

The Analysis of Property Loans Development in Indonesia

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ABSTRACT

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The property sector in Indonesia has an essential role in driving the national economy. The bank lending development to the property sector in April 2019 did not show significant growth and stagnant. This study analyzes the growth trend of property loans in Indonesia and estimates the factors that affect the number of housing loans (KPR) and apartment ownership loans (KPA) in Indonesia. The data used in this study are secondary data and time series. The analytical tools used in this research are trend and regression. The results showed that from 2020 to 2025, the property loan growth in Indonesia will still be sluggish. The condition is identified by construction loan which is expected to grow even though the increase is not too significant, real estate loan is still fluctuating, this is because in 2019 there was a decline in real estate loan growth of almost 50 percent from the previous year, and KPA and KPR are estimated to decline even though in nominal terms the number of KPR and KPA increases. The population number variable has a positive and significant effect on the number of KPR and KPA in Indonesia. The more the population, the more the number of KPR and KPA will increase. Meanwhile, the variables of economic growth and inflation in this study did not significantly affect the number of KPR and KPA.

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Introduction

The property sector in Indonesia has an essential role in boosting the national economy. According to Bank Indonesia (BI), achieving a more robust property sector performance is responsible for various authorities, including BI. BI authorities' policies related to the synergized property sector are believed to accelerate improvements in the property sector's performance. The property sector in Indonesia can absorb a large number of workers. This sector also has a multiplier effect and backward linkage, which significantly impacts other sectors—another impact of the property sector on the economy, especially financial products. An increase in property prices will impact the ability to pay. Thus, it is essential to have synergy between related parties to ensure a healthy and robust property

sector work development. In addition, the policy constructed by Indonesia Central Bank (BI) regarding loosening or tightening the Loan to Value ratio (LTV) with due regard to the financial cycle is expected to be able to increase the vigilance of banks in disbursing loans, especially housing loans (KPR).

According to Bank Indonesia, property loans are divided into construction loans, real estate loans and housing loans (KPR), and apartment ownership loans (KPA). The development of bank lending to the property sector in April 2019 did not show significant growth and stagnant. This figure increased slightly from the previous month, which recorded an increase of 17.1% annually. Accelerated housing loans drove this growth (KPR) and apartment ownership loans (KPA), and construction loans. Meanwhile, real estate loans recorded a slowdown in growth. KPR and KPA loan growth was 13.8% (YoY) in April 2019, higher than the previous month's growth of 13.2% (YoY). Meanwhile, property loan disbursement in April 2019 reached IDR 480.4 trillion, higher than the previous month's IDR475.5 trillion. This came from the increase in KPR types 22 to 70 in the Aceh and North Sumatra Provinces.

According to Rahayu, Sri, Betharia, Lela, and Rospida (2018), the determinants that affect housing demand are population, per capita income, and selling price. Pranawengrum and Ciptono (2010) emphasize that the factors that affect residential property demand include housing prices, population, loan interest rates, and inflation in the housing sector. According to Habiby (2013), the factors that significantly influence customers to borrow housing loans (KPR) are interest rates, income, age, education, and housing location. Meanwhile, Ganthari and Syafri (2018) stated that consumption loan interest rates and income per capita significantly affect mortgage demand. Siravati (2018) stated that loan interest rates and inflation have a negative and significant effect on demand for housing loans and economic growth, and the loan to deposit ratio has a positive and significant effect on housing loans. Sandria, Adnan, and Yuliana (2016) stated that house prices and loan interest rates affect the demand for housing loans. Thus, refer to the background, it is essential to conduct research related to the property loan development in Indonesia and estimate what are the determinants affect property loan especially for Housing loans (KPR) and Apartment Ownership Loans (KTA).

Methods

Research Design, Location, and Time

This research utilizes modified variables from previous literature from Habiby (2013); Ganthari and Syafri (2018); Sandria, Adnan, and Yuliana (2016); and Rakhmawati (2011).

The variables are as follow:

1. The amount of housing loan (KPR) and apartment ownership loan (KTA) in Indonesia (KK)
2. Population (JP)
3. Economic Growth (PE)
4. Inflation (I)

Thus, the model of this research is as follows:

$$KK = \alpha + \beta_1 SB + \beta_2 JP + \beta_3 PE + \beta_4 I + e$$

This research location is in Indonesia from 1999 to 2019

Data Compilation Method

Secondary data is data that is collected to solve the problem at hand. This data can be found quickly. These secondary data sources in this research are literature, articles, journals, and the internet. According to Silalahi (2012: 289), secondary data is data collected second-hand or from other available sources before the research was conducted. Secondary data were obtained from the Indonesia Central Bureau of Statistics (BPS), Bank Indonesia, the Indonesian Financial Services Authority, and Indonesia Real Estate. The data in this study are time-series data.

Measurement and Variable Assessment

There are two hypotheses in this research that are partial test hypothesis and simultaneous test hypothesis. The hypothesis is as follow:

1. Partial test Hypothesis:
 - a. Housing loans and apartment ownership loan interest rates are significantly affect housing loans and apartment ownership loans in Indonesia.
 - b. Population significantly affects housing loans and apartment ownership loans in Indonesia.
 - c. Economic growth significantly affects housing loans and apartment ownership loans in Indonesia.
 - d. Inflation significantly affects housing loans and apartment ownership loans in Indonesia.
2. Simultaneous test hypothesis:

Independent variables significantly affect dependent variables simultaneously.

Analysis Tools

This research utilized descriptive analysis, trend analysis, and multiple linear regressions. Descriptive statistics and trend analysis are utilized to answer the first purpose

of this research. Multiple linear regression is utilized for the second purpose of this research. A trend tends to up or down in the long run, which is obtained from the average change over time. The rate of change can increase or decrease. If the rate of change increases, it is called a positive trend, or the trend has an upward tendency. Conversely, if the average change decreases, it is called a negative trend or a trend that has a downward trend. The trend line is a regression line, and the independent variable (x) is a time variable. A straight line (linear) trend is a trend that is predicted to rise or fall in a straight line. Time variable as an independent variable can use annual, semester, monthly, or weekly time. Analysis of the straight-line trend (linear) consists of small squares or (least square) and moment.

The equation of trend is as follow $Y' = a+bX$

There are several methods of trend analysis. The methods are as follow:

- 1) Free Hand Method. Drawing a trend with this free method is very easy and straightforward. Only by observing the distribution of data can we know the trend line trend of the data pattern. Of course, in this way, the results cannot be justified.
- 2) Semi Average Method. Move to the trend line by finding the group means. This method is to try to eliminate subjectivity, as in the free method.
- 3) Least Square Method. The trend line in this method is obtained by determining the line equation that has the smallest number of squares of the difference between the original data and the data on the trend line.
- 4) Moment method. This method utilizes specific statistical and mathematical calculations to determine the function of the straight line instead of the broken lines formed by the company's historical data.

Spiegel (2004) explained that multiple linear regression is an equation model that explains the relationship of one dependent variable/response (Y) with two or more independent variables/predictors (X1, X2,... Xn). The purpose of the multiple linear regression test is to predict the value of the dependent variable/response (Y) if the values of the independent variable/predictor (X1, X2, ..., Xn) are known. Moreover, multiple linear regression is utilized to determine the relationship between the dependent variable and independent variables.

The multiple linear regression equation is as follow:

$$Y = a + b_1 X_1 + b_2 X_2 + \dots + b_n X_n$$

Variable specification:

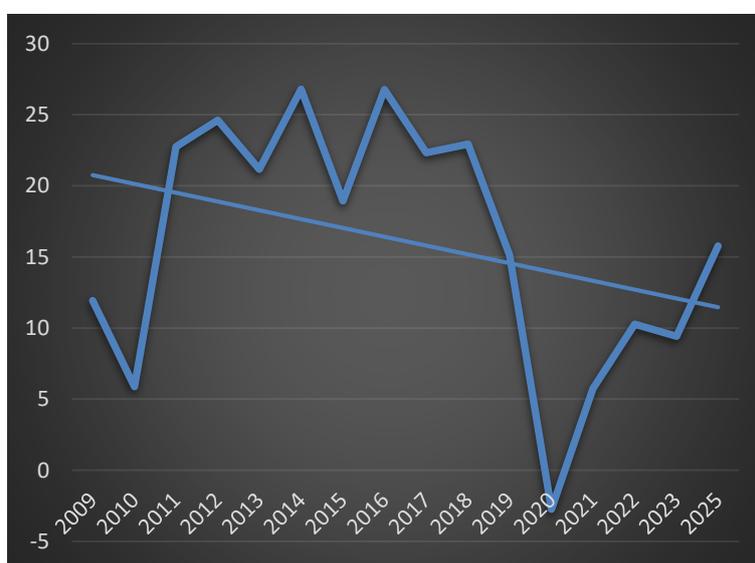
- | | |
|----------------|--------------------------------|
| Y | : Dependent variable |
| a | : Constanta |
| b1, b2,..., bn | : Regression coefficient value |

X1, X2, ..., Xn : Independent variable

Result

Property Loan Development Trend in Indonesia (Construction Loan, Real Estate, Housing loan, and Apartment Ownership Loan in Indonesia)

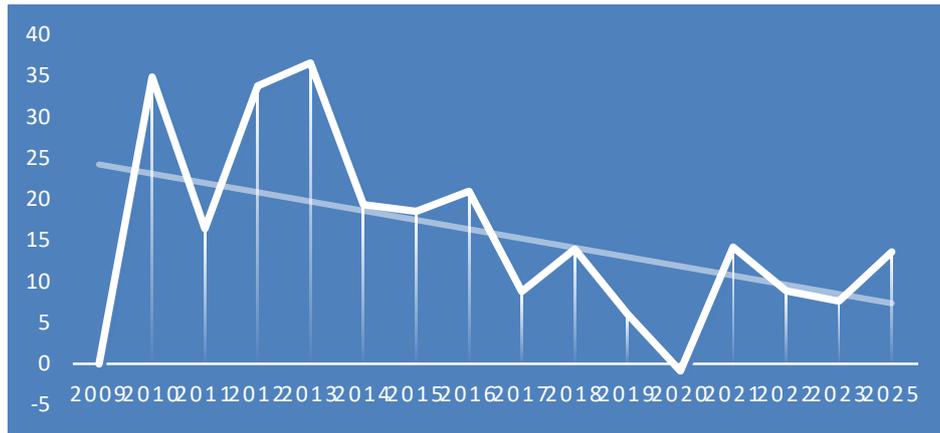
Indonesia's construction loan development trend is projected for the next five years with the ceteris paribus assumption and based on historical data from 2009 to 2025. The construction loan growth from 2010 to 2011 experienced a 16.8% significant increase. Meanwhile, the construction loan growth experienced fluctuations in the following years. Construction loan growth is predicted to grow steadily from 2020 to 2025 even though during 2009-2020, there were fluctuations. Figure 1 shows construction loan growth that tends to decline with the loan value increasing every year.



Data Source: Bank Indonesia

Figure 1. Construction Loan Growth Trend from 2009 to 2025

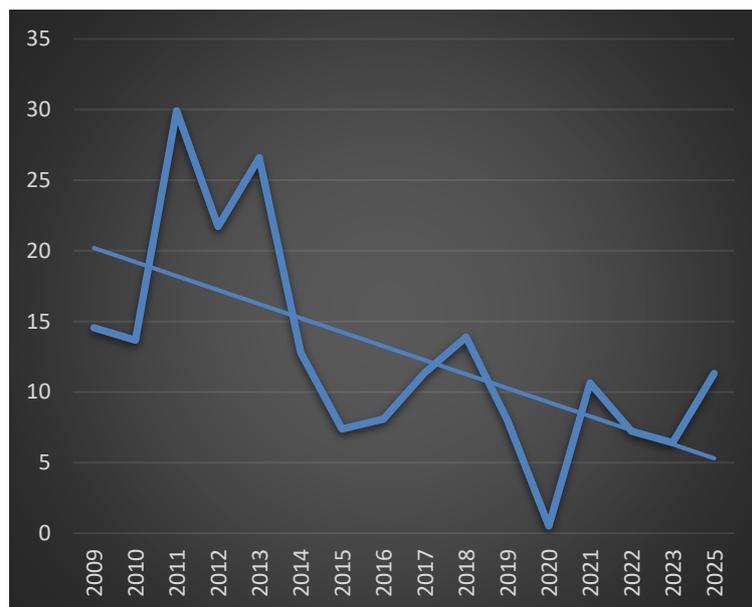
Indonesia's construction loan development trend is projected for the next five years with the ceteris paribus assumption and based on historical data from 2009 to 2025. Real estate loan growth experience sharp fluctuations from 2009 to 2025. The steepest decline growth from 2010 to 2011 was 18.4%. Real estate loan growth was the highest in 2013 at 36.5%. From 2020 to 2025, it is estimated that real estate loan growth will still fluctuate. Real estate loan growth from 2009 to 2025 tends to decline, with real estate loan values increasing every year.



Data Source: Data Bank Indonesia

Figure 2. Mortgage Loan Trend in Indonesia from 2009 to 2025

Figure 3.6 showed the development trend of housing loans (KPR) and apartment ownership loans (KTA) in Indonesia with a projection for the next five years with the *ceteris paribus* assumption and historical data from 2009-2025. Growth in the distribution of KPR and KPA in Indonesia during 2009-2025 has fluctuated. From 2010 to 2011, the growth of KPR and KPA experienced a sharp increase of 16%. However, in 2013 it experienced a sharp decline until 2015 and then continued to grow until 2018. The growth of KPA and KPR distribution in Indonesia in 2022 and 2023 is estimated to be relatively stable, with 7.2% and 6.4% growth. When viewed as a whole, the growth charts for KPR and KPA show a downward trend even though the number of KPR and KPA in Indonesia continues to grow from year to year.



Data Source: Bank Indonesia

Figure 3. Housing loan (KPR) and Apartment Ownership Loan in Indonesia 2009-2025

The growth in the distribution of KPR and KPA in Indonesia during 2009 – 2025 experience fluctuation. From 2010 to 2011, the growth of KPR and KPA experienced a sharp increase of 16%. However, in 2013 it experienced a sharp decline until 2015 and then continued to grow until 2018. The distribution of KPA and KPR growth in Indonesia in 2022 and 2023 is estimated to be relatively stable, with 7.2% and 6.4% growth. The growth charts for KPR and KPA show a downward trend even though the number of KPR and KPA in Indonesia continues to grow from year to year.

The effect of population, economic growth, and inflation on housing loan and apartment ownership loan in Indonesia.

The classical assumption is conducted before running multiple linear regressions. After the data meets the classical assumption test, new data can be processed with multiple linear regression. Four types of classical assumption tests are autocorrelation, normalization, multicollinearity, and heteroscedasticity.

Table 1. Normality Result

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
Normal Parameters^b	Mean	0E-7
	Std. Deviation	17.60784368
Most Extreme Differences	Absolute	.211
	Positive	.211
	Negative	-.170
Kolmogorov-Smirnov Z		.733
Asymp. Sig. (2-tailed)		.657
a. Test distribution is Normal.		
b. Calculated from data.		

Data source: Bank Indonesia

Based on table 1. the significance value of Asymp Sig (2 tailed) is $0.657 > 0.05$. From the Kolmogorov-Smirnov normality test. it can be concluded that the data is normally distributed.

Table 2. Multicollinearity Result

Coefficients							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-2080.153	207.220		-10.038	.000		
JP	9.867E-006	.000	.947	14.856	.000	.523	1.914

PE	-19.255	10.528	-.109	-1.829	.105	.594	1.683
INFLASI	2.681	2.607	.056	1.028	.334	.719	1.391

a. Dependent Variable: KPR

Source: Bank Indonesia

Table 2 revealed that the VIF value of JP, PE, and INFLASI is less than 10. It can be concluded that there is no multicollinearity.

Table 3. Heteroskedastisitas Test Result

Coefficients							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-46.197	69.282		-.667	.524		
JP	2.873E-007	.000	.491	1.294	.232	.523	1.914
PE	-2.526	3.520	-.256	-.718	.493	.594	1.683
INFLASI	.297	.872	.110	.340	.742	.719	1.391

a. Dependent Variable: abs_res

Data Source: Bank Indonesia

The estimation result above explained that the significance value of JP, PE, and INFLASI is > 0.05. It can be concluded that there is no heteroscedasticity in the regression model.

Table 4. Autocorrelation Test Result

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.991 ^a	.983	.977	20.647027	.670

a. Predictors: (Constant), INFLASI, PE, JP

b. Dependent Variable: KPR

Data source: Bank Indonesia

Based on Table 4, it can be seen that the Durbin Watson value is 0.670, the du value is 1.8640, and the dl value is 0.6577. Those values do not explain definite conclusions because the Durbin Watson value is between the dl and du values. After passed the classical assumption test, the existing data can be further estimated using multiple linear regression analysis tools. Below are the results of multiple linear regressions.

Table 5. Multiple Linear Regression Results

Model	Coefficients		T	Sig.	Collinearity Statistics
	Unstandardized Coefficients	Standardized Coefficients			

	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-2080.153	207.220		-10.038	.000		
JP	9.867E-006	.000	.947	14.856	.000	.523	1.914
PE	-19.255	10.528	-.109	-1.829	.105	.594	1.683
INFLASI	2.681	2.607	.056	1.028	.334	.719	1.391

a. Dependent Variable: KPR

Data source: Bank Indonesia

According to Table 5. the regression model is as follow:

$$\text{KPR and KTA} = -2080.253 + 9.867 \text{ JP} - 19.255 \text{ PE} + 2.681 \text{ Inflasi}$$

Variable specifications:

- KPR and KTA : housing loan and apartment ownership loan
- JP : population
- PE : Economic growth
- Inflasi : Inflation

The partial test results showed that the significance value of the Total Population (JP) of 0.00 is smaller than the significance value of 0.05. Thus. Population (JP) has a significant and positive effect on Housing loan and Apartment ownership loan. Based on the t-value. JP has a positive effect on KPR and KTA because the t count is 14.856 on the curve to the right of the t table. which is 2.306. Interpretation of the coefficient value for the total population of 9.867 means that if the population increases by 10 percent. the number of housing loans and apartment ownership loans will increase by 98.67 percent.

It can be concluded that the Economic Growth variable does not have a significant effect on housing loans and Apartment Ownership Loan as for the Economic Growth (PE) and Inflation variables have a significant value above 0.05. The inflation variable also does not have a significant effect on housing loans and Apartment Ownership loans.

Table 6. Simultaneous Test Result (Uji F)

Test	Value	Sig
F	154.205	0.00000

Data source: Bank Indonesia

The simultaneous test results showed a significance value of F statistic of 0.000. which is less than 0.05. It means that all independent variables have a significant effect on the dependent variable simultaneously. The adjusted R-square value test IS 0.997. It explained that 99.7 percent of the model is affected by the population. economic growth. and inflation. The remaining 0.3 percent is affected by other variables outside the model.

Table 7. Adjusted-R Square Result

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.991 ^a	.983	.977	20.647027	.670

a. Predictors: (Constant). INFLASI. PE. JP

b. Dependent Variable: KPR

Data source: Bank Indonesia

Discussion

This study revealed that the number of populations (JP) has a positive effect on housing loans (KPR) and apartment ownership loans (KTA). It means that the higher the population, the higher the demand for KPR and KTA. This is in line with Pranawengrum and Ciptono (2010) which stated that the number of residents has a significant and positive impact on residential property demand. In addition, it is also supported by the research of Rahayu, Betharia, Lela, and Rospida (2009). The research revealed that the population has a positive and significant effect on housing demand in Bengkulu.

Conclusion

The Mortgage Loan Development (Construction Loan, Real Estate, Housing loan, and Apartment ownership loan)

1. Construction loan growth from 2010 to 2011 experienced a 16.8% significant increase and fluctuation in the following years. From 2020 to 2025, construction loan growth is predicted to grow stably.
2. The real estate loan growth trend experienced the sharpest decline at 18.4% from 2010 to 2011. Real estate loan growth was the highest in 2013 at 36.5%. From 2020 to 2025, it is estimated that real estate loan growth will still fluctuate.
3. Housing loans and apartment ownership loan disbursement in 2010 experience a sharp increase of 16%. However, in 2013 it experienced another decline until 2015 and then continued to grow until 2018. The growth of housing loan and apartment ownership loan disbursements in Indonesia in 2022 and 2023 is estimated to be relatively stable, with 7.2% and 6.4% growth.

The determinants of Housing Loan (KPR) and Apartment ownership loan (KPA)

1. Population (JP) has a positive effect on KPR and KTA because the value of t count is 14.856 on the curve to the right of the t table value, which is 2.306. The total population of 9.867 means that if the population increases by 10 percent, the number of housing loans and apartment ownership loans will increase by 98.67 percent.
2. Economic Growth (PE) and Inflation variables have a significant value above 0.05. It can be concluded that the Economic Growth variable does not have a significant effect

on housing loans and apartment ownership loans. as well as the inflation variable also does not have a significant effect on housing loans and apartment ownership loans.

3. Economic Growth (PE) and inflation variables have a significant value above 0.05. so it can be concluded that the Economic Growth variable does not have a significant effect on Housing Loan and Apartment Ownership Loan. as well as the inflation variable also does not have a significant effect on Housing Loan and Apartment Ownership Loan.
4. The simultaneous test revealed that the F-statistic value is 0.000. It means that the independent variables affect dependent variables simultaneously significantly.
5. Adjusted R-square showed 0.997. It means that 99.7 percent of the model is affected by population. economic growth. and inflation. while the rest of 0.3 percent is affected by another variable outside the model.

Suggestion

The government needs to construct some monetary policies to boost property loan growth in Indonesia. Furthermore. the increasing population will increase demand for housing. both housing and apartments. It stimulates the regional government to carry out regulatory policies related to the housing and apartment development in their respective areas in terms of fulfilling housing for residents. In addition. the central government can intensify housing or apartment ownership loans for the lower class. for example. with housing subsidies or a special reduction in interest rates for underprivileged residents. These policies should be done to avoid further problems related to housing as a primary need.

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