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# Central Banks and Asset Prices: The Role of the Interest Rate in Volatility Correction in the Romanian Case

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## Abstract

*The speculative bubbles of asset prices, and especially their burst out, have a negative impact on the financial stability and also on the prices stability – the main objectives of central banks. As a consequence, a more attentive observation of the evolution of these prices is necessary. In the economic literature, opinions differ, oscillating between a total ignorance of the evolution of asset prices by the central banks and the extreme solution, consisting in considering them as the final purpose of the monetary policy. If the opportunity of the intervention is intensely analyzed, the debates related to the instruments of the intervention, differentiated depending on the nature of the assets, are almost inexistent. In this study, we intend to analyze these aspects and also to highlight the importance of dealing with the volatility of asset prices in the context of the development of the financial and real estate markets in Romania. We show that the interest rate instrument has a reduced importance in asset prices volatility correction.*

**Key words:** asset prices, central banks, interest rate

**JEL code:** G12, E58, C51

## 1. Introduction

Most of the economists agree with the fact that the crash of asset prices represents a source of financial instability which can often generate a financial crisis. Some aspects have to be pointed out in relation with the evolution of asset prices: the boom itself is not the cause of the instability, but the possible crash that can follow it; usually the speculative bubbles lead to violent crashes, the booms being rather associated with the asset prices trend on medium and long term<sup>1</sup>.

In this study we analyze the impact of the evolution of the asset prices on the financial stability, without leaving aside their impact on the prices stability. Prices stability represents a condition for achieving financial

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<sup>1</sup> Gerhard Illing defines the bubble as follows: “due to the over investments in the risky sector, the asset price in this sector (or the rent), swerve from the values given by the economic fundamentals” (Illing, 2001). Thus, the bubble is considered a distortion of the relative price of a real or financial asset.

stability. Financial stability is defined as the capacity of the financial system to accomplish its functions, counteracting the turbulences that frequently appear in its mechanisms, and also as its capacity to protect itself against the shocks that can destabilize it and to return to equilibrium.

The volatility of asset prices represents one of the four important sources of financial instability together with: the increase of the interest rate, the lack of the investors' confidence and the problems in the banking sector. Mishkin (1997) and Weber (2005) sustain the idea that the asset bubbles can affect the financial stability and reduce the overall welfare. However, the stability of the market does not mean "freezing the prices" of the asset (Schinasi, 2003). In general, the stability means the absence of those volatilities that can negatively impact on the real economy.

Being aware of the need to reduce the volatility of asset prices, in this article we will insist on the analysis of some issues that, in our opinion, are very important for the fulfilment of the two objectives of the central banks, namely prices stability and financial stability: the moment of the intervention and the tools that can be used to correct the asset prices bubbles. We also analyze the aspects that characterize the way the European Central Bank (ECB) and the National Bank of Romania (NBR) – future member of the Eurosystem, approach the subject of asset prices. Afterwards we show that the interest rate instrument had only a residual influence in Romania's case. Finally we point out the conclusions.

## **2. Approaches related to the role of central banks on the asset market**

The connection between the asset prices bubbles and the monetary policy stands for "*one of the most important challenges for the modern central banks at the beginning of the XXI century*" (Trichet, 2005). Nevertheless, the specialists have different opinions on the role of central banks in the interventions on the asset prices' evolution.

Some authors sustain the fact that the central bank does not have to take into account the evolution of asset prices in making their decisions, as for example Illing (2001), Bernanke and Gertler (2001) or Davis (2003). These economists state that, from the historical point of view, the intervention of central banks influences the economic agents' psychology affecting thus the market's equilibrium. At the same time, it is considered that the interventions of the central banks on asset booms by means of the interest rate do not eliminate the financial fragility, on the contrary, they amplify it. Mishkin (2001) does not believe that the monetary authorities

can improve their performances trying to intervene upon the bubbles. One issue that can occur in case of intervention is the loss of the credibility of the central banks, considers the author.

Other specialists among which: Patat (2000), Borio et al. (2001), Goodhart and Hofmann (2002) sustain that the asset prices influence the banks solvability and an analysis of asset prices enables a better knowledge of interactions between the real and financial spheres.

Goodhart and Hofmann (2002) showed, by means of a theoretical model, that the future demand and the inflation in G7 are influenced both by the exchange rate and by the asset prices. In their opinion, the exclusion of the asset prices from the variables taken into account in the monetary policy decisions leads to a sub-optimal response in terms of inflation and production gap volatility. The authors propose even to include the asset prices into the Consumer Price Index – an extreme solution.

There are also specialists that proceeded to a classification of the approaches related to the opportunity of the intervention of the central banks on the asset prices evolution. For example, Detken and Smets (2004) made a distinction between a reactive and a preventive approach of central banks. In the first case, the monetary authority waits to see whether the collapse can occur and only then intervenes. In case of preventive policy, the intervention takes place on the moment of the boom's construction and of the sustained credit increase.

Trichet (2005) makes a complex classification and differentiates four approaches related to the intervention of the central banks on asset prices, arguing that only the moderate ones worth being taken into consideration:

- *The orthodox approach.* This approach does not assign a special role to asset prices. In the strongest version of this approach, the prices stability is sufficient to ensure the financial stability, but this version is rejected or infirmed by the empirical calculations. In a more moderate version of this approach, the prices stability contributes, on long term, to ensure the financial stability and numerous central bankers agree with this opinion.

- *Targeting asset prices.* The extreme version of this approach is to include the asset prices into the Consumer Price Index. This idea, launched by Goodhart and Hofmann (2002), is not too appropriate because the asset prices are volatile and refer to the future consumption. In this case, the pressure on the central banks will be very important, that is why the solution is considered to be an extreme one.

• *Pricking asset prices bubbles.* The roots of this position can be traced back to the so-called "liquidationist" view and this approach has some prominent advocates within the Board of Governors of the Federal Reserve System. They sustain a strong policy reaction to market dynamics which will force the liquidation of the most risky positions without inflicting further damage on sound investment strategies and the economy more broadly.

• *Leaning against the wind.* The leaning against the wind principle describes a tendency to cautiously raise interest rates even beyond the level necessary to maintain price stability over the short to medium term when a potentially detrimental asset price boom is identified. The reasons are that credit constraints depend on the value of collateral and that, in case of a financial crisis, the whole financial intermediation process is affected<sup>2</sup>. Leaning against the wind is advisable only when the probability that the bubble will anyhow burst in the near future is small and when the future growth of asset prices is sufficiently interest rate sensitive.

Personally, we consider that the central bank has to take into account the asset prices evolution when elaborating the monetary policy strategies. At the same time, we think that the central bank has to intervene on an unfavourable evolution of prices when the stability of the system is endangered, even if the interest rate is not the most appropriate intervention instrument. Thus, for the intervention efficiency, the authorities must delimitate between financial assets and real assets, and they also have to identify the instruments with better performances in different economic and financial conditions.

### **3. Conditions for the central banks interventions and available instruments**

We will first describe the conditions required on the markets in order for the central banks intervention to be advisable, and then we will briefly analyze the possible means by which this intervention can be realized, making the distinction between financial asset and real estate asset.

In a small open economy, the probability that the central bank can stand against the general asset prices trend is insignificant (Trichet, 2005). In other words, the author states that a central bank, in particular in a small economy, does not have the capacity to withstand a general asset prices evolution influenced by the international trends.

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<sup>2</sup> This phenomenon recently occurred in the case of the real estate and credit crisis in USA, in September 2007.

It is also significant to consider the importance of financial markets within the financial system. In a bank-based system, the effects of the asset prices welfare should not have a significant impact on the monetary policy transmission mechanisms (Illing, 2001). Cecchetti (2006) reached the conclusion that the market-based financial systems are more exposed to risks caused by the asset prices booms. The results of his researches suggest that housing booms worsen growth prospects, creating outsized risks of very bad outcomes. By contrast, equity booms have very little impact on the expected mean and variance of macroeconomic performance, but worsen the worst outcomes.

On the other hand, in case of a high leverage economy where financial intermediaries are exposed to risks, a crash can determine a “bank run” affecting the process of intermediation and a quick and expensive liquidation of real assets without the intervention of the central bank (Bohl et al., 2007).

Beside the bank-based or market-based conditions, it is also important to make the distinction between the financial assets price volatility and those of housing assets price volatility, when analyzing the opportunity of central banks intervention, a distinction which is not often underlined in the economic literature. Even if most of the studies focus on financial asset prices because the stock-exchange crashes frequently caused financial crises, the speculations on the real estate market are also important. A sudden decrease of prices endangers the banking system by the reduction of the guarantees’ value. Secondly, the welfare effect would disappear and the consumption and the investments will reduce considerably. The hypotheses of the perfect market are not valid for the real estate assets, and the acquisition of properties is often accompanied by leverage.

After we have established that the central banks’ intervention instruments have to take into account the nature of the assets, we proceed to the analysis of these tools. The interest rate actually represents an important instrument available for the monetary authorities. Even if certain specialists consider that this tool can be used to correct the imbalances of asset prices, the risks corresponding to its usage are significant<sup>3</sup>. At the same time, the efficiency of this instrument has to be assessed. Unfortunately, an important part of the economic literature on this subject focuses only on the interest rate as intervention instrument.

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<sup>3</sup> These risks are influenced by the macroeconomic fundamentals in the corresponding period (inflation level, economic growth, etc.)

A possible intervention instrument for the asset prices imbalances is also the regulation and surveillance policy. When the economic booms are accompanied by unbalanced increases on the credit market causing the rise of the asset prices, the risk that their level is no longer justified by the economic fundamentals appears. This imbalance has to be corrected before a financial crisis occurs. *“Adequate regulation and surveillance policies can contribute to the preservation of the financial stability”* (Caruana, 2005).

The speculative bubbles are based on the investors herd behaviour and on the lack of market transparency. The increase of the transparency, by means of public information, represents another useful instrument. The central bank can provide such information benefiting from the necessary credibility and independence. The question that arises is whether the central bank is better informed than the market and whether it can detect a bubble. It is sure that a 10-20 percent increase of the asset prices during a month is not caused by a blooming economic situation.

The monetary policy can be sustained by the fiscal policy both in case of booms of financial asset prices as well as in case of those of real estate assets prices. The structural policies also represent an advisable solution in case of booms of real estate asset prices.

#### **4. The role of NBR in the correction of asset prices imbalances**

Although at present the analysis of the evolution of asset prices is not an important element for the NBR monetary policy decisions, it can be counted among the new challenges for the stability of the financial system. This issue grows more important in the context of a European framework and of a continuous development of the Romanian financial and real estate market, after the economy will recover.

At European Union level, the single monetary policy is not sustained by a common fiscal and structural policy. The use of the interest rate as intervention tool can diversely affect the member states' financial system. Detailed studies made by the ECB to increase the market's information level require significant efforts. Moreover, the markets are still considerably influenced by the decisions of the national authorities.

The ECB's monetary policy strategy takes into account the asset prices evolution as one of the economic and financial indicators selected for assessing the risks on short and medium term that threaten the prices stability (the second pillar supporting the ECB's monetary policy decisions). The evaluation of these indicators is carried out in a context of prices stability and the ECB intervenes only if the stability is menaced.

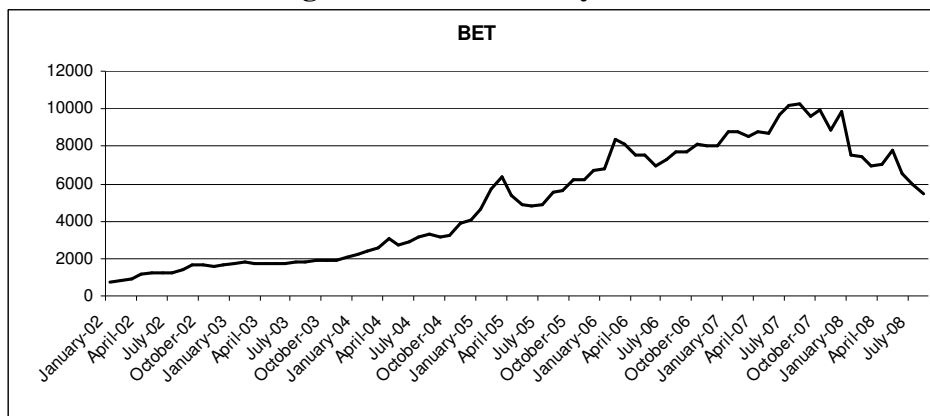
On short term, a close cooperation between the national authorities and the ECB would represent a solution for taking a common decision related to the opportunity of an intervention on the market, to the moment of this intervention, as well as to the consequence and importance of this action. The interventions still fall in the responsibility of the national authorities.

Before underlining the importance of asset prices analysis and of the adoption of preventive solutions for the Romanian financial system, we have to mention that the real estate and the financial markets, even if they are not mature, registered a considerable increasing development before the economic crisis.

In Romania, the evolution of the real estate asset prices and the bubble burst resulted in a real problem. The housing value increased substantially during the last years, amplifying the wealth effect or the leverage capacity by using the non-financial assets as guarantees. The sharply prices increase on this market was artificial. The reduced liquidity of the real estate market and the considerable share of non-financial assets out of the total net fortune have significantly diminished the inhabitants' capacity to cope with the systemic choc.

In relation with stocks prices, the NBR analyzes the evolution of the financial market in its monthly bulletins and stability reports, but these analyses only monitor the level of market development, and not the unjustified increase of the stocks prices. These analyses did not contribute to a price correction before 2007, but in the aftermath of the financial crisis, the Romanian capital market knew a severe downturn (Figure 1).

**Figure 1: BET index dynamic**



Source: Bucharest Stock Exchange

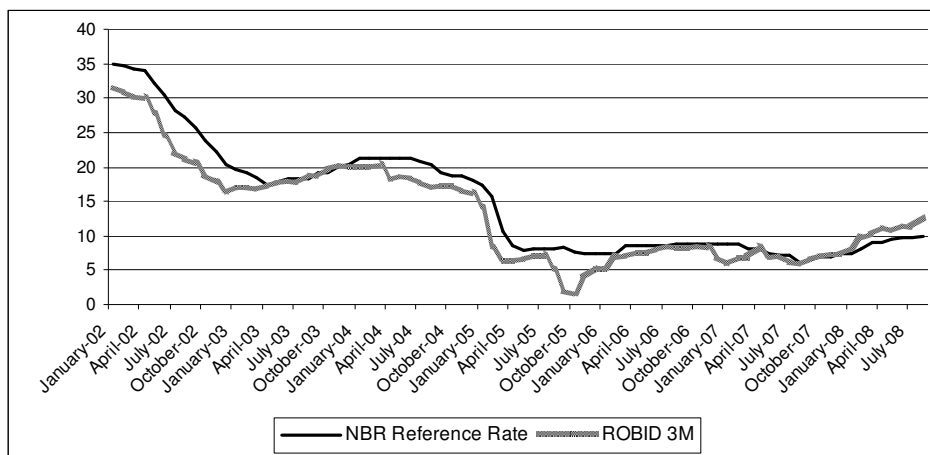


That is why, in the future, a more intense response from NBR to asset prices bubbles construction is required. But is the NBR's official interest rate an efficient intervention instrument?

### 5. Interest rate as possible intervention instrument: econometric tests

In order to highlight the importance of the interest rate in the financial correction of asset prices volatility in the Romanian case, we performed econometric tests using monthly data<sup>4</sup>. Because the NBR's official interest rate can remain unchanged for a longer period, we decided to use as a proxy the ROIBID at 3 months<sup>5</sup>, in order to test the influence upon the BET index. The correlation between the interbank interest rate and NBR's Reference Rate is very strong (Figure 2).

**Figure 2: NBR's Reference Rate and ROIBID 3M**



Source: NBR Monthly Bulletins

Different control variables were introduced in the econometric equation to validate the findings, but the results were not stable. That is why we have chosen to test the asset price evolution in relation with the real interbank interest rate and the macroeconomic conditions. Because the BET index and the real interest rate were stable only in first difference, we have used their variation in the final equation:

<sup>4</sup> We took into consideration the stock prices in order to reveal the financial assets prices. The stock market has an important weight into the Romanian capital market.

<sup>5</sup> Romanian Interbank Bid Rate.

$$\Delta \log\_bet_t = c + \alpha * \Delta rir\_robid3_t + \beta * ip_{t-1} + \varepsilon_t$$

where:  $\Delta$ ,  $c$ ,  $rir\_robid3$ ,  $ip$  and  $\varepsilon$  represent the variation, the model's constant, the interbank real interest rate at 3 months, the industrial production<sup>6</sup> and the errors of the model;  $\Delta \log\_bet$  is the logarithmic return of the BET index.

The equation was tested for the period January 2003-August 2008. The tests results are presented in the Table 1.

**Table 1: Econometric results**

<i>Dependent variable:</i>		
$\Delta \log\_bet_t$		
<i>Explanatory variables</i>	<i>Coefficient</i>	<i>t-Statistic</i>
c	0.0140	0.6468
$\Delta rir\_robid3_t$	-0.0180**	-2.1991
$ip_{t-1}$	0.0010	0.2250
$R^2$	0.0748	
DW	1.9690	
Observations:	67	

*Note: \*, \*\* and \*\*\*, mean statistic relationship significant at 10%, 5% respectively 1%.*

We can observe that the explanatory power of the model is reduced ( $R^2 = 0.07$ ), but the errors of the model are independent (Durbin-Watson statistic is close to 2).

This equation, even if it is simple, shows that the BET index trend is negatively influenced by the real interbank interest rate evolution. However, the real economy situation, represented here by the first order lag of the industrial production, is not significant. The model appears fragile in these conditions.

Consequently, we can not state that the interest rate represents a successful instrument in the correction of financial assets prices volatility in Romania. Moreover, it is not the only instrument which can be used for this purpose. Our recommendation is that the authorities should get more involved in increasing the capital market transparency.

## 6. Conclusions

The asset prices represent an element that has to complete the analysis carried out by the central banks. Nevertheless, this concern of the

<sup>6</sup> A proxy for the economic growth rate.

monetary authorities for the evolution of the financial asset prices should not determine them to automatically intervene on markets in order to stabilize the asset prices volatility. A preventive intervention policy is more efficient. The reaction of the central bank must not be mechanical, but it has to exist. This implies the need to carry out complex studies and analysis, especially to determine the construction of bubbles. The choice of the intervention tools has to be done by taking into account two elements: the delimitation of the market booms and of speculative bubbles, respectively the delimitation between the financial asset market and real estate market, even if the evolution of these two markets is closely related.

Although the interest rate policy remains the most important intervention instrument, the results do not always fit the expectations. The authorities have to count on a mixture of elements to correct the imbalances. The regulation and surveillance policy, together with the reduction of the asymmetry of the information, represent important factors for the prevention of the constitution of speculative bubbles. The role of the NBR in the correction of asset prices imbalances has to become more active and consistent in the future.

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