THE INFLUENCE OF UNEMPLOYMENT AND INFLATION ON ECONOMIC GROWTH

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Abstract

Inflation is driven by price changes. Under these circumstances, an inflationary process of course has effects on the economy. Unemployment in turn is a factor that expresses how the economy can absorb unoccupied workforce, not to mention unemployed people. The two indicators (economic categories) have an effect on economic growth in the sense that, by slowing down their growth rate, this has an economic effect on economic growth and to the extent that these two indicators increase, they have a negative effect. The authors suggest that the two statistical indicators have an effect on economic growth. From studies and interpretations of economists, it follows that the two indicators are in the opposite correlative ratio, in the sense that an increase in unemployment indicates an inadequate workforce use, but by raising unemployment, inflation is moderated. Conversely, an increase in inflation also shows a decrease in unemployment. We also base this view on the fact that, at present, trade unions in the bargaining with employers often prefer rather than increase unemployment to better maintain wages at a lower level, which in this way influences inflation.

Keywords: *inflation, unemployment, economic growth, correlation, indicator*

JEL Classification: E24, E31

Introduction

In this article, the authors present the main methodological aspects in relation to the two indicators they are analyzing, namely inflation and unemployment. Then, it performs [an up-to-date presentation of the level recorded by the two indicators in the first eight months of 2018. The data are compared with previous developments, aiming to present the evolution and the possible influences on the economic growth and not last in turn, reference is made to the fact that the evolution of the two indicators also has an effect on the quality of life. Romania, compared to other European countries, has

a moderate inflationary level and temperate unemployment. The problem needs to be dealt with more deeply, in the sense of finding out and what is the share of the unoccupied population in the national economy. It should also be considered that the exodus of the population working abroad is a positive factor of the unemployment in our country. A simple analysis will point out that this aspect is also the fact that if the approximately three million Romanian citizens working abroad return to work, we do not know what the real possibilities of the national economy to offer them the work. We also refer to the fact that some party or party platform programs are far from reality. In this respect, there is a „priority" in determining the return of those working outside the country without considering the possibilities offered by Romania's job offer. The paradox is getting worse given that some official opinions show that the Romanian school no longer correlates the „production" of graduates with the needs of the national economy. At the same time, it is underlined that some aspects of the economy are neglected. Thus, there is no longer an active reconversion process. This explains why the jobs offered and the almost zero employment of them, ie the needs of the economy are not correlated with the qualifications of those who have the desire to take employment. The article emphasizes that a criterion should be introduced, namely that those who are unemployed and who refuse to accept compatible jobs, should be discontinued from the support provided by unemployment benefits.

Literature review

Aaronson, Mazumder and Schechter (2010) studied what is behind the rise in long-term unemployment. Anghel (2015) presented the evolution of consumer prices. Anghelache, Marinescu, Lilea and Stoica (2017) analyzed the methodology for calculating the consumer price index. Anghelache, Anghel, Dumbravă and Ene (2018) studied the employment rate, unemployment and job vacancies in the economy, and Anghelache and Sacala (2015) presented some theoretical aspects of inflation. Kroft and Notowidigdo (2016) investigated whether unemployment benefits should follow the variation in unemployment, and Miyamoto and Yuya (2011) have approached the links between rising labor productivity, job search and unemployment. In an article, Blanchard (2006) presented the evolution of facts and ideas about unemployment in Europe. Also, Chéron, Hairault and Langot (2013) approached the balance of the life cycle of unemployment.

Research methodology, data, results and discussions

In the following we want to present the methodology for obtaining the data underlying this study. Labor force data are obtained through the Quarterly Statistical Survey on Household Workforce (AMIGO), in accordance with

Council and European Parliament Regulation No 577/1998 on the organization of a selective labor force survey in the The European community.

The unemployed are people aged 15-74 who simultaneously fulfill the following three conditions: they do not have a job; are available to start work in the next two weeks; have been actively seeking a job at any time during the last four weeks. Unemployment rate is the share of the unemployed in the active population. The economically active population includes all persons supplying labor available for the production of goods and services during the reference period, including employed and unemployed people. Registered unemployed persons are the persons registered in the National Employment Agency (ANOFM), which benefit from the legislation on the social protection of the unemployed. The two sets of statistical indicators (monthly unemployment according to international definition and registered unemployment) are not comparable because data sources, measurement methods, concepts, definitions and scope are different. Data analysis in both series, however, provides a complete and real picture of the Romanian labor market.

The applied estimation methodology is based on econometric methods that exponentially level the linear trend data series. The projected values are derived from the data provided by household labor force statistical survey, based on smoothing coefficients, which corrects the gross unadjusted form and trend of the series. Smoothing coefficients are determined by minimizing predictive errors.

How to present the data. The data in this article is presented in a seasonally adjusted form, thus eliminating the effect of seasonal variations. For seasonal adjustment, the DEMETRA program (TRAMO / SEATS method), which also performs the estimation of the calendar effect (Orthodox Easter, bisect year and other national holidays), as well as the identification and correction of extreme values (occasional level changes, transient or permanent changes) . The estimation of unobserved components: trend-cycle, seasonality and irregular component is achieved by the SEATS program based on ARIMA models. The seasonally adjusted series were obtained by eliminating the seasonal component of the original series. The trend, which is the series adjusted for both the effect of seasonal and accidental variations, was obtained by eliminating the irregular seasonal series.

Due to the low number of observation cases, the reliability of the estimates for the indicators corresponding to the category of young people (age group 15-24) is extremely low, the series obtained with a high degree of volatility. For the „young" category, quarterly data are disseminated (for example, the data submitted for January, February and March are equal and refer to Quarter I). Data for young people are disseminated, as provisional data, two months after the end of the reference quarter and finalized once the AMIGO statistical survey estimates are completed in the corresponding quarter.

The whole series was calculated according to the resident population reassessed in terms of comparability with the 2011 Population and Housing Census results.

Data Review Policy: Unemployment and Unemployment ratios are monthly disseminated under the title of provisional data and are subject to quarterly revisions as new information becomes available as follows: January, February and March reference periods are published in variant provisionally at the end of February, March and April, and will be reviewed in May; April, May and June reference periods are published in provisional version at the end of May, June and July and reviewed in August; the July, August and September reference periods shall be published in the provisional version at the end of August, September and October and shall be reviewed in November; the October, November and December reference periods shall be published in provisional version at the end of November, December and January (the following year) and shall be reviewed in February - the following year.

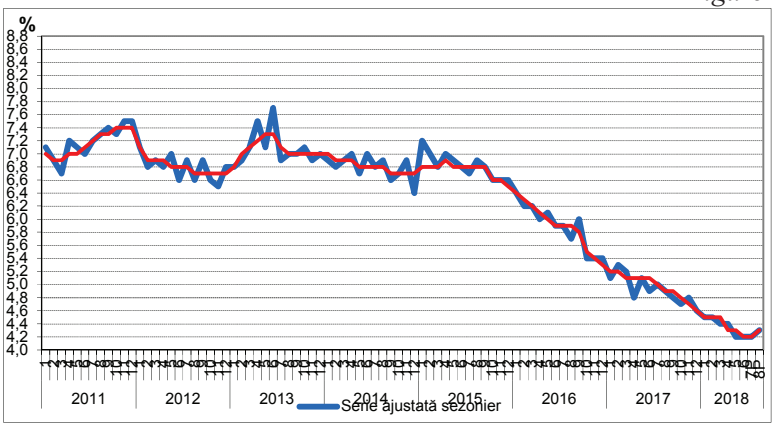
Annually, with the release of data for the first month of the year, seasonally adjusted and trend-adjusted series are fully revised as a result of the re-estimation of ARIMA's parameters.

- **The unemployment rate analysis in seasonally adjusted form**

The unemployment rate in August 2018 increased by 0.1% compared to the previous month (4.2%). The unemployment rate for men was 1.4 percentage points higher than for women. The evolution of the unemployment rate is shown in Figure no. 1.

Monthly Evolution of Unemployment Rate 2011-2018 (%)

Figure no. 1

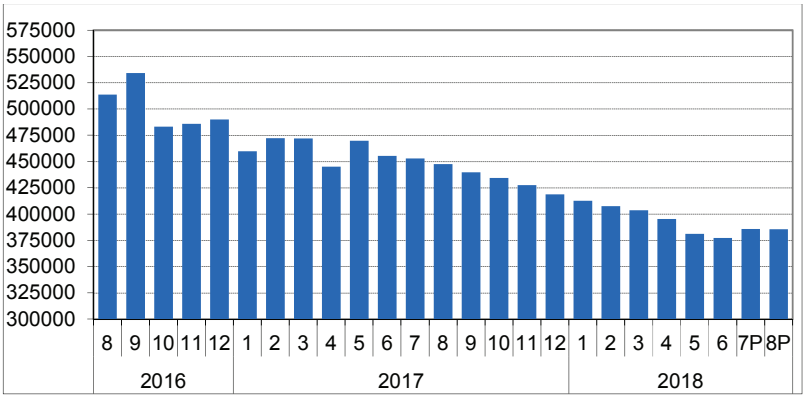


Source: National Institute of Statistics - Press release

The number of unemployed (aged 15-74) estimated for August 2018 was 386 thousand persons, registering the same value as in the previous month, but declining compared to the same month of the previous year (448 thousand persons). The data is presented in the following graph.

Number of unemployed between August 2016 and August 2018

Figure no. 2



Source: National Institute of Statistics - Press release

By gender, the unemployment rate in men exceeded by 1.4 percentage points that of women (the respective values being 4.9% for males and 3.5% for females) table no. 1.

Unemployment rate by sex (%)

Table no. 1

	2017					2018							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul. P	Aug. P
Total													
15-74 years	4,9	4,8	4,7	4,8	4,6	4,5	4,5	4,4	4,4	4,2	4,2	4,2	4,3
15-24 years	17,8	17,8	19,7	19,7	19,7	16,8	16,8	16,8	16,6	16,6	16,6	...	...
25-74 years	4,0	3,9	3,6	3,6	3,5	3,6	3,5	3,6	3,4	3,3	3,3	3,4	3,4
Male													
15-74 years	5,5	5,5	5,3	5,3	5,1	5,0	5,0	4,8	5,0	4,7	4,6	4,8	4,9
15-24 years	16,8	16,8	19,2	19,2	19,2	17,0	17,0	17,0	17,4	17,4	17,4	...	...
25-74 years	4,6	4,6	4,2	4,2	4,0	4,1	4,0	4,0	3,9	3,8	3,7	3,9	4,0
Female													
15-74 years	4,1	4,0	4,0	4,0	4,0	3,9	3,8	3,9	3,5	3,5	3,6	3,5	3,5
15-24 years	19,0	19,0	20,5	20,5	20,5	16,5	16,5	16,5	15,6	15,6	15,6	...	...
25-74 years	3,1	2,9	2,9	2,8	2,8	3,0	2,9	3,1	2,7	2,7	2,8	2,7	2,7

For adults (25-74 years), the unemployment rate was estimated at 3.4% for August 2018 (4.0% for men and 2.7% for women). The number

of unemployed aged 25-74 was 75.2% of the total number of unemployed estimated for August 2018.

In the following we will analyze the evolution of consumer prices, but first we will make some clarifications regarding the methodology of calculating the indicators as it is defined by the National Institute of Statistics.

Consumer price indices (CPI) cover monetary expenditures for end-use goods and services for all resident households except institutional households in order to provide a more relevant and accurate picture of inflation. The CPI can be regarded as a method of measuring, broadly, the prices of a fixed cost model.

The Harmonized Index of Consumer Prices (HICP) is a set of EU consumer price indices, calculated according to a harmonized approach and a single set of definitions. The HICP is primarily designed to assess euro area price stability and price convergence in the EU as well as for inflation comparisons at European level. Starting January 2016, the HICP series are published with the reference year 2015 = 100.

Expenditure Item is a group of expenditures made by consumers to meet specific consumption needs of food, non-food, or service.

Weight is the coefficient of quantification used to calculate a synthetic index (aggregate) for a collection of non-compensatory elements directly, having as function the determination of the relative importance of each element in the surveyed statistical collectivity.

The monthly inflation rate represents the increase in consumer prices in a month compared to the previous month.

Monthly average inflation rate - the average of monthly price increases. It is calculated as a geometric mean of monthly indices of consumer prices based on a chain of less than 100 basis points.

Annual average inflation rate - rising consumer prices in a year compared to the previous year. This rate is calculated as a ratio, expressed as a percentage, between the average price index of one year and that of the previous year, of which 100 is deduced. In their turn, the average price indices of the two years are determined as simple arithmetic means of the monthly indices of each year, calculated against the same basis (October 1990 = 100).

The annual inflation rate is the increase in consumer prices in a month of the current year, compared to the same month of the previous year. This rate is calculated as a ratio, expressed as a percentage, between the one-month index of the current year and the index of the corresponding month of the previous year, calculated against the same basis, whichever is lower.

The measured prices are those actually borne by consumers, so they include sales taxes on products such as value added tax. The CPI is calculated on the basis of the elements that fall into the direct consumption of

the population and excludes: consumption from own resources representing the equivalent of the quantities of products consumed by the population from sources other than purchases (from stock, from own production, received in gift, etc.); expenditure on investment and accumulation (purchase of dwellings, building materials used to build new dwellings or to carry out repairs to old dwellings), insurance rates, fines, gambling, taxes, etc .; labor costs for household production (plowing, sowing, picking, grooming of gardens and orchards, vineyards, harvesting, hay mowing, medical treatment of animals, etc.). IPC excludes interest and credit costs, referring to them as a financing cost, not as a consumption expense.

The collection of data involves observing and registering prices in the 42 cities of the county where 68 research centers were selected, depending on the number of inhabitants. The units in which prices / rates are recorded have been selected locally, from research centers, depending on the volume of goods and services. They are included in the nomenclature approx. 7300 units, which need to be kept as long as possible to ensure the continuity of price observation.

The CPI is calculated as a Fixed Base Laspeyres index. Starting in January 2018, the calculation of monthly fixed-rate indices is done using average prices in 2016 (2016 = 100) and the weights of the same year determined on the basis of the average family budget survey.

For HICP, the index is calculated and published against the average of 2015 (2015 = 100). This index reference period is used for the full chronological series of all HICP indices and sub-indices, according to EU Regulation 2010/2015. All Member States of the European Union comply with this rule for reasons of comparability, irrespective of the baseline for the national indices and the weighting system used. This means that complementary calculations are performed on the same data in order to obtain an index based on the average of 2015 and for reasons of comparability, the weights used by each country in the HICP calculation are expressed in December December prices of the previous year.

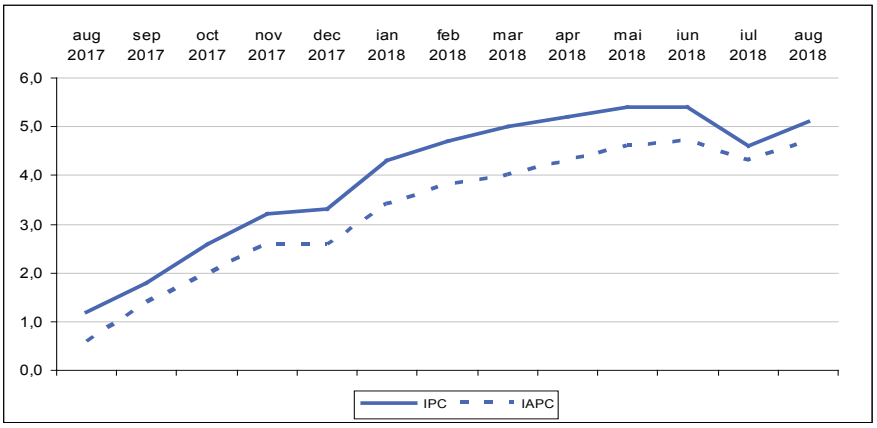
• Analyzing the evolution of consumer prices

Consumer prices in August 2018 compared with August 2017 increased 5.1%. The annual rate calculated on the basis of the Harmonized Index of Consumer Prices (HICP) is 4.7%.

The average inflation rate over the previous 12 months (September 2017 - August 2018) over the previous 12 months (September 2016 - August 2017), based on the CPI, is 4.2%. Determined on a HICP basis, the average rate is 3.5%.

Annual change in consumer prices (%)

Figure no. 3



Source: National Institute of Statistics - Press release

Consumer price index and monthly average inflation rate

Table no. 2

- percent –

	August 2018 versus:			**Average monthly inflation rate** over the period 1 I - 31 VIII	
	July 2018	December 2017	August 2017	2018	2017
Food goods	99,83	101,23	104,15	0,2	0,1
Non-food goods	100,66	103,21	106,78	0,4	0,1
Services	100,13	101,56	102,61	0,2	-0,1
TOTAL	**100,28**	**102,22**	**105,06**	**0,3**	**0,1**

Source: National Institute of Statistics - Press release

Partial indices calculated by excluding certain components from the CPI

Table no. 3

- previous month = 100 -

	August 2018 %
Total CPI excluding alcohol and tobacco	100,30
Total CPI excluding fuels	100,32
Total CPI excluding products whose prices are regulated	99,95
Total CPI excluding vegetables, fruit **, eggs, fuels and products whose prices are regulated *	100,09
Total CPI excluding vegetables, fruit **, eggs, fuels and products whose prices are regulated *, beverages and tobacco	100,10
TOTAL	**100,28**

Source: National Institute of Statistics - Press release

*) Products whose prices are regulated: medicines, electricity, natural gas, thermal energy, CFR transport, water transport, post and courier, identity card issuance services, auto license, passport, water, sewerage, in common, rents established by the local government.

**) To respond more accurately to the needs of inflation analysis, starting in September 2014, the fruit group includes, besides fresh fruit and citrus fruit and other meridian fruit.

Consumer price index in August 2018 for the main goods and services

Table no. 4

Weighting coefficient	Name of goods / services	August 2018 versus:	
		July 2018 %	December 2017 %
10000	Total	100,28	102,22
3315	Total food goods	99,83	101,23
4599	Total non-food goods	100,66	103,21
2086	Total services	100,13	101,56

Source: National Institute of Statistics - Press release. Data processed by authors..

Conclusion

The study in this article concludes that macroeconomic indicators - inflation and unemployment - are important as it highlights the consequences of how the workforce is working in the field in which it produces itself, and hence its effects on the national economy. In this perspective, the need to correlate the needs of the labor market with the qualifications and structure on the qualifications of labor resources is becoming clearer. The need for professional reconversion is of the utmost importance that must be carried out in accordance with the requirements of the labor market. It is noted that due to the inadequate pursuit of the correlation between the labor market requirements and the training of the labor force, these discrepancies appear

to lead to the increase of the unemployment. Inflation is also an element that shows how rising prices are evolving, and this has an effect on the actual results achieved in the national economy, and last but not least, expresses the quality of life that is affected. A comparative study was not carried out at European Union level, but it is easy to understand that although Romania is in a good position in terms of the evolution of these two indicators, the quality of life (living standard) is well below the level and standards to the other countries in the European Union.

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