplier is chosen because it can reflect the fluctuation of price well and based on past research, we can know the impact of the change of money supply on the price level with a lag of about a year, so the lagged period m_{t-1} is chosen as the explanatory variable; v accelerates inflation, and the selection of a narrow monetary circulation speed is based on similar grounds. And since CPI often has a strong autocorrelation, this autocorrelation usually comes from the decision-making made by people on the expectation of future price through historical data. Therefore, CPI_{t-1} of lagged period is selected as another explanatory variable.

According to the selected indicators, the annual data from the relevant website as a sample. About CPI this paper intends to select the annual data from 2004 to 2016, because there is a lag period, so choose one more year, m is the same reason. v selects the base currency, nominal GDP and narrow money supply from 2005 to 2016, and calculate the available sample data. The above data are from the "China Financial Yearbook" and the People's Bank of China official website. Sorted data has been placed in the appendix for viewing.

3.2. Empirical Model

According to the above discussion, the model will use the current CPI_t as the explanatory variable, while the previous narrow money multiplier m, the current narrow money velocity v and the previous consumer price index CPI_{t-1} as an explanatory variable, using the traditional linear regression model of econometrics for empirical analysis. Taking into account that the sample data of some variables differ greatly from other variables, logarithm of variables CPI, m, CPIt-1 to avoid data fluctuations can also reduce the heteroscedasticity of the model, and we can obtain the elastic relationship between each explanatory variable and the explained variable CPI to minimize the error caused by the absolute value of the model. The variable v is small enough and the logarithm will be negative and affect the meaning of the model so v will maintain the original status. The rest are constant terms, so here is the model:

$$ln\ CPI_t = \beta_1 + \beta_2 * ln\ m_{t-1} + \beta_3 * v_t + \beta_4 * ln\ CPI_{t-1} + \varepsilon$$

For the time series CPI, the stability is very important, and only after the confirmation is stable, the cointegration and Granger causality test can be carried out. To test the stability, the unit root test is used, Common test methods are DF test, ADF test, PP test, etc. In this paper, Eviews8.0 test respectively $ln\ CPI_t$, $ln\ m_{t-1}$, v_t, $ln\ CPI_{t-1}$ and ADF results are shown in Table 3.1.

Table-3.1. ADF result of variables.

variables	ADF	5% critical value	stability
$ln\ CPI_t$	-4.17112	-3.403313	stable
$\Delta ln\ CPI_t$	-4.95168	-3.519595	stable
$ln\ m_{t-1}$	-7.92515	-4.246496	stable
$\Delta ln\ m_{t-1}$	-9.72541	-3.403313	stable
v_t	-2.1012	-3.403313	unstable
Δv_t	-6.59928	-3.32097	stable
$ln\ CPI_{t-1}$	-5.11286	-3.403313	stable
$\Delta ln\ CPI_{t-1}$	-5.02984	-3.40331	stable

After examination, we can see that the variables $ln\ CPI_t$, $ln\ m_{t-1}$, $ln\ CPI_{t-1}$ all reject the assumption of unit root, that is, both are stationary, and $v_t$accepts the assumption that it is not stable, while the first difference of v_t, Δv_t is a

smooth sequence, so Δv_t instead of v_t to be used as a variable, its economic meaning is the amount of change in the velocity of the narrow money. Finally, the model is modified as follows:

$$ln\ CPI_t = \beta_1 + \beta_2 * ln\ m_{t-1} + \beta_3 * \Delta v_t + \beta_4 * ln\ CPI_{t-1} + \varepsilon$$

From the modified formula above, we can see that $ln\ CPI_t$, $ln\ m_{t-1}$, Δv_t, $ln\ CPI_{t-1}$ are same order integration and all variables are no longer unit root, so we can organize co-integration test on these variables, co-integration test can be used to determine whether there is a long-term equilibrium between the various variables. Due to the number of samples, this paper uses the Engle-Granger two-step test, which is different from the unit root test of the variables. The cointegration test is to check whether there are unit roots in the residual terms of the regression equation. If not, it is steady. According to the new model using the least squares (OLS) to estimate the parameter values, the test results are presented in Table 3.2.

Table-3.2. co-integration test result using OLS.

variables	coefficient	std deviation	t-value	P-value
$ln\ m_{t-1}$	0.0484	0.0617	2.78	0.463
Δv_t	0.5	0.687	2.18	0.072
$ln\ CPI_{t-1}$	0.219	0.3	4.06	0.0066
β_1	5.569	1.41	3.95	0.0075

R-squared = 0.785 Prob. = 0.0198 Sum squared resid= 0.00180
Adjusted R-squared = 0.678 Durbin-Watson stat= 1.35.

Thus, a complete estimation equation of the adjusted model can be obtained:

$ln\ CPI_t = 5.569 + 0.484 * ln\ m_{t-1} + 0.5 * \Delta v_t + 0.219 * ln\ CPI_{t-1} + \varepsilon$

It can be seen from the results of the variable estimation that t-values of all parameters are significant, and R^2 is 0.785, which is more convincing. Then the residuals were tested by ADF, the first order of the residuals was stationary, but the stability was not significant. The p-value was 0.0463, so we could reject the long-term equilibrium unit roots. In all, we get that $ln\ CPI_t$, $ln\ m_{t-1}$, Δv_t, $ln\ CPI_{t-1}$ are co-integration variables, with long-term equilibrium relationship.

The econometric model established above shows the long-term equilibrium relationship between the consumer price index, namely the inflation index and the previous year's narrow money multiplier, the change of money circulation velocity and the previous year's consumer price index, because they are co-integrated. Based on the model's estimation results, the following conclusions can be drawn:

First of all, with other variables unchanged, every 1% increase in the CPI_{t-1} will result in a 0.219278% change in the consumer price index CPI_t in the current period. From this we can see that people's expectation of prices tends to be with the price volatility of the previous period changes, and this change is positive, that is, the higher the previous period, the higher is the current period.

Second, the coefficient of ln mt-1 is 0.48418, which means the elasticity of CPI_t is that the narrow money multiplier increases by 1% for the previous period and the current price index will rise 0.48418%. This variable is used to measure the magnifying effect of the change of money supply on inflation and the greater the value, the more obvious this effect. It can be said that the change in the money supply and demand has a greater impact on the price than CPI_{t-1}.

Finally, the coefficient of Δv_t is 0.500286, that is to say, for every 1% increase in the velocity v_t of the narrow money circulation, CPI_t will change 0.500286% in the same direction. And m_{t-1} has a similar effect on CPI_t which is also a positive impact on prices.

To sum up, the increase in the circulation of electronic money brought by the development of network finance has a positive correlation with inflation and has a positive impact on inflation. After examination, it also confirms that the growth of electronic money can raise the price level to a certain extent through monetary supply & demand and the speed of money circulation these two channels. At the same time, we can see that the coefficient of each

parameter is still small, indicating that the development of network finance in our country has not yet reached the mature stage. It can be believed that with the deepening of the Internet and financial links in the future, the coefficients will also be somewhat improved.

4. CONCLUSIONS AND IMPLICATIONS

Through the previous theoretical description and empirical analysis, we can get the following conclusions, and to some extent in accordance with the conclusions of the corresponding policy recommendations, I believe it will help the central bank in the formulation and implementation of monetary policy.

Over the years, with the development of finance, its form has also undergone constant changes. From the earliest exchange of goods, barter, the establishment of the world's first bank in the 12th century to the online financial services nowadays all over the Internet, which has completely subverted the original appearance. However, the essence of finance will not change with it. This article elaborates the influence of the development of internet finance on the level of inflation through the conduction of electronic money from both the supply & demand of money and the velocity of money circulation. On the one hand, we use the monetary multiplier formula and Keynes's liquidity preference theory respectively to show that the development of network finance has a changing effect on the supply and demand of money, which is manifested in the substitution and conversion effect of traditional currencies, which is people's willingness to hold liquidity-strong and easy-to-use electronic currency, thereby raising prices and boosting inflation; on the other hand, compared with traditional currencies, Internet financial assets can freely flow among various financial assets and narrow the gap between people and the distance of various financial products, so people are also more interested in investing in financial products, the flow of funds accelerates between financial products and bank accounts, and finally speeding up the flow of money.

Then we make an empirical analysis on whether the money supply, the velocity of the currency and the previous inflation rate will affect the inflation rate of the current year, and choose three parameters of the previous year: the narrow money multiplier, the change of money velocity and the inflation rate of the previous year. The results show that the money supply, the velocity of the currency and the inflation rate in the previous period have a positive correlation with the current inflation rate. Meanwhile it shows that the development of network finance has a positive effect on inflation.

Although the development of internet finance has given a boost to China's financial sector after the financial crisis and greatly boosted the economic recovery, it will still have a bad impact on inflation to a certain extent, thus making the central bank's monetary policy effectiveness declines, the macro policies more difficult to control, and show some negative effects in the economic and social development. In order to better strengthen the vital role of the central bank in the economy, some policy recommendations are made according to the above conclusions:

First of all, the central bank should improve its statistical work in the field of network finance and effectively strengthen the monitoring of some important economic magnitude in this field. In particular, it should have sufficient understanding, clear the definition and statistical standard of the emerging concept of electronic money and try to apply it into the national payment and settlement system. Now the statistics on the official website of the Central Bank are basically blank for the data in the field of network finance. Without accurate data, it is impossible to analyze and predict the macroeconomic situation of the country and the inflation, nor is it conducive to the formulation of policies and related fields professional research. Although due to the rapid development of internet finance, the situation is changing rapidly, and the timeliness of statistics is not long, historical data still have some reference value to the future.

Second, after the field of network finance is included in the scope of statistics, the central bank should also use these data to add the social impact of the development of network finance to the reference for policy analysis. The central bank to implement monetary policy has four main purposes, namely, price stability, full employment, economic growth and balance of international payments, the central bank macroeconomic regulation and control

usually choose to use single or multiple monetary policy to make a discretionary choice, and now, with new factors, and it has impact on the overall economic and financial environment, so it's even more necessary to consider the role of network finance in changing the traditional intermediary goals, such as the monetary multiplier. Due to the several effects analyzed above, such as the monetary multiplier, these targets of the class will lose its original accuracy, but the central bank can still better regulate through the interest rate and other factors.

Thirdly, now that the central bank has established regulatory authorities for the traditional financial industry and has implemented effective regulatory measures, it has neglected the emerging field of network finance. With its rapid development, various types of financial irregularities and vicious speculation, such as since 2012, the online loan P2P company that has been gradually developing has witnessed a massive "runaway" incident in 2015. About 2.14 P2P loan platforms went out of business each day, which caused extremely bad economic and social consequence, and also turned so many people's hard-earned money into a bubble. Therefore, to strengthen supervision is the most urgent requirement of the central bank for the online financial industry nowadays, and to establish a special supervision department and to speed up the formulation and implementation of the relevant laws will be fruitful measures.

Lastly, I think that while the central bank is monitoring and supervising, we must also vigorously promote the development in the field of network finance. After all, this is a new area that has emerged in response to the trend of economic development. It has greatly satisfied people's demand for currency diversity, and provides an excellent platform and high convenience to participate in the financial investment, so promoting its development is a win-win choice, is the inevitable choice for social prosperity and national development.

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