THE DETERMINANT OF FACTORS THAT INFLUENCE THE DEMAND OF MORTGAGE LOAN

(A CASE STUDY IN BTN (BANK TABUNGAN NEGARA) UNIVERSITY OF BRAWIJAYA BRANCH OFFICE MALANG IN 2008 – 2012)

By:

AULIA RATUNINGTYAS

NIM. 105020107121012

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THE DETERMINANT OF FACTORS THAT INFLUENCE THE DEMAND OF MORTGAGE LOAN

(A Case Study in Bank Tabungan Negara (BTN) University of Brawijaya Branch office malang in 2008 – 2012)

Aulia Ratuningtyas
Farah Wulandari Pangestuty,SE.,ME
Faculty of Economics and Business
Email: aulia190393@gmail.com

By using secondary data obtained from BTN University of Brawijaya Branch Office Malang and Central Bureau of Statistics (BPS) Malang in 2008 to 2012 and multiple regression analysis, this study is aimed to analyze the factors that influence the demand of mortgage loan in BTN University of Brawijaya Branch Office Malang from 2008 to 2012. BTN is the biggest bank in Indonesia that provides mortgage loan as the main product. The results of multiple regression analysis show that the factors include lending rate, inflation, income, and exchange rate are simultaneously influence the demand of mortgage loan. Inflation and income have significant influence towards the demand of mortgage loan, but lending rate and exchange rate has insignificant influence towards the demand of mortgage loan.

Keywords: The demand of mortgage loan, lending rate, inflation, income, exchange rate

A. INTRODUCTION

The economic growth of Indonesia in 2010-2013 is relatively stable in the range of 6% (Bank of Indonesia, 2013). The economic growth of Indonesia is supported by some economic sectors that grow rapidly. One of the economic sectors that support Indonesian economic growth is residential property sector or real estate.
The increasing growth of residential property sector cannot be separated from higher society demand for house.

The higher demand of residential property has supported by commercial banks as adequate financing. Bank provides mortgage loan as the banking product. As the biggest bank in Indonesia that provides mortgage loan, BTN dominates 26% of mortgage loan market (Kompas Newspaper, 2014). BTN has big amount of mortgage loan demand and roles to the residential property sector in Indonesia. The demand of mortgage loan should well regulated by government and monetary authority. The government and monetary authority should concern with the factors that influence the changing of the demand of mortgage loan.

There are many studies discussing about the factors that influence the demand of mortgage loan. The findings of the other studies show that the demand of mortgage loan is influenced by lending rate, inflation, income and exchange rate. The writer attempts to acknowledge the factors that may influence the demand of mortgage loan in BTN. This study will contribute the empirical basis in Indonesia especially in Malang.

B. LITERATURE REVIEW

The Fundamental Theory of Demand

The demand of goods and services occurs if consumers have the willingness and ability to purchase (Samuelson and Nordhaus, 2010). There are several factors that affect demand. The price of house may influence the demand of mortgage loan.
Inverting the effective demand for housing implies that home prices depend on the credit constraints (Meen, 2001), Muellbauer and Murphy (1997) and Cameron, Muellbauer, and Murphy (2006) in (Min Hua Zhao and Stephen Whelan, 2005). A theoretical result also demonstrated home price-to-rent framework. The demand may influenced by price, but there are the other factor that may influence the demand. The demand also influenced by income, consumer taste, and future expectations (Samuelson, 2003:62).

The Relationship between Lending Rate and the Demand of Mortgage Loan

The demand of mortgage loan cannot be separated with lending rate. Lending rate has negative relationship towards the demand of mortgage loan. When banks increase lending rate, the demand of mortgage loan will decrease. This is because lending rate is cost of borrowing (Mankiw, 2006), thus when the banks determine the high level of lending rate, therefore the cost of borrowing that should paid by borrower will high. According to Stiglitz and Greenwald (2003) the lending rate becomes one factor that should be considered by society in order to apply mortgage loan in commercial bank.

The Influences of Inflation Rate towards the Demand of Mortgage Loan

The second factor that affects the demand of mortgage loan is inflation. Inflation is defined as an increase in the overall price level. Inflation is attack all of economic sectors including residential property sector. If the house price rises, the
customer ability to purchase it will fall proportionally (Case, et al, 2012:479). Modigliani, as stated in (Dornbusch, 1987 in Aryaningsih, 2008), inflation can decrease the demand of money in the form of credit or mortgage loan. Inflation can influence whether the investor invest in the property sector or not. It is difficult to predict the cost or revenues they may be discouraged from investing in property sector.

**The Relationship between Income and the Demand of Mortgage Loan**

Actually, income refers to the flow of wages, interest payments, dividends, and other things of value accruing during a period of time (Samuelson and Nordhaus, 2010:230). Income is the main source of customer to buy goods and services in market. Income becomes the fundamental factor in economic sector. The society’s willingness to buy a house and apply mortgage loan depends on their income. When the income of society is increase, therefore the willingness to buy a house with mortgage loan will increase (Firdaos, 1997 in Utami, 2013).

**The Relationship between Exchange Rate and the Demand of Mortgage Loan**

Exchange rate is a value that indicates the amount of the value of domestic currency needed to get the other unit of foreign currency (Sukirno, 2002:87). Exchange rate becomes an important part to do the international trade among the nations. According to international trade theory, the changing of society demand is caused by income, society preferences, and exchange rate (Salvatore, 1997 in Hesti, 2012). The exchange rate has significant influence to the demand of loan in
commercial bank (Ahmad Kholisudin, 2012). Exchange rate has influence people to apply loan to the bank.

**Hypothesis**

Based on the theories that the writer has examined in previous sub chapter, there are some important points describing about the factors that may influence the demand of mortgage loan. The points considered by the writer to make the hypothesis are:

1. Lending rate is significant influence the demand of mortgage loan.
2. Inflation is significant influence the demand of mortgage loan.
3. Income is significant influence the demand of mortgage loan.
4. Exchange rate is significant influence the demand of mortgage loan.

**C. RESEARCH METHODOLOGY**

This study uses secondary data that obtains from BTN University of Brawijaya Malang and BPS (Central Bureau of Statistics) Malang in period 2008-2012. The method of this study is multiple regression analysis. Multiple regression analysis is used to analyze the influence of independent variables (lending rate, inflation, income, and exchange rate) to dependent variable (the demand of mortgage loan). The model is as follows:

\[ Y = \alpha + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e \]

Descriptions:

\[ Y \quad : \text{Dependent Variable} \]
\[ \alpha \quad : \text{Constant} \]
b₁, b₂, b₃, b₄ : Regression coefficient

X₁ : Lending rate
X₂ : Inflation
X₃ : Income
X₄ : Exchange rate
e : Residual error

### D. FINDINGS AND DISCUSSION

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>Tstatistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C (β₀)</td>
<td>1.326613</td>
<td>1.437519</td>
<td>0.922849</td>
<td>0.3601</td>
</tr>
<tr>
<td>Lending Rate (β₁)</td>
<td>-0.029969</td>
<td>0.015838</td>
<td>-1.892207</td>
<td>0.0637</td>
</tr>
<tr>
<td>Inflation rate (β₂)</td>
<td>0.023397</td>
<td>0.012690</td>
<td>1.843689</td>
<td>0.0706</td>
</tr>
<tr>
<td>Income (β₃)</td>
<td>0.675896</td>
<td>0.099414</td>
<td>6.798810</td>
<td>0.0000</td>
</tr>
<tr>
<td>Exchange Rate (β₄)</td>
<td>0.098937</td>
<td>0.135015</td>
<td>0.732787</td>
<td>0.4668</td>
</tr>
</tbody>
</table>

Fstatistic 33.03053  Prob = 0.000
R-squared 0.706074  Adj. R-squared = 0.684698

**The Empirical Model of Multiple Regression Test**

Demand = β₀ + β₁ LenRate + β₂ Inf + β₃ Income + β₄ Exrate

Demand = 1.326613 - 0.029969LenRate + 0.023397 Inf + 0.675896Income + 0.098937ExRate
The multiple regression model consists of:

1. Constant variable in the multiple regression model indicates that the variables of lending rate, inflation, and income variable are constants. When lending rate, inflation, and income are constants, the demand of mortgage changed by 1.326613. Furthermore, constant variable does not influence the demand of mortgage loan. This indicates whether lending rate, inflation, and income are constants or not. Therefore the demand of mortgage loan does not change.

2. Lending rate coefficient is -0.029969. This means that when lending rate increased by 1\%, therefore the demand of mortgage loan will decreased by 2.9969\%. Furthermore, according to partial test (T-test) the lending rate variable partially does not influence the demand of mortgage loan. This means that the changing of lending rate does not always changes the demand of mortgage loan.

3. The inflation rate coefficient is 0.023397. This means that when the inflation rate increased by 1\%, the demand of mortgage will increase 2.3397\%.

4. The income coefficient is 0.675896. This means that when the income variables increased by 1\%, therefore the demand of mortgage loan in BTN University of Brawijaya Branch Office Malang will increase 67.5896\%.

5. The exchange rate coefficient is 0.098937. This means that when the exchange rate increased by 1\%, it will increase the demand of mortgage loan 9.8937\%.

**Coefficient Determination**

The contribution influences of lending rate, inflation, and income towards demand of mortgage loan is shown by the amount of coefficient determination ($R^2$). The coefficient determination of lending rate, inflation, and income on the demand of
mortality is 70.6%. This presents how big the influences of lending rate, inflation, and income to demand of mortgage loan. This means that lending rate, inflation and income contributes 70.6% demand of mortgage loan in Malang. The demand of mortgage loan is explained by 70.6% lending rate, inflation rate and income variables. In the other hand, 29.4% is explained by others variable outside model.

The Significant Influence of Lending Rate Variable to the Demand of Mortgage Loan

The finding of this study shows that lending rate has significant influence to the demand of mortgage loan. The lending rate has negative relationship to demand of mortgage loan. The society tends to consider the amount of lending rate in one bank to another. Because the lending rate is cost of borrowing that should pay by customer along the loan period. The increasing number of lending rate will increase the cost that customer should pay. Therefore, the customer should consider the amount of lending rate. When the lending rate increases, it will decrease the demand of mortgage loan. This is because the society willingness to apply mortgage loan are reducing. The society tends to apply mortgage loan to another bank with the lower one.

The Significant Influence of Inflation Rate towards the Demand of Mortgage Loan

The findings of this study presents that inflation positively influenced the demand of mortgage loan. This means that when inflation increases, the demand of
mortgage loan will increases. The inflation rate positively influence the demand of mortgage loan. This is possible because despite inflation is increase normally. The steady increase of inflation create a good economic condition. It will increase the society willingness to invest their money, the purchasing power of society increase and the wealth of society is also increase. Therefore, the society buy a new house and still apply mortgage loan to the banks.

**The Significant Influence of Income towards the Demand of Mortgage Loan**

Income has positive and significant influence to the demand of mortgage loan. When income increases, therefore the demand of mortgage loan will increase. This finding presents that income is positively related to purchasing power. The increasing income of the society will improve the purchasing power of society. The purchasing power is important to determine the consumer’s decision in buying goods or services. This purchasing power is related to consumer demand. High society income leads to higher demand of mortgage loan.

**The Insignificant Influence of Exchange Rate to the Demand of Mortgage Loan**

The exchange rate has positive relationship to demand of mortgage loan. This means that the increasing of exchange rate will increase the demand of mortgage loan. But, the society does not consider exchange rate as the factors that influence their choice to apply mortgage loan. This is because house is primary needs. The society will buy a house even the exchange rate increase.
E. CONCLUSION AND RECOMMENDATION

Conclusion

According to the findings and discussion of this study, the writer makes conclusions about the influences of lending rate, inflation, income, and exchange rate towards demand of mortgage loan in BTN University of Brawijaya Branch Office Malang. They are:

1. The society concern to lending rate before they apply mortgage loan. This is because the lending rate is cost of borrowing. Therefore, the increasing of lending rate, it will increase the society expense to pay the lending rate along the credit period. The lower lending rate will attract the society to apply mortgage loan.

2. The stable increasing of inflation rate in Malang due to monetary and fiscal policies that created by Bank of Indonesia and Government. This causes the good economic condition in Malang. The good economic condition leads the increasing of the society willingness to invest and buy assets on credit.

3. The purchasing power of the society is based on income. Income has the fundamental roles to whole economic life. Every goods and services that society buys should be suitable with their income level.

4. The exchange rate has positive relationship to demand of mortgage loan. This means that the increasing of exchange rate will increase the demand of mortgage loan. But, the society does not consider exchange rate as the factors
that influence their choice to apply mortgage loan. This is because house is primary needs. The society will buy a house even the exchange rate increase.

**Recommendation**

According to the discussion and the conclusions reached by the writer, therefore the recommendation or suggestions about this study are:

1. According to the findings of the study, when the lending rate is lower, it is good for the society to apply mortgage loan. This is because they can pay the lending rate cheaper along the credit period. When the inflation rate is stable, it is create the good economic condition for society to apply mortgage loan. Therefore, when income of the society increase, it is better for them to apply mortgage loan.

2. For the BTN, when the inflation is high, that should be decrease the lending rate because it is also important to maintain the inflation rate. When the commercial bank decrease the lending rate, the society will apply mortgage loan to the banks, therefore the money circulation in the society will decrease.

3. The exchange rate has insignificant influence to the demand of mortgage loan. This means that the society can ignore exchange rate when they want to apply mortgage loan.

4. BTN is government bank that provides subsidy for society with low income. Therefore, for the next researcher to conduct research about the influence of the subsidy toward the demand of mortgage loan in BTN.
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