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Model of analysis of the correlation between the population and the labor force market

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Abstract. *The occupied population includes all persons – both employees and freelancers – who develop a productive activity within the production limits of the European Accounts System. In this figure it is included the number of employees determined in compliance with the accounts that take into consideration both data sources used to determine the cost of labor force occupation, such as the Survey on labor force in households (AMIGO), the Inquiry regarding the cost of labor force (S3), Annual structural survey in enterprises (ASA), and also administrative data sources (information provided by the Ministry of Foreign Affairs, Ministry of Labor, Family and Equality of Chances, Ministry of Interior and Administrative Reform etc.), accounting situations of commercial companies.*

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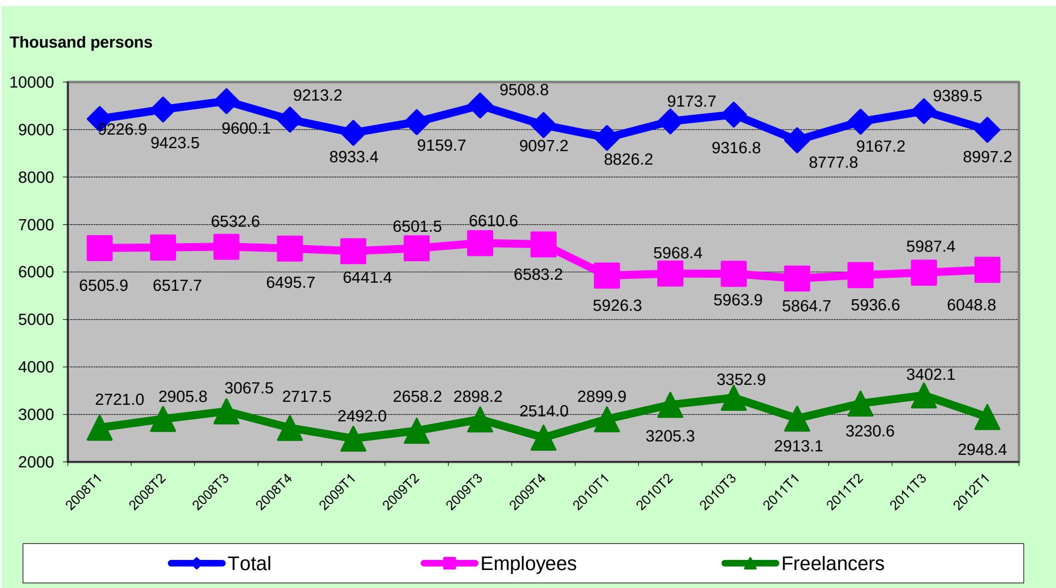
REL Classification: 12B.

The curve of the following chart shows the number of occupied population, by trimesters, in 2009-2012. The occupied population was some 9.6 million people, with high values in quarter 3 2008 (9.6 million), respectively quarter III 2009 (9.5 million), to reach 9.1 million persons in trimester III 2010. In 2012, 1st Quarter, the total occupied population was 8,997 million persons, of which 6,049 employees and 2,948 free lancers).

Employees represent all the persons working mainly on the basis of a formal or informal contract, for other resident institutional entity, in exchange for wages or some equivalent pay. The number of employees, the second curve, shows a level oscillating between 6.4 million in quarter II 2009 and 6.6 million in trimester III 2009, 6.5 million in trimester III 2010, 5.9 millions in trimester II 2011, reaching the level of 6.1 millions in trimester I 2012.



Source: National Institute of Statistics.

Figure 1. *Occupied population according to the methodology of the European Accounts System, 1995*

We state that the number of employees includes those working in the hidden economy, established according the computation methodology.

Another category is represented by the independent workers (freelancers), they being the sole owners or co-owners of the entities without judicial personality they work in. In this category, can also be included: family workers, non-paid and home workers that manufacture for market; workers that exert, both individually and collectively, productive activities regarding exclusively the final consumption or formation of capital on their own account. Their number oscillated between 2.5 millions in 2009 and 3.1 millions in 2008, to reach 2.4 millions in 2010, 2.6 millions in 2011 and 2.49 millions in 2012.

The occupied population, according to the SEC methodology, is the sole indicator that indicates the human potential of the occupied labor force that can be used to determine the social productivity of labor as a ratio between the GDP and the occupied population.

The evolution of the productivity of labor is, within the series, fluctuant enough, from positive elevated levels, such as in quarter III 2008, of 10.7%, to constant decreases starting quarter I 2009 until quarter I 2010, to record a comeback to a positive trend, of 1.6% in quarter II 2010 against the previous year, of 1.9% in quarter III 2010 against quarter III 2009. In 2011 and during the six months of 2012, the productivity have not manifested significant oscillations, but recorded a low level.

Real hourly productivity marks, in principle, the same evolution as the real productivity per occupied person.

In the analysis of the occupied population, it can be observed the percent evolution of the structure occupied regarding the great employees categories and individual entrepreneurs.

In this context, according to the European Account System edition 1995 also, the employees hold a weight of some 70% out of the occupied population.

On activity branches, the greatest weight is held by agriculture, with 27.6%, followed by industry, with 22.5%, and transports, with 21%.

The indicator occupied population of Romania compared to other countries proves a concerning discrepancy in negative way and where we think the attention of decisional factors must be focused.

In 2011, Romania, with a rate of occupation of 60.7%, was among the countries with values below EU27 average (for which, the value of the indicator was 64.5%).

The greatest values of the occupation ratio in 2011 were recorded in: Netherlands (76.3%), Denmark (74.1%), Sweden (72.9%), Austria (71,4%) and Germany (71.0%).

In most EU27 member states, the occupation ratio in 2011 was increasing against the previous quarter, excepting four member states, in which case slight declines were observed (between 0.1 and 0.4 percent points): Portugal, Lithuania, Luxembourg and Belgium. At the level of EU27 the increase against the previous quarter was +0.7 p.p.

Against the same period of 2009 the occupation ratio was in decline in most European states. At the level of EU27 the decrease was -0.5 p.p. The exceptions are six member states, for which the occupation ratio remained at the same level or increased slightly (at most 1.0 p.p.) – among these, Romania. In the case of Romania, the increase of +0.7 p.p. recorded in 2011 against 2010 produced on the background of occupation characteristics of our country, where the agricultural sector continues to hold a significant weight.

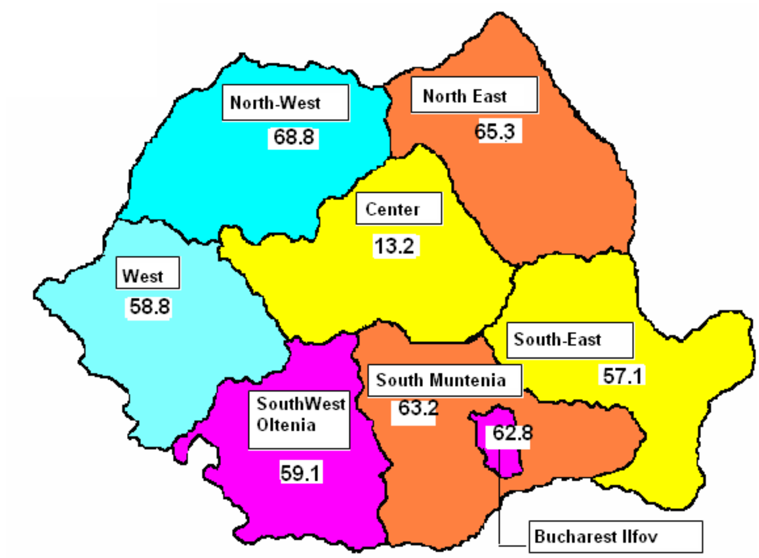
In Europe, the most significant declines in 2011 against 2010 were recorded in: Estonia (-3.9 p.p.), Lithuania (-3.3 p.p.), Bulgaria (-3.0 p.p.) and Latvia (-2.1 p.p.).

In 2011, in Romania, the weight of employees in total occupied working age population was 66.1% – one of the most reduced in Europe (the next-to-the-last place, after Greece). In the same time, the weight of non-employees in agriculture (mainly employees on their own and family non-paid workers) was 26.2% – the greatest in Europe.

The increase of occupation in 2011 against the previous periods occurred on the background of transition towards agriculture, phenomenon visible from:

- Reduction of employees weight (by 2.1 p.p. smaller in 2011 against 2010);
- The increase of the weight of non-employees in agriculture (mainly workers on their own and family workers): by 3.0 p.p. against 2008 and by 1.8 p.p. against 2009.

According to the provisional results of the Survey on Labor Force (AMIGO), in 2011, the occupation ratio of the working-age population was 60.5%; increasing by +0.3 p.p. against the end of 2010. Regarded through the prism of distribution by development regions, the smallest occupation ratio was recorded in the Center region (53.2%) and the greatest in the North East region (65.3%).



Source: National Institute of Statistics.

Figure 2. *Territorial disparities of the occupation ratio (%)*

Occupation rates greater than the national average (60.1%) were recorded only in two regions where the agricultural sector is significant – North-East (65.3%) and South (63.2%), and also in Bucharest Ilfov (62.8%), where labor force is drawn into the services sector. The highest growths, established by chain indexes, were recorded in the North East region and South Muntenia, and the highest decreases were emphasized in Bucharest Ilfov and South-West Oltenia.

Information regarding the "budget sector" must be carefully analyzed, because the data refer to the statistics from economic activities (aggregated on homogenous activity) according to CAEN Rev.2: pubic administration, education, respectively health and social assistance (including private education – some 2%, respectively some 4.5% for health and social assistance), excluding the armed forces and assimilated personnel (MApN, SRI, MAI etc.).

These statistics do not take into account the financing form, their purpose being to provide information on economic activities, according to CAEN Rev.2.

The budgetary sector was characterized, during the period 2009-2012, by continuous decreases of the number of employees. The most accentuate declines were recorded in 2010 and during the first nine months of 2011.

The effective of employees at the end of 2011, belonging to the budget sector, reached almost 947 thousand persons, the declining trend continues. Thus, in the public administration were 199.0 thousand persons, in education 377.4 thousands and in health and social assistance 357.8 thousands.

Comparatively to the end of 2010, the effective of employees decreased by 59 thousand persons. Out of these, some 40% came from the pubic administration and 60%, in almost equal proportions, form education, respectively health and social assistance.

Also, declines in the effective of employees recorded in the pubic administration units can be found in the secondary activities developed by these entities: cultural, sport, and recreational activities, landscape design and services for buildings, agriculture, water supply, sanitation, waste management, de-contamination, constructions, transport and storage, production and supply of electrical and thermal energy, gases, hot water and air conditioning, lease and sub-lease of real estate goods etc.

As for the evolution of average monthly salary gains during the period 2009-2011, they were characterized, mainly, by declines from one month to another, excepting the months when annual and occasional premiums were granted, according to the national law, sums from other funds.

Following the application of legal provisions (Law No. 118/2010 regarding some measures for the recovery of budgetary equilibrium), of reduction by 25% of salary gains for the personnel in the budgetary sector, in trimester III 2010 the lowest values of the net average salary gain for the last years were recorded, that is: public administration 1,404 lei, education 1,063 lei and health and social assistance 1,036 lei.

In October 2010, in all the activities of the budget sector, salary gains were recorded, due to the payments of occasional premiums (including holiday wages), of sums from other funds (including the previous periods), of cumulating functions for teachers, also for payments of supplementary hours worked in some medical facilities. Also, the increase of salary gain was influenced by the firing of personnel with small wages from the sector.

However, compared to June 2010 (the month that preceded the application of Law No. 118/2010), the net average salary gains from October, were 18% – 21% below the level for June.

Compared to previous October, net average nominal salary gains form October 2010 was 24% lower in education, 22% lower in health and social assistance and 20% lower in public administration. In 2011, the salaries held at these levels, as we expect their block in 2012, or even their reduction, if the effects of the crisis will impose.

The effect of economic crisis was felt in the demand for labor force in the budgetary sector. In 2011 the lowest values of the vacant work places ratio was recorded, since 2095 until present, in public administration, respectively health and social assistance.

Compared to the previous year, in 2011, the vacant work places ratio decreased in health and social assistance (by 0.20 p.p.), public administration (by 0.11 p.p.), and in education it increased (by 0.12 p.p.).

The evolution of the vacant work places ratio was more accentuated in health and social assistance (by 2.53 p.p.), followed by public administration (0.67 p.p.), and for education the ratio kept unchanged.

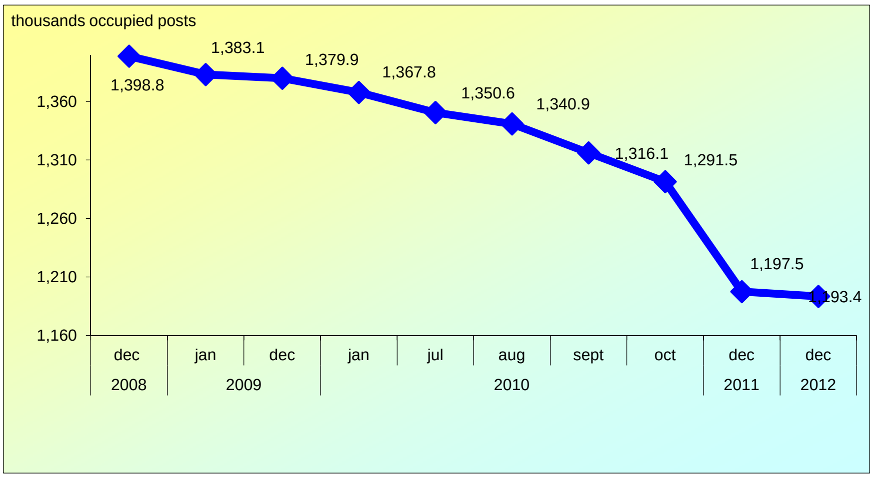
In 2011, little more that 10% of the total vacant work places were recorded in each of the activities: public administration (2.7 thousand vacant places), respectively health and social assistance (2.4 thousand vacant places), while in education the demand for work places was of some one thousand. Comparatively against the previous periods, in health and social assistance, the most significant decrease of number of vacant places recorded: by 7.8 thousand vacant places, representing more than two-thirds (67.5%) of the number of vacant places that diminished within a year in the whole economy, respectively with 0.8 thousand vacant places against the previous trimester.

In public administration, in 2010-2011, the number of vacant work places decreased by 0.7 thousand, and against 2009, by 2.2 thousand. In education, a slight increase of the demand for work places recorded, as against the previous year, following the start of the new school year. In 2010, the weight of employees in pubic administration, defense and social security in the public system was 7.8%, decreasing by 0.3 p.p. from 2009. At the level of EU, the indicator had the value of 8.4%. Among the European countries, the evolutions against 2010 are divergent: as the decrease trend is observed in 12 countries, increase in 12 while in three countries the weight of administration employees remained constant against the same period of the previous year. In 2011, with only 6.3% of the employees working in the field of health and social assistance, Romania was placing among the last four countries in Europe. Lower weights were recorded only in Cyprus (4.4%), Latvia (5.4%) and Bulgaria (5.6%).

Amongst the European countries, the highest weight was recorded in Denmark (20.2%). At the level of EU27, the value of the indicator was 11.2%. Against the previous year, in almost all European countries the increase trend can be observed; five countries make exception: Cyprus, Belgium, Sweden, Finland and Luxembourg. In Romania the increase was by +0.2 p.p.

Regarding the weight of the employees in education in total employees, the value recorded in 2010 was 6.3%. This value, even in slight increase (+0,3 p.p.) against the previous year, is the smallest in Europe. The highest values of the indicator were recorded in: Lithuania (12.5%), Sweden (12.0%), United Kingdom and Latvia (in both countries 11.8%) and the smallest (apart from Romania) in: Germany (6.6%), Bulgaria (6.8%).

The increasing trend against the same period of the previous year can be observed in almost all European countries (excepting four countries). The information corresponding to the financing form are managed by the Ministry if Finance, according to the provisions of OUG no. 48/2005, with subsequent completions and modifications. In the basis of this ordnance, the main credit orders for the pubic institutions financed from the state budget, social security budget, special funds budget and of the autonomous public institutions integrally financed from own revenues, submit, monthly, to the Ministry of Pubic Finances, for the previous month, situations regarding the monitor of the number of posts and personnel expenses, for their own apparatus and for public institutions in their subordination, co-ordination or authority, regardless the financing molde. The number of posts occupied in the budgetary sector, according to the MPF, was in December 2010 of 1,190.5 thousands, decreasing against the previous periods.



Source: National Institute of Statistics.

Figure 3. *Evolution of the number of occupied posts in the budgetary sector during the period December 2008 – December 2012*

Also, as an effect of OUG no. 48/2010 for the modification and completion of some normative in the health domain, for de-centralization, starting August 2010, some hospitals in the own network of the Ministry of Health passed to the sanitary network of the public administration authorities, effecting a transfer of occupied posts from central public administration to the local one.

A direct effect of the economic crisis, the phenomenon of decline for the number of employees was accentuated during the period 2009 – June 2012.

To be remarked the fact that the monthly data regarding the number of employees and net or gross average salary gains are aggregated on the homogenous activity of the units; it means that for the units that developed more activities (secondary) apart from the principal one, secondary activities are included, each one of them, to the economic activities according to proper CAEN Rev.2.

Unlike industry and services, activity sectors that recorded decreases of the number of employees in the last month of each quarter compared to the corresponding month of the previous quarter, in agriculture and constructions, slight increases occurred, due to the seasonal character of these activities. Until trimester II 2010, the most significant decreases in the number of employees occurred in the sectors with preponderant number at the level of national economy, that is, industry and commercial services. In September against June 2010, the effective of employees in social services, respectively commercial ones, known the greatest declines (by 29.0 thousand persons, respectively by 18.7 thousand persons). The decrease of the number of employees continued in 20111 – June 2012 also.

Comparative to January 2011, the effective of employees decreased in all activity sectors, exception some slight increases recorded in agriculture in March, June and September 2011.

In October 2011, as against the previous month, the decline trend of the number of employees continued in all sectors. Significant are the decreases of the effective of employees in the social services sector (-10.9 thousand persons), respectively commercial services (-9.3 thousand persons). These declines, have represented 68% of the total decrease of the number of employees compared to the previous months.

For an extended presentation of the infra-annual statistic indicators, they were estimated monthly, on property forms: public property includes the entities with full of partial state ownership; private property includes the entities with major private ownership, full private and integral foreign (co-operative and community entities were excluded) and the public ownership of national and local interest.

During 2011, the number of employees fell by some 214 thousand persons, mainly inside units with private property. Meanwhile, the private sector has, as number of employees, the major weight in economy, some 67. In the private sector, in 2011, the most accentuated decrease of the number of employees was recorded (-116 thousand persons).

In 2011, the decrease of the effective of employees had a slower rhythm compared to the previous year, but moved from the private sector towards the public one.. As number of employees, these units hold 25% of the total number of employees in economy. The decrease of the number of employees in the public administration entities, of local and national interest, in October 2011 against the beginning of the year represented 39% out of the total decrease.

Regarding the whole public sector (public property + public property of national and local interest), which holds some 31% of the number of employees, the decrease was by 31 thousand persons in October 2011 against January 2010.

The number of insurants includes the persons with full or part time contracts that are in the declaration regarding nominal situation of insurants provided by employers. The insurants who, during the month, had only unemployment support or compensating payments are not included, even if they are present in the nominal declaration received from employers. Only those insurants are included who had been declared with a number of worked days equal to the month's number of work days, which had not benefited from medical allowances. The age groups are calculated for the respective reference month.

To allocate on groups of gross salaries realized, the incomes were cumulated for the insurants with more contracts.

The number of insurants with contract suffered continuous decreases, both as total and as age groups. So, only during the period June-December 2011, the number of employees fell by 97 thousands.

Regarding the repartition of employees on age groups, along the entire analyzed period, the major weight is held by the employees within the 30 – 44 years group.

Under the aspect of employees' repartition on intervals of gross realized salary gains, in June 2008, those making gross gains less or at most equal to 600 lei represented 22% of total, while 66% made gross salary gains between 601 and

3000 lei. To be noted that in June 2008, the average gross salary per economy was 500 lei.

During the period June 2010 – June 2012, the weight of employees that realized gross gains below or equal to 730 lei grew, reaching some 21%. Meanwhile, the weight of employees that made gross salary gains between 731 and 3,000 lei went little over 75% of the total employees.

As for the weight of employees with gross gains realized above 8001 lei, it remains constant across the period analyzed and represented some 1.45%.

In 2012 the most vacant workplaces at 1000 unemployed BIM were in Netherlands. The evolution of unemployment entries was oscillating, recording a minimum point in November 2008 (51,242 persons) and a maximum in January 2012 (87, 314 persons).

The index of real salary gains follows closely the evolution of the index for the average net nominal salary gain, as it results from the chart that emphasizes the trends recorded in the last two years. The phenomenon is explained by the decrease of the inflation growth rate that is taken into consideration at the determination of the real salary gain.

During the year, fluctuations of the salary gain are recorded, mainly determined by the grant of occasional premiums (13^{th} salary, holiday premiums, premiums in March/April, or December, for religious feasts). They influence the increases of decreases depending on the period in which they are granted, leading, eventually, to the blur of the fluctuations of the monthly salary gain at the level of the entire year.

The salary gain, both in nominal and real terms, was lower in most months in 2011, compared to the previous month (exception - March, when premiums were granted for the Easter, leading to an increase of the nominal and real salary gains as against the previous month).

On activities of the national economy, the maximum values of the net average salary gain are in the financial brokerage (with percentage between 115-146% above economy average). At the opposite pole, with the lowest net average salary gain, are placed the hotels and restaurants activities (with percentage between 41% and 43% below economy average). To be noted that both sections hold similar percentage as numbers of employees at the level of the national economy (some 2-3% each).

In 2011, compared to the previous year, the net average salary gain had a slightly decreasing trend, for most economic activities (excepting those pertaining to the budgetary, hotels and restaurants, real estate transactions and shows, cultural and recreational sectors).

In 2011, the average net salary gain realized on various activities of the national economy has recorded, both increases and decreases, in almost equal measure. So, in the economic sector, slight increases were recorded, the greatest being in the activity of production and supply of electrical and thermal energy, gases, hot water and air conditioning (+1.8%). At the opposite pole, with the most significant decrease of the net average salary gain, was the extractive industry (-18.9%, because of the premiums granted for „oilers' day" in the previous month).

In the public property units (fully state-owned or state-owned majority), the average net salary gain has the highest values. The lowest average net salary gains are recorded in the privately-owned entities (privately-owned majority, fully private, fully foreign), that hold the majority weight of the number of employees (some 63%). Exception, since July 2010, following the application of the Law no. 118/2010, the lowest level of the average net salary gain was in the public entities of national and local interest.

The number of pensioners with pensions above 1,000 lei represented, at the analyzed moment, just the fifth part (21.1%) of the total social security pensioners.

The average number of social security pensioners had a descending quarterly evolution, from 2002 until 2012.

Table 1. *Average number and average monthly pension of pensioners and social support beneficiaries*

	years	Average number of pensioners - thousands-				Average pension Lei/month			
		Trim. I	Trim. II	Trim. III	Trim. IV	Trim. I	Trim. II	Trim. III	Trim. IV
Pensioners -total (I+II+III)*)	2011	5628	5597	5576	5555	739	754	758	760
	2012	5531	5520	5019	5003	766	784	793	8019
Social insurance pensioners - total Of which:	2011	5619	5588	5568	5547	740	755	758	761
	2012	5523	5514	5007	4997	767	783	798	8018
- state social insurance pensioners	2011	4759	4744	4739	4733	763	775	776	777
	2012	4720	4710	4635	4630	777	777	785	801

Source: National Institute of Statistics.

In quarter II 2012, the number of social security pensioners has followed an ascending trend, reaching 5,531 thousand persons.

As for the state social security pensioners, after being on a continuous ascending trend, since quarter II 2007 (4,641 thousand persons), since quarter III 2010, recorded a decrease, to 4,759 thousand persons, in 2011 and 4,720 thousand persons in quarter I, 2012.

In 2011, comparative to the corresponding quarter of the previous year, the social security pensioners had the possibility to spend averagely with only 26 lei (+3.6%) additional.

In 2012, the index of the real pension decreased as against the previous year (96.0% from 118.1%); subsequently, the purchasing power of the social security pension declined. In quarter I, 2012, the average pension was 766 lei/month.

In the analyzed period, some 3/4 of the total departments have recorded a greater number of pensioners compared to the employees. In the top of this group, there are Giurgiu and Teleorman where the report pensioners/employees was almost 2 (1.9) pensioners for one employee.

The Bucharest municipality was at the opposite pole, recording the lowest value of the report (0.6).

The departments in which the ratio is 1 to 1 represents a tenth from the total.

According to the provisional results of the Survey on Family Budgets realized by NIS in 2010, the average monthly total revenues for a household were 2,257 lei, a value relatively constant during 2007-2012. The structure of the money incomes of households reveals the same trend as the total revenues.

In 2011, the average total revenues for an urban household were by 32.3% higher.

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