

A Study on Transmission Mechanism of Interest Rate in China: Literature Review

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Abstract

The China central bank announced that the M2 policy will be jettisoned and the interest rate mechanism will be accentuated. This announcement of shift of essential monetary policy intermediary from M2 to interest rate signals the monetary policy of China enter into a new era. Thus, the interest rate mechanism of China should be further enhanced and advanced. The paper is written to consolidate the present researches and come up with some deficiency of the study, and thus facilitate the policymaker to figure out our current status of interest rate mechanism and better to intensity the whole process.

Keywords

Interest rate, transmission mechanism, monetary policy, central bank, China.

1. Introduction

Recently the central bank's continuously announcement that the reverse repo is not allowed indicates a cut of reserve requirement ratio and interest rate in future. Since the adjustment of interest rate attracts attention from both society and academe all the time, the Chinese scholars would like to explore how the change of interest rate come into effect as a part of monetary policy.

The detailed process of the adjustment of interest rate affecting the macro economic factors is named interest rate transmission mechanism. This mechanism is to the vital importance to the implementation of monetary policy in China. Similarly, the occidental academia generally accepts the plausibility of mechanism and has already witnessed the completeness of the mechanism. Compared with the China's early stage of research of the mechanism, the western countries have been cognizant of its relevance and pragmatic and have explored it for many decades ago. Kuttner and Mosser (2002) considered that the interest rate channel is the primary mechanism at work in conventional macroeconomic models. As Mishkin (1995) put it, to the monetary authorities should be capable of assessing the timing and effect of the policy they are to conduct, which requires an acknowledgement of the mechanisms through which monetary policy influence the economy. As for the feasibility of the transmission mechanism, in 1995, Taylor mentioned that the framework of the mechanism withstood glut of empirical tests with success. The structure is based on the economic theory and the straightforward assumptions which intimately match the institutional structure of the world's increasingly securitized financial markets. Peter (1991) argues that, compared to the industrial countries which are developed in financial system, such developing countries as China has not studied the transmission system amply even the eminence is endorsed to the developing country setting.

In recent years, the number of papers on transmission mechanism of interest rate in China is increasing as the adjustment on interest rate becomes more and more important than other kinds of monetary tools. This essay aims to organize, summarize and review the theory of some expert in terms of the mechanism itself, the efficiency and influential factors of the mechanism in China. Furthermore, the review tends to advance the scholar to penetrate into interest rate transmission mechanism in China, facilitate the policy maker to constitute the money policy frame and provide the scholar with the research basis.

2. The Interest Rate Mechanism

2.1 The Theory of Interest Rate Mechanism

Several scholars attach their importance on the process of transmission mechanism itself. Zhang and Chen (2009) supported that the basic route of transmission is: the capital and investment fluctuates in accordance with the turbulence of the interest rate caused by the change of money supply. And thus the fluctuation will have an effect on the gross output, then the whole macroeconomics system. The conduct progress involves subtle co-movement among macroeconomics elements.

Zhang and Chen (2009) envision that it is generally accepted that the interest rate transmission of monetary policy is based on monetary theory of Keynes and IS-LM model. To be more specific, by adjusting the money supply, the real interest rate will fluctuate, then capital and investment will shift in accordance with the shift, ultimately affecting the gross output. As a matter of fact, the Taylor rule would have been applicable to the transmission mechanism. Nevertheless, such emerging markets as China possesses high inflation, unstable nominal interest rate and financial restraint phenomenon, which results in the incomplete market, causing the less feasible of the intermediary, interest rate.

From the perspective view of Zhou & Chen (2009), the interest rate transmission falls into two categories: within-industry and cross-industry. To be more specific. The within-industry transmission indicates transmission of the interest rate change among financial products and financial institution whereas the cross-industry transmission refers to the connection among financial system, Macroeconomic industrial system and countries. In this way, the turbulence of interest rate will ultimately spread to the real economy.

Several researchers explore the transmission mechanism in terms of the conduction path. Li (2015) asserted the interest rate system could be counted as dual-system. The direct method implies that the central bank changes the interest rate to carry out the monetary policy whereas the indirect route indicates that the central bank utilizes the entirely market-oriented repo rate to reach the policy goal. More precisely, the drop of interest rate causes the investment to rise and further stimulate the employment, leading to the elevation of gross product and price index. Spontaneously, the central bank would conduct such tight monetary policy as reducing the money supply to raise the interest rate, affecting in the investment demand. And the whole system falls into a circle. As for the interest rate tool, it is worth noting that the bank loan and deposit rate act as financial market benchmark rate since the Shibor has not been recognized as benchmark rate. Comparably, Zhou & Chen manifest that the interest rate can have effect on gross product through both direct and indirect ways. As for the direct method, the interest rate change conveys the adjustments to real economy through three channels including investment, capital market and exchange rate and one legislation. Furthermore, the magnification effect credit policy amendment implies the arrangement of bank operating system induced by interest rate policy. When it comes to the indirect ways, the central bank tends to reprice the securities and utilize the wealth effect, making a difference on the aggregate demand and gross product. As for the second indirect way, the interest rate spread, the exchange fluctuations, and financial asset price spread formed by the interchange between interest rate and exchange rate lead to large-scale flow of short-term funds and change of money supply and foreign trade, thus fluctuating the real economy.

Otherwise, Zhang (2006) did some research on the mutual effect of money market and capital market. He supported that the money market rate would fluctuate initially when the central bank adjusts benchmark interest rate. Hence the change may pass to capital market, which means the capital market rate floats correspondingly, and the shift of the capital market rate will also influence the money market rate in turn.

Also, there are some researches concerning on the conduction intermediate. Indeed, these years the central bank aims to cultivate a basis rate which both is based on demand and supply and is capable of affect and restrict other interest rates. Zhang (2006) stated that the trend of Shibor is basically in line with that of main investment interest rate and the interest rate spread of the two sorts of interest rate keeps stable in essence. Therefore, the Shibor reflects overall trend of the market rate. Moreover,

there is an increasing number of financial products that priced in accordance with the Shibor, hence, the prominent significance of Shibor is multiplying continuously. The Information and Statistics Department of National Inter-Bank Funding Center (2014) found that that the Shibor has already generated an integrated money market rate curve, which provide a benchmark for pricing of financial products. In other words, the initial benchmark position of money market has been approved. More recently, Liu et al. (2017) analyzed the conduction effect in terms of the sort of the selection of interest rate. They operated the test for four variables including Shibor, loan interest rate, deposit interest rate and CPI by using Variance Decompositions based on DAG method. According to the outcome of Static Variance Decompositions, the variables except loan rate are susceptible to self-reflection, which implying the 3 variables harbor persistence. To be more specific, beside itself influence, the inflation level is most affected by deposit rate.

2.2 The Effectiveness of Interest Rate Mechanism

Besides the researches on how the conduction mechanism operates, some scholars deliberate further on the evaluation of the effectiveness of the mechanism.

Certain experts initially analyzed the reasons of the stagnation of the transmission mechanism. Wang (2010) asserted that our Treasury bond market is still evolving. The exit of insurance company in 1998 lead to the imbalance of market rate, for instance, Shanghai Stock Exchange repo-rate I higher than the interbank bond interest rate. The distortion of interest rate structure indicates the inhibition effect of interest rate transmission mechanism. Similarly, Jia (2015) argued that the information asymmetry leads the borrowing rate to be stickiness. The institution factors involving credit rationing and market segmentation restrict the utilization of interest rate tools. Indeed, it is hard for the bank to take interest rate adjustment as an action to offset the potential risks since the conglomerate may be insensitive to the interest rate change.

Up to the present, since our market liberalization has been increasingly completed, the mechanism became less hampered. These years the scholars conduct a variety of statistical tests on the validity of the mechanism, and the test results present the gradual approaching to the validity of the transmission mechanism. Fang et al (2005) conducted variable stationarity, Granger causality test, Error Correct method and Impulse Response Function test based on the monthly data, quarter data and annual data from 1990 to 2004, only to find the inefficient of the transmission. The subsequent interest rate liberalization enhanced the validity of the system. Recently, Zhang and Chen (2018) utilized Granger causality test and Jonhanson method to check the advancement of effectiveness. The conduction from money market rate to investment shows effectiveness whereas the adjusting effect to effective demand was barely satisfactory. It notable that the two teams of researchers both chose the Granger causality test, which indicates that this test is capable of checking the mechanism effectiveness precisely.

Digging into the degree of market completeness, Qian et al. (2015) explored the efficiency of transmission mechanism under the perfect market and imperfect market respectively. Under the perfect market, changes of the money market rate will convey to corporate lending rate. Moving onto the imperfect market, the changes of money market rate will partially conduct to the corporate lending rate. Suppose the entrusted loans demand of enterprise is perfectly inelastic, the level of information asymmetry of borrower and lender are not the same. With the severe asymmetric information, moral hazard and adverse selection stemmed from information asymmetry would occur more frequently. More seriously, increasing the interest rate may lead to a higher default rate.

2.3 The Factors Which Affect the Effectiveness of Mechanism

While some professionals concentrate on the examination of effectiveness, others attach more importance on what affect the effectiveness of the mechanism.

With the enhancement of financial system and financial regulation reform, the adjustment generated by interest rate come into effect obviously. As it is stated by Fang et al (2005) before, since the interest rate liberalization has become increasingly completed and the fiscal system has been more mature

than ever, the efficiency of the conduction mechanism has been boosted. Thus, the degree of liberalization would be vital importance to the efficiency of the conduction.

Some economists started with the elements which impede the normal flow of the transmission. Zhang and Chen (2018) contended that the status of social-security system and sufficiency of consumer confidence are essential factors which influence the mechanism. The incomplete social-security system and low consumer confidence give rise to the insufficient consumption and high precautionary saving, weakening the elasticity between interest rate and consumption. Chen considered that the liquidity trap interfered the efficiency interest rate lever. More seriously, there is a perception by Cai et al (2002) that the income brought by reduced interest rate would cancel the substitution effect caused by reduced interest rate, giving rise to the low elasticity of present consumption. In other words, the residence's expectation of uncertain precautionary risk obstructs the efficiency of the interest rate policy. As we mentioned before, Zhang (2006) claimed that there exists the transmission between money market and capital market. Nonetheless, the signal transmission of short-term bond rate and long-term bond rate between two market lack in sensitivity, and thus the linkage is absence of the movement of two markets. As a result, the pass-through channel is enlarged as well as the short-term and long-term interest rates are segmented even segregated, eventually giving rise to a serious lagged and low inefficiency conduction effects.

Moreover, several researchers divide the factors which influence the mechanism into two types: external shock and internal shock. According to Zhou and Chen (2009), the transform of industrial structure, the price change of crude oil, and the advance of several technology represent the external shock. Moving on to the internal shock, the adjustment of exchange rate, the fluctuation of related interest rate and the change of money supply will affect the interest rate. It is worth mentioning that the internal shock of financial system involves interest rate transmission. Indeed, the turbulence of internal elements reflecting the status of real economy will have impact on the money policy and thus generate the shock of financial system internally, leading Central bank to readjust the base rate. Eventually the market rate will fluctuate based on the change benchmark interest rate.

Also, Qian et al. argued that the degree of information asymmetry could affect the efficiency of transmission. Providing that the asymmetric information does not hinder the interest rate transmission, the higher level of information asymmetry and the lower transmission coefficient of entrepreneur credit markets, the lower the pass-through efficiency. (2015)

Otherwise, by analyzing VAR of real interest and finance innovation index etc., in Hu's (2012) view, the side effect of finance innovation weakened the efficiency of central bank monetary policy in terms of the conventional interest rate conduction route. Thus, the finance innovation would be key element which have an impact on the efficiency of mechanism. It would be more prudent to construct a new monetary policy to match with finance innovation. Furthermore, the convenience brought by finance innovation will further enhance the effectiveness of monetary policy.

3. Suggestions on Further Study

To sum up, currently the theory as well as the research concerning on the interest rate mechanism has been competed in the academia in China. However, there are still some deficiency in the research of the interest rate transmission mechanism. Since the study in the realm begins late compared with those western countries, the researches of China may have not targeted towards and delved into the mechanism properly, especially concerning on the effectiveness of the mechanism. Indeed, few literatures emphasize how to conduct the test on the effectiveness of mechanism and the test methods are more or less simplex, which may urge the Chinese economists to focus on this absence. Still, the unified assessment indicator to examine the effectiveness of the transmission mechanism has not emerged. Also, several researchers acknowledged that the results they got may not sufficiently precise since the real market equilibrium rate cannot be obtained and the data they acquired was not adequate. With the increase of the public data and the development of the quantitative methods, the problems may be solved well.

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