

The Influence of Internet Finance on the Effectiveness of Monetary Policy Intermediary Targets

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Abstract

With the penetration and innovation of Internet technology in the financial field, the Internet financial industry has entered a period of rapid development since 2013. While constantly changing micro-mainframes, commercial banks and financial markets, it has become one of the influencing factors of my country's macro economy. This article uses a combination of theory and empirical research to study the influence of Internet finance on the effectiveness of monetary policy intermediary targets. From the perspectives of quantity-based monetary policy and price-based monetary policy, the intermediary targets that can represent two monetary policies are selected: money supply and interest rates. The results show that Internet finance intensifies the volatility of narrow money supply in the short term, and creates through credit in the long term. The function has a long-term expansion effect on the broad money supply, thus reducing the effectiveness of the money supply as an intermediary target of quantitative monetary policy. At the same time, it has a negative impact on the stability of interest rate transmission channels in the short term, but it is conducive to the marketization of interest rates in the long run. Therefore, it has a positive impact on the interest rate transmission channels and enhances the effectiveness of interest rates as an intermediary target for price-based monetary policy.

Keywords

Internet Finance; Monetary Policy Intermediary Target; VAR Model.

1. Introduction

The Internet finance industry has entered a period of stable and rapid development since 2013. Various innovative Internet finance models have continuously emerged, and the form of social demand for finance has also been constantly changing. Internet finance mainly covers four partial business types: third-party payment, p2p online lending, crowdfunding and Internet funds. While Internet finance continues to change microscopic entities, commercial banks and financial markets, it has become one of the influencing factors of China's macroeconomics. It reduces the effectiveness of quantitative monetary policy intermediary targets, and aggravates the instability of the monetary policy implementation environment. It has become more difficult for the central bank to use monetary policy to conduct macroeconomics. The current regulatory framework based on quantitative monetary policies in China needs to be transformed and improved, and the development of Internet finance has brought new challenges to the effectiveness of this monetary policy and also provides new opportunities for the transformation of monetary policy.

2. Current status of foreign research

Research on the influence of Internet finance on monetary policy by foreign scholars can be traced back to 1999. Friedman (1999) believes that Internet finance has affected the central bank's currency issuance function, which may lead to the disappearance of cash in circulation, which in turn impacts the central bank's status as an independent executor of monetary policy. John Hawkins, Janson (2003) and Owen (2004), based on the perspective of currency multiplier, base currency, and currency circulation speed, respectively, believed that the development of Internet finance reduced the central bank's ability to adjust the currency multiplier and supply base currency, and at the same time diverted the central bank's assets. Liability business. BIS (2004) believes that the development of

Internet finance has an impact on monetary policy by impacting the speed of currency circulation and the currency multiplier. Recent foreign research focuses on the research on the impact of narrowly defined Internet financial services such as digital currency, mobile payment, and electronic finance on monetary policy. John Hawkins (2012) believes that electronic finance reduces the cost of information transaction in the financial market and effectively alleviates the lag period of monetary policy. While Internet finance is impacting the financial market, it has a substitution effect on bank bonds. The central bank has not considered the impact of Internet finance. Continued use of the narrow money supply to measure the amount of base currency will lead to deviations in monetary policy, and the central bank needs more price-based measures. Monetary policy rather than quantitative policy.

Compared with foreign countries, China's Internet finance has a relatively late germination and a shorter development time. The industry scale is smaller, but the development speed cannot be underestimated. At present, scholars research on the relationship between Internet finance and monetary policy is mostly based on the perspective of third-party payment and P2P online lending, and conduct theoretical analysis and empirical research from the perspectives of monetary policy transmission mechanism, monetary policy target effectiveness, and monetary policy tool selection. Based on the perspective of monetary policy objectives, it mainly studies the impact of Internet finance on monetary policy objectives such as money supply and interest rates. Dai Guoqiang and Fang Pengfei (2014) believe that the essence of Internet finance is the marketization of interest rates for demand deposits, which has a greater liquidity risk, impacts the sequence of deposit interest rate marketization, and may trigger a liquidity crisis. Based on the different directions of the influence of Internet finance on two monetary policy tools, Yang Deyong, Liu Xiaotong, and Zhao Yuanjun (2017) found through empirical evidence that Internet finance increased the endogenous nature of the money supply, thereby increasing the amount of unplanned money supply and the deviation degree of quantitative money. At the same time, the sensitivity of interbank lending rates has been enhanced to improve the efficiency of the use of price-based monetary policy tools, and ultimately promote the transformation of quantitative policy tools to price-based.

3. Theoretical analysis of the influence of Internet finance on the effectiveness of monetary policy intermediary targets

3.1 The impact of internet finance on money supply

3.1.1 The measurability of Internet finance to reduce money supply

With the rapid development of Internet finance, third-party payment can meet the needs of consumers for rapid transfer of funds and replace part of the cash circulation function. At the same time, Internet finance broadens the investment channels of financial instruments, and online wealth management terminals can realize rapid conversion of assets with different liquidity. Digital currency continues to extend the concept of traditional currency, causing the boundaries between currency levels to be gradually broken. The central bank currently does not include the digital currency circulating on the Internet financial platform into the statistical scope of the broad money supply. Therefore, it has increased the difficulty of the central bank to accurately divide and measure the currency level, reduce the measurability, and make the money supply as a quantitative monetary policy intermediary Target effectiveness is reduced.

3.1.2 Internet finance reduces the controllability of money supply

The central bank regulates the amount of currency in circulation through the issuance of base currency and three major monetary policy tools, and maintains a balance between currency supply and demand. It should have sufficient autonomy and exogeneity in the supply of money. However, in real life, the development of Internet finance has deepened the endogenous nature of the money supply, resulting in a significant decline in the central bank's control over the money supply.

Under the impact of Internet finance, the instability of the currency multiplier has increased, the ability to control the base currency has decreased, and the endogenous nature of the money supply

has increased, resulting in a significant decline in the central bank's control over the money supply. At the same time, the blurring of the boundaries of currency division levels leads to a decrease in the measurability of the money supply, which will weaken the effectiveness of the money supply as an intermediary target of quantitative monetary policy.

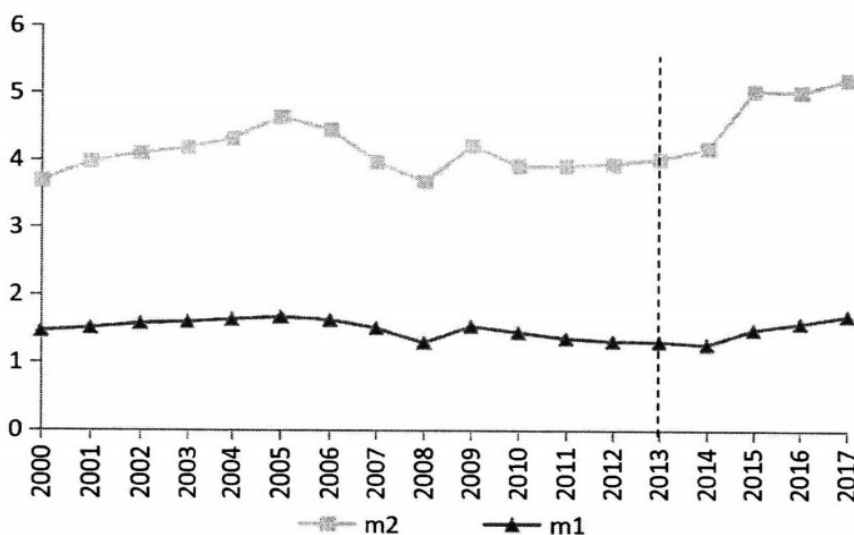


Figure 1. Currency multiplier fluctuations

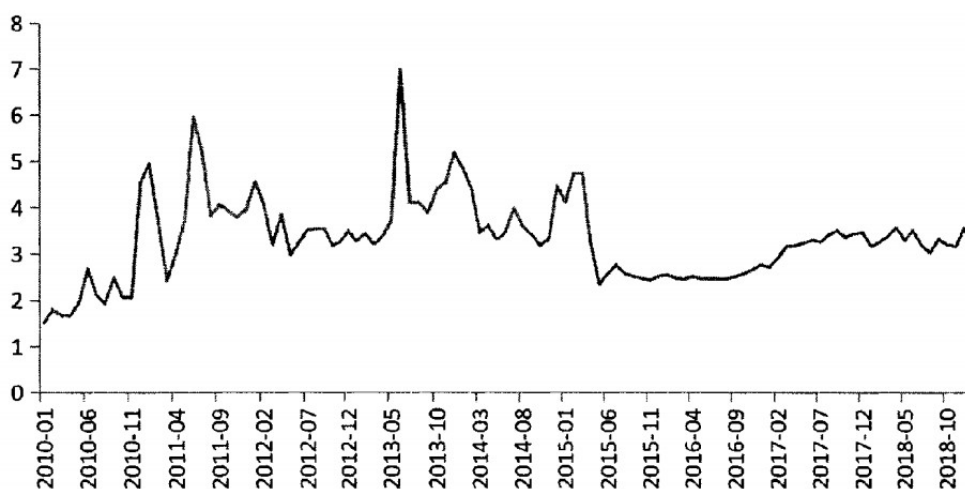


Figure 2. Interbank Offered Rate

3.2 The impact of Internet finance on interest rates

3.2.1 The short-term impact of Internet finance on interest rates

The direction and extent of the long- and short-term influence of Internet finance on interest rates are different. In the short term, Internet finance has a negative impact on the effectiveness of interest rates as a currency intermediary, which is mainly manifested in two aspects: one is the money supply side. The development of Internet finance has made the boundaries of currency division more blurred and reduced the measurability of money supply. At the same time, the ability of credit creation has increased the amount of broad money supply, strengthened the endogenous nature of monetary policy, and reduced the effectiveness of central bank monetary policy. The second is the currency demand side. The rapid development of third-party payments has led to the rapid conversion of electronic money and paper-based cash. The liquidity of the currency needs to continue to be in an unstable and

volatile state, resulting in an increase in the complexity and instability of the currency demand structure. The central bank's control over money supply is more difficult than in the past, and the balance of money supply and demand is unstable, leading to fluctuations in financial market interest rates. Interest rates cannot be fully developed as an intermediary target for monetary policy. In addition, online lending provides companies with a wider range of financing channels. Increased competition in the inter-bank lending market has led to intensified market interest rate fluctuations, weakened interest rate indicators, and reduced effectiveness as an intermediary for monetary policy.

3.2.2 The long-term impact of Internet finance on interest rates

Internet finance has increased the effectiveness of interest rates as a currency intermediary for a long time. At present, China's interest rate market lacks effective pricing measures. Long-term interest rate control and subjective intervention have weakened the supply and demand indicator of loan interest rates, making real interest rates unable to reflect the real supply and demand of market funds, and ultimately leading to a reduction in the effectiveness of the monetary policy interest rate transmission mechanism. The rapid development of Internet finance has expanded new financing methods. The result of the competition between capital supply and demand has made the allocation of funds in the financial market more effective, and the actual interest rate can better reflect the true price level of assets to a certain extent.

4. Empirical analysis of the impact of the development of online finance on monetary targets

In the selection of Internet finance variables, this paper no longer uses third-party payment and other partial business formats to replace the scale of the Internet finance industry and the time span is too small to cause insufficient sample size for research. Instead, it uses comprehensive data that can fully reflect the Internet financial business format. It selects the monthly Internet finance index transaction size from 2010 to 2019 to measure the development level of Internet finance, and it is recorded as IFI. It also selects the narrow money supply, broad money supply, and the weighted average interest rate of seven-day interbank lending as the proxy variables of money intermediary, denoted as M1, M2, and Shibor, respectively. Carry out unit root test, Granger causality test, and cointegration test.

Based on the results of IFI's tests on M1 and M2, Internet finance under high-level lags is not the Granger reason for the broad money supply, indicating that in the long run, the Internet finance index transaction scale is not the cause of quantitative monetary policy changes in the time series.

4.1 Impulse response analysis

Based on the VAR model, further impulse response analysis is done to study the response ability and adjustment speed of $\ln M2$, $\ln \text{shibor}$, and $\ln \text{GDP}$ after being impacted by Internet finance $\ln \text{IFI}$ from a dynamic perspective.

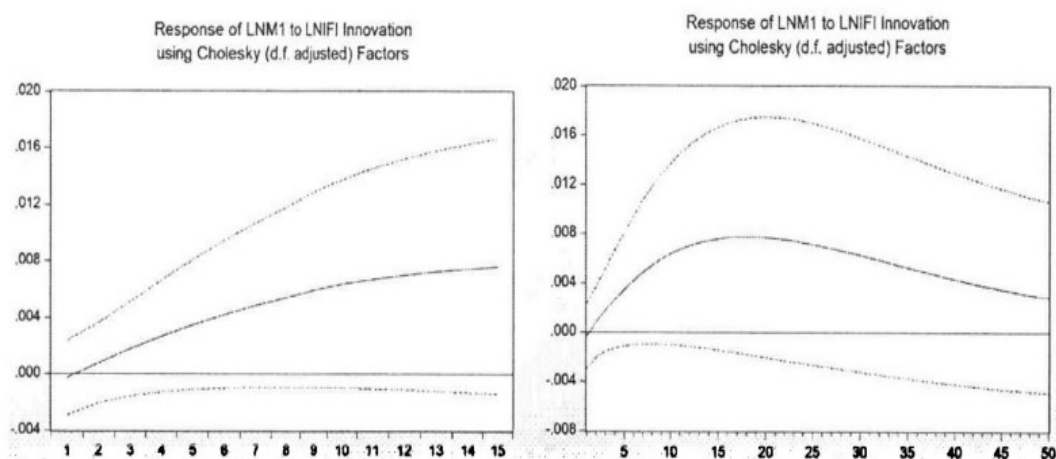


Figure 3. The short-term and long-term impact of Internet finance on M1

It can be seen from the figure 3 that given a standard deviation impact of the Internet finance index transaction size lnFI, the narrow money supply level lnM1 will have a negative response close to zero in the first period, and it will rise rapidly after the second period. After the 17th period reaches the positive maximum value, it starts to decrease slowly, and the dynamic fluctuation process first rises rapidly and then decreases slowly. It shows that in the short term, Internet finance has a greater impact on the narrow money supply, which is reflected in the substitution impact of Internet finance on cash and demand deposits in circulation, but the later curve tends to be stable and close to zero. The impact of the narrow money supply is relatively low and not stable and lasting.

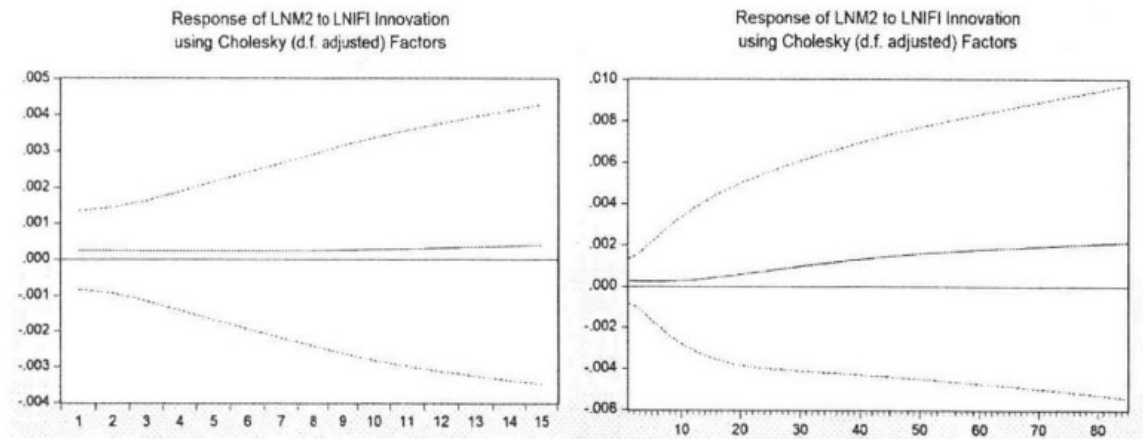


Figure 4. The short-term and long-term impact of Internet finance on M2

It can be seen from Figure 4 that the broad money supply lnM2 will initially have a positive response close to zero, and then slowly rise. Compared with the short-term, lnFI has a greater long-term impact on lnM2, indicating that the Internet financial credit currency creation mechanism has a positive expansion effect on the broad money supply, and it is in line with the reality of time lag in the creation of credit currency, which in turn affects its role as a monetary policy intermediary. The effect of the indicator.

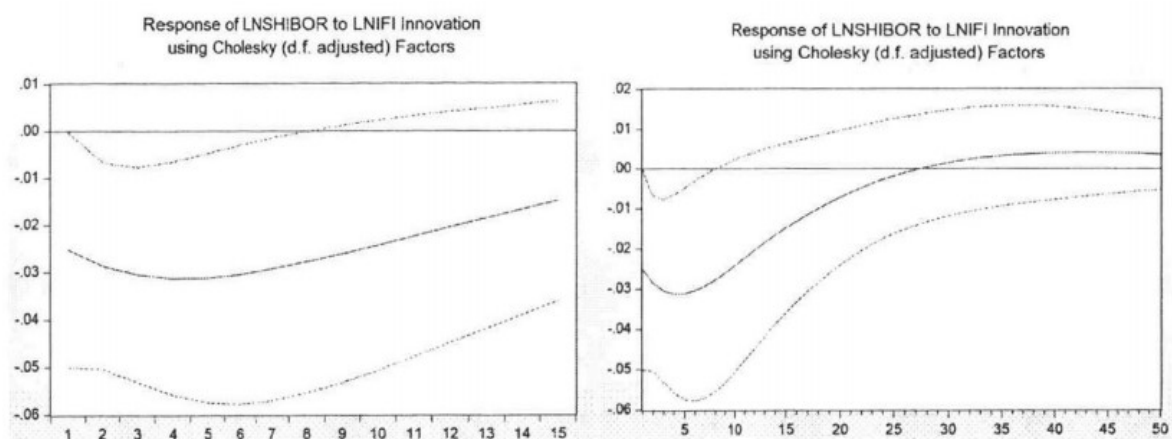


Figure 5. The short-term and long-term impact of Internet finance on Shibor

From Figure 5, it can be seen that the interbank lending rate level lnShibor initially had a negative response, and then quickly dropped to the fourth period, that is, the response value reached the minimum and then increased, and reached a positive response in the 28th period. Zero, then rose but gradually approached zero. The negative response in the short term indicates that the development of Internet finance provides banks with diversified sources of funding positions, breaks down part of the

interbank borrowing demand, has a certain substitution effect on the interbank borrowing market, and has an effect on the effectiveness of a price-based monetary policy centered on interest rates. There was a certain impact. In the long run, interest rates gradually reflect the smoothness of the true prices of assets, indicating that the development of Internet finance is conducive to the marketization of interest rates by enhancing financial market liquidity.

5. Research conclusion

Internet finance has intensified the volatility of the money supply, leading to a decrease in the controllability and measurability of the money supply, affecting its effectiveness as an intermediary target of quantitative monetary policy. In the short term, Internet finance has caused increased fluctuations in the narrow money supply, which is reflected in Electronic money and Internet wealth management products have an alternative impact on cash in circulation and demand deposits. In the long run, Internet finance has a positive impact on the supply of broad money. This is manifested in the fact that the credit money creation mechanism of the Internet financial system itself has an expansion effect on the supply of broad money. At the same time, it also enhances the market endogeneity of the money supply, leading to money supply. The controllability is reduced.

Internet finance has a negative impact on interest rates in the short-term and a positive impact in the long-term. The effectiveness of price-based monetary policy intermediary targets has increased. Internet finance has diverted the traditional financial business mainly based on deposits and loans of commercial banks, allowing commercial banks to absorb deposits and issue loans. At this time, it will face greater competition, leading to an increase in interbank lending rates. On the other hand, the influence of Internet finance on the supply and demand of money has led to the breakdown of the stable and equilibrium state of the market and the increase in interest rate instability. This has led to a negative impact on the interest rate transmission channel in the short term. Interest rates are the intermediary targets of price-based monetary policy. However, in the long run, the development of Internet finance will intensify competition with the deposit and loan market, and form a certain degree of substitution for bank deposit and loan business, thereby creating an oppressive mechanism for bank inventory interest rates and increasing interest rate sensitivity. In turn, the interest rate will be guided back to the real level, and the effectiveness of the intermediary target of price-based monetary policy will be improved.

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