2776-110X

Contents list are available at Journals.indexcopernicus.com

ASIAN Economic and Business Development

Journal homepage: aebd.tripleninecommunication.com

The Impact of Money Demand Motivation on Money Supply Indonesia

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Abstract

This study aims to investigate the impact of money demand motive on a money supply based on keyness theory. The method used in this study is the ordinary least squares method with an annual period from 2011 to 2020. We find that In Indonesia, the money demand motive has a significant effect on money supply where the transaction motive has a significant negative relationship with the money supply. A precautionary motive has a significant positive correlation with the money supply. The motive of speculation has a significant positive relationship with the money supply.

Keyword : Money Demand Motivation, Money Supply, Indonesia

JEL Classification : C10,E40,E41

Received 25 January 2021; Received in revised form 18 February 2021; Accepted 11 March 2021; 2nd revised 16 September 2021

Background

In the modern era that is growing rapidly the use of digitalization technology becomes a demand to follow the development of the times, one of which is financial technology or commonly called Fintech (Barberis et al,2019), which is the use of financial-based technology is increasingly popular in the country of Indonesia , especially the covid 19 pandemic that causes some activities to be shifted to digitalization (Bawono & Wilantari,2021). The provision of financial services based on technology provides convenience for the community, especially in financial services such as saving and borrowing, where savings and loan services can be done quickly unlike in savings and loans in general that require a long process and strict provisions in applying for loans, in addition, not all communities can make loans only people with upper middle and upper economic levels who can apply for loans. In banks, through saving technology-based loans all communities are given the opportunity to save and borrow so that people who need capital to open a business can easily get learning, in addition, people with micro-businesses can develop their business (Prabowo et al,2021).

Fintech is this technology-based transaction activity provides the convenience of someone in making transactions, online shopping application services that facilitate someone to make transactions are growing rapidly, not infrequently someone is more preferences to make online transactions compared to transactions directly, in addition to the price is quite cheap and the choice of goods more without having to visit the store one by one and effective in transactions (Viphindrartin et al,2021). Digital-based services are not only in the form of transactions, fundraising but investments can also be done digitally and even someone is more comfortable with online investments this is because all circles with small funds can make investments, the logic used by someone so interested in making digital

investments is to open a business, of course, requires considerable funds, Someone has limitations in raising large funds, considerations used rather than opening a business where the funds needed are quite large and not necessarily the business is going well, so one prefers to buy stock on a business that has been running well, later the invested funds will get results from the business given the capital (Sasongko & Bawono,2021).

Digital services that support carrying out types of activities related to finance cause the level of demand for goods to increase and encourage public transactions (Chen & Zhang,2021). 111 fintech registered with financial services authorities in Indonesia as of August 25, 2021 (OJK, 2021). Based on Keynes's theory, there are three motives for someone asking for money, namely the transaction motive, the precautionary motive and the last is the speculative motive. Where the three motives that have been expressed by Keynes have a relationship and attachment to each other, the income earned by a person will be used to cover daily needs or be used for consumption, the higher a person's income, the level of consumption will also increase. The rest of the income that has been consumed is kept in a case in the future. In addition to precautionary motives, the remaining income can be used for speculative motives, speculation here is an investment activity (Garcia & Puspaningtyas, 2021)

Cambridge Theory explains that a person's motive in asking for money is for the motive of saving wealth, which in this motive focuses more on investment. In making an investment, an investor invests in a company or buys securities with the aim of the purchase being able to provide a higher rate of return than the level of capital invested. Investors will see the rate of return before investing, where it is expected that this rate of return has a higher value than the interest rate. This is in line with Keyness' theory (Sasongko et al,2021).

In the short term, Cambridge's theory argues that the money demand is influenced by income. While Irving fisher argues that a person's demand for money is influenced by one's motives in holding money for a medium of exchange. According to Irving Fisher, transactions between sellers and buyers occur through the exchange of money with goods or services so that the amount of money in circulation will be equal to the value of the goods or services (Warwick, A. (2003). Research by Asongu et al. (2021) concluded that in the digital era with the existence of mobile banking, the demand for money motive has an effect on the money supply.However, Hossain's research (2010), concluded that money supply can be controlled by monetary policy so that the motive for money demand motive has no impact on the money supply. Based on previous research and theoretical studies, hypotheses or tentative conclusions can be developed as follows:

H1. Money demand motive has no effect on money supply

H2. Money demand motive affects money supply

This study aims to investigate the impact of money demand motive on a money supply based on keyness theory.

Review literature

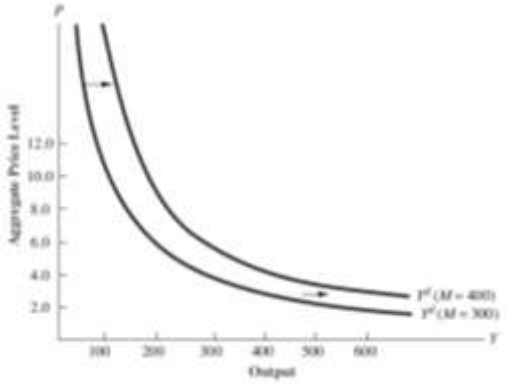
The development of the digital world develops over time, various digitalization innovation innovations with the aim of facilitating human activities are increasingly launched, now the rapid development of technology-based financial services or commonly referred to as fintech, the latest issued by some start-up businesses features offered increasingly diverse, along with the development of fintech is encouraging several sectors also increasing such as increased public consumption, investment, government acceptance, and others, it is not far from the role of money itself, someone holding money there are several motives including transaction motives, money here facilitates in transaction activities so that money exchange and other types of goods are easy to do (Viphindrartin et al,2021).

Precautionary motive is only as a form of saving so that this motive alone provides a sense of security and comfort, different with a speculative motive where a person's motive for holding money is to earn income by investing, from the motive in using money is not only used for one motive so from here there is an opportunity cost where when one motive is fulfilled one must give up the opportunity to get another motive (Telyukova &

Visschers,2013). The money demand is the same as the constant associated with the price level and the level of real income so that in this case the transaction motive will be pharmacological according to a person's income level and affect the level of money demand (Fischer,2007). In this case, it will affect the rate of acceleration of the velocity of money or the velocity of money so that the amount of money in circulation is equal to the number of transactions carried out by a person. The equation is as follows:

MV = PT

M is the amount of money, V is the velocity of money. P is the price of an item, and T is a transaction carried out by a person, Transactions are not only related to the purchase of output goods but also all forms of exchange are also included in the transaction. The velocity of money (V) is the same as the output price level set by the company with the expenses made in producing output divided by the money supply. The transaction equation function will be related to the price level but some experts argue that it is not only the price that affects the transaction but also other factors that affect the transaction equation. In the quantity theory of changes in the price of money (P), the velocity of money (V) will be inversely proportional to the volume of transactions (Froyen,2012). While the speed of money circulation is caused by the use of money by individuals in making payments, both in payments using credit cards, debit cards, or the currency itself. The remaining unspent income will be optimized for consumption and investment. Allocating residual income will drive prices up. The aggregate demand curve looks like this:



To meet a balanced rate, the level of money demand and supply must be met so that the quantity of money demanded is equal to the quantity of money supply. In the existing theory, from Keynes's theory, it is stated that there are several factors that cause the money demand: Transaction motives,Precautionary Motive,Motive for Speculation (Rao,2016).

Transaction motives is the motive for using money in buying and selling activities or a medium of exchange, where money is demanded as a link in the transaction activity, the level of transactions carried out by individuals depends on the level of income, so that when the income level of individuals increases, the transaction motive will increase and Conversely, when a person's income decreases, the level of transactions carried out will also decrease. In addition to one's income being used to carry out transaction activities, such as making someone's request with the aim of the Precautionary Motive where this motive is used to overcome unexpected expenses in the future, this guarding motive can be done by saving (Ventelou & Nowell,2015). The last motive is the speculative motive, where when income is allocated to make transactions and save the remaining unused income will be allocated to speculate, speculation itself is an activity related to securities transactions with the aim of getting profits in the future, in this case. will be related to current and future interest rates. The level of demand for money will be related to the interest rate (Bibow,2013).

Interest rates are closely related to the money demand this is because at a time when the interest rate is low the currency demand rate will increase where individuals will use their money more to make transactions, while when the interest rate increases, the level of demand for money will decrease where individuals will choose to save money rather than for transactions and speculation,

The most influential on the interest rate is the investment, in the investment of an investor will make a rate of return consideration where the consideration is what determines whether the investment will be made or not (Zhao & Li,2015). Investment is also one of the factors of changes in demand in society, In the short term investment is related to interest rates and the state of a business, the influence of this investment can be seen from changes in gross national gross (GDP), both of which are inversely proportional, when interest rates then the investment rate will decrease. This is because each individual makes an investment for the motive of speculation, where the investor expects a return of more than the purchase of the investment (Boucekkine et al,2021).

Research Methods and Materials

The method used in this study is the ordinary least squares method, the ordinary least squares method itself is used to see how the relationship between the dependent variable and the independent variable is. Where in this study want to know how the motives of the demand for money in Indonesia in the current digital era.

Based on the theory, it can be formulated The balance of speculation can be notated in the form of the following equations:

$$M1 + M2 = Mi \quad (1)$$

and

$$Mi + Bi = Whi \quad (2)$$

The equation above is the ownership of individual money, notated M1 is in the form of money for transactions, watch, while M2 is speculation in the form of securities. To find out the total level of demand for money can be notated in the form of the following equations

$$Md = L\ (Y, R) \quad (3)$$

The equation function above illustrates that the level of demand for money depends on income and interest rates, which both have an inverse relationship, when interest rates increase, and lower the level of demand for money, and vice versa.

In Keynes's theory the individual in allocating his wealth by using the function of equations

$$Wh = B + M \quad (4)$$

Information:

Wh = Wealth owned by individuals

M = Money (transactions and watchful eye)

B = bonds (speculation)

The demand and supply of these bonds are determined by the interest rate, in the equation above explains that the storage of wealth will be allocated in the form of money to be held if there will be a transaction then the remaining wealth owned will be allocated to buy. bonds, so it can be seen that individuals prefer to store wealth in the form of money compared to bonds, but individuals will be more optimal by allocating their wealth using both methods. The offer of money is related to the level of the amount of money circulating in the community, when the level of money in the binding community describes the level of money supply also increases, to regulate the level of ownership of money in the hands of the community then this is done with the control of interest rates,

The following is data related to the motive for money demand which is based on the supply of money. The following is data showing how the level of deposit allocation affects the level of money supply, which is a response to the level of money demand. Based on the theory and previous research as well as equations 1,2,3, and 4, the following equations can be estimated:

$$Md = f(T,S,P) \quad (5)$$

where Md is money demand. T is a motive transaction. S is Motive Speculation. P is the precautionary motive. Where in this study it is assumed Ms = Md.

From equation 5, an econometric equation is developed as follows:

$$Mst = \beta 0 + \beta 1Tt1 + \beta 2St2 + \beta 3Pt3 + e \quad (6)$$

The data will be included in the formulation of ordinary least square, to find out the relationship between the income allocated in the form of transactions motive, speculation motive, and precautionary motive against money supply, Independent variables are notated with T for transactions motive, P is precautionary motive, S is for speculation motives. As for variable dependent is the money supply sector, Here are the results of data processing using ordinary least square. As for variable dependent is the money supply noted by

Ms. All data is sourced from world bank data which we have processed according to research needs

Result and Discussion

OLS linear regression requires assumptions that must be met through classical assumption testing after the OLS estimation is carried out. Here are the results of data processing using ordinary least square

Table 1. OLS Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-27.16185	87.72797	-0.309615	0.7659
P	236.4335	963.2731	0.245448	0.8132
S	3031.503	32764.96	0.092523	0.9289

Of the eleven time series that have been used there is a coefficient that has a negative value, namely in the transaction variable noted with T, it describes the best relationship with dependent variables, in contrast to the precautionary motive (P) and the motive of speculation (S) where the relationship is directly proportional to the dependent variable. To find out the autocorrelation on the estimated ols, an autocorrelation test was performed using the Breusch-Godfrey Serial Correlation LM Test with the following test results:

Table 2. Breusch-Godfrey Serial Correlation LM Test result

F-statistic	2.372905	Prob. F(2,4)		0.2092
Obs*R-squared	5.426382	Prob. Chi-Square(2)		0.0663

Prob Chi-Square(2) which is the p-value of the Breusch-Godfrey Serial Correlation LM test, which is 0.0663 where > 0.05 which means there is no serial autocorrelation problem.

To see the normality of the data, normality testing was carried out using the Jarque Bera method with the following test results:

Table 3. Jarque Bera Normality Test result

Jarque-Bera	0.802894
Probability	0.669351

The results of the residual normality test have a Jarque-bera value of 0.802894 with a p-value of 0.669351 where > 0.05 which means the residuals are normally distributed.

To see multicollinearity, a multicollinearity test was carried out by looking at the Variance Inflation Factors with the test results as follows:

Table 4. Variance Inflation Factors Multicollinearity test

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
T	18650.5500	125.2686	6.6616
P	2237051	186.7515	7.232536
S	1.27E+09	138.5495	1.901351

Based on the test results, all Centered VIF values are less than 10, which means that there is no multicollinearity problem in the prediction model

Heteroscedasticity test was carried out using the Breusch Pagan Godfrey test with the following results:

Table 5. Breusch Pagan Godfrey test result

F-statistic	1.547824	Prob. F(3,6)	0.2965
Obs*R-squared	4.362741	Prob. Chi-Square(3)	0.2249
Scaled explained SS	1.0362	Prob. Chi-Square(3)	0.7925

The p-value is indicated by the Prob value. chi-square(3) in Obs*R-Squared is 0.2249. Because the p-value is 0.2249 > 0.05, it can be interpreted that the regression model is homoscedastic or in other words, there is no problem with the assumption of non-heteroscedasticity.

After a series of classical assumption tests have been carried out, all tests have validated that the OLs model that we have calculated is valid and can be used as a reference for calculations. From the results of the OLS estimation, it can be seen that by comparing the coefficients and statistical values, it can be seen that the transaction motive has a significant negative relationship with the money supply. A precautionary motive has a significant positive correlation with the money supply. The motive of speculation has a significant positive relationship with the money supply

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Conclusion

In Indonesia, the money demand motive has a significant effect on money supply where the transaction motive has a significant negative relationship with the money supply. A precautionary motive has a significant positive correlation with the money supply. The motive of speculation has a significant positive relationship with the money supply.

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