

AN EMPIRICAL STUDY ON THE INFLUENCE OF MONEY SUPPLY ON SHARE PRICE

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ABSTRACT

Money supply is an important factor affecting share price. In order to explore their relationship, the paper uses the monthly Shanghai Composite Index data and monthly money supply data from January 2008 to July 2017 to make an empirical research. The results show that the money supply have an great influence on the change of share price, in which the M1 has a significant positive impact on the share price, while the M2 and M0 have no significant impact. the M1 has brought a significant impact on opening price and the highest price, but have no significant impact on the closing price.

KEYWORDS- *Linear regression model, Money supply, Stock price;*

I. INTRODUCTION

Since reform and open to the outside world in the 1978, China's economy has been growing geometrically, expanding its economy and becoming the world's second-largest economy in 2009. With the continuous expansion of economic scale, the volume of circulation in the market also gradually increased. From the founding to 1990, the M2 balance of China's broad money supply was 1.53 trillion, and by the end of August 2017, the broad money supply balance M2 up to 164.52 trillion and nearly 100 times times.

The Shanghai Stock Exchange and the Shenzhen Stock Exchange were established in 1990 and 1991 respectively, and the price fluctuation showed a distinct stage during the 27 years of China's stock market.

From 1999 to 2005 in the first half of the price is in a state of shock, fluctuates up and down around 1500 points; In the second half of 2005, China's stock market began to brew a super bull market, up to 6,000 points. 2008 was affected by the U.S. subprime mortgage crisis, entered the bear market until the first half of 2009 has been in the downward state. The second half of 2009 to 2015 years the price is in a state of shock again, the Shanghai index in 2000-2000 points swings back and forth. Beginning in the first half of 2015, the bull market again, to a maximum of 5600 points., and then in a bear market in the second half of 2015, fell to 3000 points. And it tend to stability until 2016. The M2 of broad money supply and the M1 of narrow money supply are in line with the change direction of monthly trend of Shanghai index and stock market, especially in M1. Theoretically, the change of money supply will affect the stock price through certain conduction mechanism. So, which level of money supply have more significant effect on the stock price ? What is the main effect on the price of the stock? The theoretical analysis of this paper is based on the transmission mechanism of monetary policy and analyzes the influence of M0, M1 and M2 fluctuation on the stock price index. The empirical content includes the use of linear regression model to measure the amount of money supply in a certain period of time as an indicator of monetary policy, to empirically analyze how monetary policy affects the stock market, and further to analyze what level of the money supply will affect the stock price, which affects the price of the stock.

The transmission mechanism of monetary policy refers

to the way that central banks use monetary policy instruments to influence intermediary index, that is, from the change of money supply to output, employment, price and inflation. The complexity of modern economic investment and financing structure has changed the structure of money supply and demand greatly, which affects the implementation and efficiency of monetary policy, and the function of the stock market to transfer monetary policy is also beginning to appear. The theory of monetary policy transmission mechanism is developing continuously, various schools have different views on the transmission mechanism of monetary policy, and the channel of the stock market to the monetary policy transmission can be summed up as the channel of interest rate, Q value channel, credit transmission channel, the wealth effect channel of the life cycle theory, the substitution effect and the channel of the inflation transferring effect. We will analyse how the money supply affects the price of the stock market through the credit transmission channel.

When banks lend to companies, they usually demand assets as collateral. Lower corporate net value means fewer assets for borrowers to mortgage. Expansionary monetary policy will lead to higher stock prices and net corporate equity. Banks are lending more, resulting in increased investment and total output. Conduction pathways are as follows: $m \uparrow \rightarrow$ stock price $\uparrow \rightarrow$ corporate net $\uparrow \rightarrow$ loan $\uparrow \rightarrow$ investment $\uparrow \rightarrow$ output \uparrow .

II. LITERATURE REVIEW

i. Foreign related research

Most foreign literatures show that money supply has a significant effect on stock price.

Early, Sprinkel (1964)^[1] through the chart analysis method, Studied the money supply affect stock price in 1918-1962. The results show that changes in the money supply will lead to changes in the stock price. Homa and Jeffee (1971)^[2] by linear regression analysis, it is concluded that the change of money supply is always ahead of a certain period in the stock market index, think mutual effect exists between the two, and the influence relationship is positive. Kandil, Dhakal and Sharma (1993)^[3] under the condition of equilibrium of money

market, the paper concludes that money supply can indirectly affect the price change rate, and the relationship between them is very significant. Some scholars believe that the relationship between the two will vary depending on the length of time and the impact of the financial crisis. Lastrapes (1998)^[4] through the VAR model analysis method to study the meaning, data on money supply and stock prices in 9 countries, such as the United States, Britain, France, Germany and Japan, results in addition to Britain and France, the rest of the money supply changes of seven countries will have a significant effect on stock price in the short time, and the influence relationship is positive. And in a longer time range, the impact on stock prices is not significant. However, some scholars believe that money supply has a reverse impact on stock prices. Berkman (1978)^[5] used the event research method, the first point is that the expansionary monetary policy has a reverse effect on the stock market. Carpenter and Lange (2002)^[6] based on the quarterly data from 1995 to 2002, using co-integration relationship and VECM model to estimate the money demand function, and found that the stock market volatility is larger, the balance of M2 is greater, and the results of the VECM model analysis found that benign development of stock market will slow down the growth rate of broad money supply M2. Andreas Humpe, Peter Macmillan (2009)^[7] by using data from 1965-2005, respectively compared the United States, Japan's macroeconomic variables affect its share price, found that the money supply in the United States with a positive impact on share price, in Japan, it presents a reverse effect. In addition, some scholars believe that the money supply and stock price was no significant correlation between between. Wu (2001)^[8] through the study found that the M2 changes impact on the Singapore stock market is almost zero, under the confidence level of 95%, the narrow money supply M1 will have positive effect on stock prices but lagged. Sara Alatiqi and Shokoofeh Fazel^[9] took the M1 and the Standard & Poor 500 index as the research variables, through co-integration test and granger causality test, found no significant correlation between the two.

ii. Domestic related research

In recent years, China's stock market is becoming more and more perfect, and domestic scholars pay more attention to the relationship between money supply and stock price.

Some domestic scholars believe that China's money supply and share prices have a mutual influence. Shen Hang^[10] Selected the 2010-2015 data and used VAR model to analyze the mechanism of monetary policy in stock market: During the period of relatively stable stock market, monetary policy has a certain influence on stock market, which is the money supply, and then the interest rate, The ratio of reserve requirement to stock price is the least. Yan Dong^[11] selected the monthly data of the money supply and the stock price index from 2004 to 2015, and carries on the empirical analysis through the time series smoothness test, the cointegration test and the Granger causality test. The M1 of the narrow money supply and the stock price index have long been balanced, the stock price index is the Granger cause of the M1 of the money supply, and M1 is not the Granger of the stock price index. The central bank need to pay close attention to the development of the stock market dynamic, flexible use of monetary policy to adjust and control the stock market at the time of national economic policy. Liu Hongtao and Wang Song^[12] used a vector autoregressive model to analyze the effect of money supply on stock market price. The results show that there is a long-term equilibrium relationship between the money supply and the stock market, and the increase of M0 and M1 will have a positive impact on the stock market, but there is a time lag of about four months; The increase in M2 will give a positive impact on the stock market in the short term, but it has a negative impact in the long run. Therefore, when formulating the monetary policy, the government should contact the fluctuation of the stock market, adjust the money supply at all levels, and strengthen the supervision on the speculative behavior of the stock market. Chen Jun, Du Huan (2014)^[13] took the financial crisis as the demarcation point, through the empirical analysis, this paper studies the relationship between the stock price and the money supply before

and after the financial crisis. The study found that before the financial crisis, money supply had no significant effect on stock price, and after the financial crisis, the money supply had a significant and positive effect on stock prices. Zhang Rong (2013)^[14] by studying data from 2000-2012, thought that the bull market and stock market volatility changes in money supply will significantly affect the stock market, but when the stock market downturn in a bear market, the stock market will, in turn, affects the change of M0, therefore, the monetary authorities need to take different monetary policies because of the different level of the stock market. Ji Qingshuai^[15] used Granger causality test and least squares estimation, which studies the relationship between the price of Chinese securities market and the amount of money supply, and obtains the causality between M0, M1, M2 and stock market price. The price of securities market can be explained by money supply M0, M1 and M2, and the change of stock market price is not the cause of the change of money supply. Liu Jingsong^[16] used cointegration test, Granger causality test, error correction model and other econometric methods, through empirical research on how China's monetary policy affects the stock market to draw: Money supply has a great influence on the stock market run, every year new M0 (M1) increase or decrease in direction with the stock market go up drop direction basic synchronization, M1 information can be used to enhance the ability to predict Chinese stock market. But in M1 and does not exist a long-term co-integration relationship between stock market prices.

Some scholars believe that China's money supply has no significant effect on stock price. Wang Haiyang^[17] selected the time series data of Shanghai Comprehensive Index (SP) and money supply (M0, M1, M2) from January 2008 to May 2015 in China, and empirically analyzes the relationship between money supply and stock market price through ADF test, cointegration test and granger causality test. The research shows that there is no long-term equilibrium between the money supply and the stock price index, but the money supply can affect the fluctuation of stock price. Huang Xinqi, Xing Xiufeng, Zhang Wenfang (2010)^[18] believed that in the

long run, the stock price is mainly affected by its own relatively large, and the money supply will only have a short-term impact on stock prices. Jiao Guiming, Liu Zhongming and Zheng Xiaolin^[19] used the VAR model, this paper explores whether there is a strong intrinsic relationship between the money supply in China and the stock market by using cointegration and Ganger causality test. The results show that there is little relationship between the stock market rise and the excessive money supply, and the stock market rally depends on the expectation of the future stock market. Xue Yonggang, Cao Yanming (2008)^[20] and Shi Huanping, Niu Jingni (2009)^[21] through the study found that there is no long-term equilibrium between the money supply and stock prices, by changing the money supply to regulate the stock market, will not be able to achieve what we want. Yu Yuanquan (2004)^[22], used the TSLS analysis on Chinese stock trading volume and stock price index and the relationship between money demand and the empirical analysis, found that the stock market has substitution effect on money demand by establishing the IS-LM model, but the substitution effect IS weak, the transmission mechanism of stock market IS explained and the conduction channel IS not smooth, not for monetary policy changes to make timely and effective response. Jin Dehuan, Li Shengli^[23] (2004) based on the data from January 1997 to July 2003, the paper empirically studies the interaction between the stock market and the money supply in China, and the results show that M2 and M0 can explain the change of Shanghai Composite Index, There is a long-term cointegration relationship between M0, M2 and Shanghai Composite, and there is no cointegration relationship between Shanghai Composite Index and M1.

iii. A brief summary

In a comprehensive sense, most of the literature studies abroad show that money supply can have a positive effect on stock prices, and the domestic scholars' conclusions are different for the Chinese stock market

which is in the development stage. With the development of securities market in China, the sensitivity of securities market to monetary policy has been strengthened, and the conduction of monetary policy has more and more influence on securities market. Therefore, the central bank should use the money supply as the intermediate target to regulate the securities market and flexibly regulate the securities market. But from the actual performance, the relationship between money supply and stock price does not all conform to certain positive correlation or negative relationship.

In this paper, through selecting M0, M1, M2 monthly data and monthly data of Shanghai composite index, using the ADF test, simple linear regression model to research the relationship between M0, M1, M2 and the stock price index.

III. AN EMPIRICAL STUDY ON THE EFFECT OF MONEY SUPPLY ON STOCK PRICE

iv. Data source and Analysis

Since the promulgation of the Securities Law in 1999, the stock market of our country began to standardize and expand gradually. The sample interval from January 2008 to July 2017 is 115 samples. For the money market, select different levels of money supply stock index: Cash M0 in circulation, narrow money supply M1, generalized money supply M2, and the year-on-year growth rate of money supply and quarter-on-quarter growth rate. For the stock market, select the Shanghai Composite Index at the end of the month, the highest price, the lowest price, opening, the previous close, ups and downs, the price as the benchmark study of money supply on the impact of stock prices. All the data in this paper originates from the eastern wealth network and netease finance network, using Eviews7.0 as analysis tool.

v. The performance of money supply

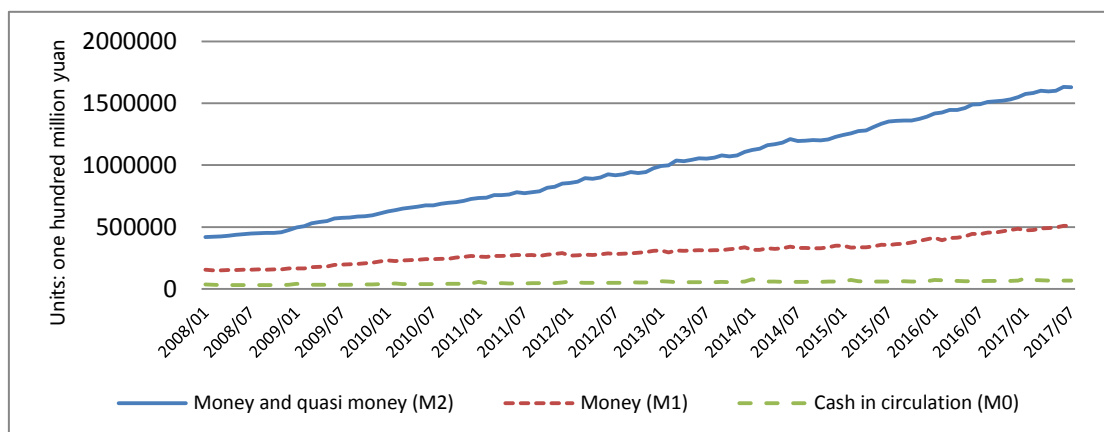


Figure 1 The change of money supply in January 2008-July 2017

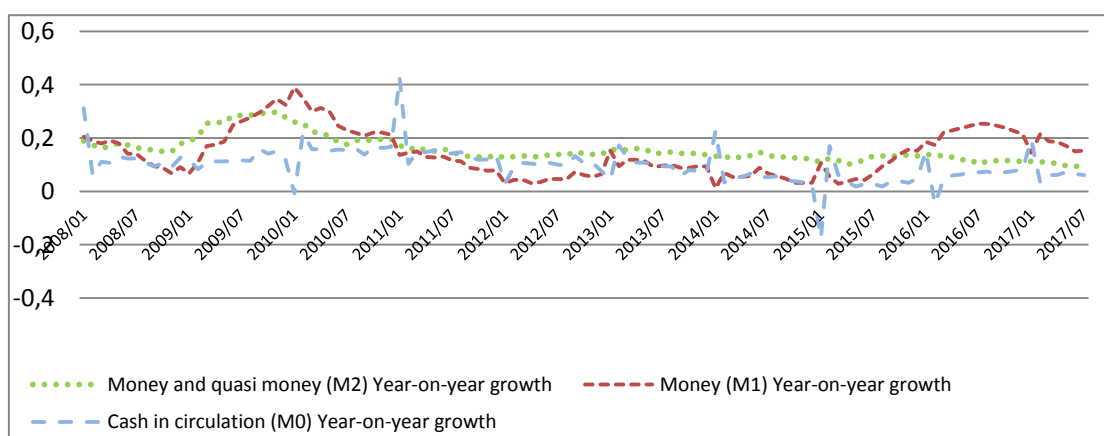


Figure 2 January 2008-July 2017 money supply growth

From Figure 1 we can see that the M0, M1, M2, three levels of money supply indicators have been significantly increased trend. And the growth trend of the money supply at different levels is increasing year by year. Among them, the M0 is more stable and little change. The M2 rise is the largest.

From Figure 2 we can see that the year-end balance of 2008 M1, M2 is relatively stable, the growth rate is basically below 20%. In 2009, in response to the financial crisis, the government implemented loose monetary policy, M1 up to 32.35%. The M2 rose by up to 27.68%. At this time, money supply and credit development rapidly, liquidity also increased rapidly, but also to the rapid rise in commodity prices, CPI also continued to high. The inflationary pressure in the later

period is increasing, and the bubbles in the capital market are becoming more and more big. At the end of 2009, the government switched to a prudent monetary policy, regulating the amount of money while vigorously conducting open market operations and reducing bank credit, and M1 and M2 growth began to decline sharply from the end of 2009.

vi. Performance of Shanghai Composite Index

Since the founding of Shanghai Stock Exchange, China's stock market has developed rapidly. But also because the establishment time is too short, there are many imperfect places. The implementation of the securities law has created favorable conditions for the further development, perfection and expansion of the stock market.

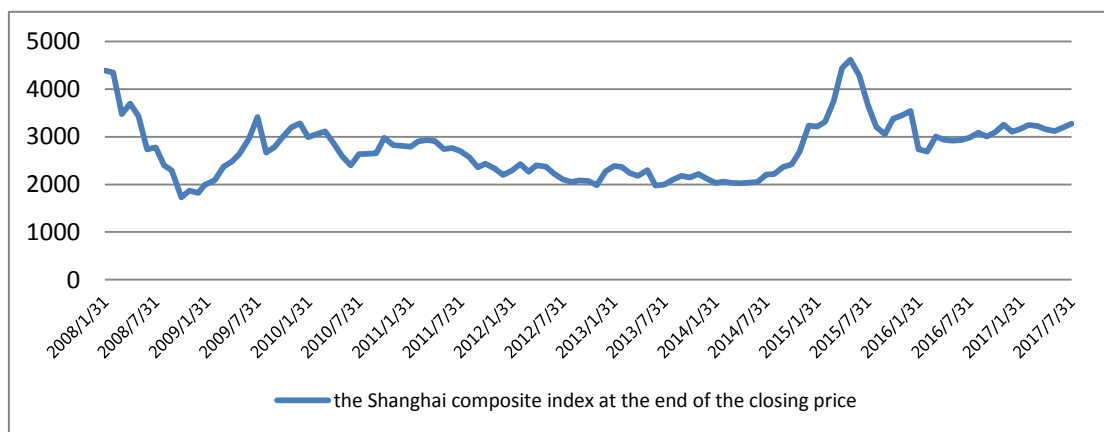


Figure 3 January 2008-July 2017 Shanghai stock market trend

From Figure 3 we can see that 2008 by the U.S. subprime mortgage crisis, the stock market continued to enter the bear market, 2008 to 2015 before the stock market more stable, basically maintained at about 2000-3000 points, in the first half of 2015 formed a super bull market, up

to 4,500 points. By the second half of 2015, it went into a bear market and fell to 3,000 points. Since 2016, it has tended to stabilize.

vii. Analysis on the change of money supply at all levels in China

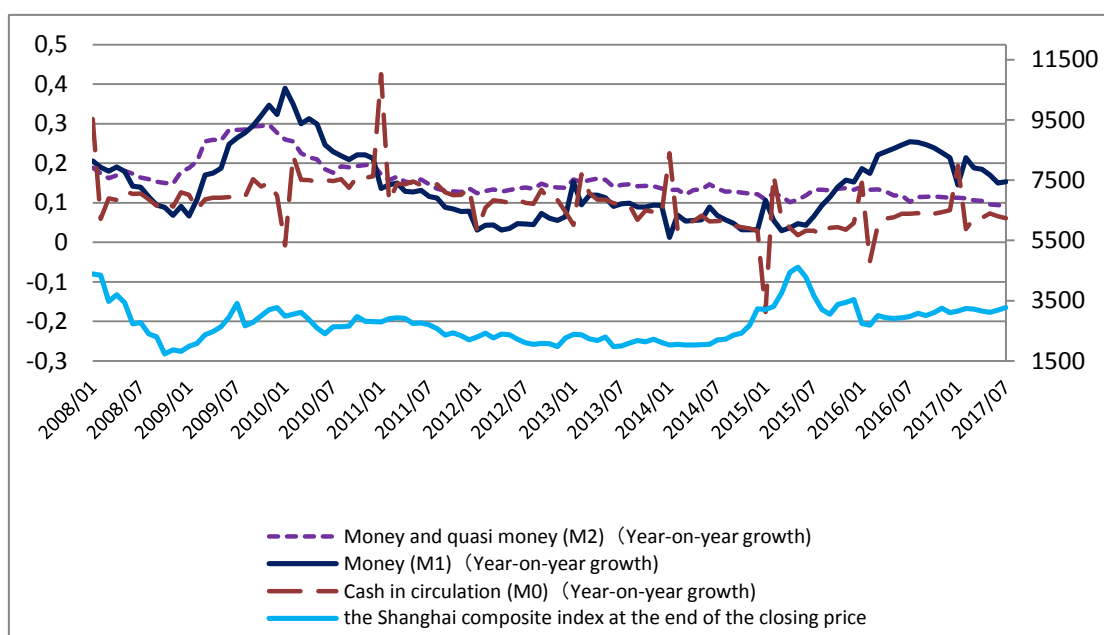


Figure 4 Comparison of the year-on-year growth of money supply and Shanghai Composite Index

By Figure 4, it can be found that the change of the Shanghai Composite Index is correlated with the change of the year-on-year growth rate of the money supply in China, especially the change trend of M1 year-on-year increase is closer to the Shanghai Composite Index.

viii. Unit root test

Most of the economic variables, such as GDP, total

consumption, price level and money supply, will show a strong trend. These economic variables with trend characteristics can occur in two situations after an economic oscillation or shock, and the economic variables gradually return to their long-term trend trajectory after oscillation or shock, and the second is that these economic variables do not return to the

original trajectory and present the state of random walk. If the economic variables studied follow a non-stationary process, such as a random walk process, when the least square method is used, the Gauss-Markov theorem is no longer established, and the return of a variable to other variables may result in pseudo regression, and if the economic variables (such as the money supply) that we are studying are non-stationary, The impact of a sudden oscillation in the economy, such as the economic crisis, will not disappear in the short term.

In order to analyze the specific quantitative relationship between stock price index and money supply m0,m1,m2. Collected from January 2008 to August

2017 monthly M0,M1,M2 data and the Shanghai Composite Index each monthly closing price, the lowest price, opening, the previous close, the fluctuation amount, the price data, carries on the first-order difference processing. In the study, the ADF unit root test method was used to analyze the stability of each variable. The regression equation is:

$$Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{i=1}^p \alpha_i \Delta Y_{t-i} + u_t$$

The model setting introduces ΔY_{t-i} (i=1,2,...,p) to eliminate the autocorrelation of the data.

Table 1 ADF test Results

variable	ADF test value	1% critical value	5% critical value	10% critical value	conclusion
KPJ	-9.061184	-3.488585	-2.886959	-2.580402	smooth
M01	-12.00457	-3.494378	-2.889474	-2.581741	smooth
M03	-10.72423	-3.495677	-2.890037	-2.582041	smooth
M11	-13.11837	-3.488585	-2.886959	-2.580402	smooth
M12	-4.366267	-3.495021	-2.889753	-2.58189	smooth
M13	-11.15202	-3.491345	-2.888157	-2.581041	smooth
M22	-3.795948	-3.489659	-2.887425	-2.580651	smooth
M23	-8.135184	-3.494378	-2.889474	-2.581741	smooth
SPJ	-9.369903	-3.488585	-2.886959	-2.580402	smooth
ZDE	-9.670966	-3.49021	-2.887665	-2.580778	smooth
ZDF	-11.4981	-3.489659	-2.887425	-2.580651	smooth
ZDJ	-8.1651	-3.488585	-2.886959	-2.580402	smooth
ZGJ	-7.081434	-3.488585	-2.886959	-2.580402	smooth

Where KPJ is the opening price; M01 is the total amount of M0 of money supply; M03 for the M0 growth rate; M11 is the total amount of M1 of money supply; M12 as M1 growth rate; M13 for the M1 growth rate; M22 as M2 growth rate; M23 for the M2 growth rate; SPJ for closing price; Zde is the fluctuation amount; ZDF for the price; ZDJ is the lowest price; ZGJ is the highest price.

From Table 1, the above-mentioned T-test statistic value is less than the MacKinnon critical value of the corresponding unit root test under the 1%,5%,10% three significant level, so there is no unit root and it is a stationary sequence.

ix. The influence of different levels of money supply on stock price index

Figure 4 Comparison of the year-on-year growth of money supply and Shanghai Composite Index. The change of the Shanghai Composite Index is correlated with the change of the money supply at all levels in China, especially the trend of M1 year-on-year growth is closer to that of the Shanghai Composite.

In order to analyze the causality of the influence of the money supply on the stock price index, we will use EViews to do a simple linear regression analysis. Now with M0, M1, M2 money supply as the abscissa, the opening of the Shanghai composite index, the closing price as the ordinate respectively do scatterplot for

preliminary analysis, the impact of money supply on the opening price is more obvious than the closing price. Therefore, we take the total amount of M0, M1, M2 and

Shanghai Composite Index to do the opening point map, as follows Figure 5.

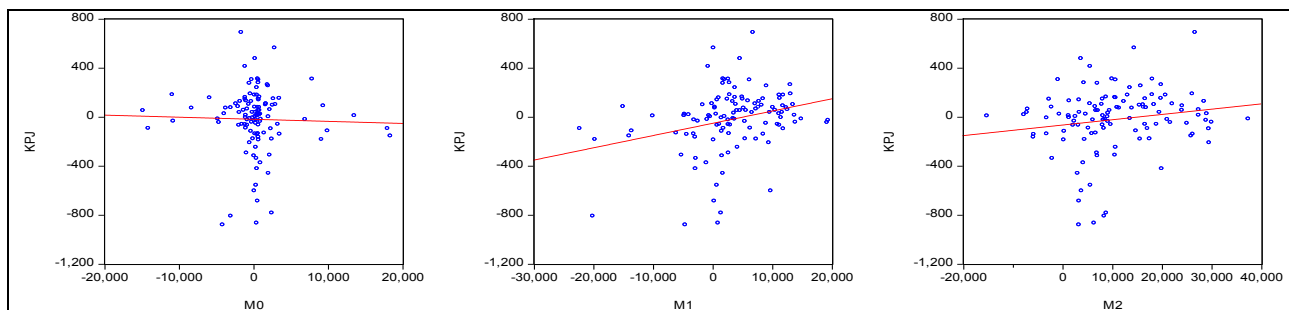


Figure 5 Scatter chart of the opening price of M0, M1, M2 and Shanghai Composite Index

From the comparison of three scatter graphs in Figure 5, it can be seen that the opening price of Shanghai Composite Index increases with the increase of Money supply M1 and M2, which is approximate to the linear relation. In particular a scatter more concentrated distribution near the M1 and opening price trend line, rather than M2. The correlation between M1 and opening price is more significant.

In order to analyze the regularity of stock price index with the change of money supply, a simple linear

regression model is established:

$$Y_t = \beta_1 + \beta_2 X_t + u_t$$

(X_t respectively M0, M1, M2)

Using the EViews software to estimate the model parameters, the regression results are obtained by selecting the least squares method as shown in Figure 6. The opening and M0, M1, M2 do regression results respectively..

Dependent Variable: KPJ					Dependent Variable: KPJ					Dependent Variable: KPJ				
Method: Least Squares					Method: Least Squares					Method: Least Squares				
Sample: 2008M02 2017M08					Sample: 2008M02 2017M08					Sample: 2008M02 2017M08				
Included observations: 115					Included observations: 115					Included observations: 115				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
M0	-0.00193	0.005	-0.35188	0.7256	M1	0.007609	0.00294	2.588268	0.0109	M2	0.001122	0.001667	0.672986	0.5023
R-squared	-0.00338	Mean dependent	-17.3098		R-squared	0.051284	Mean dependent var	-17.3098		R-squared	-0.00049	Mean dependent var	-17.3098	
Adjusted	-0.00338	S.D. dependent	260.1362		Adjusted	0.051284	S.D. dependent var	260.1362		Adjusted	-0.00049	S.D. dependent var	260.1362	
S.E. of	260.5751	Akaike info cri	13.97232		S.E. of	253.378	Akaike info criteri	13.9163		S.E. of	260.2002	Akaike info criteri	13.96944	
Sum squar	7740527	Schwarz criteri	13.99619		Sum squar	7318847	Schwarz criterion	13.94017		Sum squar	7718270	Schwarz criterion	13.99331	
Log like	-802.408	Hannan-Quinn cr	13.982		Log like	-799.187	Hannan-Quinn crite	13.92599		Log like	-802.243	Hannan-Quinn crite	13.97913	
Durbin-Wa	1.700922				Durbin-Wa	1.652576				Durbin-Wa	1.71223			

Figure 6 Opening price distinction and M0, M1, M2 regression result

As Figure 6, the result of data consolidation regression is shown in Table 2:

Table 2 The result of the return of opening and M0,M1,M2

	KPJ=-0.00193M0	KPJ=0.007609M1	KPJ=0.001122M2
Std.Error	0.005	0.00294	0.001667
t-statistic	-0.35188	2.588268	0.672986
R ²	-0.00338	0.051284	-0.000492

The result shows that the increase of the money supply M1,M2 will lead to the rise of stock price, which accords with economic significance.

The test of fitting goodness: according to Figure 6 the M1 coefficient of the $R^2=0.051284$, M2 is -0.000492 . As the amount of money supply M0, M1, M2 unit is RMB one hundred million, the unit of the stock index is only yuan. This is one of the reasons why the coefficient of decision is small. At the same time, it can be seen that the absolute value of the M1 and the return of the opening price is significantly greater than that of the M2, indicating that the M1 increase is more explanatory

to the opening price.

T-Test:

The return result of opening and M0

For $H_0:\beta_2=0$, the standard error and T values of the estimated regression coefficients $\hat{\beta}_2$ are shown in Table 2 as follows: $SE(\hat{\beta}_2)=0.005, t(\hat{\beta}_2)=-0.35188$, given a significant level $\alpha=0.05$, in the T distribution table to find the critical value $t(\hat{\beta}_2)=-0.35188 < t_{\frac{\alpha}{2}}(113)=1.982$, should not refuse $H_0:\beta_2=0$. The

significant test showed that the money supply M0 had no significant effect on the opening price of Shanghai Composite Index (KPJ) under the

$\alpha=0.05$ level.

The return result of opening and M1

For $H_0:\beta_2=0$, the standard error and T values of the estimated regression coefficients $\hat{\beta}_2$ are shown in Table 2 as follows: given a significant level of $\alpha=0.05$, $t(\hat{\beta}_2)=2.588268 > t_{\frac{\alpha}{2}}(113)=1.982$, should reject $H_0:\beta_2=0$. It

shows that the M1 of money supply has no significant effect on the opening price of Shanghai Composite Index (KPJ) under the $\alpha=0.05$ level.

The return result of opening and M2

For $H_0:\beta_2=0$, the standard error and T values of the estimated regression coefficients $\hat{\beta}_2$ are shown in Table 2 as follows: $SE(\hat{\beta}_2)=0.001667, t(\hat{\beta}_2)=0.672986$, given a significant level of $\alpha=0.05$, $t(\hat{\beta}_2)=0.672986 < t_{\frac{\alpha}{2}}(113)=1.982$, should not refuse

to $H_0:\beta_2=0$. The significant test showed that the money supply M2 had no significant effect on the opening price of Shanghai Composite Index (KPJ) under the $\alpha=0.05$ level.

It is concluded that the money supply M0 and M2 have no significant effect on the price of Shanghai Composite Index, and M1 has a significant impact on the price of Shanghai Composite Index. Stock prices rose as M1 increased.

x. Money supply M1 affect what price of stock

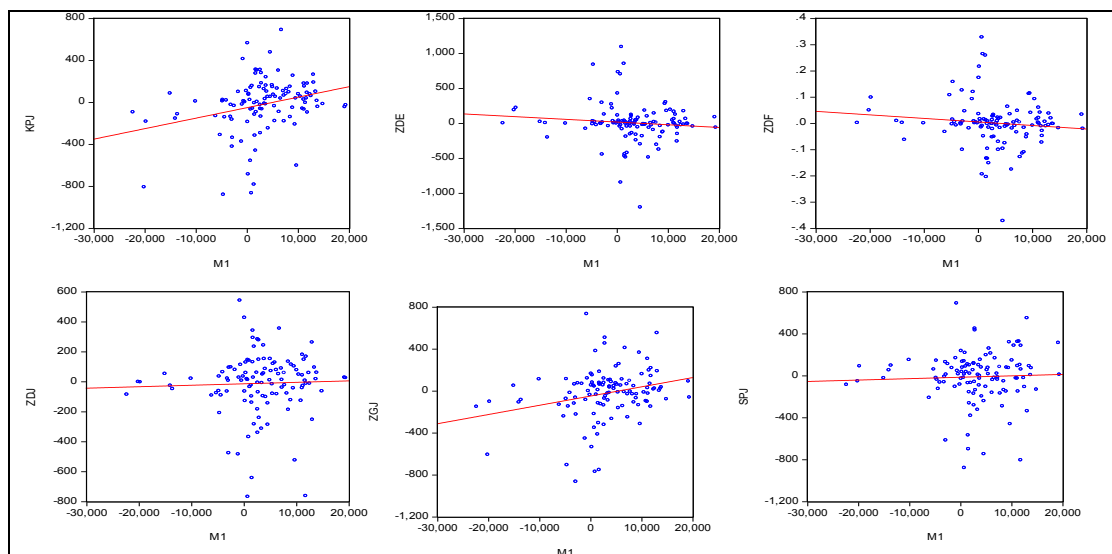


Figure 7 M1 and Shanghai Composite Index ,opening, ups and downs, fluctuations, the lowest price, the highest price, closing point of the scatter map respectively

Figure 7 shows the approximate positive linear relationship between the M1 of the money supply and the maximum price. The regression results are obtained by using the least squares method as shown in Figure 8:

Dependent Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared
KPJ (开盘价)	0.007609	0.00294	2.588268	0.0109	0.051284
ZDE (涨跌额)	-0.00289	0.003235	-0.893339	0.3736	0.006171
ZDF (涨跌幅)	-0.00000106	0.00000103	-1.037603	0.3017	0.00907
ZDJ (最低价)	0.000345	0.002388	0.144664	0.8852	-0.002121
ZGJ (最高价)	0.006529	0.002784	2.345374	0.0207	0.040445
SPJ (收盘价)	0.000701	0.002838	0.246889	0.8054	-0.000799

Figure 8 Least squares regression results

Given the significant level of $\alpha=0.05$, it is shown from Figure 8 that the P-value test results of opening and maximum prices are less than the significant horizontal α (0.05). The R^2 value of the opening and closing price is higher than that of the other prices of the Shanghai Composite Index, indicating that the M1 mainly affects

the opening and the highest price of the Shanghai Composite. Next, we will continue to study the impact of M1's year-on-year growth rate and quarter-on-quarter growth on the opening and maximum prices of the Shanghai Composite.

Dependent Variable: KPJ				
Method: Least Squares				
Date: 10/19/17 Time: 16:01				
Sample: 2008M02 2017M08				
Included observations: 115				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MIT	1785.274	847.2676	2.107096	0.0373
R-squared	0.033187	Mean dependent var		-17.30983
Adjusted R-squared	0.033187	S.D. dependent var		260.1362
S.E. of regression	255.7832	Akaike info criterion		13.9352
Sum squared resid	7458457	Schwarz criterion		13.95906
Log likelihood	-800.2737	Hannan-Quinn criter.		13.94488
Durbin-Watson stat	1.723679			

Figure 9 The OLS return result of opening and M1's year-on-year growth rate

Dependent Variable: KPJ				
Method: Least Squares				
Date: 10/19/17 Time: 16:02				
Sample: 2008M02 2017M08				
Included observations: 115				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
M1H	1320.937	659.2651	2.00365	0.0475
R-squared	0.029703	Mean dependent var		-17.30983
Adjusted R-squared	0.029703	S.D. dependent var		260.1362
S.E. of regression	256.2436	Akaike info criterion		13.93879
Sum squared resid	7485332	Schwarz criterion		13.96266
Log likelihood	-800.4805	Hannan-Quinn criter.		13.94848
Durbin-Watson stat	1.669026			

Figure 10 OLS return results of opening and M1

The data from Figure 9 and Figure 10 can be used to analyze the effect of M1 growth and chain growth on the opening of Shanghai Composite Index. By comparing T

value and p value of t test, the effect of M1 on the opening price is more obvious.

Dependent Variable: ZGJ				
Method: Least Squares				
Date: 10/19/17 Time: 16:05				
Sample: 2008M02 2017M08				
Included observations: 115				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MIT	1536.442	800.882	1.918437	0.0576
R-squared	0.025602	Mean dependent var		-18.662
Adjusted R-squared	0.025602	S.D. dependent var		244.9355
S.E. of regression	241.7798	Akaike info criterion		13.82259
Sum squared resid	6664151	Schwarz criterion		13.84646
Log likelihood	-793.7989	Hannan-Quinn criter.		13.83228
Durbin-Watson stat	1.277233			

Figure 11 Highest price and M1 's year-on-year growth rate OLS regression results

Dependent Variable: ZGJ				
Method: Least Squares				
Date: 10/19/17 Time: 16:06				
Sample: 2008M02 2017M08				
Included observations: 115				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MIH	1604.577	613.8866	2.613801	0.0102
R-squared	0.051016	Mean dependent var		-18.662
Adjusted R-squared	0.051016	S.D. dependent var		244.9355
S.E. of regression	238.6059	Akaike info criterion		13.79616
Sum squared resid	6490335	Schwarz criterion		13.82003
Log likelihood	-792.2793	Hannan-Quinn criter.		13.80585
Durbin-Watson stat	1.220463			

Figure 12 Highest price and M1 growth rate OLS return result

The data from Figure 11 and Figure 12 can be used to analyze the influence of M1 year-on-year growth and quarter-on-quarter growth on the highest price of Shanghai Composite Index. By comparing T value and p value of t test, the effect of M1 on stock price is more obvious.

IV. CONCLUSIONS

Combined with the above empirical test results, we found that: Money supply increased year by year, but M2 grows faster than M1 and M0, M1 grows faster than M0, the number of M0 is keep stable.

The share price keep rising from 2008 to 2017, but the volatility of the share price is large.

Money supply have a great influence on the share price, in which the M1 have a greater influence on the share price, but M0 and M2 have not.

M1 have influence to the open price and the highest price, but it have no influence to the close price and the lowest price. If the M1 is more and the open price and highest price is higher, so we can use M1 to forecast the open price and the highest price.

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