

# The Impact of Third-party Payments on the Money Supply

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## Abstract

With the booming development of communication technology, the Internet came into being, and the development of the Internet has brought great convenience to all aspects of society, especially in the financial industry, basic financial instruments and their derivatives continue to optimize and develop. Financial intermediation is also in dynamic development and change, and traditional monetary theory is also constantly developed by the influence of financial innovation. Whether it is online shopping or offline life, Third-party payment has gradually penetrated into the public's food, clothing, housing and transportation, providing convenience for all aspects of their work, life and study. The emergence and development of Third-party payment platforms represented by WeChat, Alipay, and Tenpay has greatly changed people's lifestyles and trading habits, and has also affected China's money supply and has a certain impact on the effect of monetary policy. In view of these problems, this paper first expounds the emergence and development of Third-party payment, the impact of Third-party payment on the money supply and the speed of money supply, and finally puts forward relevant suggestions.

## Keywords

Third-party Payments; Money Multiplier; Speed of Money Flow; Money Supply.

## 1. The Emergence and Development of Third-party Payments

The formal definition of Third-party payment in China is: the payee uses electronic devices such as computers and mobile terminals, relying on the public network information system, to remotely initiate payment instructions, and the payer's electronic device has a protection mechanism and does not interact with the payee's specific special equipment, payment institutions provide monetary fund transfer services for recipients [1].

According to the latest report from the IAB, global mobile e-commerce is developing rapidly, and in the current context, people are increasingly inclined to purchase goods through mobile devices. On average, within six months, users make purchases of goods and goods through mobile devices services, which account for 3/4 of the total. According to the survey, about 1/3 of the daily life expenditure of many consumers is completed by relying on Third-party payments on mobile devices. 1 in 4 consumers spend weekly on mobile devices, with the majority of consumers in the Asia-Pacific region. In China, up to 88% of people use Third-party payment software such as WeChat and Alipay to complete online mobile shopping, ranking first in the world. Therefore, the use of Third-party payments has become an unstoppable trend and has gradually become a daily behavior of people.

Through the analysis of the existing data, it can be inferred that the number of mobile Internet users in China exceeds the number of computer Internet users to a large extent. Thanks to the development of the mobile Internet, Third-party payment has developed rapidly. As a traditional shopping method, offline shopping is through face-to-face transactions between consumers and sellers, and the exchange is completed with cash. With the continuous improvement of the monetary system, bank cards, credit cards gradually into the public's field of vision, with the help of the rapid development of the Internet, due to its convenience, people have increased the use of credit cards, bank cards Reduced use of cash. With the development

and popularity of high-speed Internet, more and more users do not carry cash or bank cards when they go out. When ensuring that there is a balance in Third-party payment APP software (such as WeChat and Alipay), online payment can be made quickly with the help of certain technologies, offline payment can also be realized in specific scenarios.

At the same time, more and more traditional enterprises are gradually transforming to the e-commerce model, and the application and popularization of high-speed Internet have promoted the development of e-commerce. With the proposal of China's Internet plus model, more and more companies have responded to the call to adopt this model and began to gradually move from offline to online. Because of the gradual popularization of the e-commerce model and the small initial investment compared to the traditional business model, many enterprises have achieved great economic benefits. Therefore, the vigorous development of e-commerce is also closely related to Third-party payment. The development of e-commerce has also promoted the formation and improvement of Third-party payment to a certain extent. With the development and wide application of network finance and computer network technology, digital signals have gradually replaced paper as a monetary carrier of information. Third-party payment has also gradually changed into the public's consumption habits, making the payment method for the purchase and consumption of goods faster and more flexible.

In recent years, Internet finance has flourished, largely thanks to Third-party payments. Although Third-party payments improve the convenience and experience of public life, it is undeniable that Third-party payments have a certain impact on the money supply. First, it changes the speed of money circulation, to a certain extent, it has an impact on the demand for money, further affecting the money supply. In addition, the controllability of the base currency is affected by Third-party payments, and the currency multiplier also has a certain impact, which has a more obvious "substitution effect" for the currency in circulation". Ultimately, the "substitution effect" has an impact on the currency in circulation and the transmission mechanism of China's monetary policy. For the public, Third-party payment has changed payment habits and lifestyles, and has obviously replaced cash and demand savings. This is a big leap for the whole society. The "paper money era" that people often refer to in the past is now gradually being replaced by the "digital currency era".

By studying the impact of Third-party payments on the money supply, the transmission mechanism of monetary policy is derived, and its safety and effectiveness are discussed and studied, so as to exert its scale effect and promote the development of financial innovation and inclusive finance Give full play to positive externalities to improve socio-economic conditions and overall welfare levels.

At present, the development of China's mobile payment market is summarized as follows:(1) The scale of mobile payment users has gradually expanded, and the "mobile payment habits" of users have gradually formed and developed the proportion of mobile payments in overall payments is increasing. (2) The application scenarios of Third-party payment are gradually expanding. From the initial online shopping, to offline supermarket shopping, restaurant dining, taxi software, sharing services, brushing QR codes to take public transportation, etc., Third-party payments are used in almost every scenario. (3) Mobile payment is booming in China, and several mobile payment providers have initially formed a pattern of giant monopoly market, and have fully developed the use of users, but for the merchant market There is still a lot of room to be explored.

## 2. The Impact of Third-party Payments on the Money Supply

Third-party payments have a more widespread impact on the money supply. We need to clarify the preconditions for dividing the overall level of money: First, there are more obvious differences in liquidity and profitability levels for most financial assets in the market. Second,

there is a clear line between financial assets. Because Third-party payments rely on high-speed Internet, their low transaction costs lead to their higher liquidity, making it easier to convert between liquid assets and reducing the difference in liquidity between financial assets.

Third-party payments will have an alternative effect on the level of Chinese people's currency, which blurs the boundary between currency levels in the overall structure, thus affecting the overall level of currency definition. The liquidity and variability of China's existing financial assets have also been affected by Third-party payments and have decreased. Before the emergence and development of Third-party payments based on electronic cash, the conversion between RMB held in the form of paper money and demand savings had obvious time costs, transportation costs, and labor costs. Third-party payments are introduced, through Third-party payments, the public can take advantage of the high liquidity of electronic money, so that all levels of currency can be quickly switched. For example, Third-party payments, mainly represented by Alipay and WeChat, have greatly reduced the convenience and cost of payment compared with the traditional cash shopping methods in the past.

Tracing back to the source, according to Keynes's theory of money demand, money demand is mainly divided into three motivations: trading motivation, prevention motivation, and speculation motivation. The function form of the theory of money demand is  $M=MD/P=L1(y)+L2(R)$ . Monetary demand, which is indicated by M1 for trading motives and precautionary motives, is affected by income levels. M2, used to denote the demand for money to satisfy speculative incentives, is primarily influenced by the level of interest rates. L1 represents the functional relationship between M1 and income (y), and L2 represents the relationship between M2 and interest rate (R).  $M=MD/P$  represents the actual monetary demand [4]. Suppose that money has an equal supply of money and demand in the short term. Therefore, the existence of Third-party payments will affect people's money demand factors, which will have a certain impact on the money supply. The public's demand for cash is due to the cost of switching between non-cash assets and cash, and the emergence of Third-party payment platforms has greatly reduced this cost. Therefore, with the popularity of Third-party payments, the public's demand for cash will gradually decrease, that is, the demand for money (M1) generated by transaction motivations and prevention mechanisms will decrease. In addition, with the continuous expansion of the Third-party platform business, Internet financial products with higher interest rates than bank deposits have emerged. According to the assumptions of economically rational people, people are more inclined to reduce cash and turn to Third-party payment platforms for investment. On the other hand, Third-party payments for electronic money obscure the definition between financial assets. Third-party payment models are extremely convenient, and the variability of financial assets is reduced by Third-party payments. Therefore, in the future information age, in electronic money, most financial assets are likely to remain in the same form.

In 1917, Pigou published *The Value of Money*, proposing the Cambridge formula, which clearly explained the amount of money supply (m), the proportion of money wealth (k), and the level of price (P) Quantitative relationship with the form of total income (y):  $m = KPY$ , where K represents the proportion of wealth held in monetary form to total nominal income. In the Cambridge equation  $M=KPY$ , K represents the proportion of wealth that people are willing to hold in monetary form. Combined with the current era background, with the emergence of Third-party payment platforms, due to the increase in their payment convenience and popularity, people are less and less likely to make cash payments, therefore K decreases, as can be seen from the Cambridge equation, the money supply is proportional to the coefficient K, and K The decrease inevitably leads to a decrease in the money supply m.

### 3. Theoretical Analysis of the Effect of Third-party Payments on the Speed of the Money Supply

The cash transaction volume theory, proposed by economist Irving Fisher, is also known as Fisher's equation. The theory clearly explains the quantitative relationship between the quantity of money ( $m$ ), the total volume ( $T$ ), the price level ( $P$ ), and the velocity of money ( $V$ ):  $MV = PT$ . Fisher believes that the speed of money flowing is determined by the technical system. Since the rate of change in technology and system is relatively slow in a short period of time, it will affect the speed of currency circulation in a long period of time, and in a short period of time, we can regard the speed of money circulation as a constant. As can be seen from the variable form  $M = (PT)/V$  of Fisher's equation, the total volume ( $T$ ) can be considered a constant value for a short time. Thus,  $M$  is proportional to  $P$  and inversely proportional to  $V$ . In the era of great changes in transaction methods, the emergence of Third-party payments will inevitably accelerate the speed of currency circulation. Therefore, theoretically, the increase in the speed of money circulation will lead to a decrease in the money supply.

### 4. Theoretical Analysis of the Effect of Third-party Payments on the Currency Multiplier

Starting from the definition of the money multiplier, the formula given for the money multiplier is as follows:  $m = (c + 1) / (c + e + r_t * t + r_d)$ , where  $c$  It refers to the ratio of currency  $C$  in circulation to demand deposit  $D$ , that is, the cash leakage rate.  $e$  refers to the excess reserve ratio of commercial banks.  $r_t$  is the time statutory reserve requirement ratio of commercial banks, and  $t$  is the ratio of demand deposits to time deposits.  $r_d$  is the statutory reserve ratio of demand deposits of commercial banks. Due to the timeliness of the transfer and payment functions of the Third-party payment system, people are increasingly inclined to shop online or transfer directly online banking, which accelerates the settlement efficiency of funds and makes the demand deposit ratio decline. The demand for cash has been greatly reduced, and for commercial banks, excess reserves have declined, and as a result, the ratio of demand savings to term deposits has decreased,  $c$  decreases, resulting in a decrease in the excess reserve ratio  $e$ , which increases the currency multiplier  $m$ . In the case of a basic currency unchanged, the money supply increases.

### 5. Countermeasures and Recommendations

Up to now, according to the new rules, China's central bank has established a customer reserve system for domestic Third-party payment platforms to reduce the operational risks caused by the precipitation of Third-party payment funds. In the future, we ourselves should also pay more attention to the compliance operation of Third-party payment institutions to prevent and control the operational risks and uncertainties that may arise from Third-party payment institutions on the entire macroeconomic development of China, on the basis of relatively stable macroeconomic operation. Further enhance the driving force of Third-party payment institutions for China's macroeconomic development. At the same time, it is also necessary to pay attention to its impact on China's money supply situation to avoid the negative impact of Third-party payment institutions on the implementation of monetary policy.

The impact of Third-party payments on the speed of currency circulation needs to be closely monitored. If the capital market is encroached upon by Third-party payments, it may lead to inflation, and the negative factors will seriously affect China's main economic indicators. The cash market will also be more obviously replaced by Third-party payments. After the implementation of monetary policy, whether it expands or shrinks, changing the size of the money supply to adjust will become the only option for monetary authorities. However, it

should be made clear that if expansionary monetary policy begins to have a positive impact on the Third-party payments market, the policy will lead to the gradual development of the Third-party payments, cash and cash markets. Once monetary policy has been implemented, monetary authorities must take into account the direct government's direct impact on Third-party spending. At the same time, the regulatory role of Third-party spending on the money supply is also a concern, so as to effectively ensure the effectiveness of monetary policy.

Third-party payment electronic money will be included in the national monetary classification, and unified supervision and management will be carried out. In addition, the government should gradually standardize the operating licensing mechanism for Third-party payments to ensure the competitiveness of market players. Once the above problems are solved, Third-party payment will be able to significantly improve the efficiency of social capital to a large extent, thereby effectively promoting economic and social development.

If we want to improve the risk prevention of Third-party payments, we cannot do without the supervision and guidance of the central bank. The work of the relevant regulatory authorities must be carried out in the following areas: First, special financial technology industry policies or standards must be formulated and introduced. The second is to smooth the handling channels for consumer consultation and appeals of financial institutions, and improve the operation mechanism of complaint management.

The high-quality development of China's economy is inseparable from the high-quality development of the payment industry, which is the foundation of the national economy, and its high-quality development needs to be strictly supervised and escorted. Creating a good payment environment is closely linked to the efforts of every consumer, establishing, strengthening and improving our risk supervision. On the basis of maintaining a legal, reasonable, rational and orderly attitude and participating in various financial activities, every citizen should also enhance their awareness of rights and responsibilities and risks. We should also recognize that while we can enjoy the satisfaction of the benefits, we must not forget to establish a sense of risk. In the process of daily financial activities, we should stay away from illegal financial activities and constantly improve our vigilance, and learn to use the law to protect the legitimate rights and interests of ourselves and others.

Today's society is committed to building a sustainable, healthy and win-win payment security ecosystem, and Third-party payment institutions themselves have major responsibilities and play an important role. With the rapid development of information technology and the rapid changes in the Internet environment, Third-party payment institutions need to continue to work the risk research of their own payment systems, strengthen risk management, and strictly access merchants in the approval of merchants. It is also necessary to find a balance between service innovation and normative risk.

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