THE IMPACT OF ECONOMIC GROWTH IN HOUSING LOANS DEMAND IN ALBANIA

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Abstract
The lack in empirical study of housing finance in emerging economies conduct me to use Albania as a case study.
In countries like Albania where the macroeconomic volatilities are high the economic growth plays an important role in loan financing.
The data collected were organized and prepared for analysis taking in consideration the Demand for Housing Loans as a dependent variable and money supply (M1) and economic growth as independent variables. The aim of this study centered on how Housing Loans demand in Albania during the financial crisis has behaved. In emerging economies like Albania where providing a dwelling for the citizens is not one of the government's priority, having a housing loan is almost the only alternative of purchasing a house. The problem is that the economic uncertainty especially when the living standard living, shrinks the individuals demand for borrowing funds from banks.

Keywords: Housing Loans, Economic growth , Mortgages, Money Supply

Introduction
The demand for homes will depend on home prices and the cost of alternative house arrangement. The ability of the consumers to buy should be reflected in their personal income and the already existing burden of nonmortgage consumer installment debt.

In general, most studies include a variable of the economic activity (for example, GDP) and financing costs (for example, interest rates on loans bank), as the main drivers of lending (CALZA et.al.2001).

Houses and buildings for residential purposes are considered as special importance for both, determining the level of welfare in a society as well as the level of economic activity (Sheppard 1999; Poole 2003).

The house is the largest asset owned by the people and in most cases it is financed for a long period and making payments during all this period (Malpezzi 1999).

Loan demand for funds is a representation of the demand for increasing stock of debt to finance current consumption demand, investment or government spending on goods and services (Pilbean 2005; Wickens 2008).

Literature Review

In the models on credit demand, real GDP, prices and interest rates are commonly the explanatory variables, although there is no "standard" model which would be widely used. However, modeling and estimation techniques in this area are complicated due to difficulties with separating demand side effects from supply side effects (see e.g. Rajan 1994).

Empirically, the relationship between credit and current economic activity is well founded in Hofmann (2001) documents that in 16 industrialized countries the annual rate of change in real credit is closely related to that of real GDP. O'Bienn and Browne (1992) sited that one factor that can contribute to the slowdown in monetary transaction is a reduction in bank lending. It is understood that a slowdown in loans reflects influences on both the demand and the supply side. On the demand side a slowdown in economic activity and the subsequent loss of purchasing power by many individuals has disqualified them from being able to qualify for access to loans. Calza etal (2001) using the Johansen methodology in their identified the link between loans, GDP and interest rates. This link shows that in the long- term loans are positively associated with real GDP and negatively related with the long and short term interest rates. Erjona Suljoti and Gent Hashorva (2011) studied the impact of the housing prices, GDP per capita interest rates of mortgage loans. The relationship between dependent variables and independent variables for the period under consideration was very significant. GDP per capita and housing prices resulted to have a positive relation with the individuals request for housing loans, meanwhile with the interest rates this relation is negative. Based in the DOLS dynamic method they found the strong relationship for the variables taken in consideration for the case of Albania during 1998-2010

Kashyap et.al (1993) argues that a higher economic growth allows agents to borrow more in order to finance consumption and investment; therefore, there should be a positive correlation between GDP and lending activity.

Real estate market and housing loans in Albania

The dwelling market as well as the housing loan market in Albania has experienced many changes. The developments in these two markets can be divided in two time periods. During the first period 2000-2007 a very fast development of dwelling market and mortgage loans market has occurred.

Meanwhile during the period 2008-2013 the increase in both markets has slowed down due to the global financial crisis and the slow-down of economic activity in Albania

Even though it was not expected to be so fast, on 2008 the crisis in the real estate market has started based on the official data of Bank of Albania. Based on the statistics that its obvious that the demand for house purchase from emigrants has been considerably decreased. Such evidence has been confirmed from the Bank of Albania. The decrease for housing purchase from individuals has started since 2008 due to the difficult financial situation and low remittances from emigrants. Another factor influencing in the tendency of individuals to purchase a house is the loan financing. In 2008 banks started to be more restricted in lending mainly due to the increase of non- performing loans. The difficulty in having a loan will influence the market considering that the construction sector and industry absorb 77% of the total loan portfolio which is used to finance the investments in real estate. While the increase in house price is justified by the increase of construction materials during that year. The macroeconomic environment, business difficulties have influenced in the decrease of loan supply. In Albania the individuals buy a house for living purpose rather than investment one so the decrease of the demand is much lower than in Europe or USA. The transactions for housing purchases, especially apartments have decreased after 2007 and the main reasons for such a decrease are the deterioration of their financial conditions and the difficulties of having a housing loan.
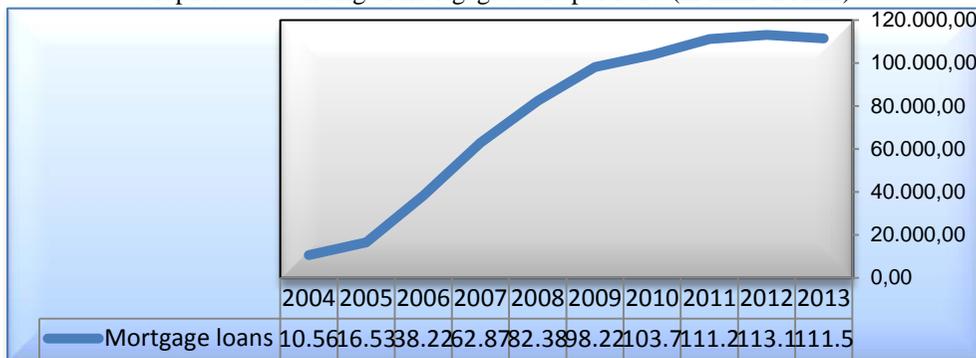
The trend of housing loans in Albania

During the period 2004-2007 the mortgage loans portfolio has experienced a high increase with an average annual increase of 65%. Such a positive trend has been sustained from the banking system development and economic growth of the period. It was created a stratum with average income having the possibility to meet the monthly obligations towards banks. On the same time the privatization of ex Saving Bank occurred, the biggest bank in Albania, named Raiffeissen Bank which gave liquidity to the market and stimulated banks to announce a new product, the "mortgage Loan". On the supply side of mortgage loans, banks used to gain market share by offering very convenience products. Many banks used the mortgage loan to diversify their loan portfolio in terms of quality and cost of funds. The willingness of banks to develop this market segment went along with the increase of individuals demand to be financed. Such an increase was due to the increase of housing prices during the years 2004-2007 which was not affordable to be paid in cash from the buyers. During this period the housing price were about 50% higher than in 2004.

On the same time banks presented very attractive mortgage products and were more tolerant in their credit policy by purpose to stimulate the demand for mortgage loans.

In 2007 the mortgage loan portfolio was two times higher than in 2004(see graph 1).

Graph 1: Outstanding of mortgage loans portfolio (in million ALL)

|	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Mortgage loans	10.56	16.53	38.22	62.87	82.38	98.22	103.7	111.2	113.1	111.5

Source: Bank of Albania

Also this period has been characterized from the economic growth which has increase the optimism for the future and further increase of the housing price, by making individuals to purchase houses through loan financing hoping that will have further increase of prices in the future. Meanwhile after the year 2007 the mortgage loans portfolio increase rate has been obviously decreased especially through the year 2010. On 2008 the slowdown in the supply for mortgage loans has been influence from lack of bank's liquidity. Under these circumstances, bank's started to be more cautious in their credit policy, especially for loans to individuals in foreign currency. For such a reason it was noticed a slowdown in the demand for mortgage loans. This demand was also influenced from the slowdown of the disposal income increase as a reason of low economic growth in the last two years. The lack of customer's confidence oriented them through saving due to the future uncertainty. Another reason of loan demand decrease is the postponement of housing purchase in the future, hoping in the decrease of housing price. At the end of 2010, the mortgage portfolio composes less than 10% of Albanian GDP.

The mortgage loan portfolio for individuals composes almost 23% of the banking system loans portfolio in 2007 and decreased to 19% in 2013. The product for housing financing may have a fix interest rate or a floating one. The interest rates also differ as per product currency. In general, most of the loans financing are in euro with floating interest rates. In any case some hybrid products have resulted to be successful in the market by having a fix interest rate for the first 2-5 years and floating for the remaining period.

Banks in Albania finance up to 80% of the collateral market value and the tenor vary from 5 to 30 years. The demand for housing loans on 2007 and beginning of 2008 was higher than the demand of individuals for consumer loans. Despite the necessity of individuals to be financed for house purchase other factors that have positively contributed in the demand for housing loans before 2008 were: the developments in real estate market, consumer's confidence and credit policies applied from banks. Credit policy standards has been somehow tighten on the fourth quarter of 2009 through increasing the spread for the high risk loans, following the same trend as European banks (see graph 2)

Graph 2: Bank Lending Conditions
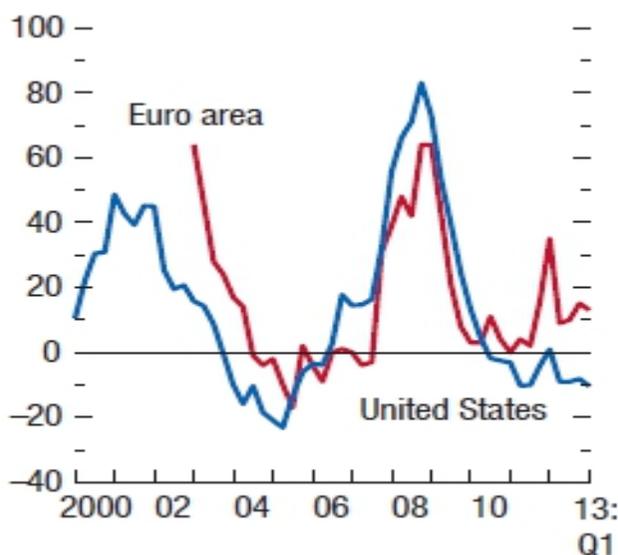
Source: IMF, World Economic Outlook 2013

The demand in the same time decreased, although the new buildings constructed in total during 2009 were 1,021. New disbursements during the 2009 suffered a considerable decrease from 36 milliard ALL in 2008 to 15 milliard ALL.

Two main factors that make banks to be conservative in lending are the non performing loans and low income of individuals

From the other side the number of new buildings constructed in 2010 was 1,283 higher than in 2009. In such a way the number of houses in stock is increased year by year. During the year 2011 the uncertainty of banks to lend was related to the macroeconomic situation in Albania, the nonperforming loans ratio, financial situation of individuals and the problematic of real estate market. The tightening of credit standards has been applied usually by reducing the financing amount and asking for additional

collateral. Albanian banks have reported that demand of customers has also decreased due to future uncertainty. The same trend has followed also during the year 2012. The demand for mortgage loans has been decreased due to the long run prediction of financial situation for the future from individuals. The decrease in mortgage loan portfolio for 2012 was 0.46 milliard all. The overall increase in retail portfolio was 0.7 milliard all during the year 2012, the lowest in the last ten years. Meanwhile during the year 2013, it was an increase of new disbursements for mortgage loans compared with 2012. The total disbursements were 18.4 milliard ALL.

The methodology and data

The conceptualization of a model is to assist in the analysis of the relationship between the demand for housing loans being the dependent variable, and other factors that may affect it. The methodology adopted need to capture all the variables. The demand for housing finance function is therefore expressed as below:

$$\log(KKSH) = c + \beta_1 \, Ys + \beta_2 \log(M1(-1))$$

Where:

KKSH-demand for housing loans

Ys-economic growth

M1 (-1)-monetary aggregate at one lag

Table 1: The results of the regression model

Dependent Variable: LOG(KKSH)
Sample: 2008Q1 2013Q4
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41.32084	6.987962	5.913145	0.0000
YS	2.904124	1.262590	2.300132	0.0318
LOG(M1(-1))	-2.635250	0.557299	-4.728613	0.0001

R-squared	0.752119	Mean dependent var	8.482524
Adjusted R-squared	0.728511	S.D. dependent var	0.313246
S.E. of regression	0.163215	Akaike info criterion	-0.671023
Sum squared resid	0.559425	Schwarz criterion	-0.523766
Log likelihood	11.05228	Hannan-Quinn criter.	-0.631956
F-statistic	31.85898	Durbin-Watson stat	1.727398
Prob(F-statistic)	0.000000		

Source: Author calculations

$\beta_1 = 2.90$ shows that when economic growth tends to increase by one percent, than the demand for housing loans tends to increase by 290 percent

β2 = -2.63 shows that when M1 at t-1 tends to increase by 1 percent, than the demand for housing loans at t0 tends to decrease by 2.63 percent

The R^2 value of 0.72 shows approximately 72 percent of the variation in the depended variable is explained by variation of the un depended variables .Since R^2 at most can be 1, we can say that the regression line fits our data extremely well;

Hypothesis testing

In my study I will refer to the test of significance approach SIGNIFICANCE APPROACH in order to define if our finding is statistically significant. To test the significance of the model we will rise the hypothesis based in the Fisher index with the level of significance α=0.05 and (k-1), (n-k) df,

For our model we postulate that:
H0: The assessed model is not statistically significant
Ha: The assessed model is statistically significant

Performing the calculations with E-Views we reach to the conclusion that factice value of Fisher (Ff) is 31.85 while the critic value Fcr= F(n-k)(k-1) = F0.05,1, 23 = 4.3

Given that Ff > Fcr then the hypothesis (H0) is rejected, concluding that the assets model is statistically significant.

Testing the Significance of Regression Coefficients: The t Test

For β1 and β2 we postulate that:
Ho : β1 = β2= 0
Ha : β1 ≠ β2 ≠ 0

In the above table the probability values for β1and β2 are lower than α=0.05, which means that they are statistically significant

Autocorrelation test

On the same time, the residuals of our model have been tested for autocorrelacion and partial autocorrelacion.
cov(ui, uj)=0 për i≠j

The hypothesis are as below:
Ho: There is no presence of autocorrelation
Ha: There is presence of autocorrelacion

Referring to the Durbin Watson test the value of d=1.72 near 2 so that it can be concluded that there is no presence of autocorrelacion.

Heteroscedasticity Test

An important assumption of the classical linear regression model is that the disturbances terms *ui* appearing in the population regression function are homoscedastic; that is, they all have the same variance.

$$E(u_i^2) = \sigma^2 \qquad i = 1, 2, \ldots, n$$

For our model we postulate that

Ho: No presence of heteroscedasticity
Ha: Presence of heteroscedasticity

Table 2: Heteroskedasticity Test: White

F-statistic	2.318349	Prob. F(4,19)	0.0943
Obs*R-squared	7.871763	Prob. Chi-Square(4)	0.0964
Scaled explained SS	3.700194	Prob. Chi-Square(4)	0.4481

Test Equation:
Dependent Variable: RESID^2
Sample: 2008Q1 2013Q4
Included observations: 24
Collinear test repressors dropped from specification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.960012	1.001684	-0.958398	0.3499
YS^2	7.276465	5.096203	1.427821	0.1696
YS*LOG(M1(-1))	-1.385180	2.678701	-0.517109	0.6110
YS	16.53430	33.73587	0.490110	0.6297
LOG(M1(-1))^2	0.006343	0.006378	0.994558	0.3324

R-squared	0.327990	Mean dependent var		0.023309
Adjusted R-squared	0.186514	S.D. dependent var		0.026385
S.E. of regression	0.023797	Akaike info criterion		-4.455426
Sum squared resid	0.010760	Schwarz criterion		-4.209998
Log likelihood	58.46511	Hannan-Quinn criter.		-4.390314
F-statistic	2.318349	Durbin-Watson stat		1.887048
Prob(F-statistic)	0.094305			

Source: Author calculations

Based of the White's heteroscedasticity Test the estimated model is insignificant and also the coefficients of the model considering the respective probabilities higher than 0.05. We conclude that in our model the heteroscedasticity is not present.

Stationarity Test

Another important test for our model is the stationarity test which is computed through Augmented Dickey–Fuller (ADF) Test. Referring to the results in annex 1 the absolute value of ADF test is higher than the absolute

critical value for 95 % level of significance. In such case we conclude that the series of residuals of the model is stationarity.

Table 3 : Augmented Dickey-Fuller Stationarity Test
Null Hypothesis: RESID02 has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		**-2.997546**	0.0897
Test critical values:	1% level	-3.752946	
	5% level	-2.898064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID02)
Sample (adjusted): 2008Q2 2013Q4
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID02(-1)	-0.544084	0.201696	-2.697546	0.0135
C	-0.002488	0.029796	-0.083499	0.9342

R-squared	0.257341	Mean dependent var	0.003184
Adjusted R-squared	0.221976	S.D. dependent var	0.161600
S.E. of regression	0.142540	Akaike info criterion	-0.975445
Sum squared resid	0.426672	Schwarz criterion	-0.876706
Log likelihood	13.21761	Hannan-Quinn criter.	-0.950612
F-statistic	7.276756	Durbin-Watson stat	2.115547
Prob(F-statistic)	0.013483		

Source: Author calculations

Jarque–Bera (JB) Test of Normality

The JB test of normality is an asymptotic, or large-sample, test. It is also based on the OLS residuals.

$$JB = n\left[\frac{S^2}{6} + \frac{(K-3)^2}{24}\right]$$

Where n = sample size, S = skewness coefficient, and K = kurtosis coefficient. For a normally distributed variable, S = 0 and K = 3. Therefore, the JB test of normality is a test of the joint hypothesis that S and K are 0 and 3, respectively. In that case the value of the JB statistic is expected to be 0. If

the computed p value of the JB statistic in an application is sufficiently low, which will happen if the value of the statistic is very different from 0, one can reject the hypothesis that the residuals are normally distributed. But if the p value is reasonably high, which will happen if the value of the statistic is close to zero, we do not reject the normality assumption.

H_0: The standard error term is distributed normally
H_1: The standard error term is not distributed normally

Figure 1: Normal Distribution of residuals series
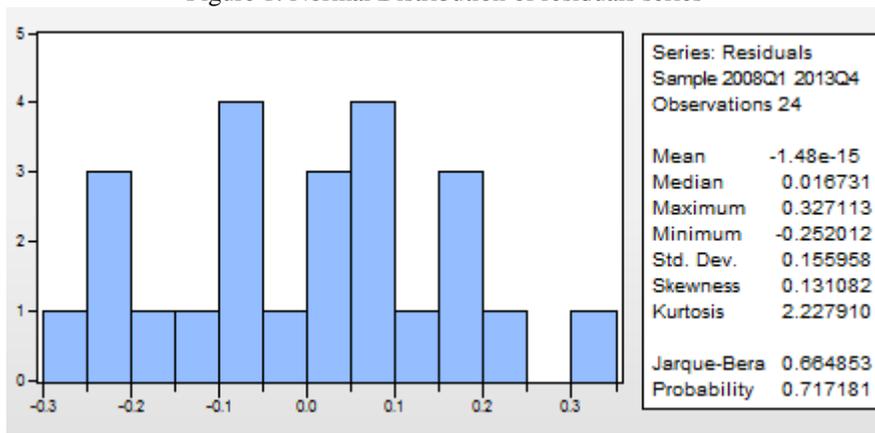
Source: author calculations

Application of the Jarque–Bera test (see annex 1) shows that the JB statistic is about 0.66, and the probability of obtaining such a statistic under the normality assumption is about 72 %. Therefore, we do not reject the hypothesis that the error terms are normally distributed.

Conclusion

The purpose of this study is to analyze the housing loans demand in Albania. The analyze has taken in consideration three factors the new mortgage disbursements as the dependent variable and the economic growth and the money aggregate M1 as the independent variable.

To treat the problem empirically it was used the log-level regression model. For the period taken into consideration 2008-2013 corresponding with the financial crises, we reached in the conclusion that the demand for housing loan has a strong positive relation with the economic growth and negative relation with M1. The increase in economic growth makes people more confident about their investments so that their request for financing increases. Meanwhile the increase of narrow money behaves as a substitution tool of borrowed funds.

In the last years the demand for housing loans in Albania, decreased in parallel with the decrease of the supply form banks. In developing

countries like Albania people are more willing to save in crisis periods than to invest.

The highest mortgage to GDP ratio corresponds to the year that the prices of houses reached the peak in 2008, thus we may say that the market price of houses has not influence much the demand for houses.

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