Inflation Model in Romania, Post-Integration in European Union Correlated with Monetary Policy

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Abstract: Throughout this article, we present the evolution of the inflation in Romania after the EU accession, factors that influence growth and lower inflation and also measures that NBR has taken in the strategy of the direct inflation targeting.

Key-Words: inflation, the monetary policy, fiscal policy, currency exchange rate

1 Introduction

Inflation one of the most complex and controversial phenomena of the contemporary economy, was considered over the time, either as the main danger in the path of sustainable economic growth, macroeconomic stability, either as a possible incentive of it.

As a macroeconomic problem, it has multiple determinations, interdependencies and impacts in the country's economy as a whole, as an indicator of macroeconomic and structural indicator reflects the health of any economy. But, beyond this perception, meets a number of peculiarities which mark the place and its role in macroeconomic stabilization and economic growth healthy.

Consider that, we will see during this study that the inflation rate had to decline in 2000. This trend was accompanied by the low interest rate, the monetary policy, the economic growth and the increasing of the direct foreign investment. Also we present the fact that the inflation rate is influenced both by the internal factors such as parliamentary elections, the budget surplus or deficit, the wage policy, maintaining the exchange rate and the external factors such as economic crisis, the perception of the foreign investors.

What meant the accession of Romania into the European Union: The Romania's accession to the EU on January 1, 2007 was the result of a period of reform efforts on the line company and the Romanian economy started in the previous decade, but accelerated particularly since 2000. Thus ended a cycle of seven years (2000-2006) as its main objective the country's accession to the European Union and began a new cycle, probably all of seven years (2007-2013), which should be completed with the adoption of Euro to Romania.

The first year of participation of Romania in the EU was a complicated mechanism, consisting of two semesters with different sensitive developments.

Thus, in early 2007, marked by the existence of international financial markets of an excess of liquidity seeking high yields, recently acquired membership of Romania and the capital account liberalization (a process completed in September 2006) favoured the entry significant external funds. This funding has led to abundant significant appreciation of the national currency, the favourable effect of short-term plan to reduce inflation, but with negative implications on the evolution of current account balance of payments, thus making it necessary to calibrate the response of monetary policy. The second half of 2007 was affected by three external factors: (i) initiation of high-risk mortgage crisis (sub prime) in the U.S., which changed the perception of the foreign investors in the economies of Central and Eastern Europe, leading to the massive withdrawal funds, (ii) unprecedented increase of the food prices and (iii) escalating the oil prices. Overlaid with a series of adverse intern evolution (a very dry crop year, stimulating the intern demand through the lax wage policy and a rapid increase in credit to the private sector), said events leading to the reappearance of inflationary pressures and further deepening the deficit external. This new combination of factors made it necessary recalibration of the response of macroeconomic policies in general and the monetary policy in particular.

2 Inflation in the first year after accession, 2007

In 2007, the average annual inflation rate measured by consumer price index (CPI) stood at 4.84 percent, according to the Harmonized Index of Consumer Prices (HICP), used by the European Commission and European Central Bank, the rate inflation was 4.9 percent, provided that the reference level (1.5 percentage points above the
average of the best three EU) was 2.8 percent. *(Table no 2 Inflation)*

Evolution mentioned led to: (i) stop the downward trajectory seen in inflation in December / December since 2000 (when inflation was 40.7 percent), given that the end of the level recorded in 2007 (6.6 percent) was higher than the previous year, and (ii) exceeded the target announced by the central bank (4 percent ± 1 percentage point).

However, it noted that the inflation in Romania do not reach the highest level of the countries that recently joined at the European Union, in December 2007, in terms of inflation, Romania ranks 5, with better performance than Bulgaria, Estonia, Latvia, Lithuania and Hungary. Also as a general finding, in the most emerging economies that practice inflation targeting occurred in 2007 exceeded the upper limit of the target range, like an effect of the global acting factors.

For Romania, the results on the reduction of the inflation rate in the first half exceeded our most optimistic expectations; it lies in the most of the period under central target (3.7 percent in March, 3.8 percent in April-June). Performance was mainly due to the currency appreciation, the effect of attractiveness that Romania, new EU member state, with fully convertible currency, exercised over a foreign investor. Due to the global excess liquidity, they turned to emerging markets offering the highest returns, including Romania.

The internal factors that contributed to reducing inflation in that period included the consolidated budget surplus, slowing the growth of administered prices and volatile prices constantly changing. In this favorable context in terms of the evolution of inflation, the NBR monetary policy reduced interest rate from 8.75 percent to 7 percent per year, by operating the four different amplitude adjustments [1]. An ongoing concern was that the monetary authority, leaving the current floating regime and using the full capacities for the deter speculators, however, does not allow an excessive appreciation of the currency because of its potential reversibility, with harmful effects on the inflation. Thus, having reached 3.11 RON / EUR in July, the exchange rate has returned to values well correlated with economic fundamentals (notably the evolution of productivity differential to the euro area).

Reversing the trend of inflation in the second half of the year occurred in the context of scarcity of food products registered worldwide, achieving new records of the oil prices, but also the crisis on the U.S. mortgage market, which changed investor perceptions of the risk leading to the capital outflows. In such circumstances, the internal macroeconomic weaknesses (advancing by the labor productivity growth in wages, rising current account deficit and the predominance of the loans financing the economic growth based more on consumption rather than exports) began to be penalized, after the first part of the same foreign investors have considered benign. Thus, the pressures of currency depreciation, show from August, were accompanied by correction of the stock market indices, the widening spreads of sovereign bonds and the increase of the CDS1 rates. Overlapping of some internal adverse events - a very dry crop year and passing the consolidated budget deficit in the final months of the year - the developments mentioned have fueled powerful flare inflation, the annual inflation increased from 4 percent in July to 6.8 percent in October.

Therefore, the NBR work towards the strengthening monetary policy, increasing the interest rate monetary policy in October 2007 and January 2008 by 0.5 percentage points to around 8 percent per year. Subsequently, given the persistence of the crisis on the international financial markets and increasing the food and the oil prices and given the need to anchor inflation expectations at a level consistent with achieving medium-term inflation target (3.5 percent ± 1 percentage point for 2009), the central bankresorted to making the new monetary policy interest rate increases by 9.75 percent in May 2008.

The national currency exchange rate returned late in 2007 to more sustainable levels, and dynamic exports began to bring forward that of imports. To ensure the restrictiveness of the monetary conditions in the broad sense, the NBR has maintained throughout the year 2007 the high rates of minimum reserves (up 20 percent for liabilities in lei and 40 percent for the liabilities in the foreign currency up). A discussion on the determinants of inflation in Romania in 2007 may not be complete without an analysis of the aggressive mode when the private sector banks have credited. In the first part of the year, in an environment characterized by the exuberance of the investment and the consumption and favourable trends in inflation, some banks have asked the NBR validate their lending enforcement, an argument in this regard is, in many cases, there are procedures up to date even by the parent banks. By the end of 2007, such permits were granted a total of 16 banks. And after the onset of the crisis sub prime loans, credit to the private sector maintained increasing (50.5 percent in real terms in December 2007 to December 2006). The fact that a share of over 54 percent of credit to the private
sector is engaged in foreign emphasizes structural vulnerabilities, when a large number of debtors are not protected against currency risk. Although a further deepening of financial intermediation is desirable, it should be a moderation in this process, given the potential negative impact on both the inflation accelerated credit and the current account deficit. However, because are given the rewards and penalties systems operating at micro, such the voluntary limitations of credit are unlikely.

3 Inflation in 2008

The second year of participation of Romania in the EU mechanisms was marked by a series of events, both external and internal, that have complicated the mission authorities to ensure macroeconomic stability. Internationally, the turmoil unleashed in the summer of 2007 high-risk mortgage loans (sub prime) were processed during the year 2008, the most serious international economic crisis recorded after the Great Depression of 1929-1933. The crisis has increased especially after the bankruptcy of Lehman Brothers in September 2008 after taking over the bank Merrill Lynch by the Bank of America in the same month.

Paradoxically, the economies that have experienced the effects of the acute crisis were emerging due to the restriction of liquidity in the international markets and therefore, the compression of the external financing resources amid rising aversion of the risk by the investors. Greater were affected countries with the large external deficits, including Romania. The only positive point about the international economic crisis was the sharp reduction in the oil prices and other raw materials, whose development was in the first half of 2008 a major inflationary factor.

Internally, the economic picture has been complicated by the parliamentary elections in November, which entailed an unprecedented relaxation of the fiscal policy and the budgetary revenue. The budget deficit reached its highest level in the last decade (5.4 percent of GDP), government sector expansion cancelling nearly all external adjustment efforts undertaken by the private sector and thus contribute to maintaining the current account deficit at a level perceived by investors foreign as too high (12.3 percent of GDP). Moreover, the pro-cyclical fiscal policy has reduced operating space available to the newly elected government in terms of countering a possible downturn in 2009. The excess demand, fuelled by wage policy and lax fiscal budget, the excessive speed was boosted by increased bank lending in the first three quarters, followed by a sudden braking in the last months of 2008. In this complicated context, a favourable influence exercised only good agricultural year, which led to inflationary pressures from food in the second half.

In 2008, Romania felt both the benefits and the costs of full liberalization of the capital account. If the first three quarters of relatively abundant of the foreign financing allowed the above potential growth of the gross domestic product, extending the international financial crisis in the real sector and a worsening perception of the foreign investors have caused the sensitive annual growth of GDP.

The conclusion is made necessary and worth the attention of policy makers and the public is that, given that the capital had freedom of the movement, the authorities should promote prudent and sustainable policies which generate for the foreign investors the confidence in the economic prospects needed both in times of the economic boom and the recession, so that they do not decrease their exposure to the host country.

In 2008, the average annual inflation rate, measured by consumer price index (CPI) stood at 7.85 percent, according to the Harmonized Index of Consumer Prices (HICP), used by the European Commission and European Central Bank, inflation rate was 7.9 percent, provided that the reference level (1.5 percentage points above the average of the best three EU) was 4.0 percent [2].

The performance achieved in 2008 in terms of inflation at the end of the period (6.30 percent in December/December) was marginally better than the previous year (6.57 percent), but insufficient to achieve the target set by the NBR (3.8 percent ± 1 percentage point). (Table no 2 Inflation)

The action and intensity of the factors contributed to this result are varied throughout the year. Thus, from January to July 2008, were decisive the inflationary pressures of the supply side generated by the strains on the food market (a result of the decreased production in 2007, the increase in prices of imports of agricultural raw materials and unprocessed products and an unfavourable base effect) and secondly, the impact of rising of the oil quotes on global over the fuel prices and the natural gas.

These two factors have gradually diminished influence in the second half but they continued pressures from the demand side, resulting from: (i) the maintenance of the wage policy laxity throughout the year (which led to the widening gap between the dynamics of negative productivity labour and salaries, with adverse effect on the pressure of the unit labour costs) and (ii) relaxation
of the fiscal policy, especially in the fourth quarter
to the elections in 2008. Another factor which acted
as meaning power demand was lending activity,
whose strong expansion in the first three quarters
has contributed to GDP growth at rates above
potential (9 percent, yielding a rate of 7.1 per
percent for full year 2008). As regards the exchange
rates, its progress has been uneven, the end of
registering a 9.9 percent nominal depreciation
against the euro, leading to more expensive
imported products and those with the euro prices
(phone services, rentals, cars). Moreover, the
exchange rate volatility (by the variation of the
depreciation of quarters I and IV) represented, along
with the impact of the other shocks said a stimulus
to inflation expectations, whose persistence in the
high levels slowed the resumption of disinflation.

The fourth quarter of 2008 marked a sharp
slowdown of the economic growth, the impact of
accelerating the spread of the national economy
through foreign trade and the financial channels, the
negative effects of international crisis. The annual
rate of growth fell to 2.9 percent from 9.1 percent
the previous quarter, eliminating the excess demand
continued during the previous quarters and causing
lowering the GDP below its potential. Maintaining a
positive annual growth rate of GDP was due to the
contribution of the same sign (for the first time after
2002) of net exports as a result of a strong decrease
in the annual terms, the imports and a modest
increase in exports. By contrast, the intern demand
contributed negatively to the change of GDP, the
final consumption decreased for the first time in the
last 8 years, and the dynamics of gross fixed the
capital to decelerate severely versus the previous
quarter. The contraction in the intern demand
reflects, on the one hand, significant slowing of
growth financing resources, both own and
borrowed.

4 Inflation in 2009
At the end of the first quarter 2009, the annual CPI
inflation reached 6.71 percent, up 0.41 percentage
points to December 2008 (6.3 percent). The
accelerating growth in consumer prices was largely
due to the significant effects of the currency
depreciation during the first quarter of 2009,
following worsening investor sentiment about the
vulnerabilities and prospects for the economies of
Central and Eastern Europe amid deepening
financial crisis and economic global [3].

The factors of the supply nature exerted mainly
negative influence on inflation. The volatile prices
of food commodities have increased significantly
accelerated during the quarter I inflationary shock of
the leu depreciation has been felt both at fuel prices
as well as that of administered prices, if the latter is
mitigated by reducing the annual rate the gas price
increase. The favourable effect acted to extend the
effects of good farm prices in 2008 on processed
food products included in the index CORE2.

The unit labour costs with the workforce in the
industry increased substantially in the fourth quarter
2008, continuing process, with relatively lower rates
in the months January-February 2009. This
development was due to the increased decline of the
labour productivity. The further deterioration of the
labour unit cost further pressuring prices increase
towards production. In the short term, these
pressures are alleviated to some extent the decline in
the external demand and internal economic crisis.

In March, CORE2, the annual inflation, stood at a
higher than overall inflation, mainly due to
acceleration given on the influence of excise duty,
the increased prices of the tobacco products. By
contrast, inflation-adjusted CORE2 (6.2 percent),
which eliminates the calculation of prices of the
tobacco products and alcoholic beverages, are below
the CPI inflation, decreasing marginally from
December 2008. More pronounced reduction in
inflation-adjusted basis has been hampered by the
impact of currency depreciation on import prices
and the persistence of the high inflation
expectations. They have provided favourable effects
of processed food price dynamics and disinflation
pressures demand deficit created during the fourth
quarter of 2008 and anticipated to be widened in the
first quarter of this year.

In June 2009, the annual CPI inflation reached 5.86
percent, down 0.85 percentage points compared to
March (6.71 percent). During the second quarter
decline in the aggregate demand impact on the
growth of consumer prices has become more
visible, including significant effect on the
components normally dominated by the influence of
the nature of supply factors (prices of fuels and
foodstuffs)\(^a\).

In the group of volatile prices, the major favourable
effect on inflation came from fuel prices, the effects
of demand contraction in the second quarter and the
appreciation of the leu against the U.S. dollar
dominating ones by the end of the growth of the oil
on the international market quotes. Dynamic food
commodity prices were also favourable. Reducing
the rate of increase was moderate in the group of the
volatile prices, but relatively strong for food prices
included in the CORE2 index.

\(^a\) The Annual Report of the NBR, 2007
Starting at very high during the first two months of the year, the annual growth rate of unit labour costs in the industry fell starting in March. Thus, although not entirely eliminated, the inflationary pressures of the labour costs, accrued in prior periods were significantly attenuated in the industry. But on the whole economy, these pressures are still pronounced, due to influences from other sectors, especially public.

In June, the CORE2 annual inflation stood slightly above the overall inflation, mainly due to pronounced acceleration of the price increases for tobacco products on account of the influential duty. By contrast, the CORE2 inflation-adjusted, which eliminates the calculation of prices of the tobacco and alcohol, dropped significantly below the CPI inflation (up to 4.8 percent), falling by 1.4 percentage points from March 2009. The favourable influences were due to the dynamics of the imports and food prices and the relative mitigation of the inflation expectations.

Although significant, the reduction in the second quarter of the inflation appears to be relatively slow with the pace of contraction of the aggregate demand. The event with a gap of disinflation observed to date, reflecting, in addition to possible effects of high uncertainty, the persistence of the structural rigidities in the Romanian economy, manifested in some segments of the market goods and services, labour market and budget expenditures. These rigidities are illustrated by the stagnation of the non-food goods included in the price dynamics CORE2 adjusted index and emphasizes the critical importance of continued structural reforms for long-term sustainability of the disinflation process and promote healthy and sustainable re-launch the economic activity.

In the first quarter of 2009, the impact of global crisis on the national economy, propagated initially through the financial channels and foreign trade has grown substantially. For the first time after 2000, the economic growth per annum negative, -6.2 percent, stressing, compared with fourth quarter 2008, real GDP decreased below its potential. The dominant contribution to the contraction of the economic activity had a strong reduction in the internal demand in terms of all its components.

The private consumption has accelerated significantly decreased compared with the previous quarter, while gross fixed capital fell back slightly, and stock changes added a strong negative influence on growth. Compression of the internal demand was due to the unfavourable dynamics of financial resources available to the public and corporations, as well as reduction in the relative terms of propensity to consumption and investment (in parallel with increased propensity to save), amid uncertainty over the duration of the effects negative economic crisis on the future revenue flows.

The real GDP amplitude decrease in first quarter was mitigated by the positive contribution of the net exports, the contraction in the annual terms of imports is significantly higher than that of exports. Meanwhile, the differential dynamics of imports and exports contributed to the substantial adjustment of the current account deficit.

5 The measuring of the inflation

In the literature the inflation is measured (or only appreciated) using several indices and coefficients: the general price index or GDP deflator, consumer price index, cost of living index, changing purchasing power of money, the result of macroeconomic indicators growth, the exceeding of the existence of money supply in circulation which is available to be spent.

One of the most known and used price index in international statistics is the consumer price index. It is widely used, with greater emphasis on economic, social and political importance, its groth is considered to be a measure of the inflation in that country.

The inflation rate is determined by relation (1.1)

\[
R_i = (\text{CPI}-1) \times 100 \quad (1.1)
\]

Consumer price index provides an overall estimate of purchased goods prices, tariffs and services used by the population in a current period over a reference period basis.

To determine the consumer price index calculation we can use four variations in economic theory: Laspeyers index, Paasche index, Fişer index and index Edgerworth Marshall.

Laspeyers index is determined on the basis of the relationship (1.2)

\[
I_{PC_{L}} = \frac{\sum p_1q_0}{\sum p_0q_0} \quad (1.2)
\]

where:
- \(q_0\) = weights associated goods and services during the base of the basket;
- \(p_1\) şi \(p_0\) = the price of the current period, that of the period;

Paasche index is determined on the basis of the relationship (1.3)

\[
I_{PC_{P}} = \frac{\sum p_1q_1}{\sum p_0q_1} \quad (1.3)
\]

where:
- \(q_1\) = weights associated goods and services during the current period.
the current basket;
p1 ţi p0= the price of the current period, that of the period;
Marshall-Edgerworth index is determined on the basis of the relationship (1.4)
\[ I_{ME}^p = \frac{\sum_{i=1}^{n} p_1(q_0 + q_1)}{\sum_{i=1}^{n} p_0(q_0 + q_1)} \] (1.4)
where:
• q1, q0 = weights associated goods and services during the current basket, that of the base period;
Fisher index is determined on the basis of the relationship (1.5)
\[ I_{F}^p = \frac{\sum_{i=1}^{n} q_1 p_0 \sum_{i=1}^{n} q_1 p_1}{\sum_{i=1}^{n} q_1 p_0 \sum_{i=1}^{n} p_0 p_1} \] (1.5)

6 Conclusion
6.1 Conclusions regarding general inflation
- It is a phenomenon and a global process, but has regional and national features according to a number of specific conditions in a particular socio-economic and political context.
- It is received in the first place, as a specific process the money market and financial market as a weakening economy in general.
- It is a multidimensional process, the multifactor genesis, the type in the different contexts, the measures and policies to combat. Thus, the genesis is mainly an economic problem and its impact becomes a social problem and a major economic and social policy problem.
Also, the inflation is a behavioural problem of the public authorities, industry and the public by “inflationary expectations” and consequently the effect of the roller, the “Snowball”.
6.2 Conclusions regarding inflation from 2007 to present
- From 2007 until 2009, the year target rate of inflation was often exceeded, advance was maximum of 5% in July 2008,
- Membership of U.E. determined in the early of 2007, significant inflows of funds, which led
Foreign significant currency appreciation so, reducing inflation.
- The interest rate monetary policy was often used as an instrument of monetary policy (chart no.).
- The aggressive policy lending (over 50% in foreign currency) applied by commercial banks, from 2007 until the second half of 2008 accentuated the structural vulnerabilities,
- The parliamentary elections in November 2008, occasioned an unprecedented relaxation of fiscal policy and budgetary revenues, which resulted in chain effects such as increasing budget deficit, increase current account deficit, eliminating the possibilities of state intervention in regard to counter the recession of 2009.

References:

Table 1. Monetary policy interest rate
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Source: the NBR report
Note: The width of the range is ± 1 percentage point

Source: NIS, NBR calculations