

Innovative thinking on the excess growth of money supply in China

Zeng Kanglin, Xu Peiwen, Luo Jing*

It is not appropriate to substitute M_2 /GDP for the Financial Interrelations Ratio (FIR) proposed by Goldsmith. FIR is mainly used to indicate the degree of financing through the market. M_1 and GDP are closely related, the growth of M_1 from 1992 to 2012 in China was commensurate with the growth of the economy and price, and there was no so-called currency over-issuance, what was over-issued was quasi-money. We should distinguish between money and quasi-money, and focus on the correlation between savings and investment, money, substitutes for money, and the substitution relationship between quasi-money and securities.

Keywords: FIR, M_2 /GDP, Excess Supply

1. Introduction

In recent years, China's annual increase of money supply increased rapidly. The "Monetary Statistical Review of 2012" issued by the People's Bank of China shows that the supply of broad money went up to 97.4 trillion yuan at the end of December, 2012, which accounted for 25% of the global money supply, ranking first in the world—higher than the United States and the Euro supply. The new release of M_2 in China is about 12.26 trillion yuan, which accounts for 46.7% of new global money. Assuming that money supply grows by 13% in 2013, then 110 trillion yuan will be issued, which will increase more than 13 trillion yuan over the preview year and will exceed the sum of newly released money for the rest of the world.

That China's issuance of currency accounts for half of the global issuance of additional money over the same period is rare in the history of world economic development. Its growth rate exceeds not only that of developed countries, but also many developing countries. How should we think of the rapid growth of China's money supply, or the relative increase of M_2 /GDP? Is there a currency over-issuance? Further exploration that takes into account the actual conditions in China is needed. This paper reviews the research on the currency issuance in recent years and gives an interpretation on the reasonableness of substitutions for FIR. On this basis, we discuss which level in the money supply is closely related to the GDP and argue for the need for innovative thinking on the study of currency over-issuance.

* Zeng Kanglin, Professor, Southwestern University of Finance and Economics, Chengdu, China; Xu Peiwen (Corresponding Author, email: xupeil3680@163.com), Beijing Branch, Agricultural Bank of China; Luo Jing, Postgraduate Student, Southwestern University of Finance and Economics, Chengdu, China.

2. Domestic research on currency over-issuance in recent years

China's domestic research on currency over-issuance began in the 1990s and most of the research is tied to the traditional currency trading equation: $MV=PY$. Most researchers follow the classic equation and think that the velocity of money (V) depend on factors such as social systems and consumer habits while the output level (Y) is subjected to the productivity level. In the short term, V and Y are stable. In the long run, an increase in the money supply will lead to an increase of price levels. After the simple mathematical processing of trading equations, we get: $\Delta M - \Delta Y = \Delta P$. When the growth rate of money, ΔM , is higher than the growth rate of economic growth, ΔY , then $\Delta P > 0$, which means the price level rises or vice versa. For these reasons, many researchers calculate the domestic supply scale of currency over-issuance with the equation $\Delta M - \Delta Y - \Delta P$. It can be said that these researchers' idea about excess money supply is based on the standard of money demand functions determined by the basic trading equation. If the size of the money supply in real economic life is greater than the value calculated by the money demand function, it means that there is an excess money supply. If the excess money supply doesn't lead to inflation, it means money is lost.

The earlier research about the issue of China's currency loss is Mckinnon (1993). He found in his research that the proportion of China's fiscal revenue in GNP decreased from 34.8% in 1978 to 18.5% in 1991. However, serious inflation had not appeared in this period. According to his ordered theory of market economy, only under the condition where central financial institutions are balanced can the market achieve steady growth. Otherwise, the inflation caused by fiscal imbalances will curb its growth. This particular phenomenon in China is known as the "mystery of Chinese currency." Following this, Chinese scholars interpreted this mystery as follows: the growth rate of money supply exceeds the sum of output growth rate and inflation rate. Academic research about China's excess money began to explain the mystery. Generally speaking, there are four theories to explain the mystery of China's money supply: first is the theory of an enhanced degree of monetization; second is the lagged effect theory; third is the theory of forced savings; fourth is the theory of currency conversion. Although these four theories have differences, they all answer the question of reasons about excess money and are based on the real economy in order to study the excess money. Such studies reflect the realities of 1990s and are convincing to some extent.

In 21st century, there is great progress in the study of excess money supply through academic studies and practical departments, which are mainly reflected firstly in the mature "currency slack method" of foreign studies that is used to measure the extent of an excess money supply. Second is empirical research. The method of "currency slack" put forward by Roffia and Zaghini (2007) has three assumptions: first is the balance of supply and demand of the money market: $M_2 = M_d$. Second is that currency demand is a function of the price level, national output, and the real interest rate: $M_d = f(P_t, y_t, i_t)$. Third is that the amount of currency over-issuance is the difference between the amount of the real money supply and the equilibrium value: $CM = M_2 - M_d$. Both M_2

and M_d in the third assumption of this method are stock, which is more scientific compared with the analysis of M_2 and GDP, the relationship between stocks and flows. Moreover, the second hypothesis includes the variables of economic growth, price level, and real interest rates, which is a major step forward.

In related empirical research, Song (2012) measured relevant economic variables, especially virtual economic variables with the method of “currency slack.” He concluded that the excess money supply in Guangdong Province has a positive impact on the virtual economy in this region and he also put forward relevant policies. In addition, Zhang (2012) measured the excess money supply by the method of “monetary slack” with annual data from 1991 to 2010 as the sample. He also performed empirical analysis of the impact of excess money on inflation with ADF tests, cointegration test, the Granger causality test, VAR model, impulse response function, variance decomposition, and others. The results show that the phenomenon of excess monetary supply exists in China. This phenomenon has not only had a positive impact on inflation, but also the duration of the impact is longer.

Under the impetus of empirical research, some substantive departments candidly express their views on the subject of “currency over-issuance” and the expansion of M_2/GDP . The research group at the Nanjing Branch of the People’s Bank of China (2013) argues that the assertion that currency over-issuance exists in China lacks adequate scientific basis for the following reasons: GDP cannot cover all the commodities that require currency transactions; the reforms and the evolution of market-oriented economic operations require a lot of additional money for support; in addition to acting as a medium of exchange, M_2 also has the function of storage. The research group emphasizes that the high value of M_2/GDP has an inherent rationality. First, higher value reflects the general development trend of global credit currency. Second, higher M_2/GDP is the external appearance of the imbalanced economic structure in China. Third, they conclude that it is the inevitable result of a shortage of financial assets. Fourth, over-issuance doesn’t necessarily lead to serious inflation. In addition, they refute the arguments of a few typical issues about “currency over-issuance” on the basis of the theory of money supply and demand, as well as the combination of the experience of China’s economic and financial development. On this basis, they judge the actual extent of currency over-issuance.

Based on the above analysis, it is worth pondering to measure the adequacy of the excess supply of money with the absolute value and growth rate of M_2 and GDP. We must examine whether it is reasonable to replace FIR with M_2/GDP .

3. FIR has a specific meaning, and cannot be substituted with M_2/GDP

In Goldsmith (1969)’s theory of financial structure, he put forward the idea that the Financial Interrelations Ratio (FIR) could be used to measure the degree of monetization. This index has been widely used in later studies. According to Goldsmith’s definition of FIR, i.e., $FIR = M_2/$

GDP, Zeng, Lv, & Xu (2013) perform comparative analysis of M_2/GDP in China and select other countries. He find the extent of monetization in China to be higher than that in mature markets of Western economies and emerging market economies. Can this inference really stand up to scrutiny? We must start with Goldsmith's definition and elaboration of FIR in order to answer the question. Goldsmith suggests that study of financial theories is needed to explore the major economic factors that determine the financial structure, financial instruments stock, and financial transaction flow. At the same time, how these factors interact should be clarified in order to promote financial development. He also notes that financial institutions and various kinds of financial instruments constitute a country's financial structure, which are different from the basic structure of economy that is reflected in national wealth. He also indicates that this financial structure is the country's financial superstructure and its relationship with the economic basis is reflected through FIR. Therefore, Goldsmith's definition about FIR can be expressed as follows: (the total stock of financial assets on one time point)/(total value of the physical assets + net foreign assets).

First, FIR indicates the marketization extent of financing under the condition of a market economy, which means that FIR reflects the relative size of external and internal financing used by a country's families, businesses, and government. External financing includes equity and debt financing, such as issuing shares, bonds, or bank credit. As long as the relative size of external financing is larger than the national output, the dependence on investment is less than that of saving, which reflects a rising marketization degree of a country's financing. Two phenomena generally exist in countries that have a higher degree of economic monetization: a closer relationship between the real economy and monetary economy, and higher dependency of the economy on the market. Therefore, the financial interpretation of economic monetization should reflect financial marketization. Thus, we can make the inference that countries with a higher degree of financing marketization have more developed financing. Therefore, we think FIR can well reflect the degree of development of the financial sector.

Second, FIR also reveals the correlation between economic development and the market value of financial assets in a market economy. We generally believe that the market value of financial assets has an inverse relationship with the interest rate, which means the rising (or falling) interest rates will inhibit (or stimulate) the investment scale and cause the reduction (or expansion) of national output. Therefore, the correlation between the market value of financial assets and economic development can be summarized as the mutual influence of variables: asset prices, interest rates, investments, economics, and so on. In a market economy, people's expectations determine the mutual interaction of these variables. Thus, it can be said that a change of M_1 , to a certain extent, reflects changes in people's expectations. When the proportion of financial instruments in tangible wealth increases, it that indicates people's have high expectations for the economy, and vice versa. Therefore, FIR can be considered a confidence index.

FIR can act as a significant indicator of M_2/GDP to measure the economic monetization degree. It is reasonable for some counties to measure the economic monetization with M_2/GDP at a particular development stage. However, along with the changes of an objective economic environment, the phenomenon of mismatch between M_2/GDP and economic monetization has become increasingly evident for China in the 21st century. From the point view of the World Bank's data, amongst the world's top 25 countries of M_2/GDP , most are countries with higher per capital income levels. Countries that have a deep mire of debt crisis are included, such as Portugal and Spain. Germany, with the most prudent monetary policy in the world, is also included. This suggests that an increasingly high M_2/GDP has close relationship with resident income, but is less correlated with an economic monetization degree. We need to point out that when some scholars explain the relationship between investment and output, they regard M_2 as investment while GDP is used to reflect output. In recent years, the ratio between the two factors is high in China and M_2 is about 1.8 to 1.9 times GDP. It is accordingly said that investment of 2 yuan with an output of 1 yuan or investment of 1 yuan with an output of 0.5 yuan. Whether this understanding is reasonable or not is worth studying.

4. Among the money supply, M_1 has closer relationship with GDP

The issue of which indicator has a closer relationship with GDP among the money supply M_1 and M_2 has plagued our researchers. Marshall (1890) pointed out that the money supply in the community included "currency as a medium" and "currency as an asset." Zeng (2002) also made further elaboration. Based on the above consideration, we suggest that M_1 has a closer relationship with GDP. From the perspective of the relationship between the debtor and creditor as our point of analysis, money is in the scope of assets and it includes "currency as an asset" and "currency as a medium." The former refers to currency that can increase in value, while the latter refers to currency that has the role of payment, which correspond to the potential purchasing power and real purchasing power, respectively. In financial statistics, currency that has potential purchasing power is called "quasi-money": M_2-M_1 .

Since M_1 has a closer relationship with GDP, the Financial Interrelations Ratio (M_2/GDP) can indicate the marketization of financing, but cannot accurately describe the links between input and output. Therefore, we think we should investigate the change of the relationship between M_1 and GDP to determine whether the money supply is excessive. In this regard, we use the data from 1992 as the starting point for our study because China's reform and opening up actually began after Deng Xiaoping's speech in 1992 during his southern tour. Reform and opening up has had a substantial impact on the money supply and economic development. Meanwhile, securities trade must have additional money to supply. But as far as we know, the financial statistics department do not include the currency that acts on securities trading in the money supply statistics. Moreover, China's economic cycles and political cycles are closely related. During the National People's Congress in 1992, three

important decisions were made. First, the concept of “Guaranteeing GDP Growth of 8%” was put forward; second, the establishment of a socialist market economic system was proposed; and third, the basic framework of a Socialist Theory with Chinese Characteristics was established.

In this regard, we make use of the twenty years of *China's Statistical Yearbook* from 1992 to 2012, compiled by National Bureau of Statistics for analyzing the following indices. The first is the M_1/M_2 . This index shows the proportion of the currency that serves as a means of payment and purchase in the money supply. M_1 is the real money in circulation while M_2 measures the broad money supply in China. Over these 21 years, the readings on the index of M_1/M_2 stayed between 36% and 45%, with relatively little volatility, indicating that currency that acts as a medium is stable. Second is the GDP/M_1 . This index shows the proportional relationship between GDP and the currency in circulation. GDP is an integral part of product value. Since the value of products is reflected monetarily, M_1 has a closer relationship with GDP. Over the same period, the average ratio was 1.92:1. The highest was 2.53:1 in 1995 while the lowest was 1.51:1 in 2010, which had an overall downward trend. Therefore, the proportion of the money that acts as a medium in the total money demand that guarantees the national output showed a downward trend. The extensive development of money substitutes such as credit cards is an important reason for this phenomenon. Third is the index of GDP/quasi-money. Quasi-money is money that is not in circulation in the money supply. It is mainly the reserves or savings of certain members of society. Therefore, this index shows the proportional relationship between GDP and reserves or savings of the members in society. During this period, the average of the rate has been 1.22:1. The highest was 1.97:1 in 1992 while the lowest was 0.78:1 in 2012. The data shows that early in these 21 years, bank deposits were the main means of saving, since the other forms of credit were underdevelopment. In the following years, the other forms of credit have been rapidly developed and the people's dependence on bank deposits is reduced. Thus, we get two inferences: first, the development of credit accelerates financial disintermediation, especially the disintermediation of the banking system. Second, the credentials securities such as valuable securities can substitute for “currency that acts as an asset.” Fourth is the cycle growth rate of M_1 . The so-called “cycle” is the comparison between the study period and the previous period. In these 21 years, the average annual growth rate has been 18.8%. The cycle's growth rate reached its highest value, 39%, in 1993, while saw the lowest value of 6% in 2012. This suggests that the growth rate of money in real circulation is declining. Fifth is the cycle growth rate of GDP. This is the relative growth range of GDP in the study period compared with previous periods. In these 21 years, the average annual growth rate has been 9.9%. The highest value was in the year 1993, exhibiting an increase of 14.2% over the previous year while the lowest wain 1999, with a value of 7.6%. This shows that China's GDP growth has been steadily growing. Sixth is the retail price index, which indicates the changing extent of consumer prices in China. In these 21 years, the average annual index has been 103.6, with maximum value of 121.7 in 1994 and a minimum value of 97 in 1999. This indicates the price level of consumer

goods is relatively stable. Seventh is the price index of the industrial producer, which reflects the changing level of price when purchasing raw materials for investment. In these 21 years, the average annual index was 106.4, with the highest value of 135.1 in 1993 and the lowest value of 92.1 in 2009. This indicates the production costs of producers are not stable under the influence of external factors.

5. Comparison of M_2 between China and Japan

The value of M_2/GDP in China is not the highest in the world. It is higher in Japan. There are two reasons for this: first, the saving rate is higher in Japan, and second, the proportion of indirect financing is larger in Japan than in China. This is a major issue worth studying: how to analyze and compare the situation of M_2/GDP between China and Japan?

For the different values of M_2/GDP between China and Japan, the first factor to examine is the gap between the statistical standards in the two countries. At this stage, M_2 in China consists of cash, demands deposits of enterprises, fixed deposits of enterprises, savings deposits of residents, housing fund center deposits, and the deposits of non-deposit taking financial institutions in the deposit-taking financial institution. M_2 in Japan includes banknotes, coins, demand deposits, and fixed deposits. According to the official website of the information database for the World Bank, the index contrast between China and Japan indicates that in these 36 years between 2001 and 2007, the index of M_2/GDP reached its peak in 2000. In the following year of 2001 to 2007, the index remained at a relatively stable level. It began to rise until 2008 and closed at its highest point in history in 2012. Combined with prevailing economic and financial environment analysis, the two historic peaks in 2000 and 2012 were deprived from the expansionary monetary policy after the financial crisis. Moreover, according to the World Bank data, the rate of M_2/GDP in Japan reached 1:2 in 1994 and then in 2000, it reached the highest peak in history with a proportion of 1:2.4. However, from the point of view of growth rate of M_2 , in the first 10 years during the past two decades (1991–2000), the average growth rate of broad money supply was 3.84% while for the next 10 years it was -0.99%. In comparison, from 1991–2000, the average growth rate of broad money supply was 25.3%, while in the following ten years was 18.3%. This indicates that the growth rate of money supply in Japan has been stable while it has rapidly increased in China, especially in the nearly five years since 2008. In 2008, the State Council issued the “Options on the Current Financial Promoting Economic Development” and pointed out that in order to implement a moderately loose monetary policy and promote a steady growth of money and credit, two steps can be initiated. The first is to maintain adequate liquidity in the banking system and to promote the steady growth of money and credit. The target of the annual broad money supply growth should be higher than sum of the growth rate of GDP and inflation for 3% to 4% and strives to reach 17%. Second is to enhance the capital support of central government investment projects by the policy-making financial institutions and commercial banks and to make efforts to achieve the loan target of

more than 4 trillion yuan. The implementation of the policy made the RMB loans of financial institutions reach 4.2 trillion yuan in 2008. Over the continuity of the policy, M_2 has increased by 29.36%, and the RMB-based loans of financial institutions reached 9.6 trillion yuan, which far exceeded the intended target. This indicates China's money supply policy is largely driven by policy.

To analyze the situation of M_2/GDP in China and Japan, three points are worth noting: first is that the money supply in China has continued rising while Japan experiences ups and downs. Second is that the statistical caliber is not the same in China and Japan. The former is narrow and the latter is wide. Third is that the money supply in Japan is mainly driven by the market, while it is mainly driven by policy in China. Therefore, we cannot make a simple comparison of the money supply between Japan and China but to find out the difference.

If the money supply of 97.41 trillion yuan in 2012 is regarded as the base and the growth rate of M_2 is controlled at 13%, then M_2 in 2013 and 2014 will reach 110 trillion and 124 trillion respectively. According to the *Statistics Yearbook of National Bureau of Statistics* (2012), the total population of China was 1.34735 billion at the end of 2011. We assume the population in both 2013 and 2014 was 1.35 billion, then the corresponding per capital currency holdings were 81,500 and 92,100. However, the distribution of M_2 was not uniform and lots of liquidity was concentrated in a few hands. Still, with 2012 as the base year, we assume the growth rate of GDP in China is stabilized at 7% and the growth rate of M_2 is controlled at 13%, then the value of M_2/GDP will be expanded to 1:1.2 by the end of 2015, which will catch up with Japan.

6. Innovations needed in the study of the growth of excess money

Comparing the growth rate of M_2 with that of GDP, we can reach the conclusion that the money supply get excess increase, which is counterintuitive. The paradox is that the supply of money has not fully formed M_1 while quite a lot of money has contributed to forming the quasi-money. Although the quasi-money has potential purchasing power and can be transformed into a means of payment, it is still monetary asset held by the public. Currency, as an asset, not only can increase its own value, but also can be held unlimitedly by people. Under certain conditions, continuing to expand the money supply may be occurring. The question is who has mastered the right of the money supply and to whom is the money supply going? Who can be in favor of controlling such resources? These questions have been beyond the scope of economics and finance. Moreover, it is difficult to examine with logical thinking and research paradigms in the views of Western Economics, such as the proportional relationship between M_2 and GDP. This requires us to combine these concepts with China's reality and to have innovative logical thinking as well as an effective research paradigm. We think three points should be noted in the study of the excess money supply growth.

6.1. Money and the quasi-money should be distinguished

M_1 is the currency that circulates in reality and plays the functions of circulation and payment. Quasi-money (M_2 - M_3) is potential currency and plays the function of saving. M_1 , as a means of currency in circulation and a means of payment, constitutes the money funds in enterprises and institutions and plays a role in purchasing in the commodity exchange. Since the monetary amount depends on the length of circulation and commodities that require for selling and buying, the amount is measurable. In general, M_1 is limited and relatively stable. The quasi-money M_2 - M_3 , as the saving instruments, constitutes the accumulation of income. Despite the fact that accumulation of monetary income can be converted into money funds through distribution, it is still the accumulation of monetary income and its amount depends not on circulation and benefits. Since the benefit is uncertain, its monetary accumulation can be measured and has greater flexibility.

6.2. To focus on the relationship between savings and investment

There are many perspectives to study savings including those of sociology, psychology, and economics. Different perspectives have different characteristics and evaluations. By contrast, we think contemporary research on savings should take the perspective of finance and examine the relationship between saving and investment, as it acts upon monetary funds. Studying the relationship between them is to understand how to achieve equilibrium. Tracing the history of doctrine, we know Wicksell, of the Swedish School, is the first one to combine saving with investment. He analyzed the relationship with general equilibrium theory, the Walras School, as well as Bahm-Bawerk's theory of capital and interest, the Austrian School. Wicksell pointed out that the interest rate was the main reason which affects the balance of saving and investment. Wicksell wants to stress a number of things. First, savings and investments correspond to the capital supply and demand respectively. The balance between saving and investment is actually that of loan supply and demand. Second, the natural rate is a key factor that affects the balance of savings and investments, which is equivalent to the expected rates of capital return, and is affected by the expected market. Third, when the interest rate of currency (real market rate) is lower than the natural rate (expected rate of capital return), the economy is in a phase of accumulation (a phase of expanded investment demand). The increasing demand for loans leads to increases in interest rate, which plays a further role in promoting the growth of savings. Fourth, the growth in savings corresponds to the growth of loan supply. However, interest rate increases will curb the demand for loans in the capital market. The interaction of the positive and negative roles makes the supply of the loan capital achieve equilibrium. Fifth, in the new equilibrium, the prices of commodities and labor remains unchanged. Overall, the hypothesis that the interest rate of currency is consistent with the natural rate is the premise of Wicksell's equilibrium theory about savings and investment. Only when this condition is

met can the balance between savings and investment be achieved through the money supply. Although the interest rate of currency deviates from the nature rate in the reality of economic life, the significance of Wicksell's study that first combined savings with investments cannot be denied.

After Wicksell, a study presented Keynes (1936) about the equilibrium of savings and investment had far-reaching meanings. He combined savings and income with investments and defined savings as the difference between personal income and personal expenditures. We need to note that the "personal" mentioned in the definition refers to social members such as entrepreneurs and employees without government. The investment mentioned in this definition refers to the net additional social capital (I) in a particular stage. In addition, we assume that the savings and unexpected income are S and Q, respectively. Then the sum of savings and unexpected income is the net additional capital: $I=Q+S$. Since the unexpected income is not included in the income, it will not form a deposit. We can get the formula: $S=I-Q$, which means the amount of savings is equal to the difference between the net additional capital and unexpected income. Thus, savings will not necessarily equal to investment. Moreover, Keynes also pointed out that the community groups of savings and investment are not the same and there is not a mechanism to make the savings equal to investment. In his later published book, *General Theory of Employment, Interest, and Money*, Keynes amended the view: $\text{income}=\text{products' value}=\text{consumption}+\text{investment}$, $\text{savings}=\text{income}-\text{consumption}$, thus, $\text{savings}=\text{investment}$.

Keynes's updated view about the relationship between savings and investment is a result of not only changes in his calculation methods, but also those in his view about the mechanism for exploring savings and investment. In the book of *Treatise on Money*, he approves Wicksell's idea that whether the interest rate of money is equal to the natural rate or not is an important factor affecting the balance between savings and investment. He also pointed out that saving is the behavior of consumer groups while investment is the behavior of the entrepreneurial group. There are differences in the size, mechanisms, and effect in these two kinds of behavior. In his book, *General Theory of Employment, Interest, and Money* price stability is a precondition of the natural equality of savings and investment that Keynes referred to. But in real life, price fluctuation is normal. Thus it is difficult to balance savings and investment. Keynes claimed that investment demand could be stimulated through fiscal and monetary policies and the contradiction between increasing saving propensity and the lack of investment demand could be regulated. Therefore, Keynes focused on mechanism establishment of savings and investment to study saving, and reveal the balance of savings and investment.

Different from Keynes, Samuelson examines the relationship between savings and investment from the perspective of macroeconomics. He said: first, depreciation is, to some extent, corresponding with parts of supply and demand. Thus, the depreciation of fixed assets should be included in the scope of enterprise saving. Second, he put forward the concept of "government

deposit” and suggested that the behavior of government saving should be included in the equilibrium framework of saving and investment. Third, he qualified and did empirical analysis of the savings of individuals, businesses, and governments. Fourth, the identical equation of saving and investment was put forward.

Both Samuelson and Keynes admit the possibility of theoretical balance between savings and investments. However, they also recognized the prerequisite of automatic equalization would be difficult to achieve in real economic life. In Samuelson’s view, since the groups, motivations, and conduction mechanisms of savings and investment are different, it can achieve equilibrium through financial monetary policies.

Following the theoretical logic of a classical writer’s study on the balance of savings and investments, we can draw the following: saving is a part of income and thus a part of the social product value. Not only do households, individuals, and businesses have savings, but so do governments. In order to balance savings and investments, fiscal and financial policies must be applied to different actors, different motivations, and different transmission mechanisms.

In China, investment that acts as a form of currency is mainly from the saving that acts as a form of money, but not entirely in this form. Studying a certain period of economic thought, if the monetary form of investment is greater than the form of savings, then the surplus parts can be regarded as excess money supply. The reason why we say it can be regarded as such is because many factors cause an excess money supply, but not investment. Moreover, the monetary form of savings cannot be entirely reflected in the additional money supply in the current year. They may be manifested in the money stock over many years. But this does not cause us to draw the conclusion that the important factor of excess money supply is not entirely determined by the balance of monetary form savings and monetary form investment, but by transforming currency to capital through the additional money supply to take advantage of resources and develop the economy.

6.3. To study the substitution of money and money alternatives as well as quasi-money and securities

Money substitutes, such as credit cards, can be an alternative to currency and play the role of payment. They have one thing in common, which is built on the basis of bank credit. Securities that have the role of preservation and appreciation under certain conditions are able to replace currency and play the role of saving. Research regarding whether the money supply excessively increases must examine alternative dynamics. We noted previously that in the past 21 years from 1992 to 2012, M_1 , acted as a payment instrument and had a downward trend. The main reason is the extensive development of currency alternatives. It was also pointed out that in the several years over the past 21 years, the form of people’s saving was bank deposits in earlier times, while in the latter years, people’s dependence on the bank deposits decreased due to the development of other credit forms. This indicates that currency M_2-M_1 , acts as an

asset and has a direct alternative relationship with other credentials. Generally speaking, if all kinds of credentials can be recognized and accepted by the public, then the demand for money that acts as an asset will be reduced accordingly. On the contrary, the demand for this form of money will increase correspondingly. This cannot be ignored in examining the excess money supply.

Some researchers calculate the amount of excess money supply with the absolute value of M_2 minus the GDP in a given year. But such logic and research paradigms form a paradox. First, M_2 is the stock of money supply over the years while GDP is the flow of a given year. We don't know what the value is if we calculate the value at one point minus the value over a given periods. Second, the stock reflects the precipitation of currency and flow reflects the output. How can we explain that the excess money supply is equal to the value of historical precipitation minus the GDP in a given year. Third, the historical precipitation amount of money M_2 does not entirely affect the output of a given year. Since a significant portion of assets were transformed into an existence as an asset. Moreover, some of them went to foreign markets and thus cannot influence the domestic output. Fourth, the money flow has speed. The change of the speed influences the flow of money, then the flow acts on the output. Since the flow has changed, how could the stock possibly remain unchanged?

7. Conclusions

It makes some sense for some countries to show the extent of economical monetization with the indicator of M_2/GDP at a particular development stage. However, along with changes of the objective economic environment, the mismatch phenomenon of M_2/GDP with economic monetization is increasingly evident. If we still measure the monetization degree with this indicator, we will draw the conclusion that the monetization degree in China is higher than that of Western countries with mature markets as well as higher than some emerging market economies. This conclusion would neither withstand scrutiny nor be copacetic with China's national conditions since the increasing value of M_2/GDP in China reflects the promotion degree of market financing.

Research on the excess money supply should span across a substantial period and should pay close attention to the turning points of indices. We regard the 21 years from 1992 to 2012 as the period span and divide these 21 years into the first decade and second decade on the basis of economic cycles and political cycles. In the previous decade, a major factor that leads to a significant increase in the money supply is the introduction of foreign investment and export encouragement, while in the latter 11 years, the major factor is the development of real estate and associated "land financing." In the previous decade, the turning point was 1998, when the money supply was in excess of 10 trillion for the first time. In the latter 11 years, the turning points were 2005 and 2009, when the money supply was 30 trillion and 60 trillion respectively.

During the past over 21 years, the growth rate of M_1 has been basically consistent with the sum of the rate of economic growth and the rate of price levels, without the phenomenon of excess supply. The real over-supply is when money acts as an asset, namely quasi-money. We think of when money, which acts as asset, can be regarded as the savings of market participants. Then the transforming process of this part of savings into the excess-supply of money is actually the process of achieving economic development by mobilizing social resources. At the same time, assets will be formed in the process. It is worth noting that the efficiency of capital formation determines the ability to repay debts. If we develop invalid assets dependent on an excess money supply, the corresponding liabilities will be repaid by future generations.

Under certain conditions, there is a possibility of expanding the money supply. The question is who has the right to supply money and to whom is the money supplied. Who can be in favor of control over such resources? These questions have been beyond the scope of economics and finance. Moreover, it is difficult to examine such issues with logical thinking and research paradigms from Western Economics. In all, we think that future research on the excess money supply should pay attention to the following notes: (1) money and quasi-money should be distinguished; (2) to focus on the relationship between savings and investment; (3) to study the substitution of money and money alternatives, as well as quasi-money and securities.

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