DEVELOPMENT AND CORRELATION OF THE GROSS WAGE WITH INFLATION

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Abstract

In this article, the authors proposed to analyze the degree of satisfaction of the employees according to the gross income achieved, but also in line with the effect of inflation. This study is also based on the fact that the current national administration (the government) is currently preparing comprehensive wage legislation.

Of course, wages remain the main source of income for people working in economic activities, as well as their families. From this point of view, the analysis of the real earning index becomes even more important because besides the gross salary is the question of knowing the actual salary adjusted to the inflation rate

The real earning index is, in fact, the most important to characterize the income resources available to the country's population, how it manages to meet its living needs.

In the study, we aimed to compare consumer prices, ie the evolution of inflation, with the average net earnings index, not gross. From this, we conclude that the consumer price index, through the value-added tax reduction policy from 24% to 19%, had an approximately linear course, which did not affect the level of the nominal net salary too much.

On the other hand, in the new law that came into force on 1 January 2018, a number of elements have emerged that may lead to instability in assessing the evolution of real net employee incomes. In this respect, we mention that if for the minimum wage the Ordinance stipulates imperative the increase to 1900 lei, regarding the transfer of the tax obligations from the employer to the employee, the imperfection of this article gives the possibility to interpret that, where there is no policy but it is a private sector, there may be negotiations that can have two effects: on the one hand if some employees want to lose their jobs, not accepting what the employer proposes, and in some cases some wages, under the pressure of maintaining the job.

The purpose of this article is to analyze gross and net salary in relation to inflation and with some indication of how regulations in the new wage law can bring some effects.

Importantly, it is imperative for Romania to increase the net average gross salary, but this should have a reflection on raising the real salary, especially since 2017, by flattening prices (administratively deflated), the effect of inflation will have a negative influence on actual income.

Key words: *real wage, income, deflation, price index, correlation.*

JEL Classification: E24, J31

Introduction

Wage earnings are an important element in employee involvement and, thus, in increasing labor productivity, an important factor in increasing production in natural and value units.

The study begins with the presentation of the comparative evolution of gross salary and inflation. Then, the current state of wage developments and the prospect of real wage growth are analyzed. A comparative study of the rise in prices as well as the maintenance of the income of the population at a constant level is carried out.

The article is based on data published by the National Institute of Statistics and EUROSTAT, studying the existing data series, and also interpreting a number of issues that can have an effect on improving the net salary level on the economy.

The authors refer to the net salary and add it to the real one, because in the study, two elements converge to this approach. The first is that gross wages are changed under the authority of the order that passes tax obligations from employer to employee and therefore it is not relevant to say about this increase in gross wages but net wages that should remain unchanged or increase . On the other hand, the net salary, even so, is influenced by the change in the general consumer price index (inflation), which clearly determines the reduction of revenues that are characterized by the purchasing power parity.

In fact, in the study of gross domestic product on an international level, the purchasing power parity index is used alongside Gross Domestic Product per capita as the first indicator is the one that most reflects the capacity or the possibility of revenue through the purchasing parity prices to meet the needs of the population.

In fact, in every society, in every country there is a normal criterion, as embodied in the European Union Directive, namely the increase in the quality of life. And this quality of life can not grow anyway, but through the purchasing power parity, which will ensure income coverage of all the

expenses of a family, as well as the realization of savings meant to ensure their placement in investments. The analysis is complex and therefore the study is accompanied by a series of representative data and graphs that argue the views of the authors.

Literature review

Ales, Kurnaz and Sleet (2015) analyzed the normative implications of technical changes for fiscal policy design, and concluded that the overall optimal policy response is to reduce marginal taxes on low incomes to averages, and to increase them at the same time medium to large incomes. Anghel, Lixandru, Popovici, Solomon and Stanciu (2017) presented the main theoretical aspects of price indices for inflation measurement and studied the methods used to deflate macroeconomic indicators. Anghel (2015) studied the evolution of inflation and consumer prices in Romania, starting from the fact that the effects of inflation can also have implications for other aspects of economic and social life. Anghelache, Anghel and Burea (2017) analyzed elements of the payroll system, which plays an extremely important role in attracting labor to the production of goods and services. Anghelache, Voineagu and Gheorghe (2013) is a reference work in the analysis and measurement of inflation. Author and Handel (2013) analyzed the correlation between human capital, work and wages. Chen, Kacperczyk and Hernn (2011) studied whether restrictions on company operations imposed by trade unions affect firms' capital costs to increase them. Dube, Lester and Reich (2010) analyzed the effects of the minimum wage in the economy and the long-term consequences of minimum wage changes. Kanagaretnam and Sarkar (2011) analyzed the effect of managerial clearing terms on well-known incentives for „sub-investments". Lemieux, MacLeod and Parent (2009) addressed issues related to salary performance and wage inequality. Rogerson (2008) conducted a comparative analysis of hours worked in continental Europe and the United States.

Research methodology, data, results and discussions

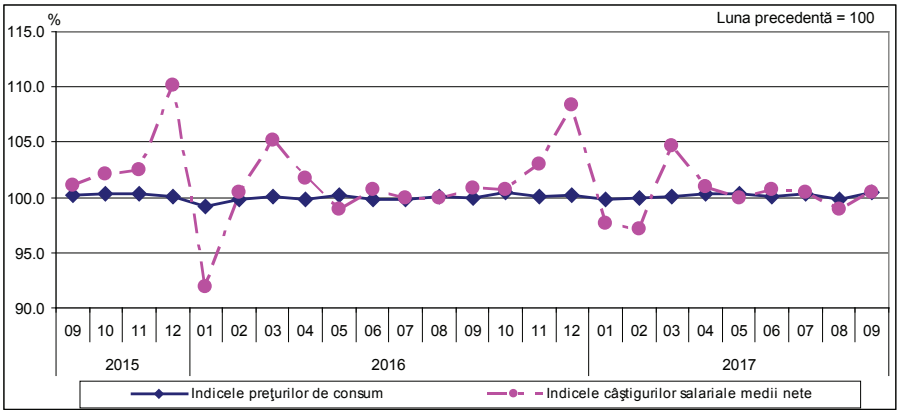
The analysis of gross, real or real gross wage correlation was made, comparing the monthly evolution in 2017, with the previous month or similar period of the previous year. The study of data series, which includes the evolution of the two variables, is suggestively suggestive.

For example, in September 2017, gross nominal average earning was 3,305 lei, 0.5% higher than in August 2017, and the net nominal average salary was 2,376 lei, up from the previous month with 12 lei. The highest net nominal average earning was recorded in information technology services

activities, including computer services, namely 6.022 lei, and the lowest in hotels and restaurants, respectively 1.399 lei. Ordinance on the transfer of tax obligations from employer to employee does not change the meaning of the analysis and the conclusions drawn.

Compared to the same month of the previous year, net average earnings in 2017, the same month increased by 13.5%. The real earning index adjusted for inflation, compared to the same period of the previous year, was 111.5%. The real earning index was 100.0% for September of 2017 compared to August. Compared to October 1990, the real earning index was 178.3%, retaining the same value as in August 2017. The evolution of consumer price indices and the net average wage index between September 2015 and September 2017 is presented in the following chart.

Evolution of consumer price indices and net average earnings indices between September 2015 and September 2017



Source: Press release of the National Institute of Statistics no. 279 / 11.07.2017

In the current context, when the salary law (January 1, 2018), which sparked and will cause controversial, diametrically opposed reactions, we consider that an analysis of the salary and income situation of the population is gaining momentum. Therefore, one-year comparative analysis reveals that data may change.

For example, in September 2017, in most economic sector activities, the average net earning was higher than in August 2017. The increase in net average earning compared with the previous month was due to the granting of occasional bonuses (including premiums quarterly, annual, for outstanding performance), in-kind rights and cash benefits, amounts from net profit and

other funds, as well as outputs or higher receipts (according to the provisions of the collective agreement and the individual labor contract).

The most significant increases in net average earning were recorded as follows: 15.8% in crude oil and natural gas extraction and 6.7% in extraction services; between 3,5% and 4,5% in the manufacture of textiles, tanning and finishing of hides and skins (including the making-out of travel and haberdashery, harness and footwear, preparation and dyeing of fur), manufacture of computers and electronic and optical products; between 2.0% and 3.0% in the manufacture of electrical equipment, cinematographic production, video and television programs, audio recordings and musical publishing activities (including broadcasting and broadcasting), manufacture of rubber products and plastics, research and development, telecommunication, paper and paper products.

In the period under review, we also see decreases in net wages, decreases in net average earning as compared to the previous month were determined by the granting of occasional bonuses, reduced by 8.4% in coal mining and inferior; between 2,0% and 5,0% in the metallurgical industry, beverage production, printing and reproduction of recordings, forestry and logging (including fishing and aquaculture), air transport, financial intermediation (excluding insurance and fund- pension), manufacture of tobacco products.

In the budgetary sector, increases in net average earning compared to the previous month in education (+ 3.6%) were registered, following the payment of the teachers' hourly payment. Net average earning decreased slightly compared to the previous month in general government (-0.5%), respectively in health and social assistance (-1 leu).

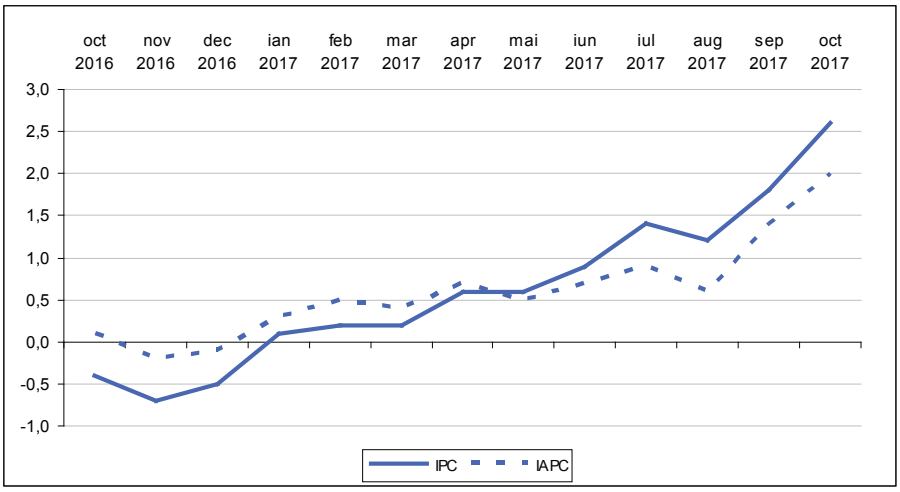
Depending on wage / income developments, it is important to analyze how consumer prices have changed. From the correlated interpretation of the gross (net or minimum) wage with the inflation rate, measured by the increase in the consumer index, consumer prices in October 2017 compared to October 2016 increased by 2.6%. The average consumer price over the previous 12 months (November 2016 - October 2017) over the previous 12 months (November 2015 - October 2016), calculated on the CPI, is 0.7%. Determined on the basis of the aggregate consumer price index, the average rate is 0.6%.

The change in the consumer price between October 2016 and October 2017 shows that both the consumer price index and the harmonized index of consumer prices increased month by month. Thus, for four months (October 2016 - January 2017), these indicators were negative, and we may appreciate that we are disinflationary. This conclusion is not real because the evolution was based on the reduction of the VAT rate from 24% to 19%, so it is a deflation.

Since January 2017, the two indices have seen an increasing trend, affecting the real value of wages (gross or net) and the income of the population. In 2017 there were price increases that, to a greater or lesser extent, correlated with rising inflation (the two indices of rising prices). The annual change in consumer prices is highlighted in chart no. 1, presented below.

Annual change in consumer prices (%)

Chart no. 1



Source: Press release of the National Institute of Statistics no. 287 / 10.11.2017

The analysis of the evolution of consumer prices and the average inflation rate is analyzed on three groups, namely: food goods, non-food goods and services. This development is also the same as in the previous month, compared to the same month of the previous year or to December of the previous year. At the same time, the average monthly rate recorded in the analyzed year and the monthly average rate of the previous year are compared. In table no. 1, these data are presented, resulting in the service group still not discussing the rise in consumer prices.

Consumer price index and monthly average inflation rate

Table no. 1

- percent –

	October 2017 to:			Monthly average inflation rate over the period 01.01-31.10	
	September 2017	December 2016	Octomber 2016	2017	2016
Food goods	101,30	103,02	103,52	0,3	0,0
Non-food goods	101,74	102,93	103,26	0,3	-0,1
Services	100,16	99,68	99,67	0,0	-0,2
TOTAL	**101,28**	**102,31**	**102,63**	**0,2**	**-0,1**

Source: National Institute of Statistics

In this article, the authors analyzed the evolution of inflation as well as the partial indices calculated by the exclusion from the consumer price index of some components. We considered those products that had a high proportion of consumption or are luxury products (alcoholic beverages and tobacco). Also, a series of products whose prices are regulated and do not influence the evolution of inflation (consumer prices) have been excluded. The data are presented in table no. 2.

Partial indices calculated by excluding certain components from the CPI

Table no. 2

- previous month = 100 -

	Octomber 2017 (%)
Total CPI excluding alcohol and tobacco	101,35
Total CPI excluding fuels	101,08
Total CPI excluding products whose prices are regulated	101,04
Total CPI excluding vegetables, fruit **, eggs, fuels and products whose prices are regulated *	100,38
Total CPI excluding vegetables, fruit **, eggs, fuels and products whose prices are regulated *, beverages and tobacco	100,37
TOTAL	**101,28**

Source: National Institute of Statistics

Looking at the data in the table, we find that the most serious reduction in consumer price indices is achieved when the products of the four (vegetables, fruit, eggs, fuel and products whose prices are regulated) are eliminated and five (vegetables, fruits, eggs, fuels and products whose prices are regulated, beverages and tobacco). Partial calculated indices have values of 100.38% and 100.37% respectively. Overall, taking into account all the partial indices, the consumer price index remains unchanged (101.28%). From the study of the data in table no. 2, compared to the evolution of the gross or net average wage, we find that there is an inverse correlation, which leads to the real salary, diminished by the effect of inflation.

In order to highlight the effect of the change in consumer prices, we report in table no. 3 consumer price index for the main groups of goods and services.

The Consumer Price Index in October 2017 for the main groups of goods and services

Table no. 3

Weighting coefficient	Name of goods / services	October 2017 to:	
		September 2017 (%)	December 2016 (%)
10000	TOTAL	101,28	102,31
3465	TOTAL FOOD GOODS	101,30	103,02
642	Milling and bakery products	100,39	101,56
329	Vegetables and canned vegetables	106,67	102,09
229	Fruit and canned fruit	102,54	113,02
108	Oil, bacon, fats	100,21	100,20
852	Meat, prepared and preserved meat	100,51	103,71
137	Fish and canned fish	100,29	101,62
539	Milk and dairy products	101,07	102,96
61	Eggs	106,63	103,84
150	Sugar, confectionery and honey	100,02	101,49
106	Cocoa and coffee	100,12	101,01
129	Alcoholic beverages	100,11	100,85
183	Other food products	100,14	101,62
4545	TOTAL NON-FOOD GOODS	101,74	102,93
389	Haberdashery, haberdashery, haberdashery	100,44	101,84
283	Footwear	100,75	101,72
167	Household and furniture products	100,16	100,96
266	Chemical articles	100,01	99,96
243	Cultural-sport products	100,17	101,04
660	Hygiene, cosmetic and medical articles	100,13	100,29
827	fuels	103,47	101,94
615	Tobacco, cigarettes	100,46	103,25
1049	Electricity, gas and central heating	104,15	107,70
46	Other non-food goods	100,31	101,37
1990	TOTAL SERVICES	100,16	99,68
20	Manufactured and repaired clothing and footwear	100,30	101,73
114	Rent	100,32	102,22

Weighting coefficient	Name of goods / services	October 2017 to:	
		September 2017 (%)	December 2016 (%)
319	Water, canal, sanitation	100,04	103,55
160	Cinemas, theaters, museums, education and tourism	100,50	101,32
24	Auto, electronics and photo repairs	100,22	101,29
140	Medical care	100,40	102,68
66	Hygiene and cosmetics	100,37	103,31
81	Urban transport	100,23	101,90
92	Inter-urban transport (other modes of transport)	100,10	101,27
648	Post and telecommunication	99,86	94,89
130	Restaurants, cafes, canteens	100,41	101,81
36	Other industrial services	100,25	101,77
160	Other services	100,56	99,20

Source: National Institute of Statistics

From the succinct interpretation of the data in this table, the consumer price index for the services group (99.68%), in particular CFR (94.32%), post and telecommunications (94) , 89%), radio and television subscriptions (85.50%) and other services (99.20%).

The analysis of the correlation between gross and net average wages can be increased by using econometric models (regression or time series), but these are not the subject of this study.

Conclusion

From the study presented, some conclusions, especially practical, are drawn.

First of all, the increase in the income of the population must be based primarily on the increase of the real net salary. We say real net salary because it has to be considered in relation to some legislative provisions (see the Order on the passage of tax obligations from employer to employee), as well as to real income, in order to be correlated with the evolution of inflation.

The second conclusion is that, in Romania, the real net average income level is much behind the other European Union countries. From the comparative study of this indicator, based on the purchasing power parity, Romania is on the penultimate place after Bulgaria, but we have to make it clear that Bulgaria has made some progress over the last period, recovering much from the lag behind who recorded it.

A third conclusion is that government policy must be well-targeted to target the evolution of inflation, according to which, the positive change in the real net salary should be appropriate.

From the study we conclude that in the national economy this ratio between net salary and inflation should be analyzed periodically so that the evolution of inflation is not controlled and, of inflation.

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