

CREDIT BEHAVIOUR IN
ALBANIA: A SIGN OF
CONVERGENCE OR A
DEVIATION FROM ITS
LONG-TERM TREND?

Irini Kalluci*

WORKING PAPER

08 (39) 2012

BANK OF ALBANIA



**Irina Kalluci*

The views in this paper are those of the author and do not necessarily reflect those of the Bank of Albania.

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ABSTRACT

Developments of rapid credit growth during 2004-08 in Albania, and then the immediate slowdown that lending suffered after 2008 are important events worth an in-depth analysis, not only from the macroeconomic but also from the financial system's stability point of view. This paper aims to study the behaviour of lending to the Albanian economy, and to estimate its fluctuations over the last decade. For this reason, both statistical and econometric methods are employed to identify the "equilibrium" credit level in the case of Albania.

1. INTRODUCTION

Similarly to a number of other countries that changed their regimes, from centrally planned into market economies, Albania faced a number of economic, political and social changes and challenges, after the '90s. Among others, one of the distinguishing features of the countries in transition was and still is somehow, the low financial intermediation and the limited use of banking services. Also, the financial system consists mostly of banks while other financial institutions play a negligible role.

“Central–Eastern Europe and the Balkans (CEB) banking systems went through three phases: (i) the recognition that a large share of the loans extended by public banks, mostly to state enterprises, had to be written off, and the shift to the government of the related loss; (ii) the sale of banks, primarily to foreign investors; and (iii) the beginning of more standard banking operations, including increased lending to truly private enterprises.” (Cottarelli et.al, 2005).

In the first years of transition, banks operating in Albania kept high levels of cash and began to see short-term investment in government securities as the best and safer form of investment. Credit was not granted due to uncertainties concerning contract enforcement, lack of information on potential borrowers, and a difficult macroeconomic situation that prevailed in those years. However, in early 2000s, the situation started to improve and gradually banking market actors exchanged the free risk investments (showing their risk-averse attitude), with a massive lending. With green field investments of foreign banks and the privatization of state-owned banks, the level of competition intensified and banks started to “fight” for increasing their market share in loans and deposits. As a result of the competition in the credit market, investments were shifted from government securities towards loans for clients, thus increasing the loans portfolio at very fast rates. All this “greed” for gaining market share was associated with the underestimation of credit risk, with bank’s easing lending standards and overestimating the payment capacity of their customers.

Later on, the Albanian banking system came under the pressures of the global crisis as well and the pace of lending changed, making banks more conservative in granting loans and borrowers more uncertain about their repayment ability.

This study aims to analyse the behaviour of credit notably since 2004, and possibly to identify two different behaviours, before and after the global financial crisis. It sorts out some possible reasons that stand behind these behaviours and then provides analyses for the period of rapid lending during the years 2004-08; and for the credit slowdown in the years following the global financial crisis. After these analyses, this paper identifies an equilibrium of the credit/GDP ratio which would comprise a possible potential where lending to the Albanian economy should be.

For emerging economies, the assessment of an equilibrium level is difficult, as credit growth and the deviations from this equilibrium may be part of the convergence process. Moreover, the credit behaviour has changed since the start of the global financial crisis and its growth has decelerated possibly not only because of the economic slowdown (due to the crisis), but also of credit market saturation (credit equilibrium). This study aims to address precisely these issues. The long-term credit equilibrium level for Albania will be estimated through the identification of a natural benchmark offered by a panel of countries. But, we must say that although this method serves to identify a normal level of credit, it does not show how quickly a country should move towards that level.

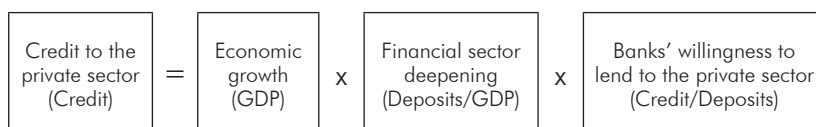
Section II of the paper brings some stylized facts, reasons and risks that accompanied lending activity during the last decade in Albania. Then section III presents a review of the literature on credit equilibrium and the different methods used for measuring possible deviations from the long-term trend. The fourth section applies these methods in the case of Albania, for identifying possible deviations from the equilibrium. The last section lays down the conclusions.

2. A GENERAL OVERVIEW OF THE ALBANIAN ECONOMIC AND FINANCIAL ENVIRONMENT

2.1 STYLIZED FACTS FOR LENDING IN ALBANIA

The intermediation role of Albanian banking sector became more obvious after 2004. Some of the features that accompanied the economic and financial development, especially in the years 2004-08 were: relatively high and stable rates of economic growth, low inflation and mostly within the bands set by the monetary authority, a high level of banks capitalization, lending mainly in foreign currencies, extension of lending to individuals (especially mortgage loans as the demand for this type of loans increased significantly¹) but without reaching the levels of lending to businesses, relatively high lending interest rates, low level of non-performing loans, satisfactory rates of return on equity and assets of the banking system, etc.

According to Crowley (2008), the credit to the private sector could be defined as the product of three elements, as shown in the following scheme:



Lending by banks is considered as the main source of external financing of enterprises in transition countries (Albulescu, 2009). This is confirmed even for Albania (BEEPS 2008), where borrowing from banks is the second largest source after internal funds/retained earnings. Despite rapid growth rates that were achieved after 2004, lending to the Albanian economy relative to GDP still remained low, since it started from very low levels inherited from the past.

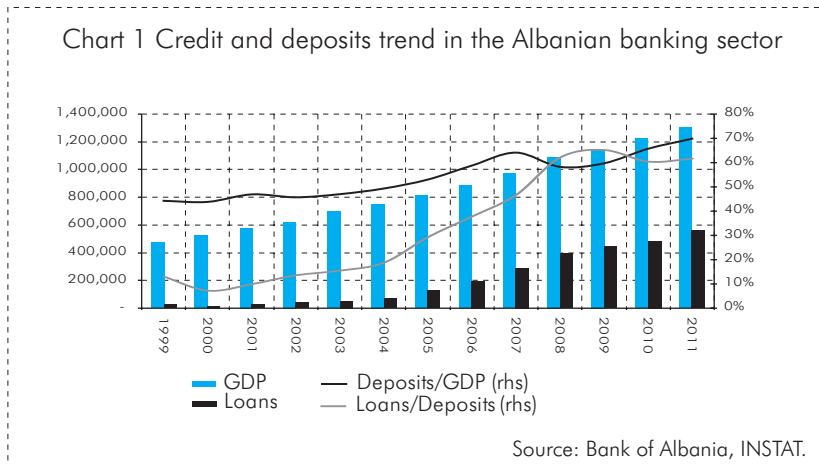
¹ Increased lending for house purchase was influenced by both sides of the market: by banks' willingness to exploit new credit market segments, and by public demand for credit (according to Bank of Albania's Supervision Annual Report 2007).

As Chart 1 points out, the rapid credit growth² during the second half of the last decade is supported by the country's economic growth, moving together on the same direction. Dushku (2010) evidences a bi-directional relationship between financial development and economic growth in the long-run, for Albania. The acceleration in the pace of lending has somewhat come as a result of the convergence with the macroeconomic conditions and the greater demand of the economy for credit. As mentioned in a Staff Country Report of IMF (2006), "...The credit ratio in Albania is lower than in countries with similar income levels ... a relatively rapid credit expansion would be appropriate at this juncture because prudential indicators were quite favorable..." Even though the risks associating this rapid growth were still at low levels, "... at the end of 2006, the Bank of Albania introduced a number of regulatory amendments aiming at slowing down crediting growth levels, through imposing higher capital requirements on more aggressive banks. These measures were further supplemented in 2008, targeting more directly cases when borrowers had no income in foreign currency" (Fullani, 2011).

While the ratio of the financial system deepening (deposits/GDP ratio in Chart 1) has increased more slowly, banks have been more willing to shift their investments towards lending. In general, the rate of credit growth has been higher than that of deposits, as lending started from low initial levels. The speed of growth in credit to deposits ratio shows the tendency of investing in more profitable means of the funds collected from Albanian depositors, and a larger increase in the credit portfolio than in deposits. This development evidences that the banking system has started to consolidate its intermediation role. After 2008, a change was noticed in this increasing trend of credit/deposits ratio. As mentioned in Bank of Albania's Supervision Annual Report (2008), "...the problems in the Albanian banking system were mainly caused by massive deposit withdrawals, due to loss of public confidence. Such loss of confidence was instigated by information coming from international markets and informal rumours circulating within the country". Banks faced liquidity problems due to deposit withdrawals from 2008 Q4 to 2009 Q2. However, by the end of 2009, deposits returned

² The average annual growth rate for the period 2005-08 was nearly 55 per cent.

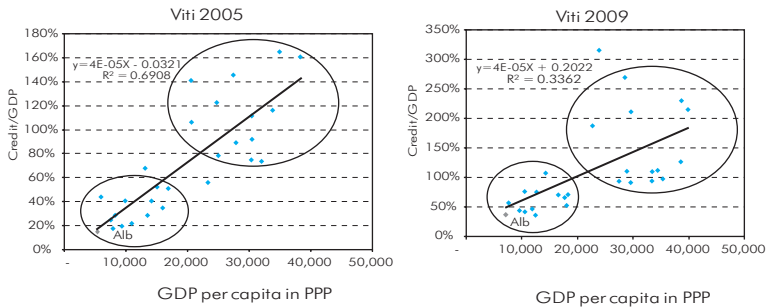
to their 2008 level. Meanwhile, the pace of lending decreased significantly, due to economic growth slowdown, which affected the demand for credit, but also due to the supply shrinkage derived from the reduction of banks financing sources.



To better understand the links between the GDP and indicators of the banking system such as credit and deposits, Table 2 presents the correlations between them. In this way, it turns out that these indicators are highly correlated with each-other, and apparently affect distinctly each other's values.

Sa (2006) explains the relationship between the pace of lending and the welfare of a country. When the economic picture is optimistic, the expectations for the future are higher, more revenues and profits are expected, which leads to an overvaluation of assets (real estate prices). This increases the net worth of firms, reduces the external financing premiums and enhances their ability to borrow and spend. But as such a situation can not last forever (because each phenomenon has its own cycles), even this process changes its direction. When the expectations are not as good, the effect on the elements mentioned above will be the opposite.

Chart 2/a and 2/b Credit/GDP and GDP per capita in 2005 and 2009 (28 countries)

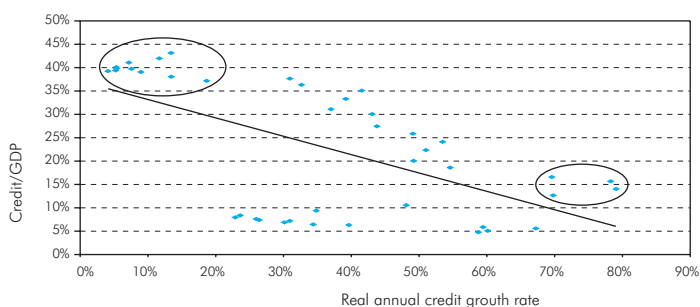


Source: World Bank and WEO (April 2011), author's calculations.

In the illustrations given in the charts 2/a and 2/b, Albania lies below the regression fitted line, which presents the relation between the credit/GDP ratio and GDP per capita for all euro area countries and the emerging economies of Central and Eastern Europe, for the years 2005 and 2009. Even though it stands in the lowest part of the line, a significant shift may be seen in the absolute position of Albania, between two charts, thus from 2005 to 2009. A significant positive correlation exists between two factors, which justify the econometric model that will be then applied for Albania to generate a path in which lending in the Albanian economy should move, in order for it to remain within normal levels.

As may be seen, the catching-up process in the income level (measured by GDP per capita) was associated with higher lending, even in greater growth rates than those of the GDP itself. This explains the high growth rates of credit after 2000s, a period when the banking system was characterized by fundamental changes and a significant increase in financial intermediation. However, over time, the closer emerging economies come to advanced economies, the slower the convergence process itself.

Chart 3 Credit/GDP ratio and the real annual growth rate of credit in Albania



Source: Bank of Albania, author's calculations.

Chart 3 displays the real annual growth rate and the credit to GDP ratio during the period 2001 Q4-2011 Q4. Points encircled in the right-down side of the chart, represent the period when the annual rate of credit growth reached its peak (2005 Q2-2006 Q1) as well as the period when credit in relation to GDP stood at relatively low levels. Meanwhile, the points that are in the top-left circle of the chart refer to the period 2009 Q2-2011 Q4, when the pace of credit growth slowed significantly, while the credit/GDP ratio reached the highest levels within the period under analysis. Looking at this decreasing relationship between the two indicators, it must be said that when the credit-to-GDP is low, a rapid credit growth rate for reaching the appropriate levels seems normal.

2.2 REASONS AND RISKS ACCOMPANYING CREDIT GROWTH IN ALBANIA

This section of the paper aims to highlight, identify and analyse the factors that led to rapid credit growth mainly in 2004 - 2008 in Albania, which should be seen as demand and supply driven factors, as well.

Deepening of financial intermediation: Developments of the financial system in general and banking sector in particular (i.e. the privatisation of the largest bank in the country, the entry of foreign banks in the Albanian market, or the establishment of new banks, which began to “fight” for market share) would trigger the deepening of the financial intermediation and easing of lending conditions. Banks expanded the range of loan products they offered, giving customers the possibility to choose between different types of loans, with different terms and conditions.

Convergence process: The expansion of credit, starting from almost negligible levels, was a normal and expected process, at a period when Albania moved from centralized to market economy. This increase was expected also in the framework of the objectives of integration and convergence with advanced economies.

Wealth effect: The rapid growth of real estate prices increased the confidence of bank customers that investing in real estates (although funded by loans) was a good and profitable investment. This led to an increase in the demand for mortgage loans and in their volume in bank loan portfolios. As mentioned in Bank of Albania’s Supervision Annual Report (2007), “... purchasing a house, under the conditions of lack of a capital market, is deemed a good investment possibility for many households”.

Exchange rate: The exchange rate stability created the illusion of security and gave the borrowers the possibility to borrow in foreign currencies (especially in euro) and not be endangered, in that period, by exchange rate fluctuations. Borrowers tended to take loans in foreign currencies (notably in euro) mainly because the interest rates of this type of loans were lower. In addition, households took foreign currency-denominated loans mainly for house purchases (house prices were in foreign currencies) and businesses took foreign-currency-denominated loans for trading with other countries (transactions were executed in foreign currencies). The negative effects of this kind of borrowing (notably when borrowers were unhedged against the exchange rate risk) materialised after 2008, when their solvency decreased, owing to the appreciation of the currency in which they had taken the loans.

Employment and income: The growth in employment rate and expectations for higher income encouraged borrowers (especially the households) to take more loans, hoping that they would repay them in the future when their financial situation would be even better.

M3 Aggregate: Broad money growth (M3 aggregate growth), on average by 12 percent in annual terms in the years 2003-08, had a positive effect on the ability of banks to lend to their clients.

Interest rates: Despite the considerable costs of borrowing, the demand for credit has been high, thus not negatively affected by the interest rates. Moreover, the significant difference between the interest rates on loans in domestic and foreign currency increased the level of loans denominated in the latter.

Deposit growth: The high growth rate of deposits, namely the financing sources of banks, led to increased opportunities of investing these funds in more profitable alternatives - such as lending (see Chart 1 for the progress of credit to deposits ratio).

Increasing spreads: Larger differences between loans and deposits interest rates provided incentives for banks to grant more loans, as demand for credit was high and sensitivity to higher interest rates was low.

Crowding in/out effect - Fiscal consolidation was another factor that has positively contributed to the growth of private sector credit. The decrease in government debt to GDP ratio was associated with the reduction in the share of banks' investment in government securities, gradually shifting funds towards lending to the private sector (businesses and households). While the share of investments in treasury bills at the end of 2004 comprised nearly 45 percent of total assets of Albanian banking sector, the share of loans in that total was only 16 percent. After that period, the weights of these investments exchanged positions and at the end of 2008, the share of loans in the total assets portfolio reached 47 percent, while the treasury bills investments decreased to nearly 13 percent.

What happened after the outburst of the global financial crisis, that is after 2008, in relation to lending to the Albanian economy? A number of tendencies observed until then started to change direction and the banking sector slowed down significantly its lending activity. Some of the factors that may have caused this behaviour are as follows:

- Albanians had fresh memories of negative experiences with the pyramid schemes in 1997 and of the banking panic of 2002, when their confidence on financial system was shaken. Again, when Albanian depositors noticed that the global crisis of 2007-08 hit the financial institutions worldwide, they started to withdraw deposits at the end of 2008, which reduced the funding sources available to banks for granting loans.
- The crisis also affected the real sector and slowed down economic growth rates, thus bringing a decline of borrowers' solvency, which made banks more sceptical about granting new loans during that period.
- The increase in credit risk, which materialised in the expansion of the percentage of non-performing loans in the loan portfolio, may be caused as a result of two main phenomena: *first*, the exchange rate fluctuations, since more than 50%³ of foreign currency loans were unhedged against the exchange rate risk. As a result, borrowers found themselves vulnerable to sudden changes in exchange rates, thus their ability to pay, fell. *Secondly*, problems in the loan portfolio surfaced as a result of portfolio maturity as well. This was an expected phenomenon, which possibly just coincided with the global crisis. However, no direct connection between them has been proven.
- Lending to the Albanian economy may have been approaching its potential. Therefore, a noticeable slowdown in the growth rate would be more than acceptable.

³ In 2009-10, according to Bank of Albania's Supervision Annual Report 2010.

3. LITERATURE REVIEW

Usually, a high lending rate reflects a greater economic development and it is part of financial intermediation deepening. But in many cases, it has caused banking and financial crisis. As a phenomenon observed in almost all economies (despite the moment of occurrence), rapid credit growth has its own supporters and opponents. On one hand, some argue that a rapid credit growth when starting from very low levels of credit is a positive step toward a market economy for those economies which are going through transition, as it shows the development of the financial system and a natural convergence to advanced economies. On the other hand, critics of credit growth suspect that a rapid increase (that could end up in a credit boom), may bring severe economic consequences and can even lead to banking crises or beyond.

A high rate of credit growth certainly has its costs and is associated (if not simultaneously, after several periods), with possible consequences and risks:

The relationship of banking and exchange rate crises - According to an IMF study (2004), records of the last decades show that 75% of credit booms that have occurred in emerging economies have been associated with banking crises and about 85% of them with exchange rate crisis.

Deterioration of the current account deficit - Given the high growth in lending and the banks inability to meet their needs for funds through domestic savings, they refer to their parent banks for external financing, thus worsening the current account deficit in the balance of payments (Kiss, 2006). Even Sa (2006) has argued that it is not a problem if the expansion of bank credit is used for financing imports of capital goods (which in turn will increase productivity and exports). But if this credit is used for financing the consumer goods, it may fuel inflation and affect the sustainability of the current account, which in turn may lead to a decline in international reserves and an increase in external borrowing.

Deterioration of credit portfolio quality – Another consequence of fast credit growth is the deterioration of credit quality after the boom ends, as during credit expansion loans are granted even to those borrowers (businesses or households) that in normal times are considered as risky. According to an IMF study (2006), initially, during the fast growth of lending, the share of non-performing loans (NPL) declines, due to the fact that it takes time for the new portfolios to display the problems. As the portfolio matures, the NPL ratio starts to increase, even above earlier levels. This is known in literature as the “ageing effect”, under which default rates reach their peak 3-4 years after the loans are granted (Borio et al., 2001).

Bubbles in stock and real estate prices - According to Sa (2006), a lending boom is usually associated with higher real estate prices. If these bubbles burst, they are followed by a breakdown of activity. The Asian crisis of the '90s has proved this effect.

Vulnerability of the banking system – When the credit expansion is accompanied by a considerable economic growth, it could make banks undertake more risk. Inadequate diversification of these risks may lead to bank failures (Sa, 2006).

According to theoretical literature, credit growth can be divided into three components: *the trend* that is usually determined by macroeconomic variables; *the cyclical component*, usually associated with economic cycles and; *an excessive growth* (a potential boom) usually identified as the difference between actual growth of credit and the level defined by the two other components (Kiss, 2006).

How to identify if there is an increase in lending beyond the normal parameters suggested by macroeconomic fundamentals? Thus, what is the equilibrium or potential level of credit that an economy can afford, without being transformed into a process that threatens the financial and macroeconomic stability? For this issue, the economic literature has given three answers (Kiss, 2006):

First, regardless of economic fundamentals, a fixed limit value (as a kind of speed limit) may be set, beyond which credit growth would be considered dangerous. But setting such a growth limit is arbitrary and inflexible and does not take into account a country's specific macroeconomic development.

Second, the potential level of lending can be defined in the form of a trend, given the historical data, assuming long time series. The logic that lies behind this model is that in the long run, the explanatory variables are completely included in the loans outstanding. But if the time series are not long enough to enable the calculation of this equilibrium, how can we be confident in our calculations?

The third answer takes into account the economic fundamentals and the explanatory variables, based on econometric methods and this seems to be the most usable method nowadays for determining the equilibrium level of lending.

A rapid credit growth often raises concerns from the perspective of both financial and macroeconomic stability. Therefore, the empirical literature on credit booms, is trying to find a definition of what should be called an "excessive" credit growth. "In theory an episode of credit growth can be thought of as "excessive" if either: (i) it endangers financial stability, via financing undeserving projects that will eventually turn into bad loans, or (ii) it leads to unsustainable macroeconomic developments, such as a deteriorating external position leading to an unsustainable build up of external debt." (Boissay et al., 2005).

In general, credit growth is considered "excessive" if it is higher than the levels justified by the development and macroeconomic indicators of a country. However, it should be noted that the identification of this "excess" is difficult and its size can vary depending on the method selected to calculate the equilibrium level, beyond which credit growth is considered excessive.

"These equilibrium levels are themselves moving targets, since they increase in line with the improvement of fundamentals.

Thus, credit growth appears to be largely a process of financial deepening that is driven by the transformation and catching up process" (Christl, 2007).

3.1 METHODS OF CALCULATIONS FOR DEVIATIONS FROM AVERAGE VALUES

Various authors have used different quantitative methods to distinguish between a situation where credit is growing rapidly and a situation where the economy is experiencing a credit boom. While the former is an integral part of financial deepening (especially for emerging economies), the second is an increase beyond normal parameters and volatile in longer periods of time.

Thus, authors who have dealt with this issue usually have identified the equilibrium level of credit/GDP, using mainly two types of methods: statistical and econometric methods.

3.1.1 STATISTICAL METHODS

Hodrick Prescott (HP) Filter is a filtering method, where the time series are divided into short and long term components. It is a data-smoothing technique, commonly applied to remove short-term fluctuations that are associated with the business cycle, thereby revealing long-term trends. This method is frequently used in the literature on credit booms and will also be used in the case of Albania, for identifying if lending has experienced a boom or bust in the last decade.

Kaminsky and Reinhart (1996) define the value of 9.3 percent of GDP as the threshold for annual changes in the credit/GDP ratio, which maximizes the signal to noise ratio in the prediction of banking crises in a group of industrial and market economies.

Gourinchas et al. (2001) in a study carried out for 91 countries for the years 1960-96 suggest the use of two possible indicators for identifying a credit boom: the absolute and relative deviation

from the long-term trend measured by the HP filter. The absolute deviation (expressed in percentage points of GDP) is calculated as the difference between the actual credit / GDP ratio and the value generated by the HP filter. The relative deviation (expressed in percentage) is the ratio of absolute deviation to the actual credit/GDP ratio.

For each of these deviations, the authors have calibrated thresholds, defined to capture 100 cases of credit booms for the 91 countries over the period under analysis; if the value of the deviation exceeds this limit, it will be a signal for a credit boom in that country. In this case, the threshold is the same for each country, without distinguishing between different stages of economic development of the countries. The threshold for the absolute deviation is set to 4.8% and for the relative deviation is set to 24.9% of the GDP. The more a certain country exceeds the thresholds defined for each of the deviations, the more likely it will experience a credit boom situation.

IMF (2004) presents another way of determining whether a country is experiencing a boom or bust situation in lending, via the calculation of an interval. In this regard, the study takes into account the real credit growth. But this variable is often criticized for several reasons: First, transition countries usually experience higher credit growth rates at the start of the transition period because of very low initial loans stock and of the convergence process that they must undergo. Second, credit growth rates are highly correlated with business cycles. If a low growth rate is preceded by a negative growth rate, it would appear to be a credit boom (Coudert and Pouvelle, 2010).

To avoid these limitations brought by the use of this indicator, the credit to GDP ratio is suggested to be used in the analyses, which is a variable normalized by the size of the economy. However, in the analysis that will be presented in following sections in the case of Albania, both indicators are used to better understand the performance of each indicator.

IMF (2004) defines the range where the values of the indicators should be (real credit growth or credit/GDP) as 1.75 standard deviations of the fluctuations of the indicators around (over or under) their long-term trend. Since this is a threshold individually set for each country, it is considered a better indicator for identifying credit booms, as it takes into account the specific characteristics of each country and does not apply a general fixed threshold to each state.

3.1.2 ECONOMETRIC METHODS

Following is a summary of the findings of several authors who have used econometric methods for identifying the equilibrium level of lending.

Schadler et al. (2005) using the error correction model and taking the aggregate euro area countries as a benchmark, identified out-of-sample the potential level of lending for the new members of the euro area, using as explanatory variables of the credit to GDP ratios, the variables of GDP per capita in terms of purchasing power parity (PPP) and real long-term interest rates.

Cottarelli et al. (2005) included in the study a group of 24 developed and emerging countries, where using the cointegration and panel data methods, indicators such as the public debt/GDP ratio, GDP per capita, financial liberalization, inflation threshold, accounting standards, restrictions on the banking sector or the legal origin, have been identified as factors that determine the potential credit/GDP ratio. Then they applied out-of-sample the estimated coefficients to the figures of the fundamentals in 2002, for the CEB economies.

Boissay et al. (2005), through error correction methods for a panel of 19 developed and emerging countries, have identified the equilibrium levels of credit/GDP and credit growth rate, using as explanatory variables the real interest rates, the GDP growth rate, as well as the gap between observed and estimated values of the credit to GDP ratio.

Kiss *et al.* (2006), with the error correction method (ECM), identified macroeconomic variables such as: GDP per capita in terms of PPP, the real interest rates and inflation as indicators that affect the long-term behaviour of credit in the euro area countries.

Égert *et al.* (2006) conducted a similar study for several OECD countries and emerging economies from Asia and Latin America, estimating out-of-sample the long-term equilibrium of credit/GDP for 11 CEE countries based on variables such as: GDP per capita in terms of PPP, public sector credit/GDP, short and long-term interest rates, housing prices, inflation, financial liberalization, and the existence of the credit registry, via the method of least squares with fixed effects.

Coricelli *et al.* (2006) have identified the equilibrium level of real credit growth rate for 10 countries of Central and Eastern Europe with the panel data method, using the credit growth rate and the interest rates (lagged) as explanatory variables.

Coudert and Pouvelle (2010) used a sample of 52 countries (developed and emerging) and with the Panel Cointegration method generated the equilibrium level of credit to GDP ratio, in these countries. As explanatory variables of this ratio, they used per capita GDP in PPP, the net capital flows/GDP, stock market capitalisation/GDP, the exchange rate regime, legal origin, etc.

Often, for the identification of credit equilibrium in the transition countries, the out-of-sample method and not the in-sample one is used. The reason for using this method is that these countries generally start from very low levels of lending to the economy, a legacy of the centralised system. If for the assessment of the credit equilibrium of a transition country, a panel of countries belonging to this group is used, the estimations of coefficients and constant term may be biased. To avoid this bias that tends to over or underestimate the parameters generated by the equations, it is suggested to be used a panel of countries that do not exhibit such features in credit / GDP ratio, or an out-of-sample panel which does not include the country in question, into these estimations.

4. APPLICATION OF DIFFERENT METHODS FOR ALBANIA

To better understand the behaviour of credit in Albania and see if it has experienced a boom or bust, especially during the last decade, alternative statistical and econometric methods will be used.

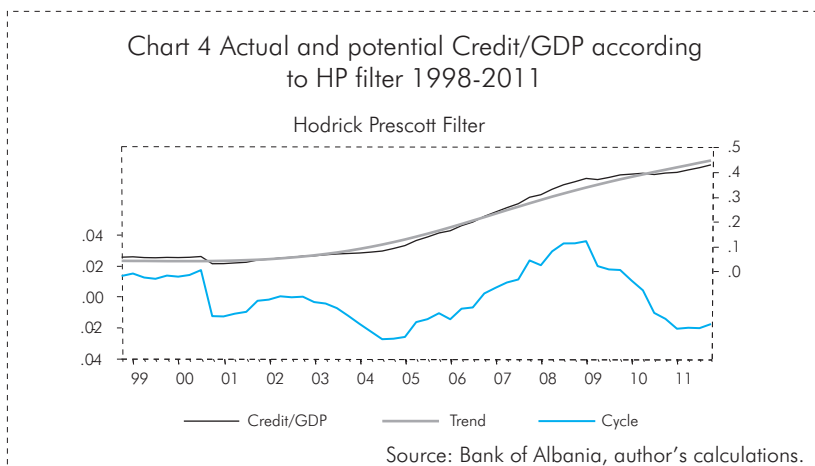
4.1 STATISTICAL METHODS

Statistical methods generally look at the deviations from the long-term trend, but differ from each other by the credit indicator used, the way of calculating the deviations, and the threshold set.

- *Hodrick Prescott (HP) Filter*

In the case of Albania, quarterly data were used for the credit to GDP ratio during the period 1998 Q4 – 2011 Q4. With the Hodrick Prescott filter method (where $\lambda = 1600$, as we use quarterly data), a series of values was generated, which are considered as normal values for the series, based on its long-term trend. Data for credit are taken from the Bank of Albania's website and show the credit outstanding without accrued interests. Meanwhile, the annualized GDP in a certain quarter is calculated as a rolling sum of the last four quarters.

HP filter shows that lending in the Albanian economy has been below its long-term trend since the end of 2000, and the difference was larger in the period when the fast credit growth began (2004-05), thus in a certain way, this acceleration has been justified by the very low values reached until that moment. Later (in 2007), with the rapid growth of credit, it was observed that the actual level exceeded its long-term trend and stayed above this level until the middle of 2010. Right after this moment, a much lower credit growth was noticed, as presented in the chart below. According to the HP filter, the credit/GDP ratio ranges from 4.5 percent in 1998 to nearly 45 percent in 2011.



However, to judge whether credit growth is excessive or not, it is not sufficient to take into consideration the fact whether credit / GDP is above or below its long-term trend (calculated with the HP filter). For this reason, different authors have identified a threshold beyond which credit is considered as a threat for the stability of a country.

- *Deviation from the long-term trend*

Applying the method suggested by Kaminsky and Reinhart (1996), where the threshold is set at 9.3 percent of the GDP for the annual changes in credit/GDP, the results obtained are presented in Table 1 in the Appendix. According to this methodology, there is no point in time (during the years 1999 to 2011) that lending has been experiencing a boom.

- *Absolute and relative deviation from the long-term trend*

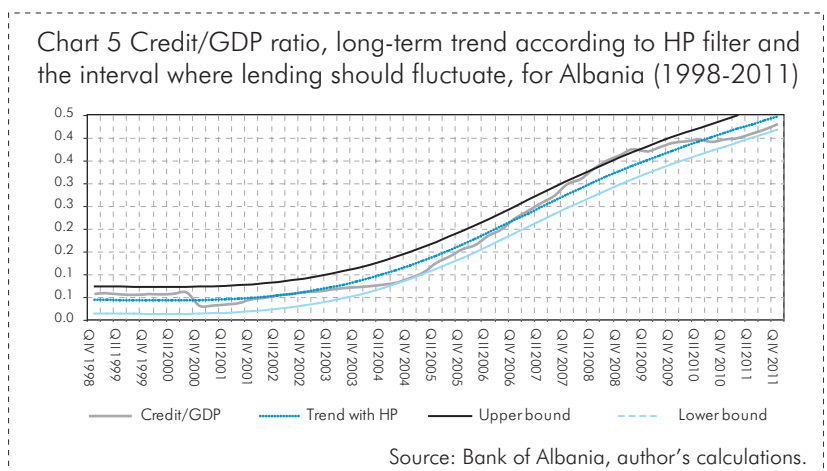
After generating the long-term trend for the credit / GDP in the case of Albania (using the HP filter), we calculated the quarterly absolute and relative deviations from this trend, based on the methodology of Gourinchas et al. (2001) which was explained in the previous section. Given the threshold set by these authors for the absolute and relative deviations (respectively 4.8% and

24.9%), beyond which it is thought the economy is experiencing a credit boom, it was noticed that in the period 1998-2011, despite the high rate of credit growth in the economy, there were not any moments in which the macroeconomic and financial stability of the country was threatened. The results are presented in Table 1 in the Appendix. According to these results, under the absolute deviation criterion, Albania has never experienced a credit boom. Meanwhile, according to the relative criterion, possible booms can be considered situations during the period 1998 Q4 - 2000 Q3, when the credit / GDP ratio has also been over its long-term trend (HP filter).

- *The identification of an interval within which the credit should fluctuate*

As discussed in the previous section, the IMF study (2004) has identified a path beyond which the credit / GDP and the real credit growth rate will be regarded as a boom (if exceeding the upper limit) and a bust (if coming out of the lower limit), where these two thresholds are calculated as values that stay away from the long-term trend line, by 1.75 times the standard deviation of the fluctuations from this trend.

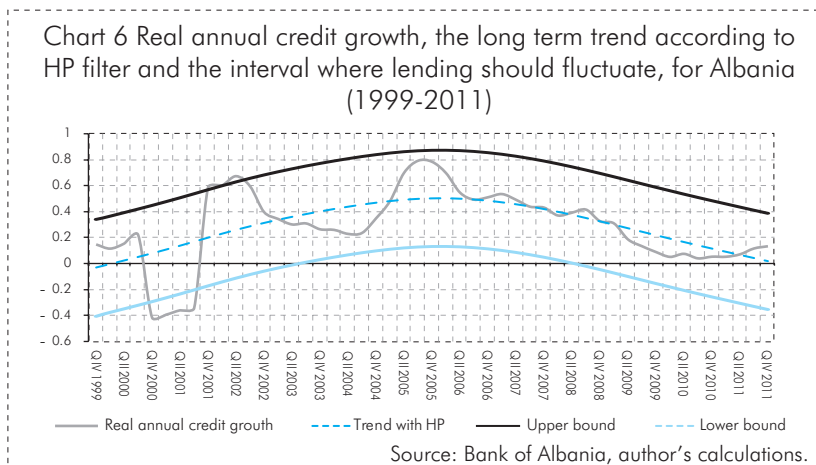
The following charts are depicting this interval for both indicators in Albania.



Considering the credit / GDP indicator (Chart 5), it has been over the upper bound for three consequent quarters (2008 Q3 up to 2009 Q1), during all the period under analysis, but the deviation from the limit is not significant. Then the situation has been stabilized rapidly and the ratio entered again within the required bounds. Meanwhile, credit in relation to GDP has never fallen below the lower threshold, despite the slowdown noticed in lending growth.

On the other hand, the real annual rate of credit growth fell for four consecutive quarters below the lower bound calculated according to IMF (2004), starting from the last quarter of 2000. This period is characterised by a real credit growth rate at very high negative values.

To prove the criticism for the use of the growth rate in identifying booms, immediately after this period with significant reduction of credit, another moment came when lending started to grow even more than the justified levels (respectively in the 2001 Q4 up to 2002 Q2, the real credit growth rate has come out of the upper threshold (Chart 6).



4.2 ECONOMETRIC MODEL

In this study, the model will not be estimated with new and specific variables for Albania. Instead, the equation presented in the paper of Coudert and Pouvelle (2010) will be used. Later on, taking the coefficients estimated through their model, we will apply them to Albanian data for identifying “the normal values” of lending in Albania. The picture after this model is the assessment of fitted values, which are considered as “normal” values for the equilibrium level of the credit-to-GDP ratio, given the macroeconomic fundamentals of a country. If the observed credit-to-GDP ratio remains below the fitted values, then the country has still room to expand lending, thus showing a catching-up effect; hence, a rapid credit growth would be more than justified.

The coefficients of Coudert and Pouvelle’s model are chosen to be applied in the case of Albania for the following reasons: *First*, it is the most recent study on the evaluation of credit equilibrium, which takes into account longer time series. Similar studies that have identified the level of credit equilibrium include fewer periods in the analysis, ending several years ago. *Second*, this study includes Albania too, in the large panel of countries, but, as in-sample estimations of coefficients may be biased, the authors rerun estimations by removing the CEE countries (Albania as well) and thus creating a reduced sample (which helps us for an out-of-sample estimation).

In their study, Coudert and Pouvelle (2010) included a panel of 52 developed and emerging countries, Albania listed among these countries. The period studied covers 1980 Q1 – 2007 Q2, thus the time span under analysis ends exactly at the eve of the financial crisis. Intentionally, the authors ended there the period that were analyzing, as they consider the crisis as an abnormal event that may bias the findings. Using a broad sample of countries, the authors pretend to estimate a worldwide standard, under the assumption that all countries share more or less the same long-term equilibrium path. The model of Coudert and Pouvelle (2010) presented in equation (1) below, is derived from equations of supply and demand for credit. Therefore, the explanatory variables of the

credit-to-GDP ratio will be those mostly used in literature. Initially, these authors use an OLS regression on pooled data without and with fixed effects, generating the coefficients for the relations of the dependent variable credit-to-GDP with all other elements included in the equation.

Precisely, the equation used by Coudert and Pouvelle (2010) is as follows:

$$\log(c_{i,t}) = a_{0,i} + a_1 * \log(\tilde{Y}_{i,t}) + a_2 * r_{i,t} + a_3 * n_{i,t} + a_4 * cap_{i,t} + a_5 * EER_{i,t} + a_6 * LS_i + a_7 * TRANSI_i + \varepsilon_{i,t} \quad (1)$$

where,

$c_{i,t}$ – is the dependent variable, credit/GDP for the i -th country at time t

$\tilde{Y}_{i,t}$ – is GDP per capita in PPP

$r_{i,t}$ – real interest rate

$n_{i,t}$ – net capital inflows/GDP

$cap_{i,t}$ – stock market capitalization/GDP

$EER_{i,t}$ – dummy variable for the exchange rate regime

LS_i – dummy variable for the legal system origin

$TRANSI_i$ – dummy variable for the transition countries

After estimating this equation (with and without fixed effects) and taking the expected signs for the coefficients, the authors seek to identify the long-term relationship of the variables, since they want to compute an equilibrium level of lending. As they suspect that the first estimates are likely to be spurious, they test the series for stationarity and cointegration. The variables resulting non-

stationary⁴ in levels are the dependent variable (credit/GDP), GDP per capita in PPP and stock market capitalization/GDP. It is these last two indicators that will be used as explanatory variables for the long-term relationship with the dependent variable. After being tested for cointegration (with Pedroni test), both series proved to be cointegrated with the series of credit/GDP. But as the cointegration vector between the credit/GDP and stock market capitalization/GDP is unstable, the authors prefer not to include the latter in the final model. Thereby, equation (1) was transformed by Coudert and Pouvelle (2010) into a shorter form, which includes only the indicator of GDP per capita in PPP as an independent variable (see equations (2) and (3) presented below).

Coudert and Pouvelle (2010) estimated two equations: one for the whole sample of 52 countries (eq.2) and another for a reduced sample (eq.3), which excludes the CEE countries (Albania as well) to avoid the downward bias of the parameters. In the reduced sample, the authors have used as a benchmark, countries whose credit/GDP ratio has been stable for a long time. Usually such choices are made for two reasons (Boissay et al., 2005):

First, the long time series available for these countries facilitate the robust evaluation of elasticities for each country. *Second*, the elasticities of these countries with stable ratios for this indicator are lower than those of the countries that are in the catching-up process, giving the possibility of identifying an upper bound for the measure of “excessive” credit growth. When for identifying the elasticities of a group of countries their own data (in-sample method) are used, it is more likely to generate higher values for them, thus setting a lower limit for the measure of “excessive” credit growth.

4.2.1 RESULTS

Taking into account the estimated coefficients of the equations of Coudert and Pouvelle (2010), the two equations that we will apply for Albanian data for calculating the credit equilibrium, are

⁴ The authors used several panel unit root tests, as Levin, Lin and Chu (2002); Breitung (2000); Im, Pesaran and Shin (2003); Augmented Dickey - Fuller and Philips Perron.

as follows:

$$\log(c_{i,t}) = -0.164 + 0.44 * \log(\dot{Y}_{i,t}) \quad (\text{for the whole sample}) \quad (2)$$

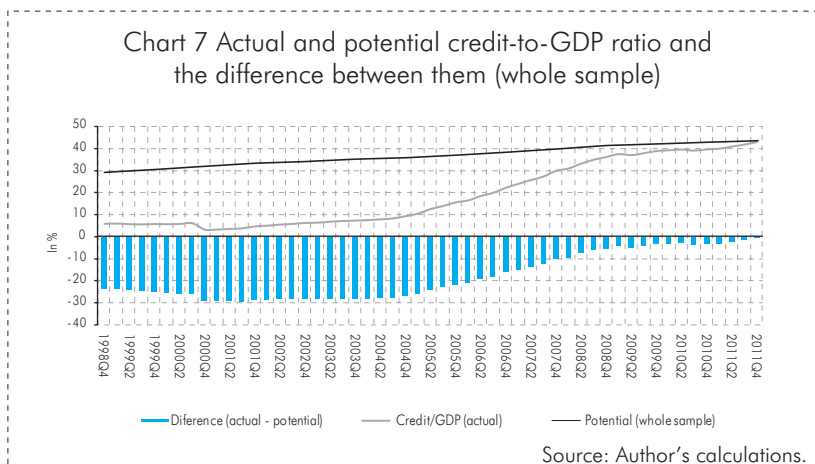
(t-statistics=48.9)

and

$$\log(c_{i,t}) = 1.90 + 0.24 * \log(\dot{Y}_{i,t}) \quad (\text{for the reduced sample}) \quad (3)$$

(t-statistics=35.5)

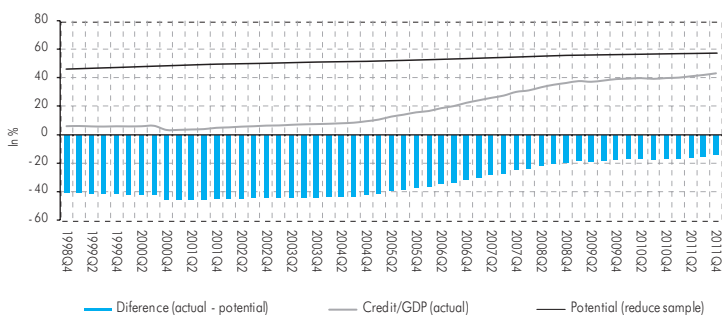
The two charts below represent the actual and potential credit to the Albanian economy and the differences between them, calculated in the context of a whole sample as well as of the reduced one.



Some of the findings derived from this application are as follows:

- As discussed earlier, the coefficient before the explanatory variable (GDP per capita) has the expected positive sign and it is lower in the case of the reduced sample (excluding CEE countries), than that of the full sample. As known from literature, emerging economies should have higher growth rates of lending, to reach the advanced economies.

Chart 8 Actual and potential credit-to-GDP ratio and the difference between them (reduced sample)



Source: Author's calculations.

- However, the lower values of the coefficient before the explanatory variable (for the reduced sample) are offset by a higher value of the constant observed in this equation. This fact confirms that advanced economies start from higher lending rates than countries experiencing the transition period.
- Using the developed countries (i.e. reduced sample) as a possible benchmark, we may see that although Albania has notably narrowed the gap between actual and potential credit-to-GDP ratio after 2004, it is still well below the level imposed by developed countries. In this regard, judging by its macroeconomic fundamentals, we may say that Albania has still room to increase lending in relation to GDP and to converge to the levels of this ratio in countries that are considered to have reached the equilibrium (see chart 8).
- If we estimate the potential level of lending to the Albanian economy, where the full sample of 52 countries (developed and emerging) taken into analysis will serve as a benchmark, its values are lower (Chart 7). According to the above, the inclusion of emerging economies in the sample reduces the estimations for this level. As a result, we can say that Albania is increasingly approaching the credit potential, given that in the last 2-3 years it has been very close to the equilibrium. The difference between actual and the estimated values from equation (2) is narrowing more and more, reaching

the minimum in the end of 2011. This signals that Albania is approaching the stage of equilibrium in lending, taking always into account its macroeconomic development as well.

- As discussed above, we may say that Albania has been in a catching-up stage throughout the last decade, which explains why its lending rates were very fast in the outset. Similar results are obtained by other authors (Cottarelli et al. 2005, Mühlberger 2007, etc.), who have indicated that Albania was on the stage of catching-up in terms of lending.
- Later on, the observed slowdown after 2008 simply coincided with the global financial crisis, but it seems not to be its direct consequence. Credit growth rates lowered as credit approached its potential, dictated by the country's macroeconomic development.

5. CONCLUSIONS

This study brought to the attention an issue intensely discussed in the literature of the last decade (especially for emerging economies), i.e. lending. Motivated by a changing behaviour of credit in Albania, a more detailed analysis was deemed as necessary in order to understand its trends and to judge whether it was a normal behaviour based on macroeconomic fundamentals, or a deviation from its long-term equilibrium.

From the statistical view, main findings suggest that Albania has not experienced a lending boom, despite high growth rates especially after 2004. Apparently, the “hunger” of borrowers for funds and of banks for investing in profitable instruments was due to lack of previous opportunities to invest and generate substantial profits.

The econometric model used was the one presented in the study of Coudert and Pouvelle (2010), taking the coefficients generated from them and applying them in-sample and out-of-sample for Albania. However, this study extends the series of the estimated equilibrium level of credit in Albania, in a much longer period and even beyond the period under consideration by these authors, with the assumption of long-term relationships identified. Thus, the ratio of potential credit/GDP was calculated, which showed that it was determined in the long-term by the variable of GDP per capita of each country. As a result, based on its macroeconomic fundamentals, Albania has moved very close to the equilibrium level of credit when judged from a world benchmark (including many advanced and emerging economies). Nonetheless, it still has room to expand credit if we compare and want to converge with the advanced economies.

REFERENCES

Albulescu C. T., (2009), "Forecasting credit growth rate in Romania: from credit boom to credit crunch?", MPRA Paper No. 16740.

Bank of Albania's Supervision Annual Reports 2005-2010.

Boissay F., Calvo-Gonzales. O., Koźluk T., (2005), "Is lending in Central and Eastern Europe developing too fast?", European Central Bank, mimeo.

Calza, A., Gartner C., Sousa J., (2001): "Modelling the Demand for Loans to the Private Sector in the Euro Area". ECB Working Paper, no.55, April 2001.

Christl J. (2007), "Economic governance and sustained growth in the Balkans", JVI Policy Research Conference 2007, Vienna 15-16 March 2007.

Coricelli F., Mucci F., Revoltella D., (2006), "Household credit in new Europe: lending boom or sustainable growth?", CEPR Discussion Paper, 5520.

Cottarelli, C., Dell'Araccia G., Vladkova-Hollar I., (2005), "Early Birds, Late Risers, and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and in the Balkans", Journal of Banking and Finance, Vol. 29 pp.83-104.

Coudert V., Pouvelle C. (2010): "Assessing the Sustainability of Credit Growth: The case of Central and Eastern European Countries", The European Journal of Comparative Economics, Vol.7, n.1, pp.87-120.

Crowley J. (2008), "Credit Growth in the Middle East, North Africa, and Central Asia Region", IMF Working Paper, 08/184.

Duenwald Ch., Gueorguiev N., Schaechter A. 2005, "Too much of a good thing? Credit booms in Transition Economies: The cases of Bulgaria, Romania and Ukraine", IMF Working Paper, WP/05/128, June.

Dushku E. (2010), "Financial development and economic growth: the Albanian case", Bank of Albania Working Paper Series, 2010.

Égert B., Backé P., Zumer T., (2006), "Credit growth in Central and Eastern Europe. New (over)shooting Stars?", ECB Working Papers, No.687, October 2006.

Fullani A. (2011), "Analysis of economic and financial developments in Albania", Speech by Mr Ardian Fullani, Governor of the Bank of Albania, at the 24th Conference of Banking Supervisors from Central and Eastern Europe, Tirana, 12 April 2011.

Gourinchas P.O., Valdés R., Landerretche O. (2001), "Lending booms: Latin America and the world", NBER Working Paper No. 8249.

International Monetary Fund (2004), "Are credit booms in emerging markets a concern?", World Economic Outlook, April 2004, Chapter IV.

International Monetary Fund (2006), "Albania – Selected issues", Part III. Rapid credit growth in Albania, IMF Country Report No. 06/285.

International Monetary Fund (2006), "Staff Country Reports - Albania", IMF Country Report No. 06/286.

Kaminsky G., Reinhart C., (1996), "The twin crises: The causes of banking and balance-of-payments problems", International Finance Discussion Paper 544.

Kiss G., (2006), "Fast credit growth: equilibrium, convergence or risky indebtedness?", MNB Bulletin, June 2006.

Kiss G., Nagy M., Vonnák B., (2006), "Credit growth in CEE: Convergence or Boom?", MNB Working Papers, 2006/10.

Mühlberger M. (2007), "Banking in South Eastern Europe: Moving into the spotlight", Deutsche Bank Research, August 2007.

Sa S. (2006), "Capital flows and credit booms in emerging market economies", Banque de France, Financial Stability Review No.9, December 2006.

Schadler S., Drummond P., Kuijs L., Murgasova Z., van Elkan R. (2005), "Adopting the Euro in Central Europe. Challenges of the next step in European Integration", IMF Occasional Paper, 234.

The World Bank Group, "BEEPS At-A-Glance 2008 – Albania", January 2010.

Zdzienicka, A., (2009), "Vulnerabilities in Central and Eastern Europe: Credit Growth", CNRS-GATE Working Paper 09-12.

APPENDIX

Table 1. Calculations of absolute and relative deviations from the long-term trend (1998-2011)

	According to Gourinchas et al. (2001)		According to Kaminsky and Reinhart (1996)	
	The absolute deviation threshold - 4.8%	The relative deviation threshold - 24.9%	The absolute deviation threshold (annual changes) - 9.3%	
1998 Q4	1.3%	29.2%*	N/A	N/A
1999 Q1	1.5%	32.9%*	N/A	N/A
1999 Q2	1.2%	27.3%*	N/A	N/A
1999 Q3	1.1%	25.7%*	N/A	N/A
1999 Q4	1.3%	30.4%*		-0.1%
2000 Q1	1.3%	29.0%*		-0.3%
2000 Q2	1.4%	31.5%*		0.1%
2000 Q3	1.7%	38.5%*		0.5%
2000 Q4	-1.3%	-28.8%		-2.6%
2001 Q1	-1.3%	-28.7%		-2.4%
2001 Q2	-1.1%	-24.3%		-2.3%
2001 Q3	-1.0%	-21.0%		-2.3%
2001 Q4	-0.3%	-5.8%		1.5%
2002 Q1	-0.2%	-4.1%		1.8%
2002 Q2	0.0%	0.1%		2.0%
2002 Q3	-0.1%	-1.0%		2.0%
2002 Q4	0.0%	-0.4%		1.6%
2003 Q1	-0.4%	-5.5%		1.4%
2003 Q2	-0.5%	-6.3%		1.3%
2003 Q3	-0.8%	-9.6%		1.3%
2003 Q4	-1.2%	-14.6%		1.1%
2004 Q1	-1.8%	-19.2%		1.2%
2004 Q2	-2.3%	-22.4%		1.1%
2004 Q3	-2.8%	-25.0%		1.2%
2004 Q4	-2.7%	-22.7%		2.0%
2005 Q1	-2.6%	-20.0%		3.0%

2005 Q2	-1.7%	-11.7%	4.7%
2005 Q3	-1.5%	-9.5%	5.7%
2005 Q4	-1.1%	-6.5%	6.3%
2006 Q1	-1.5%	-8.2%	6.0%
2006 Q2	-0.8%	-4.1%	6.0%
2006 Q3	-0.7%	-3.5%	6.0%
2006 Q4	0.2%	0.9%	6.7%
2007 Q1	0.6%	2.4%	7.5%
2007 Q2	0.9%	3.6%	7.3%
2007 Q3	1.1%	4.1%	7.4%
2007 Q4	2.3%	8.4%	7.7%
2008 Q1	2.0%	6.9%	7.0%
2008 Q2	2.9%	9.6%	7.5%
2008 Q3	3.4%	10.8%	7.6%
2008 Q4	3.4%	10.4%	6.3%
2009 Q1	3.6%	10.5%	6.6%
2009 Q2	2.0%	5.5%	3.9%
2009 Q3	1.7%	4.8%	3.0%
2009 Q4	1.7%	4.6%	2.7%
2010 Q1	1.0%	2.7%	1.8%
2010 Q2	0.4%	1.0%	2.6%
2010 Q3	-1.1%	-2.6%	1.2%
2010 Q4	-1.5%	-3.5%	0.7%
2011 Q1	-2.1%	-5.0%	0.7%
2011 Q2	-2.0%	-4.7%	1.3%
2011 Q3	-2.0%	-4.7%	2.7%
2011 Q4	-1.8%	-4.0%	3.3%

* Values exceeding the respective threshold are marked with *

Table 2. Correlation among loans, deposits and GDP

Correlation	DEPOSITS	LOANS	GDP_Annualised
DEPOSITS	1.0000		
LOANS	0.9743	1.0000	
GDP_Annualised	0.9697	0.9435	1.0000

Source: Bank of Albania, author's calculations.

CIP Katalogimi në botim BK Tiranë

Irimi Kalluci,
Credit behaviour in albania: a sign of convergence
or a deviation from its long-term trend?- /
/ Kalluci Irimi - Tiranë:
Bank of Albania, 2012

-40 f; 15.3 x 23 cm.

Bibliogr.
ISBN: 978-99956-42-63-2.

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*Bank of Albania
Sheshi "Avni Rustemi", Nr. 24, Tiranë, Shqipëri
Tel.: + 355 4 2419301/2/3; + 355 4 2419409/10/11
Fax: + 355 4 2419408*

or send an e-mail to:

public@bankofalbania.org

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