

DIRECT TARGETING OF INFLATION –THE MONETARY POLICY STRATEGY OF THE BNR

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Abstract: *The fundamental objective of the monetary policy of the NBR is to ensure and maintain the price stability. To achieve this goal, the NBR has approached as a monetary policy strategy the direct targeting of inflation, which has had a great influence on the macroeconomic variables of Romania. The paper aims to investigate the macroeconomic forecasting models used by the NBR and to what extent the monetary instruments applied by the NBR are close to the targeting of inflation.*

Keywords: *inflation, monetary policy, GDP, exchange rate.*

JEL Classification: *E52.*

1. Introduction

The monetary policy is the instrument by which the state intervenes in the economy to achieve the objectives of the economic policy: the balance of economic growth; maximizing the employment rates; stabilizing the balance of the external payments; price stability; reducing the budget deficit.

The monetary policy fulfils its essential role of ensuring the price stability and maintaining the inflation within the normal limits by all actions performed by the monetary authority or the central bank of a state.

The central bank exerts its influence on the economy through instruments and means of intervention to implement the specific measures of the monetary policy. Through these instruments, the central bank can increase the volume of money by acquiring securities on the money market, in which case the process is called liquidity injection or it can withdraw money from the economy, the phenomenon called liquidity destruction.

2. The instruments of intervention of NBR

The instruments and means of intervention of the central bank in the economy can be:

a) Instruments and means of *indirect* intervention whereby the central bank controls the money supply and the money intermediaries having limited access to the central bank's deposits. The most important indirect intervention instruments are: official discount rate, open market policy and minimum reserve requirements (RMO).

b) Instruments and means of *direct* intervention whereby the central bank exerts its influence on money by intervening on the value and size of the deposits held by banks and credit institutions. These instruments and means refer to banking regulations when setting the interest rates and exchange rate.

Depending on the objectives pursued, the monetary policy instruments can also be classified according to their structure as follows:

- Instruments through which the central bank supplies and removes the central currency from the market. These consist of: operations in the open market and providing credits in the money market whose interest rate is variable; rescheduling

operations; advances offered to the State by the central bank; the formation of the mandatory minimum reserves and those applying to the loans and deposits;

- Instruments that exert influence on the patrimonial assets and liabilities of banks, generating an unfavourable influence. This includes total and selection quantitative targets such as the verification of issuance of the financial securities; setting interest rates in debit or credit; the required use ratio based on a minimum volume of financial securities (bonds), treasury bills etc.;

- Instruments for verifying foreign operations include: oversight of currency exchanges (external authorized debts, foreign currency markets, deposits consisting of coins and foreign securities purchased by non-financial economic agents); required reserves applied to the deposits held by non-resident individuals; the involvement of the central bank in the foreign exchange; bank regulations applied to the deposits made by non-residents on the interest paid for this type of deposits.

3. The direct targeting of inflation

In Romania, the fundamental objective of the monetary policy of the NBR is to ensure and maintain the price stability. To achieve this goal, the NBR, since 2005, has approached as monetary policy strategy *the direct targeting of inflation*.

Direct targeting of inflation involves setting a target for the level of inflation over a certain period of time to ensure the price stability.

One of the features of targeting of inflation is that it represents a numerical target, either percentage, with or without the acceptance of an offset interval, either as absolute fixed size, taking into account the index of the consumer price.

The direct targeting of inflation strategy was introduced in 1990 by the Central Bank of New Zealand as an innovative instrument of the monetary policy. By applying this instrument, it is intended to achieve conciliation between the rigid rules on the one hand and the discretionary approach on the other. Besides the indisputable success achieved both by developed and developing countries, the direct targeting of inflation has encountered difficulties and risks that have led to failure to achieve the proposed objective, especially in the early years of implementation.

The direct targeting of inflation has advantages and disadvantages mentioned in the table below.

Table no. 1. The advantages and disadvantages of the direct targeting of inflation

Advantages	Disadvantages
<ul style="list-style-type: none"> • Simplicity and clarity on the target; • It is not based on the stable relationship of money-inflation • Increased transparency of the central bank • Reducing the effects of the inflationary shocks • The possibility of communicating to the public of the level of inflation to which it has been targeted and which it must ensure in the near future 	<ul style="list-style-type: none"> • Delayed signal on the target achievement; • Imposes rigid rules • It generates a degree of instability in the financial market

The effectiveness of this strategy is conditioned by the cumulative fulfilment of criteria and requirements such as:

- lowering the annual inflation rate below 10%;
- strengthening the credibility of the central bank;

- strengthening de jure and de facto independence of the NBR;
- fiscal consolidation, fiscal policy coordination with the monetary policy;
- flexibility of the exchange rate of the leu
- increasing the transparency and accountability of the central bank;
- strengthening the banking system and increasing the banking intermediation;
- Increasing the efficiency of the money transmission channels.

Inflation targets are expressed as annual variation of the consumer price index within ± 1 percentage point. The nature evolution and the inflation target values set by the NBR, until the present, are characterized by two distinct phases:

- Stage of the downward inflation target (2005-2012);
- Stage of a multi-year stagnant target of inflation (starting in 2013).

The table below presents the evolution of the inflation target from 2005 to the present:

Table no. 2. Evolution of the inflation target

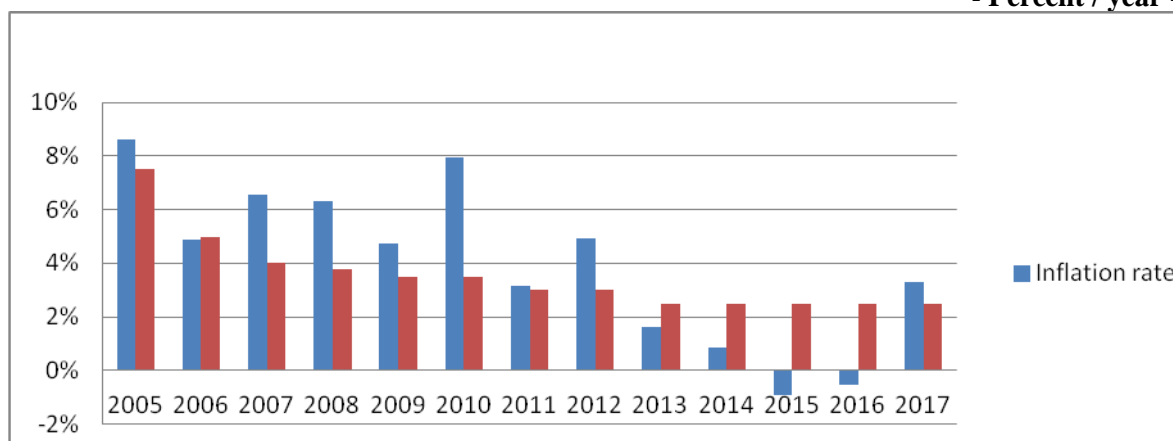
Year	2005	2006	2007	2008	2009	2010	2011	2012	Starting in 2013
Inflation Target	7.5% ± 1 p.p.	5% ± 1 p.p.	4% ± 1 p.p.	3.8% ± 1 p.p.	3.5% ± 1 p.p.	3.5% ± 1 p.p.	3% ± 1 p.p.	3% ± 1 p.p.	2.5% ± 1 p.p.

Source: www.bnr.ro

Compared to the established inflation targets, the annual inflation rates recorded the following evolution:

Chart no. 1. Evolution of inflation and inflation target

- Percent / year -



Source: www.insse.ro, www.bnr.ro

The graph shows that for the first years the inflation rate is higher than the inflation target. In 2013 and 2014, when a fixed target is set to ensure the price stability over the medium term, the inflation rate is lower than the multi-annual inflation target, and for the next two years, 2015 and 2016, it scores negative values than the target, so that in 2017 it will return to a positive value, above the level of the fixed target.

In 2018, the monetary policy measures adopted by the NBR presented in the periodical reports aim at establishing the trend of increasing the inflation rate. Thus, in the inflation report presented in May this year, it was mentioned the significant increase of the annual inflation rate from one month to the next. The evolution of the annual CPI inflation rate is presented in the following table:

Table no. 3. Evolution of the annual CPI inflation rate

January 2018	February 2018	March 2018	April 2018	May 2018
4.32%	4.72%	4.95%	5.22%	5.41%

Source: www.bnr.ro

The increase confirmed the forecast from previous reports to March, but for April and May it exceeded the expectations.

Analyzing the situation in the first quarter of this year, it resulted that this increase was due to the modification of the indirect taxes and the elimination of non-tax charges, to which were added the increases in prices for electricity and natural gas.

The upward trend of April and May was the consequence of higher than expected increases in fuel and tobacco products.

The annual rate of adjusted CORE 2 inflation, which is different from the annual CPI inflation rate by eliminating the administered prices of the tobacco products and alcoholic beverages, which are not significantly influenced by monetary policy measures, also experienced an ascending evolution towards of the level recorded in December (2.4%), reaching the maximum level in April, followed by a slight decrease in May. The evolution of the adjusted CORE 2 indicator in the first 5 months of 2018 is presented in Table no. 4:

Table no. 4. Evolution of the adjusted CORE 2 indicator

January 2018	February 2018	March 2018	April 2018	May 2018
2.8%	2.9%	3.05%	3.09%	2.95%

Source: www.bnr.ro

The evolution of the first quarter of this inflation indicator was partly due to the dynamics of the leu exchange rate, with an impact on the import consumer goods prices and tariffs for some services as well as increases in international quotations for energy products. On the other hand, this evolution reflects the action of the fundamental factors, respectively the surplus of demand in the economy, which puts pressure on the production costs, thus predicting an increase in the inflation of the economic agents.

The decrease recorded in May is the result of the slowdown in the growth rate of the international prices of the agricultural products and the evolution of the exchange rate of the leu against the euro.

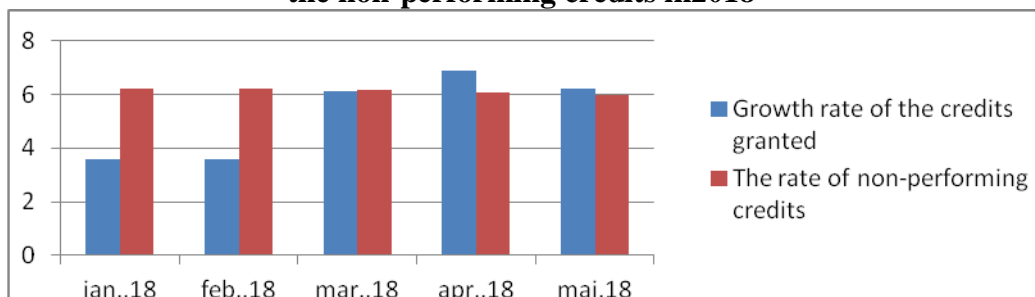
In the first quarter of this year, there was recorded a decline in the annual GDP growth to 4%, down from 6.7% recorded in the last quarter of last year, by lowering the household consumption and of the gross fixed capital formation compared to the previous period. By reducing the difference between the annual growth rates of the imports and the exports, the net export contribution has grown to GDP growth, improving sensitively the current account deficit.

At the level of the national economy, there is a slowdown in the growth rate of the industrial production in April compared to the first quarter of the year, an acceleration of the annual dynamics of trade and services activity.

Labour productivity has experienced an increase diminished from the previous period due to the wage increases in industry.

The credit granted to the private sector maintained its annual growth in the first quarter, being outstripped by the growth rate in April (6.9%) and May (6.2%). The growth rate evolution of the credits granted compared to the non-performing credits rate in the first 5 months of the year is shown in Chart no. 2:

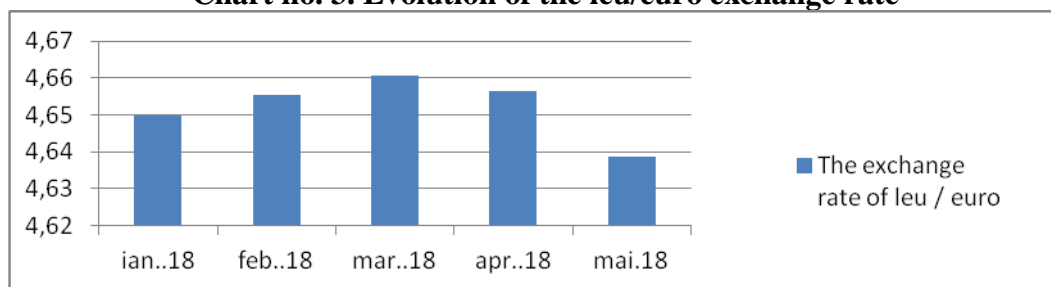
Chart no. 2. Evolution of the growth rate of the credits granted against the rate of the non-performing credits in 2018



Source: www.bnr.ro

The leu/euro exchange rate continued its upward trend at the end of the last year until the middle of February, in the second half of the first quarter and in the first two months of the second year, recording a relative stability. The evolution of the leu/euro exchange rate in the first 5 months of 2018 is presented in Chart no. 3:

Chart no. 3. Evolution of the leu/euro exchange rate



Source: www.bnr.ro

There was recorded an acceleration of the increase in the liquidities in the economy due to the increase in the volume of the payments of the beneficiaries of European funds, as well as the upward evolution of certain categories of the budgetary expenditures.

Analyzing the trends of evolution of these inflation indicators, the NBR adopted in the meetings of the Board of Directors held this year, the following monetary policy decisions, according to Table no. 5:

Table no. 5. Evolution of the inflation indicators

Decisions of the NBR Board of Directors in 2018	The monetary policy interest rate	Interest rate for the deposit facility	Interest rate for the credit facility	RMO level
Meeting in 07.02.2018	2.25%	1.25%	3.25%	8.00%
Meeting in 08.05.2018	2.50%	1.50%	3.50%	8.00%
Meeting in 04.07.2018	2.50%	1.50%	3.50%	8.00%

Source: www.bnr.ro

It can be noticed that during 2018, the level of minimum reserve requirements (RMO) remained unchanged for the entire period, keeping the level of 8.00%. Also, it can be noticed that after the meeting in July this year did not change the percentages of the interest rates established after the meeting in May.

4. The Macroeconomic forecasting models

In order to outline the quarterly and annual projections of the NBR, it has a *forecasting framework* that includes database management and the use of macroeconomic forecasting models that are three categories:

- a) *Empirical models* include relationships between dependent macroeconomic variables (inflation rate, interest rates on deposits and credits, growth rates of GDP components, etc.) and determinants thereof, which are independent macroeconomic variables (exchange rate, oil price, turnover, monetary indicators, etc.).
- b) *Central model* - medium-term analysis and forecasting model -MAPM - includes relations between important macroeconomic variables (interest rate, aggregate demand, inflation rate, exchange rate), under the assumption of optimal rational behaviour of the central bank, external sector, financial institutions, companies or population.
- c) *Satellite models* - with the purpose of detailing and completing the forecasts resulting from the first two categories of models.

The forecasting process is carried out in *three phases*, which are chronologically followed as:

1) Short-term projections and expert projections

1.1) *Short-term projections* are based on empirical models and have a maximum forecast horizon of two quarters.

1.1.1) the short-term inflation forecast is based on the Armax model that uses monthly data series for the main components of the CPI: food goods (excluding eggs, fruit and vegetables), non-food goods (excluding products with administered prices, fuels and tobacco), and services (except those with administered tariffs).

1.1.2) the short-term GDP forecast uses quarterly data for models with the following structure:

- a) Forecasting equations of the private consumption
- b) Forecasting equations for the gross fixed capital formation
- c) Forecasting equation of the export of goods and services
- d) Forecasting equation of the imports of goods and services
- e) Forecasting equation of the stock changes
- f) Scenario of evolution of the public consumption
- g) $GDP = a) + b) + c) - d) + e) + f)$

1.2) *Expert projections* include those variables whose evolution cannot be estimated econometrically; the sources of information being the communications of the authorities in the specialized fields or internal and external surveys (e.g. the price adjustments for the excisable products, electricity tariffs, etc.).

The final projection is the arithmetic mean between the aggregate prognosis of the models and the expert forecast.

- 1) *Establishing the initial conditions and the position within the economic cycle* represents the first stage of integrating the forecasts by which the variables break down into the cyclical component (deviation from the trend) and the trend of evolution (the medium term equilibrium), in order to ensure the compatibility with the MAPM model.
- 2) *The projection obtained using the MAPM model (model of analysis and the medium-term forecast)* reflects the mechanisms of monetary policy transmission that act to achieve the medium-term equilibrium. The model uses the evolution of macroeconomic variables throughout the economic cycle and has a forecast horizon of 8 quarters. The role of the model is to integrate all the available information that is needed in the analysis and implementation of the monetary policy decisions.

The result of the forecasting process provides a picture of the inflation evolution and the interest rate of the monetary policy and allows the comparison of some alternative scenarios.

It is intended to continuously improve the model, to develop the sector satellite models and to carry out various related analyzes. Thus, a future MAPM model is envisaged to provide the theoretical and empirical support needed to sustain the monetary policy decisions, involving:

- Formalizing some explained equations for the GDP components and for the labour market (modelling the wage dynamics);
- The analytical approach of the evolution of the fiscal impulse;
- Replacing with a dynamic general equilibrium model.

The annual CPI inflation rate is projected to reach 3.6% at the end of this year and 3.0% at the end of next year, 2019. An oscillation is also expected to be around 5% in the third quarter of 2018.

The annual adjusted CORE2 inflation rate is projected to reach 3.2% at the end of 2018 and 3.4% at the end of 2019.

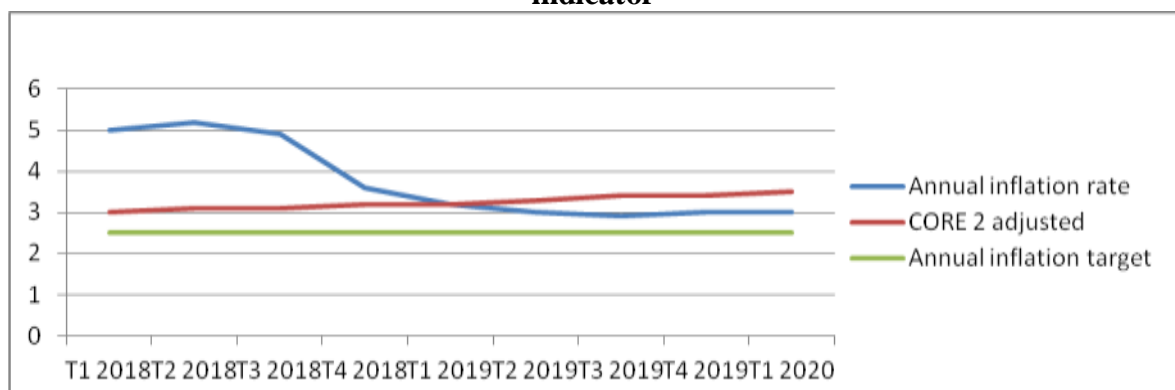
Detailing the quarterly evolution is presented in table no.6:

Table no. 6. Quarterly forecast of inflation target, annual inflation rate and adjusted CORE 2 indicator

	T1 2018	T2 2018	T3 2018	T4 2018	T1 2019	T2 2019	T3 2019	T4 2019	T1 2020
Inflation target				2.5				2.5	
Forecast of the annual inflation rate	5.0	5.2	4.9	3.6	3.2	3.0	2.9	3.0	3.0
The adjusted CORE 2 forecast	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5

Source: www.bnr.ro

Chart no. 4. Projection of the annual inflation of the PCI prices and the adjusted CORE 2 indicator



Source: www.bnr.ro

5. Conclusions

The fundamental objective of the National Bank of Romania is to ensure and maintain the price stability. The most important monetary policy strategy adopted by the NBR since 2005 is the direct targeting of inflation. Thus, since 2005, the NBR has set an inflation target, which has decreased year-on-year from 7.5% to 3%, and this target will remain constant from 2013 to 2.5%.

This NBR's direct targeting of inflation strategy is not based on the sustainable money-inflation relationship and offers high transparency to the central bank, but it is inconvenient to generate some degree of financial market instability.

Regarding the annual CPI inflation rate, it had an upward trend between January and May 2018 as a result of the change in certain indirect taxes and the suppression of the non-fiscal charges. A somewhat similar trend in the same period was also the annual rate of adjusted CORE2 inflation, an increase due to the dynamics of the leu exchange rate and the surplus of demand in the economy, the difference between the two rates being noted in May when the annual rate of the adjusted CORE2 inflation dropped to 2.95% as a result of the reduction in the growth rate of the international prices for certain agricultural products.

As for the decisions of the NBR Board of Directors for 2018, it is estimated that in its meetings it was decided that the monetary policy interest rate, the interest rate on the deposit facility and the credit facility to increase by 0.25% and the RMO level should remain constant at 8%.

The main macroeconomic forecasting models used by the NBR to highlight the quarterly and annual projections related to the monetary policy refer to: empirical models, central model, also called the medium-term analysis and forecasting model, MAPM and satellite models.

The forecasting phenomenon presents a vision of the evolution of inflation, but also of the monetary policy rate, this process having three important phases.

Thus, using these forecasting models, it is estimated that the annual inflation rate will be 3.6% in Q4 2018, and at the end of 2019 it will reach 3%. With regard to the annual rate of adjusted CORE2 inflation, it is projected to be 3.2% in Q4 2018, so with 0.4% lower than the annual inflation rate, so that at the end of Q4 2019 it will increase by 0.2%.

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