

# Is the Incidence of the Monetary Policy on the Mortgage Market Possible?

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**Teodora Barbu**

**Georgeta Vintilă**

Academy of Economic Studies, Bucharest

***Abstract.** The article sets out to approach mortgage markets and their impact on the financial structure and on the financial stability. The synthesizing of studies done lead to the conclusion that the institutional characteristics of the mortgage market influence the monetary policy shocks on the prices of housing and consumption. In developed countries, transmission of such shocks is stronger because of mortgage markets mature and flexible. Regarding this aspect, there are significant divergences in the structure of the mortgage market between the main industrialized countries. Also, the reaction of central banks to the speculative bubbles on the mortgage markets is extremely reduced, thus formulating a series of interrogations related to the lack of concern of monetary authorities regarding the price of real assets.*

**Key words:** mortgage market; monetary policy; speculative bubble; central bank; real assets.

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**JEL Codes:** E52.

**REL Codes:** 8J, 14K.

## 1. Heterogeneity mortgage markets

The importance of houses in the wealth of natural persons, the importance of economic boom cycles in the financial stability and role of mortgage markets characteristics in transmitting monetary policy show that it is important to consider the mortgage market as a part of the financial structure. This situation is particularly adequate in Europe, where the creation of the single financial services market had a reduced impact in the way that there are numerous divergences, which shows the fact that there are significant differences compared to other regions where the mortgage market is homogenous within each monetary area (Calza et al., 2007, pp. 235-241).

In the US, the mortgage and mortgage products market has known a significant growth in the last years, becoming the largest market with fixed interest rate. While in the US more than half of the mortgage market is secured, the European market of mortgage products continues to be reduced. The situation reflects the existence of a number of characteristics of mortgage market in the US, which encouraged the increase of securing and reducing the need of mortgage credits. The American mortgage market is currently dominated by mortgage banks which typically represent the originators of loans. These, in turn, are sold on the primary market to enterprises sponsored by the US government (governmental agencies) which play a pivot role on the American mortgage market. The governmental agencies purchase individual packages of mortgage

loans from certain banks, either owning them in the balance sheet or selling them on the secondary mortgage market. Currently, in the US there are five mortgage governmental agencies with different corporate structures: one fully private (Sallie Mae), a public agency (Ginnie Mae) and three other agencies with a hybrid statute (Fannie Mae, Freddie Mae and FHLB).

These three agencies have private shareholders but function with the implicit guaranteeing of the state and with certain advantages (tax exempts and registering fees).

Fannie Mae and Freddie Mae are the largest agencies, being created in the 1930's and 1970's, as part of an effort to increase the number of house owners and improve the mortgage market. Fannie Mae and Freddie Mae have two main business lines: on one hand they buy mortgages, hold them and issuing nescuritizate bonds; on the other hand they offer MSB type warranties (mortgage backed securities), in the last years significantly increasing the importance of these business lines. For the products specific to the mortgage market, MBS have increased in the US with an annual percentage of 10%, the balance of these operations reaching 4,4 trillions USD, compared to 3,8 trillions USD, treasury bonds (in 2007/2006).

The involvement of governmental agencies Fannie Mae, Freddie Mae together with investment banks such as Goldman Sachs, Merrill Lynch and Bear Sterns in operations of securing mortgage markets have triggered and sustained the crisis, first manifested in the US under the name of

subprime crisis. According to this mechanism, a bank could grant any volume of mortgage loan because it could sell them further, to a financial institution, receiving the entire value of the loan plus the interest.

The financial institutions (mentioned above) have secured these credits by cumulating them in an issue of financial derivatives, considered to be very secure, with AAA rating which were purchased by large banks or countries' treasuries. Thus, non-performing loans were wrapped in financial derivatives with superior ratings which were due either to the implicit guaranteeing by the state or due to the solid financial situations and the ties between the rating agencies and investment banks. The

institutions involved in securing the loans have succeeded this way to gain considerable profits such as Lehman Brothers (which increased its income from 1,5 billion USD in 2003 to 4 billion USD in 2007) considering that the ones who purchased the derivatives did not know what they contained.

When this scheme collapsed, the governmental agencies and investment banks have registered significant losses (Fannie Mae lost in 2007-2008 more than the combined profits of 2000-2006). In the table 1, there are some of the institutions involved in the acquisition of AAA derivatives packages which contained non-performing credits.

**Total losses generated by subprime credits**

Table 1

Institution	Type of institution	Value of loss (billions) \$
Switzerland UBS AG	bank	37.7
Citigroup-USA	bank	39.1
Merrill Lynch	Investment bank	29.1
HSBC – Great Britain	bank	20.4
Royal Bank of Scotland – Great Britain	bank	15.2
Morgan Stanley	Investment bank	11.5
AIG	bank	11.1
Wachovia Bank – USA	bank	11.1
Deutsche Bank - Germany	bank	7.7
Mizuho Financial Group - Japan	bank	5.5
Societe Generale	bank	3

**Source:** [www.federalreserve.gov/releasses/h8/current](http://www.federalreserve.gov/releasses/h8/current).

Compared to the American market, the European market of mortgage products is very reduced, and the mortgage backed securities – MSB make up 50% of the total secured European market, this component being liquid only in Great Britain and the Netherlands. In the last years, the number of cases of securing mortgages originated in other countries was limited. The main reason the European mortgage market remains fragmented and insufficiently developed is

the harmonization of the legal framework, which affects both the characteristics and rules applicable to mortgage loans and securing each loan, reflecting a variety of mortgage products in the European countries.

The prices of houses have had spectacular evolutions in the last years in the industrialized countries. Like the prices of other assets, the prices of houses is influenced by interest rate in certain countries, this being a channel of transmitting

the monetary policy. Because the prices of houses, monetary variables and macroeconomic aggregates change, as a response to some shocks in the economy, it is difficult to see the causality relationship between them (Monacelli et al., 2008, pp. 2-22).

After the decline of capital market and the fall of economy in 2000-2002, the monetary policy has relaxed in the majority of developed countries, creating favorable conditions for increasing the prices of houses. Thus, the monetary policy has become less adapted to the mortgage in a series of countries, the interest rate on the long-term remaining low and the price of houses continuing to rise.

The prices of assets, respectively the prices of houses are not among the objectives of central banks, but clearly the oscillation of house prices may have important implications on the economic activity and inflation. The consequences of sudden modifications of house prices on the financial stability require a proper regulation of this domain. The major decline of the price is often associated with the economic collapse and triggers considerable crisis when the value of the nominal collateral is declining significantly. Regarding the reactions of monetary policy to the modification of houses prices there are empiric reduced evidences which show that central banks change their monetary policy rate as a necessary reaction to the implications of house prices on inflation and economic growth. Monetary policy may react to other variables, such as oil shocks,

productivity drops, interest rate shocks. The analysis of these correlations in countries such as Japan, Sweden, Great Britain and Australia suggests that central banks were preoccupied mainly with inflation and interest rate, paying little attention to the prices of commercial and residential properties. Recent speeches (at the level of 2007) about this issue suggested that banks should have to produce a shift of monetary policy, if you wanted to restrict substantially the rapid increase in the price of assets.

Even in the time of speculative bubbles, the policy of central banks is uncertain, as the lag of monetary policy is long. In the opinion of central bank governors "*the price of real assets is important for central banks only to the information they provide about macroeconomic evolution, not being at all regarded as a monetary policy objective*" (Filardo, 2005, pp. 291-298).

Debates on this theme had a public character in Great Britain, where house prices tripled in 9 years (until 2004). Starting with November 2003, the Committee of Monetary policy of The Bank of Great Britain gradually increased the repo rate with 125 basis points up to 4,75%. Also, in December 2003, the British government changed the index of RPIX properties, determined by taking into consideration the price of houses. In the context of the current crisis, BCE has operated the most drastic reduction of interest rate in its 10 year history reaching a level of 2,5% and the Bank of Great Britain reduced the reference interest rate to 2%, the lowest level since 1951.

## 2. Transmission of monetary policy through the “housing channel”

The institutional differences between mortgage markets are often quoted as a source of differences which manifest between different countries, from the point of view of the way the impulses of monetary policies are transmitted within the economy.

The size and distribution of mortgage debt, the average maturity of contracts and the type of interest rate are the main characteristics able to determine the effects induced by interest rate modifications on the income and collateral. Authors, such as *Guy Debelle* (2004, pp. 51-64) show that an increased weight of the interest variable rate for mortgage contracts leads to an effective mechanism of transmitting monetary policy through “housing channel”. Studies done by Bank of International Settlements show that monetary policy brings about stronger effects in Anglo-Saxon countries than in Europe. Different authors approached this subject, showing a series of aspects: *Matteo Iacoviello* (Iacoviello, Neri, 2008) shows that variations in the magnitude of responses to monetary policy shocks manifests in European countries thanks to differences between financial systems; *Angeloni* (Angeloni et al., 2003, pp. 29-30) considers that the institutional differences in financing houses is a possible explanation for the response of private consumption to monetary policy shocks in European Union, compared to the US; other authors (Calza et al., 2007) set out to apply VAR model on the case of three Anglo-Saxon countries (Canada, US, Great Britain), 7 European countries (Germany, Italy, France, Spain, Netherlands,

Belgium as well as Denmark), taking into consideration the period 1980-2004, to assess the mortgage market in response to monetary policy.

In order to identify monetary policy shocks, authors used *the Cholesky factorization standard procedure* for estimating the variance-covariance matrix. Results indicated that an increase of interest by 100 base points determines the decrease of both private consumption and houses' prices. Transmitting monetary policy is strong in Great Britain, Netherlands and the US and has a reduced level in France and Germany which is strongly correlated to the degree of development of the mortgage market. The model highlights the response of houses prices to monetary policy through the following indicators: mortgage debt – GDP ratio, the weight of ownership, the index of integration in the mortgage market and the loan/houses value ratio. In all cases authors have found a clearly positive relationship: the reaction of houses' prices to the monetary policy shock with variable structure of interest rate consists of a response of 1,82% in the case where mortgages are refinanced and 0,38% in the case where it is not allowed, which signifies a strong reaction of houses prices in case of flexible mortgage markets.

The transmission of monetary policy with impact on the mortgage market is done through three channels, respectively: a) the channel of nominal debt; b) the channel of collateral and its constraints; c) the channel of asset prices. It is important to highlight the fact that the first two channels act independent to the manifestation of prices rigidity.

The most intense subject approached in specialty literature is the channel of credit and its sensitivity on the prices of houses. The existence of this channel is correlated to the structural characteristics of the houses financing system, especially to the institutional organization and level of efficiency. The transmission of monetary policy through the credit channel is linked to the mortgage market as well as to other sectors of the economy. Mortgages are a part of collateral assets and their features are strongly influenced by the prices of these assets. Such a correlation may explain the attitude of banks which increase the investment side in the mortgage market, in the period of price increases. The credit channel may be regarded both as a source (as a result of institutional deposits) and as a destination (at the user level). As a source, thanks to the volatility of houses' prices, loans on the mortgage market are considered risky. If a negative shock of monetary policy increases the aversion to risk of the bank's management than the reduction of asset levels may affect mainly the loans for houses, if on the mortgage market the lack of liquidity starts to show. In this case, banks will adjust crediting policy. The manifestation of a state of reducing and segmenting of loans for houses affects the demand coming from the population in a higher measure than in case of current usage goods. The reduction of credit loans, in the absence of state funds or alternative credit institutions, has as effect the fragmentation of demand, in this sector more than in other ones.

The relevance of credit channel in the houses market can be explained by a major

structural feature: the organizing of the houses financing system. Referring to this aspect, three models are identified:

- a) the bank oriented model (Finland, Great Britain, partially Germany);
- b) the mortgage market model (partially Germany);
- c) state model (Norway and partially Finland).

*The bank oriented model* is characterized by the strong presence of institutional depositors (commercial and mortgage banks). In Finland, 80% of the houses market is covered by these institutions and in Great Britain, 90%. In Germany commercial, savings banks and credit cooperatives covers 45% of the market and the rest is assured by mortgage banks, *Bausparkassen*. Thus, the banking system, through its nature, is strongly linked to the credit channel, because the sum of funds that can be loaned is strongly dependent to the monetary policy actions due to the founding of the activity of these institutions on short-term deposits.

*The mortgage market model* is characterized through the strong role of mortgage institutions, the main difference to the banking system model being the source of the funds of these specialized intermediaries (respectively, the issuing of long-term titles as mortgage and municipal bonds). Thus, it is argued that the existence of this mechanism based on mortgage bonds is at least linked to the credit channel, a sign that the monetary policy has limited effects on the credit offer.

*The state model* is characterized through the relevant presence of the state (directly or indirectly) through public banks. In Finland, the state assures between 10% and 20% of

the mortgage loans through the State Fund for Houses and in Norway this percentage is situated at 40%. Mortgage loans are generally restricted to the social houses or in some cases to particular categories of beneficiaries.

Matteo Iacoviello shows the correlation between the credit channel, effectiveness in houses financing and the type of institutions involved in the activity on the mortgage market by using VAR methodology of analyzing houses market. Taking into consideration a multitude of variables (real GDP, inflation, monetary policy rate, real price of houses, total loans from all the mortgage institutions, interest rate on the mortgage market, short-term interest rate) have led to identifying the credit channel in Finland, Germany, Norway and Great Britain with different effects (reduce in Great Britain and strong in Finland).

Another model that describes to what extent the credit channel may be part of the monetary policy transmission policy is that of *Ben S. Bernanke* (Bernanke, Gertler, 2001, pp. 1-7). This is based on the macroeconomic effects of credit market's imperfections, in the sense that each imperfection generates external costs of fund increases, which in turn affects the crediting decisions. In this context, the endogenous developments of the credit market (through variations in the value of the collateral) acts through amplifying and propagating macroeconomic shocks. In conducting monetary policy, the price of real assets is important, especially in the case of speculative bubbles, without reaching a consensus regarding the most adequate strategy of monetary policy. In Bernanke's opinion (2008, pp. 3-6), monetary policy must not be used aggressively in order to

burst a speculative bubble. Referring to this subject a series of questions may be formulated, respectively to what extent the monetary policy can identify the speculative bubble and whether monetary policy is the best mean of deflating the speculative bubble.

Ideally, a speculative bubble may be managed through the moderate adjustment of interest rate. Even if the speculative bubbles are identified, they cannot be influenced in a predictable manner by monetary policy. Each strategy of reducing the speculative bubble induces a series of substantial costs due to short-term deviation of macroeconomic objectives of monetary policy, as well as due to political complications or moral hazard problems.

### **3. The reaction of central banks in banking crises generated by the mortgage**

The frequency of banking crisis generated by variations of mortgage markets in the last 25 years (beginning with the crisis in the northern countries and ending with the recent crisis in the US) justifies the interrogation regarding the way central banks intervene.

The involvement of central banks in the management of banking crisis is done through the fulfillment of the role of final lender. From this point of view there were questions related to the reason of the financial support that is granted by the central bank to the financial institutions and especially to banks, the non-financial entities being excluded. To this question the answer can be formulated depending on the distinction

between the two traditional characteristics of banks, respectively the vulnerability to losing confidence and externalities associated with the bankruptcy of banks (Hoggarth, Soussa, 2000, pp. 166-174).

The vulnerability of banks comes from their lack of liquidities, which in case of powerful crisis affects the entire banking system.

Bankruptcy of an increased number of banks or just of some important banks may influence the economic policy and especially the payment system. Such externalities imply or suggest that the bank's bankruptcy, generated either by liquidity problems or by non-fulfillment of solvency can sometimes justify the intervention of public authorities, the involvement of the central bank not being necessary. But every involvement is justified only if other solutions are not possible and if the benefits of financial stability exceed the involved costs, respectively the increase of moral hazard risk. In these conditions, the management of bank crisis implies a certain preoccupation for preventing them which is possible through: ensure or guarantee deposits, through regulation and surveillance. Such taken measures can reduce the systematic risk which generates banking crisis but cannot eliminate it completely.

Considering this, for some public authorities, the avoiding of banking bankruptcies is possible through the development of the private sector, supplier of important liquidities, case in which central banks fulfill the role of middlemen, trying to convince the individual banks of the potential of the ones that seem less solvable. In such a case, the private sector subsidizes the bankrupted banks and brings back the

market discipline. The coordination of banks' actions, through the private sector, brings on a series of difficulties due to the short-term competitive advantage of banks with surplus of liquidities during the crisis. In such circumstances, moral persuasion and the regulations of public authorities are necessary in order to establish a cooperation attitude between competitive banks.

The experiences of the last two centuries prove that, when the financial institutions are insolvent, authorities try to organize the private capital sector. In countries where competition of the financial system has certain degrees of limitation, semi-private institutions were established with the aim of solving liquidity issues of small banks. It is the case of Germany, where in the 70's LikoBank was created, considered by Bundesbank as a penultimate lender. When the organizing of liquidity issues and organizing of private sector is not possible through individual banks, the requirement of liquidities must be approached at the level of the entire banking system and through the intervention of the central bank, as a last rank lender.

Another problem regarding the role of last rank lender of the central bank is that of the interest rate to which it grants loans, respectively at a penalty rate of interest. Such a practice generates a series of effects, of which we keep in mind:

- aggravating the state of crisis of banks which cannot reimburse the loans granted at a higher rate of interest;
- supplies signals on the market, which favors an inadequate evolution of activity and offers managers the possibility of taking enhanced risks.

The basic idea, which must come out of such a situation, is that the central banks, together or separate from other surveillance of banking systems institutions, impose conditions in fulfillment of the role of last rank lender, of which penalizing interest rates, which limits their ability to engage in a multitude of activities.

Besides this aspect, it is important that central banks inform of the enforced politics before the manifestation of banking crisis, the role of these advance notifications being that of reducing the uncertainty and moral hazard. More concrete, the announcements coming from central banks are necessary for banks with solvency issues to know if they are going to be backed up or not. The aspect is of high importance, which results from the elements that are found in the Report of countries in the Group of 10 (1998), where it is mentioned that in actions of backing up financial institutions it is necessary to state how, when and under what circumstances the help can be granted. The aim of such a transparency is to eliminate ambiguity from the interventions of the central bank (Hunter, 2008, pp. 5-7).

As a conclusion to the issue of central bank intervention in bank crisis management the following statements can be made:

- The involvement of central banks in the solving of banking crisis is based on the vulnerability of banks to the liquidity crisis and on the impact which banking bankruptcy has on the entire financial system and on the economy.
- As the distinction between the lack of liquidity and insolvency is not clear in practical activity, the central bank is involved indirectly through facilities

granted to the private sector or directly including the ensuring of deposits as well as the surveillance of the banking system;

- Solving banking bankruptcies brings about official costs, materialized into provisions constituted for covering capital risk or losses produced by granting liquidities to banks which can become insolvent. This is the reason why the aim of each intervention by the central bank, the terms and conditions in which these are performed must be limited only to the situations through which the maintain of the financial system's stability is ensured.

The multitude of approaches found in the specialty literature, regarding this subject, can be illustrated and completed with the measures adopted by central banks in 2007-2008, with the aim of ensuring financial stability of which: reducing monetary policy rates and supplying liquidity to the banking system. Exemplified by the measures adopted in several countries affected by the crisis.

*The interventions of US Central Bank* – in the context of the crisis were implemented in august 2007, in the day when BNP Paribas registered considerable losses from three of its funds, which owned assets in the form of secured subprime titles. As a direct and immediate consequence, European Central Bank responded immediately with short-term liquidity injections totaling 94,8 billion \$ being the most important operation of the kind in the last 9 years. In the same day, FED increased the level of open-market operations, measure followed by a series of

other interventions, which can be synthesized in the following way (for the period august 2007-march 2008).

- 5 modifications of the *federal funds rate target* totaling 225 basis points, respectively 2,25 %;
- Creating and modifying the mechanism “*Term Auction Facility*” (TAF) as well as a “swap” line with European Central Bank (ECB) and National Bank of Switzerland (totaling 36 billion USD);
- Modifications in the program of the program of “lending securities” and initiating the one called “*Term Securities Lending Facility*” (TSLF);
- Extending the crediting towards primary dealers by creating the facility “*Primary Dealer Credit Facility*” (PDCF).

Falling housing prices has resulted in 2007, in the US, an unprecedented situation and the quality of mortgages knew a powerful depreciation. On the 9<sup>th</sup> of August 2007, the American financial system started to crash. Losses incurred by banks were due to owning important secured mortgage titles. In this context, the traditional instruments based on interest rates proved ineffective, reason for which the FED had to try a variety of new intervention ways. Thus, beginning with 2007, FED modified the way it granted credits to commercial banks trough the creation of facilities “The Term Auction Facility” and by granting direct loans to investment banks. It also

made dollar/euro swap transactions with ECB and dollar/Swiss franc with the Bank of Switzerland. The extraordinary loans granted to investment banks completed the intervention measures of the FED, which totaled over 500 billion USD.

In table 2 there are some directions of actions of central banks in a series of countries. In comparison with these, the measures adopted by National Bank of Romania beginning with August 2008 have contrasted with the ones adopted by large central banks. In the first place, in August 2008, The National Bank of Romania published *The New Crediting Regulation for the population*, through which banks were coerced to establish way the maximum degree of debt, differentiated on clientele categories and credit destination. The general effect was that of diminishing credit sizes, in an ampler context of lack of liquidities in the banking system. In October, commercial banks borrowed from National Bank of Romania through “credit facilites- the lombard” credit the sum of 49 Billion RON (the equivalent of 13 Billion EUR) 28 times more than the total sum borrowed in the 1st of January – 1st of September 2008 period. Also, the liquidity crisis has been highlighted through the reduced volume of deposits constituted by banks at NBR, in average 5 times less than in previous months (570 million EUR in October 2008). The injections of liquidites done by NBR have consisted of permanent facilities, repo operations and sway type bilateral transactions.

## Measures adopted by central banks in the view of ensuring stability in the context of the crisis

Table 2

Central Bank	Concrete actions
Federal Reserve Fund (FRF)	<ul style="list-style-type: none"> <li>• Purchased bonds worth of 600 billion USD, issued and guaranteed by mortgage credit institutions</li> <li>• Granted a support of 200 billion USD for consumption credits and loans for small enterprises</li> <li>• Purchased bonds worth of 100 billion USD issued by Fannie Mae and Freddie Mae and other 500 billion, value of bonds guaranteed by the same institutions</li> <li>• Supported with 200 billion USD the crediting of students, credit cards and auto market</li> <li>• Starting with January 2008 till the end of the year, has succesively reduced reference interest rate which was reduced from 3,25% to 0,25% - in December, with the tendency towards 0,11% - in January 2009 (at a rate of 0% of interest Central Bank cannot inject money into the economy through banks)</li> </ul>
Bank of England	<ul style="list-style-type: none"> <li>• Reduced the monetary policy interest rate to 2%</li> </ul>
Bundesbank	<ul style="list-style-type: none"> <li>• Did not reduce interest rate</li> <li>• Adopted a plan of sustaining financial system worth of 400 billion EUR</li> </ul>
Bank of New Zealand	<ul style="list-style-type: none"> <li>• Reduced the reference interest rate to 5% (the lowest level in the last 5 years)</li> </ul>
Bank of China	<ul style="list-style-type: none"> <li>• Performed the most significant reduction of interest rate in the last 10 years (for 1 year loans, the interest rate became 5,58%, and for deposits 2,52%)</li> </ul>
Bank of Japan	<ul style="list-style-type: none"> <li>• Reduced interest rate from 0,5% to 0,3%</li> <li>• Accepted as guarantees bonds issued by BBB rated companies</li> </ul>
BNR	<ul style="list-style-type: none"> <li>• Maintained throughout 2008 the interest rate at 10,25% level, in the context of a profound liquidity crisis</li> <li>• In February 2009 has reduced the monetary policy interest rate level from 10,25% to 10</li> </ul>

Contemplating on these events and interventions lead inevitably to the interrogation regarding the revision of monetary policy objectives of central banks and the direct ways of acting. If until recent years the discussions were dominated by the role of last rank lender of the Central Bank, the risks taken by this institution or the

separation of this role with the Treasury, these interrogations are not valid anymore. In the context of the financial crisis, the Central Bank represents the sole official organism which can act fast enough through effective interventions and the monetary policy may exert considerable influences on the mortgage market and price of real assets.

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