THE CAUSAL RELATIONSHIP BETWEEN BANK CREDIT FOR REAL ESTATE AND ECONOMIC GROWTH IN ALBANIA

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Abstract

Construction has become one of the main sectors supporting economic growth in Albania in recent years. Some of the factors that have boosted the growth are: the increase of residential projects, the continuation of post-earthquake reconstruction works and public investments, mainly in road construction. A VEC model will be presented in this paper that uses bank credit for real estate as a cointegrated variable with GDP growth, as the construction sector in Albania occupies a very important role in the economy. The objective of this model is to identify the short-term and long-term causal relationship between this credit activity and economic growth in Albania. The analysis by subject and purpose of credit use shows that real estate investment credit for individuals occupies the largest share of the total credit portfolio, followed by real estate credit granted to businesses. From the results of the econometric model it was concluded that credit to the real estate sector has a positive effect on long-term economic growth. The construction sector is one of the sectors that contribute the most to GDP and, at the same time, to the growth of the banks' loan portfolio. Lending to this sector, according to the results of this model, has a positive influence on the economy.

Keywords: *Albania, bank credit, economic growth, real estate, VECM*

Classification JEL: *C33, G21*

1. Introduction

Construction has become one of the main sectors supporting economic growth in Albania in recent years. Some of the factors that have boosted the growth are: the increase of residential projects, the continuation of post-earthquake reconstruction works and public investments, mainly in road construction. Construction was one of the activities least affected by the pandemic crisis, as the residential sector also benefited from the unusual boom in real estate sales, which led the economic performance after 2020.

Loans for the purchase of real estate are growing rapidly. Competition between banks has increased and loans are cheaper than ever before. The crisis proved that the real estate market in Albania often goes beyond the most expected schemes and projections. When the economy was hit by the worst recession in 23 years, few expected the property market to continue to rise. Compared to business loans, average loan values are lower, which enables better distribution of credit risk. Another factor is the increase in property prices, which also translates into a higher security for the value of the collateral.

Recently, most banks seem to have increased their offers, and therefore their attention towards loans for individuals, especially mortgage ones. One of the reasons, I believe, is the growing demand from individuals, combined with the smaller credit risk that this category has compared to businesses. Even the constant increase in prices has caused banks to be somewhat more protected by the collaterals that cover the loan, since the increase in value provides better coverage.

Albanian citizens are becoming more oriented towards investing in real estate. Thus, the main objective of this paper is to identify the short-term and long-term causal relationship between

real estate credit activity and economic growth in Albania, by employing a VEC model that uses bank credit for real estate as a cointegrated variable with GDP growth.

2. Literature Review

In the conditions of the decline of national production and employment, it was expected that individuals would appear more attracted to making large investments, such as the purchase of a real estate. Even more so, when it comes to this investment being supported by taking large and long-term loans, such as home loans. However, the statistics of the Bank of Albania [1] show that last year, Albanian families received 26.5 billion ALL, or about 215 million euros, in loans for the purchase of housing.

According to the authors Spulbăr and Nițoi (2011, p.43) [11], "banks are of particular importance for economic growth, credit allocation, financial stability, as well as for the competitiveness and development of companies." In 2010, Spulbăr and Nițoi [10] estimated an econometric model that intercepts determinants of the evolution of non-government credit in Romania. The authors noted that economic growth and real estate prices had the most significant impact on non-government credit.

At the macroeconomic context, the level of credit has a direct influence on economic growth [7]. Most empirical studies [6] usually conclude that the development of the financial sector accelerates economic growth.

The results obtained in another study [9], applying the least squares regression method for a panel of countries, show that economic growth, credit quality, the financial intermediation rate, together with foreign and domestic sources of financing are the basic determinants of credit growth. Also, other estimates [12] show that mortgages are positively related to income and negatively related to interest rates. The cost of construction turns out to be an important factor influencing the price of housing.

I conducted [4] an econometric case study to make a quantitative analysis of the relationship between credit activity and economic growth for six developed countries, resulting in a positive relationship between economic growth and bank credit to the private sector, the real interest rate and ROE and in an indirect correlation between the dependent variable and the determinants of bank credit to government and public enterprises and non-performing loans.

The results of Morina and Turan's VAR model research [8] show that the interest rate margin is significant and positively related to economic growth and credit to the private sector negatively related to economic growth, and the impulse response function shows that a shock to the interest rate margin has a positive effect on GDP since the first gap, and after that, the trend is decreasing.

My paper [2], used a Vector Error Correction Model to estimate through empirical analysis the long- and short-term effects of the influence of credit activity and some bank-specific determinants on economic growth in Albania. In general, the GDP and bank credit to the private sector had a negative cointegration. The VEC model [3] concluded in a positive relationship between economic growth and public credit, deposits and non-performing loans. Otherwise, the results displayed a negative link between economic growth and private credit, ROE and the Herfindahl index.

3. Research Methodology

The main objective of this paper is to identify the short-term and long-term causal relationship between real estate credit activity and economic growth in Albania, by employing a VEC model that uses bank credit for real estate as a cointegrated variable with GDP growth.

As mentioned above, a VEC model is presented in this paper that uses bank credit for real estate as a cointegrated variable with GDP growth, as the construction sector in Albania occupies a

very important role in the economy. For this model, the focus will be on the independent variable real estate credit (% of GDP). The other independent variables considered are: treasury bills (% of GDP); deposits (% of GDP); ROA and the Herfindahl index. This study uses quarterly time series covering a 24-year period from 1998q4–2021q4, making a total of 93 observations for each variable. All regressions and econometric tests are performed using R software.

The definition of the variables is represented in table no. 1 below:

Table No. 1. Variables definition

Variable	Code	Definition	Source
Economic growth	gdpg	the quarterly GDP percentage growth rate	INSTAT[5]
Credit for real estate (% of GDP)	credit_restate	real estate credit, calculated as total real estate credit as a percentage of GDP	Bank of Albania
Treasury bills (% of GDP)	treasury	total treasury bills that are outstanding at the end of each quarter as a percentage of GDP	Bank of Albania
ROA	roa	return on assets	Bank of Albania
Deposits (% of GDP)	saving	total deposits in ALL million relative to GDP	Bank of Albania
Herfindahl index	hh	the degree of concentration of the banking sector	Bank of Albania

Source: own processing

4. Results and Discussion

To this end, this study proposes the use of the Johansens Cointegration test to determine whether there is a long-term relationship between the credit activity and economic growth. Also, the first step before estimating the econometric model is to select the time lag of the impact of the variables on the model.

Table no. 2 shows the optimal gap for this model, as indicated by the Akaike information ratio (AIC), the Schwartz information ratio (SC), the Hannan-Quinn information ratio (HQ) and the final error prediction criterion (FPE). HQ and SC lag selection criteria chose lag 1 as the optimal lag order and AIC and FPE criteria chose lag 3. To see the impact of real estate credit to GDP for this model I will choose that all variables to be included in the model with lag = 1.

Table No. 2. Delayed order selection criteria

Lag	AIC(n)	HQ(n)	SC(n)	FPE(n)
1	1.589342	2.053997*	2.740594*	4.909197
2	1.840632	2.703563	3.978670	6.372903
3	1.515132*	2.776338	4.639957	4.717578*
4	1.634991	3.294472	5.746602	5.578996

* shows the criteria-based lag order

Source: own data processing using the R program

According to the Trace test, the existence of a cointegration equation is confirmed, that is, the rank of cointegration is 1. Economic growth has an effective and cointegrated equation of rank 1. This result indicates that there is a long-run equilibrium relationship between economic growth and activity of lending in Albania for the period studied.

Table No. 3. Johansen Trace test

No. hypothesis of cointegrations	Trace statistic	10% critical value	5% critical value	1% critical value
r = 0	108.23*	97.18	102.14	111.01
r ≤ 1	73.02	71.86	76.07	84.45
r ≤ 2	48.02	49.65	53.12	60.16
r ≤ 3	26.2	32	34.91	41.07
r ≤ 4	11.99	17.85	19.96	24.6
r ≤ 5	5.32	7.52	9.24	12.97

Source: own data processing using the R program

Table no. 4 shows the long-run effect of the lending activity proxies on economic growth.The mathematical representation of the equation is:

EQgdpg = 0.08credit_restate – 1.43treasury + 0.24saving – 1.24roa – 0.05hh (equation 1)

Table No. 4. The output of the long-term VEC regression equation

Variable	gdpg
credit_restate	0.08168886
treasury	-1.434287
saving	0.2445267
roa	-1.240324
hh	-0.05749534

Source: own data processing using the R program

The results of the econometric model showed that there is a statistically significant direct relationship between the dependent variable economic growth and the factors credit for real estate and deposits. On the other hand, the results of the econometric model showed that there is an indirect correlation between economic growth and treasury bills, ROA and the Herfindahl index. An increase of 1p.p. of the level of credit for real estate will increase GDP by 0.08p.p. An increase of 1p.p. of the level of deposits will increase GDP by 0.24p.p. An increase of 1p.p. of the ROA level will reduce GDP by 1.24 p.p. An increase of 1p.p. of the level of treasury bills will reduce GDP by 1.43 p.p. An increase of 1p.p. of the level of the Herfindahl index will reduce the GDP by 0.05 p.p.

From these results it can be seen that credit to the real estate sector has a positive effect on long-term economic growth. The construction sector is one of the sectors that contribute the most to GDP and, at the same time, to the growth of the banks' loan portfolio. Lending to this sector, according to the results of this model, has a positive influence on the economy.

Table no. 5 shows the output of the short-term VECM model results. In this case, the system contains six variables. In the equation, gdpg is expressed as a function of its own lags and the other five variables. ECT stands for the error correction term or the long-run impact of variables

on GDP. The table shows that the estimated coefficient of ECT for gdpg is significant and has a negative sign.

Table No. 5. The output of the short-term VEC regression equation

Regression coefficients	Equation 1 Equation gdpg
ECT	-0.5288*** (0.098)
Intercept	7.838*** (1.5032)
gdpg -1	0.0991 (0.1014)
credit_restate -1	1.307 (1.3886)
treasury -1	-1.4129 (0.9173)
saving -1	-0.4353* (0.1786)
roa -1	1.6571. (0.8373)
hh -1	-0.3355 (0.2569)

Source: own data processing using the R program

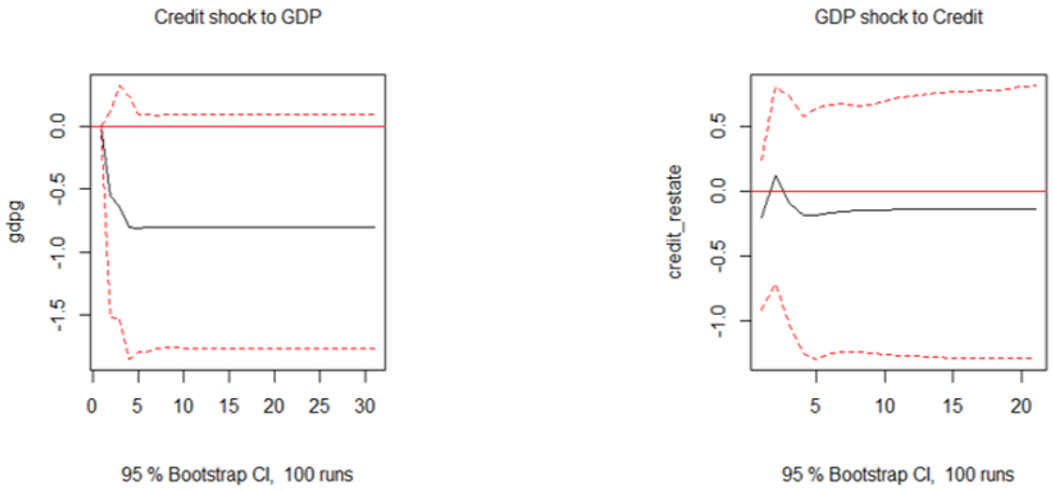

Figure No. 1. Impulse-response functions for economic growth and real estate credit
Source: own data processing using the R program

The size of the estimated coefficient of the error correction term for gdpg indicates that about 0.53p.p. from the previous quarter's imbalance in the system is corrected each quarter of the year. GDP corrects negatively after an economic shock on the lending side.

The constant variable has a positive impact on GDP. In the absence of the effect of all variables, GDP growth will be 7.84p.p. In a long-term perspective, real estate credit had a lagged positive impact on GDP (1.31p.p.). Also, there is a significant and negative relationship at lag (-1) between deposits and GDP growth. When deposits increase, the effect on economic growth will be

negative, and the effect will appear after 3 months since there is a lag (-1). There is a significant and positive relationship at lag (-1) between ROA and GDP growth. When ROA increases, the effect on economic growth will be positive, and the effect will appear after 3 months since there is a lag (-1).

Impulse-response functions were derived for the GDP growth equation and the real estate credit equation, as seen in figure 1 above. An increase in GDP growth first increases lending, then a contraction, followed by a positive trend in long-term lending.

5. Conclusions

Investing in real estate is one of the few options that individuals have to invest in Albania, in order to maximize and diversify their income portfolio. These customer needs are fully in line with the role and mission of the bank to serve as a catalyst for the economy, to help with the necessary financial liquidity, investments made by individuals and at the same time to serve the commercial activity of the bank itself.

The analysis by subject and purpose of credit use shows that real estate investment credit for individuals occupies the largest share of the total credit portfolio, followed by real estate credit granted to businesses. From the results of the econometric model it was concluded that credit to the real estate sector has a positive effect on long-term economic growth. The construction sector is one of the sectors that contribute the most to GDP and, at the same time, to the growth of the banks' loan portfolio. Lending to this sector, according to the results of this model, has a positive influence on the economy.

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