

THE INFLATIONARY PHENOMENON IN ROMANIA

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Abstract

The inflationary phenomenon has a long history, being considered a monetary process. It has unfolded over time with uneven intensity as well as changes in meaning. The meanings, consequences and rhythms of this process at the macroeconomic level were asymmetrical and asynchronous, so historians and experts in the field described it as "the disorder of economic life."

Through this paper, we intend to perform a radiography of the inflationary phenomenon in Romania. The macroeconomic indicators used in the quantification of the inflationary phenomenon as well as the differences between the CPI (Consumer Price Index) and the Harmonized Index of Consumer Prices (HICP) are presented, the first mentioned being relevant in the quantification of the inflationary phenomenon in Romania and the latter being the indicator used to make comparisons of the inflation rate between the European Union states as well as the Eurozone.

From the point of view of the methodology of scientific research, the following methods were used in conjunction with: analysis, synthesis, induction, deduction, comparative processing of data. It was highlighted the influence of the inflation rate on the evolution of GDP in comparable prices, determined by the Pearson Coefficient.

Key words: *inflation, macroeconomic indicators, EU, Pearson coefficient*

JEL Classification: *E31, E50, F45*

I. ROMANIA - A SHORT PRESENTATION OF THE MACROECONOMIC INDICATORS

In the European Union, all Member States, including Romania, calculate inflation using the same units of measurement. More precisely, the same methodologies. They do not differ from one state to another. "Romania calculates and publishes, periodically, the same indicators used in all EU countries, using the same methodologies. They are produced by the European Community Statistics Office (Eurostat) on the basis of rigorous scientific criteria. The calculations made in Romania by the National Institute of Statistics are also transmitted to Eurostat. The harmonized index is used by Eurostat in comparisons between EU countries (Copaciu M., 2017).

The macroeconomic indicators used in Romania to determine the country's economic situation as well as the state of the inflationary phenomenon are presented in the table below, along with estimates for the year 2018:

Table 1: Estimates on macroeconomic indicators for 2018 in Romania

| Indicators | Unit of measurement | Estimates for year 2018 |
|--|---------------------|-------------------------|
| GDP – current prices | Bil. Lei | 907,9 |
| Real growth | % | 5,5 |
| Average consumer price increase (CPI) | % | 3,1 |
| Number of unemployed people at the end of the year | Thousands of people | 351 |
| Registered unemployment rate | % | 3,9 |
| Gross average earnings | Lei/month | 4162 |
| Current account balance | %GDP | -2,6 |

Source: *Government of Romania, Ministry of Public Finance, Report on the macroeconomic situation for 2018 and its projection for the years 2019-2021, https://www.bns.ro/images/Raport_buget_2018.doc*

Compared to other EU member states during the period 2000-2015, Romania had a consumer basket with much higher shares than the average of other countries. This encourages inflation to reach higher variability. Thus, as regards the category of "processed foods excluding tobacco and alcoholic beverages" our country held the highest share of 18.4%, while the EU average was 8.3%. Concerning the "unprocessed food" category, Romania also held the highest share, 16%, while the EU average reached 7.3%. At the opposite end, the lowest share was recorded for the "services" category, ie 20.1%, and the EU average was 41.1%.

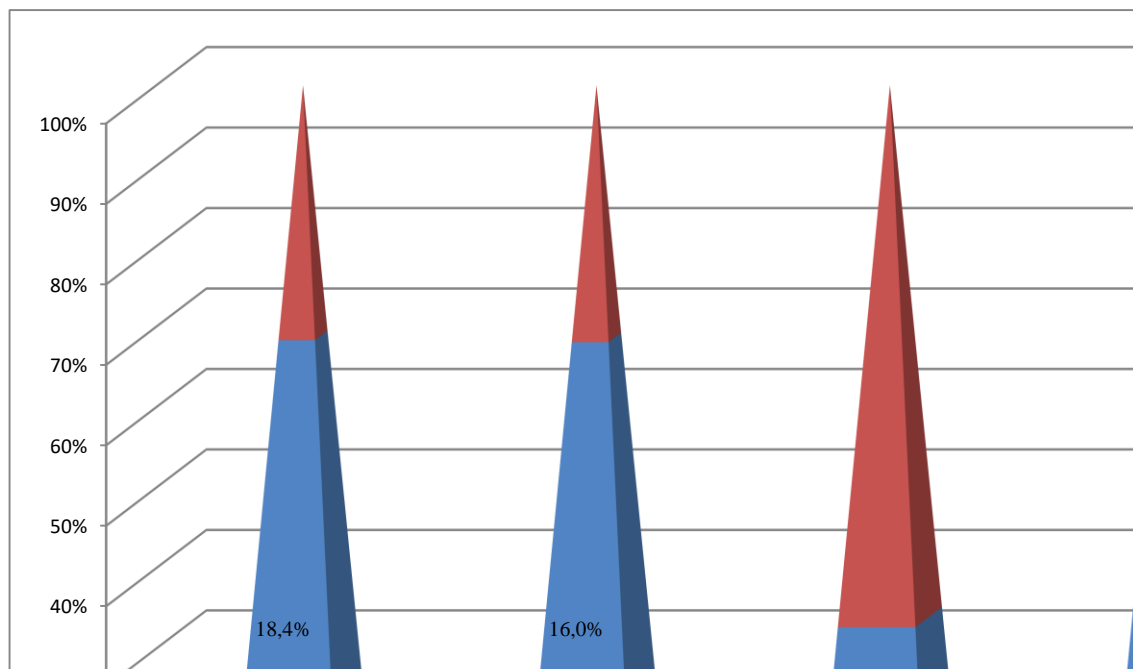


Fig. 1. Structure of Romania's consumption basket compared to the EU average in 2000-2015

Source: Copaciu, Mihai, „About prices and inflation”, pag. 8, http://media.hotnews.ro/media_server1/document-2018-02-24-22306412-0-prezentare-predeal-mihai-copaciu-bnr.pdf

In terms of budget indicators, the budgeted income projected for 2018 is 31.7% of GDP, with 32% and 31.9% of gross domestic product (GDP) in 2020 and 2021 respectively. These developments are generated by the evolution of the macroeconomic indicators on the reference horizon, but also by the normative acts that have been adopted so far.

Table 2: Evolution of budgetary indicators and estimates of future developments

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|------|-------|-------|-------|-------|-------|
| Consolidated general budget income (cash) | 29,4 | 30,5 | 31,7 | 31,9 | 32 | 31,9 |
| Consolidated general budget expenditure (cash) | 31,8 | 33,4 | 34,6 | 34,4 | 33,8 | 33,1 |
| Consolidated general budget balance (cash) | -2,4 | -2,96 | -2,97 | -2,58 | -1,89 | -1,23 |
| Consolidated general budget balance (ESA) | -3 | -2,96 | -2,96 | -2,38 | -1,82 | -1,45 |
| Structural balance | -2,2 | -3,06 | -3,17 | -2,17 | -2,22 | -1,71 |

Source: Government of Romania, Ministry of Public Finance, Report on the macroeconomic situation for 2018 and its projection for the years 2019-2021, https://www.bns.ro/images/Raport_buget_2018.doc

II. THE ROMANIAN NATIONAL BANK AND THE INFLATIONARY PHENOMENON (INFLATION RATE)

The National Bank of Romania (NBR) is the central bank of our country and holds the monopoly over the issuance of fiduciary currency, its main goal being to maintain price stability. Quarterly, the National Bank has data on the evolution of inflation, the size of the macroeconomic indicators, as well as future prospects and projects, which are organized and included in the "Inflation Report". So, all those who are interested in knowing and understanding the decisions taken on monetary policy can appeal to the transparency of these decisions, and they are covered and explained in this report.

The latest situation regarding inflation and macroeconomic indicators in our country was provided in May this year. According to the data specified on the site, the annual CPI inflation rate did not stop growing in the first quarter of 2018, so that it reached a value of 4.95% in March, this value exceeding the upper bound of the stationary target range of 2.5%. However, according to the "Inflation Report" previously, the annual inflation rate was expected to have an upward trajectory, going up by 0.6% over December 2017. This is due to price increases, changes in indirect taxes and the elimination of non-tax charges in early 2017 (Anghel M.G., 2017).

Romania's economic agents had expectations of a fall in inflation in the first quarter of this year, but the outcome is another. We face a surplus of demand in the economy, the volatility of the leu exchange rate and the pressures felt at the cost of manufacturing. These statements are supported by the evolution of the annual CORE2 inflation rate, which increased by 0.5% in March 2018 compared to December 2017.

At the same time, with the evolution of the exchange rate of the leu, there were changes with negative effects on the prices of consumer goods from import as well as among the tariffs of some services.

At a meeting held on 7 February 2018, it was decided to raise the monetary policy rate from 2% per year to 2.25% per year. In addition, the interest rate for the deposit facility was increased to 1.25% per year and the interest rate on lending to 3.25% per year.

Due to actions taken at the beginning of 2017, such as the reduction of indirect taxes, the elimination of non-tax charges, and the recent increase in electricity and heating tariffs, the annual inflation rate has seen a significant increase this year, of 4.32% in January, followed by an increase of 4.72% in February 2018. Moreover, the annualized rate of adjusted CORE2 inflation rose by 0.5 percentage points in the second month of this year from the figure recorded at the end of the previous year.

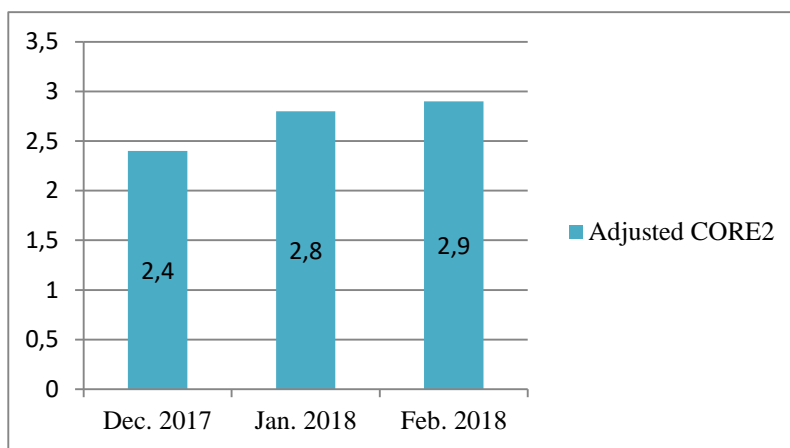


Fig. 2: Annual adjusted CORE2 inflation rate

Source: NBR, May 2018, "Inflation Report", [http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/RaI201805%20\(2\).pdf](http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/RaI201805%20(2).pdf)

According to the most recent assessments discussed at the National Bank of Romania(BNR) Board meeting on April 4, 2018, expectations have been reconfirmed on capping the inflation rate over the target range over a very short period of time. At the same time, also mentioned a return to the end of 2018 at the upper limit of the range. However, the assessment has been hampered by risks and uncertainties stemming from fiscal policy behavior and labor market conditions as well as from the evolution of the economy and the inflationary phenomenon present in the euro area.

The annual adjusted CORE2 inflation rate is projected to reach 3.2% at the end of this year and 3.4% at

the end of next year. In dynamics, the annual rate of change in basic inflation is projected to continue to grow over the projected horizon, registered during the past year and the beginning of the current year. The projected values are inferior to those published in the previous "Report" due to lower inflationary pressures stemming from the revision of the surplus demand and import goods prices, while the prospects and expectations of economic agents related to the inflationary phenomenon have been repositioned at higher levels for most of the forecast range. Due to the fact that the expansion of consumption is due more to imports of goods than domestic production in recent years, the external environment will continue to exert internal inflation pressures, but of low magnitude. The projected inflation rate of Romania's main foreign trading partners remains below 2%.

During the sessions that took place this year, some inflation prospects were discussed for the next period. Balanced macroeconomic policies will be put in place not to destabilize prices but will be needed to ensure lasting and sustainable economic growth. So, a fall in the inflationary phenomenon is projected by the end of this year, with a projected value of 3.6% and a 3% target for the end of 2019. In addition, gradual moderation is expected in terms of economic growth over the previous year.

The conduct of monetary policy is intended to ensure that price stability is sustained and maintained in the medium term, and the way in which these objectives are met must take part in economic growth as well as the stability of the macroeconomic framework. It is expected that the risk balance against the projection of the annual inflation rate will show an upward deviation from the baseline scenario. These risks originated in the dynamics of international energy prices and the high labor market tensions, influencing the wage-productivity ratio in the private sector.

With reference to the domestic plan, inflationary pressures may arise from deviating from the projected inflation rate. They can either be produced directly, as a result of increased aggregate demand and increase production costs, either indirectly, constituted by the repositioning of the exchange rate of the leu, which could induce compensatory effects (Anghel M.G., 2016).

Members of the National Bank Board held a meeting on May 7, 2018, during which the factors that in a few months will lead to a slight increase and capping of the annual inflation rate above the upper limit of the target range were mentioned and debated. Among these causes, on the supply-side factors have a greater impact, but also inflationary pressures that lead to an increase in fundamental factors, which will induce the risk of disrupting inflation expectations over the medium term. In view of these factors, the Board of Directors has decided that there is a need to increase interest rates by 0,25 percentage points, the increases being highlighted in the following table:

Table 3: Interest rate increase

| | <i>Initial value (%)</i> | <i>First increase (%)</i> | <i>Last increase (%)</i> |
|---|--------------------------|---------------------------|--------------------------|
| <i>Monetary policy interest rate</i> | 2 | 2,25 | 2,50 |
| <i>Interest rate for deposit facility</i> | 1 | 1,25 | 1,50 |
| <i>Interest rate on credit</i> | 3 | 3,25 | 3,50 |

Source: BNR, May 2018, "Inflation Report", [http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922, file:///C:/Users/PC/Downloads/RaI201805%20\(2\).pdf](http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/RaI201805%20(2).pdf)

Thus, the monetary policy rate is 2.5%, the interest rate for the deposit facility is 1.5%, and the interest rate for the Lombard facility reaches 3.5%. Also at the above-mentioned meeting, The Board of Directors of the National Bank of Romania decided that it is beneficial to maintain the current levels of minimum reserve requirements that are applicable to the RON and the foreign currency liabilities of credit institutions.

III. ANALYSIS OF THE EVOLUTION OF THE INFLATION RATE IN ROMANIA

In the last 3 years, CPI dynamics has been relatively benign, which can no longer be said about CPI evolution in the first quarter of this year. The slight increase of the CPI over the last 3 years, was largely due to the successive changes in the indirect taxation sphere. Annual CPI dynamics is increasing by 1.6 percentage

points in the first quarter of 2018 due to the measures implemented during January and February 2017, which are:

- lowering the standard VAT rate to 19%;
- removing over-fueling;
- certain non-taxable taxes canceled .

It essentially demonstrates that throughout the year 2017, annual inflation rates have been burdened by the disinflationary impact of the aforementioned fiscal relaxation measures, which has congested monthly increases in consumer prices throughout this range.

The deterioration in the annual inflation rate in the first quarter of 2018 is lower than the one produced in the three months before, if we relate to an inflation measure calculated at constant rates, marked by:

- overlap of supply shocks (or similar);
- increasing Brent quotations;
- price increase for electricity;
- re-introduction of over-fueling;
- European deficits in the case of food (eg eggs and butter).

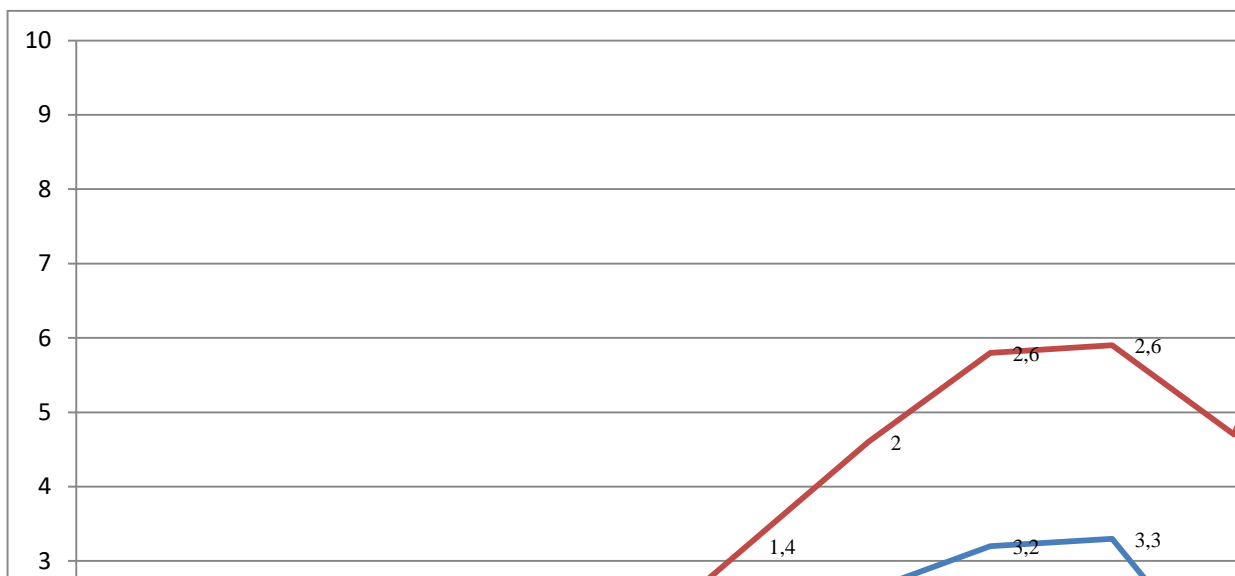


Fig. 3.3. Evolution of CPI and HICP(IAPC) indices in Romania, April 2017 - April 2018

Source: National Institute of Statistics, "Annual rate of consumer price index (%)", <http://www.insse.ro/cms/ro/content/indicele-pre%C8%9Burilor-de-consum-ipc-37>

Taking a look at the chart, we notice that consumer prices in April 2018 face an increase of 4.6 percentage points from the 0.6% recorded in April of the previous year. Also, HICP value rose in April this year by 3.6 percentage points compared to the value of 0,7% since April 2017.

The inflationary impact of all these factors will be compounded by annual changes in consumer prices over the next two quarters of this year. The accelerated rhythm of the rise in consumer prices in the first half of 2018 is influenced by current pressures at both exogenous variables, as well as the level of basic inflation.

Within the first category, the components with administered prices, especially the "energy" group, are relevant. Thus, January brought a new increase in electricity (by 2.3%), generated exclusively by the last stage of market liberalization. In this way, the annual dynamics reached 18.2% in March, after four consecutive quarters of growth. Similarly, there were changes in January, but among natural gas prices (+ 5.6%), the movement being justified by ANRE through the developments that were recorded on the free market during 2017. In this situation, annual consumer price inflation peaked at the end of the first quarter slightly above the aggregate, exceeding 8%.

A similar contribution to the upward path of the CPI annual rate is the adjusted CORE2 index, which has a growth rate in annual terms that accelerated by 0.4% compared with December 2017, the corresponding March level being at 3 %.

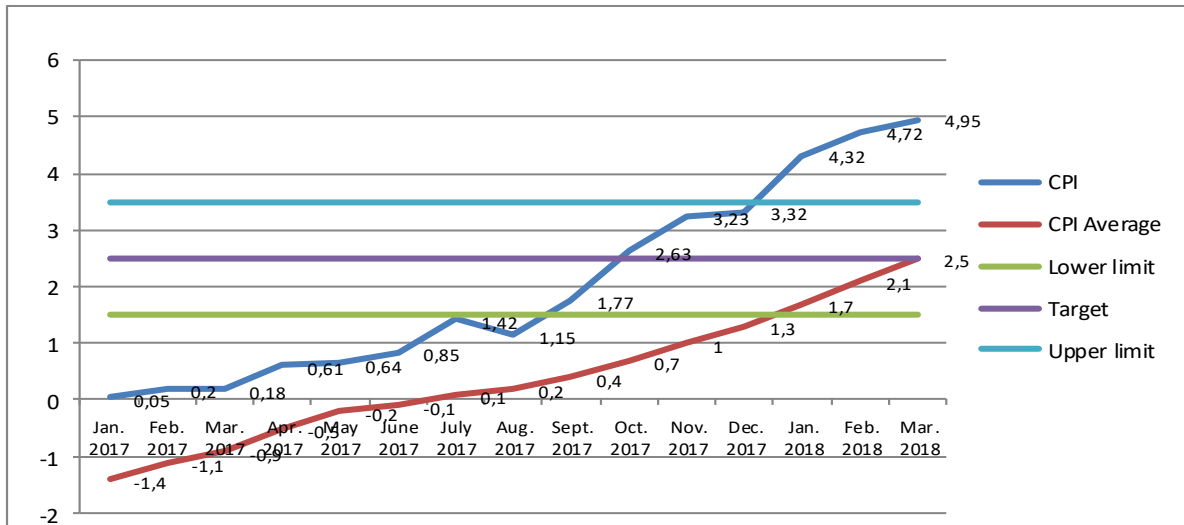


Fig. 4. Evolution of inflation in Romania during January 2017-March 2018

Source: NBR, May 2018, "Inflation Report", [http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/Ra1201805%20\(2\).pdf](http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/Ra1201805%20(2).pdf)

In the following, we wanted to analyze the influence that the inflation rate has on GDP. As an analysis was made in Romania over the period 2008-2017, we used the GDP in comparable prices. The information on the two variables was published on the website of the National Institute of Statistics.

Table no. 4. Evolution of Purchasing Power, Inflation Rate and GDP in Comparable Prices in 2008-2017 in Romania

| Year | CPI (previous year = 100) | Inflation rate (%) | GDP in comparable prices (mil. Lei) |
|------|------------------------------|-----------------------|--|
| 2008 | 107,85 | 7,9 | 453638,3 |
| 2009 | 105,59 | 5,6 | 487331,1 |
| 2010 | 106,09 | 6,1 | 506446,5 |
| 2011 | 105,79 | 5,8 | 539520,4 |
| 2012 | 103,33 | 3,3 | 568719,4 |
| 2013 | 103,98 | 4 | 616393,3 |
| 2014 | 101,07 | 1,1 | 656318,6 |
| 2015 | 99,41 | -0,6 | 692617,4 |
| 2016 | 98,45 | -1,5 | 758227,6 |
| 2017 | 101,34 | 1,3 | 811303,5 |

Source: National Institute of Statistics, 2018, <http://www.insse.ro/cms/ro/content/ipc-serii-de-date>

To measure the intensity of the link between inflation rate and GDP in comparable prices, we calculated the Pearson correlation coefficient with SPSS for Windows.

The value of the Pearson correlation coefficient resulted in 0.892, which shows a strong link between the two variables analyzed - the inflation rate and the GDP in comparable prices. As the program also indicates, the value obtained is statistically significant.

| | |
|---|----------------------------|
| | Pearson Coefficient |
| Inflation rate with GDP in comparable prices | -0,892290263 |

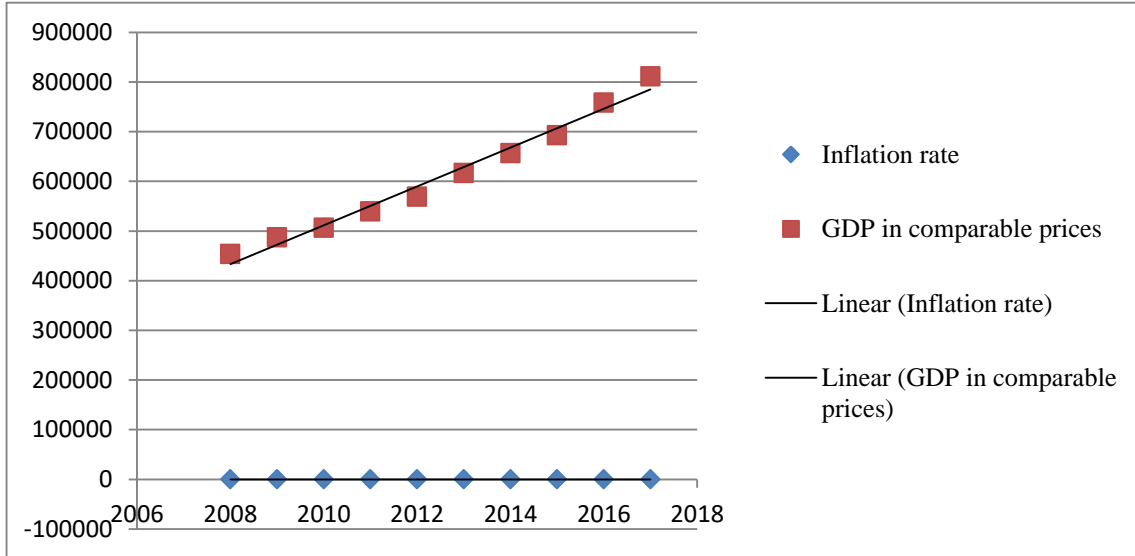


Figure no. 3.5. Evolution of Purchasing Power Index, Inflation Rate and GDP in Comparable Prices in 2008-2017 in Romania

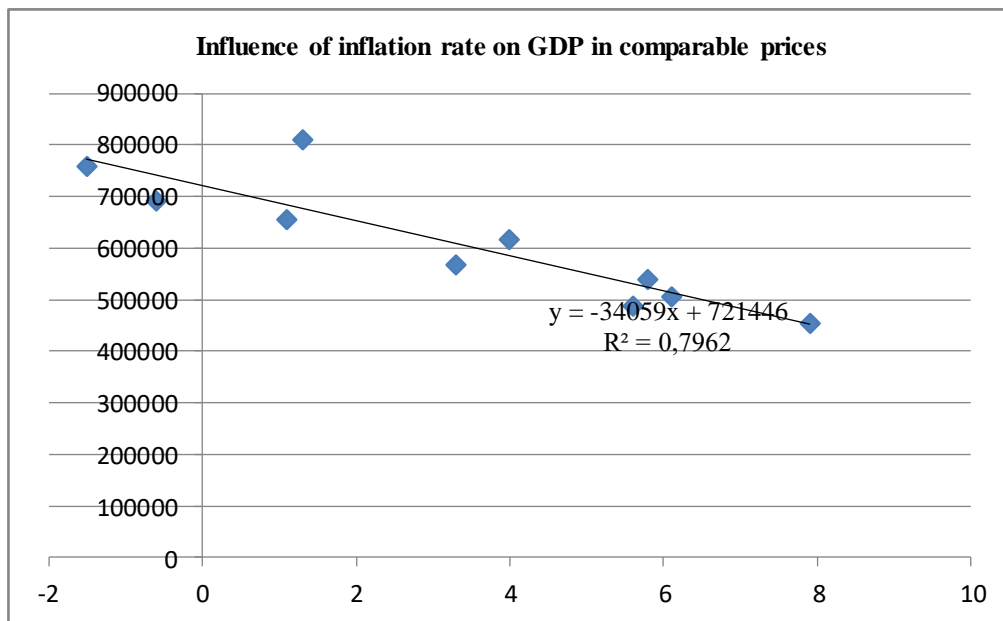


Figure no. 3.6. The influence of the inflation rate on the evolution of GDP in comparable prices, determined by the Pearson Coefficient

From the graphical representation of the two indicators, but also from the value of the Pearson coefficient, it can be concluded that there is a very strong inverse relationship between the GDP and the inflation rate, ie an increase in the inflation rate leads to a reduction of the GDP value, and vice versa.

IV. CONCLUSIONS AND PERSPECTIVES

In Romania, the legal basis for the observation and registration of prices and tariffs is Law no.226 / 05.VI.2009 on the organization and functioning of official statistics in Romania, published in the Official Gazette no. 397 / 11.VI.2009, also the Government Decision no. 957 of 18.08.2005 on the organization and functioning of the National Institute of Statistics (NIS), published in the Official Gazette of Romania no.810 of 07.09.2005, as subsequently amended and supplemented, as well as the Government Decision on the Annual National Statistical Program (ANSP) in the Official Gazette (GD no. 933/2017 on the approval of the National Multiannual Statistical Program 2018-2020).

Budgetary and economic estimates are the foundation of the budget construction for 2018, as well as the 2019-2021 horizon. However, they may develop deviations from the levels set in the baseline scenario, due to countless risks that may arise either from internal sources or from external sources, these have led to various implications in the evolution of public finances.

Table 8: CPI evolution and projections on future developments

| Date | CPI (%) | CPI (constant taxes) | Lower limit of variation range | Annual inflation target | Upper limit of the inflation range |
|---------|---------|-----------------------|--------------------------------|-------------------------|------------------------------------|
| T1 2018 | 4,95 | 4,7 | 1,5 | 2,5 | 3,5 |
| T2 2018 | 5,2 | 4,9 | 1,5 | 2,5 | 3,5 |
| T3 2018 | 4,9 | 4,8 | 1,5 | 2,5 | 3,5 |
| T4 2018 | 3,6 | 3,5 | 1,5 | 2,5 | 3,5 |
| T1 2019 | 3,2 | 3 | 1,5 | 2,5 | 3,5 |
| T2 2019 | 3 | 2,8 | 1,5 | 2,5 | 3,5 |
| T3 2019 | 2,9 | 2,6 | 1,5 | 2,5 | 3,5 |
| T4 2019 | 3 | 2,7 | 1,5 | 2,5 | 3,5 |
| T1 2020 | 3 | 2,8 | 1,5 | 2,5 | 3,5 |

Source: NBR, (May 2018), Inflation outlook, "Inflation Report", [http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/RaI201805%20\(2\).pdf](http://www.bnr.ro/PublicationDocuments.Aspx?icid=3922,file:///C:/Users/PC/Downloads/RaI201805%20(2).pdf)

There is talk of economic growth in 2018, based on domestic demand. In terms of supply, there is an improvement in economic activity for all sectors, with stronger accents in the industrial and construction sectors. Also, it is estimated that the number of employees aged between 20 and 64 will continue to rise, along with the decrease of unemployment by the end of this year. Moreover, it is estimated that the inflation rate will decrease until 2020, when the consumer price index (CPI) will reach the level of 3% and 2.7%, respectively, calculated at constant taxes.

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