

## THE NATURAL BALANCE OF POPULATION IN THE NORTH EASTERN DEVELOPMENT REGION DURING 1990-2008

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**Abstract:** During 1990-2008, in the North-Eastern Development Region, the natural population balance registered a regressive trend, due to particularities of the two demographic indicators: birth rate and overall mortality. Social and economic transformations that have occurred since 1990 were reflected in the demographics. Thus, the natural balance was in a downward curve. However, it should be noted that its rates have never been negative.

**Keywords:** *natural balance, birth rate, general mortality, marriage, age structure, migration.*

The natural evolution of the population depends on the complexity of political, economic and social factors that act with a certain intensity, depending on the time and context that are being analyzed.

### 1. The natural balance of population in the Romanian Development Regions

During 1990-2008, the natural population<sup>1</sup> balance of the Development Regions followed a general trend of declining, rates ranging from approx. 0-7 ‰ (in 1990) up to -4 ‰ and 0.5 ‰ (in 2008).

In 1990, the rates of the natural population balance in most of the Romanian Development Regions ranged between 0 and 4 ‰. An exception was the North-Eastern Region, which registered the highest rate of natural balance, 7.3 ‰, well above the national average of 3 ‰.

There was a general downward trend in the natural balance, even if during the analyzed period the rates suffered some fluctuations. Thus, between 1990-1996 and 2000-2003 there were reductions in rates, followed by their recovery (1997-2000 and 2003-2004) and a relative stagnation from 2004 to 2008. In 2008, the natural balance fluctuated between -5 ‰ and 0 ‰.

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<sup>1</sup> Calculated as a difference between the birth rate and the general mortality of the population.

Table 1 - The dynamics of the natural balance rates of the total population in the Romanian Development Regions during 1990-2008

Period	Development Regions								Romania
	North-East	South-East	South-Muntenia	South-West Oltenia	West	North-West	Center	București-Ilfov	
1990	7.3	3.9	1.3	1.7	0.1	3.1	3.3	0.1	3
1991	4.9	1.4	-0.4	0.3	-1.2	1.4	1.5	-2	1
1992	3.9	0.9	-1.4	-1.1	-2.6	-0.4	0.3	-3.3	-0.2
1993	3.3	0.3	-1.4	-1.1	-2.8	-1.2	-0.6	-3.7	-0.6
1994	2.9	-0.6	-1.7	-1.4	-2.9	-1.1	-0.6	-3.6	-0.8
1995	2.1	-0.8	-2.8	-2.4	-3.6	-1.7	-1.3	-4.2	-1.6
1996	0.9	-1.9	-3.9	-3.4	-4.2	-2.1	-1.7	-4.8	-2.5
1997	1.8	-1.3	-3.3	-3.2	-3.6	-2.1	-1.1	-4.4	-1.9
1998	2.5	-0.8	-2.9	-2.9	-3.3	-1.6	-0.8	-3.8	-1.5
1999	2.6	-0.8	-2.8	-2.9	-3.3	-1.6	-0.8	-3.6	-1.4
2000	2.5	-0.5	-2.3	-2.1	-2.9	-1.3	-0.1	-3.1	-0.9
2001	1.7	-1.5	-3.2	-3.2	-3.5	-2	-0.8	-3.4	-1.8
2002	0.6	-2.4	-4.4	-4.7	-4	-2.8	-1.8	-3.8	-2.7
2003	0	-2	-4.2	-4.2	-4	-2.4	-1.1	-3.1	-2.5
2004	0.8	-1.5	-3.6	-4.2	-3.6	-2.2	-0.8	-2	-1.9
2005	0.7	-1.5	-3.7	-4.5	-3.5	-1.7	-0.6	-1.8	-1.9
2006	0.8	-1.4	-3.6	-4.4	-3.4	-1.6	-0.7	-1.3	-1.8
2007	0.6	-1.6	-3.5	-4.2	-3	-1.5	-0.5	-1.2	-1.7
2008	0.5	-1.6	-3.4	-4.2	-2.6	-0.9	-0.1	-0.2	-1.5

Source: NIS, Bucharest

During 1990-2008, the natural balance of the population in the North-Eastern Region has registered a general downward trend, noting that rates have never been negative (from 7.3 ‰ to 0.5 ‰ in 1990). This further certifies a certain demographic vitality of the region, compared with other regions of the country. Positive natural balance is derived from a series of "demographic advantages" gained in time: maintaining higher rates of fertility and birth, as well as the structures by age groups with a still high share of young population (particularly in rural areas where a certain demographic, traditionalist behavior strengthened).

The downward trend of natural population balance has occurred against a complex of socio-economic factors, such as the repeal of the liberalization of abortion law (in response to the prohibition of the communist regime), the use of contraceptives, the degradation, over time, of the economic and financial situation, etc. Not to forget the social changes that marked the Romanian society aligning it to the specific concepts and values of the capitalist consumption societies. A key role was played by women's empowerment and the new status that they had in the society.

Demographically, this new perspective has resulted in fewer new-born and decreasing birth rates. Equally, access to information, the desire to have a successful career (by having a higher level of education) has had consequences

on female fertility and on the traditionalist demographic model based on marriage (young people delaying marriage more and more).

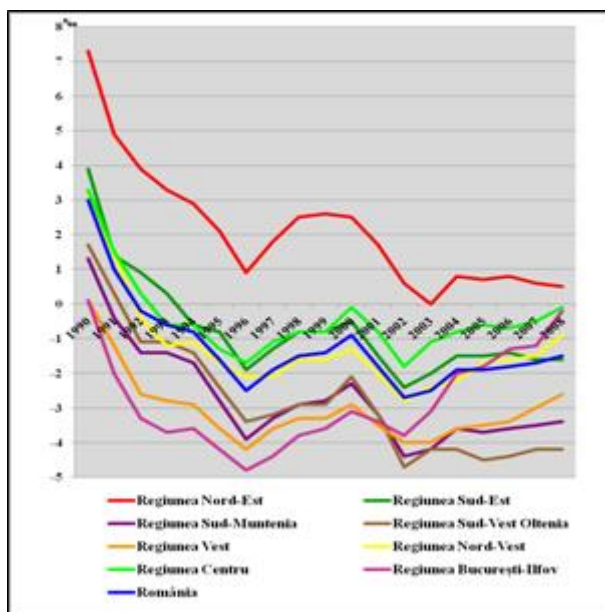


Figure 1- The dynamics of the natural balance rates of the total population in the Romanian Development Regions during 1990-2008

## 2. The natural balance of population in the counties of the North-Eastern Development Region

The general downward trend of the natural balance has been reported in all the counties of the North-Eastern Region. In 1990, rates varied between 8.5 ‰ (8.2 ‰ maximum being recorded in Iasi county) and in 2008, they varied between -1 ‰ and 3 ‰. It should be noted that in all counties of the North-Eastern Region, the natural balance rates were higher than the national average throughout the analyzed period. Thus, Romania's natural balance rate of was 3 ‰ in 1990 and in 2008 it dropped to -1.5 ‰.

The natural balance fluctuations can be correlated with the demographic and socio-economic factors that have acted simultaneously. We also need to mention the reported changes in the field of internal migrations of the population. There was a return of the population to the rural area, which started in 1992, amid economic instability and difficulties in the labor market.

The most obvious change in the migration flow was in 1997, the winner being the rural area. It's practically a return of the population who left the rural area before 1989. In terms of demographics, natal behavior, specific to the rural

population, has made its mark, so the period between 1997 and 2000 was a turnaround of the population's natural balance.

Table 2 - The dynamics of the natural balance rates of the total population in the counties of the North-Eastern Development Region during 1990-2008

Period	Counties						North-Eastern Region	Romania
	Bacău	Botoșani	Iași	Neamț	Suceava	Vaslui		
1990	7.7	5.7	8.2	6.2	7.3	7.7	7.3	3
1991	5.5	2.9	5.7	4.3	5.4	4.8	4.9	1
1992	4.5	1.7	4.3	3.2	4.9	4.1	3.9	-0.2
1993	3.3	1.3	3.9	2.9	4.2	3.5	3.3	-0.6
1994	3.3	1	3.3	2.2	3.9	2.7	2.9	-0.8
1995	2.2	0.4	3	1.4	2.8	2.2	2.1	-1.6
1996	1.2	-1.7	1.5	0.1	2.3	0.5	0.9	-2.5
1997	1.8	0	2.6	0.5	2.8	2.1	1.8	-1.9
1998	2.3	0.4	3.9	1.3	2.8	3.4	2.5	-1.5
1999	1.9	1.5	3.9	1	3.2	3.5	2.6	-1.4
2000	1.8	1.1	4.1	1.1	3.2	3.6	2.5	-0.9
2001	0.8	0.7	3.3	-0.2	2.5	2.2	1.7	-1.8
2002	-0.5	-0.1	2.5	-1.5	1.4	0.9	0.6	-2.7
2003	-0.9	-0.5	1.6	-1.7	1	-0.2	0	-2.5
2004	-0.1	-1.1	2.5	-0.6	1.7	0.9	0.8	-1.9
2005	-0.4	-0.8	2.5	-0.8	1.7	0.9	0.7	-1.9
2006	0.4	-1.4	2.7	-0.6	1.4	1.1	0.8	-1.8
2007	-0.1	-2.1	2.9	-1	1.2	0.8	0.6	-1.7
2008	-0.4	-1.1	2.9	-1.4	1.7	-0.1	0.5	-1.5

Source: NIS, Bucharest

A further reduction in rates of natural balance occurred between 2001 and 2003. It came with a background of increasing mortality rates as a result of the aging population. At the end of the period (2004 -2008), there was a recovery trend in the context of incentive legislation relating to maternity leave and parental allowance (Emergency Ordinance no. 23/10.04.2003). Thus, since 2004, the value of the monthly allowance was 800 Ron and it lasted for two years. The effect of the adopted measures was visible in the recovery of the natural balance. This can be explained by the fact that, since 2006, the generation born in 1990 aged 15 years, entered the fertile segment of the population.

One of the most spectacular developments in the natural balance was recorded in Botosani County. Thus, during 1990-1996, there has been a collapse of this index, the rates decreasing from 5.7 ‰ in 1990 to -1.7 ‰ in 1996. This sharp decrease was associated to the development of the demographic indicators (birth and mortality), but also to the economic ones. Considering the background of economic instability after 1989, birth and mortality rates have evolved differently. In that period, the birth rate fell from 16.7 ‰ to 12.6 ‰, while overall mortality increased from 11 ‰ to 14.3 ‰. These developments were caused by difficulties occurring in the economy, particularly in the industrial sector which

absorbed most of the working population. The mal-function of the industrial units, combined with the lack of investment and the cessation of subsidies offered by the state generated the phenomena of unemployment and poverty. Demographically, socio-economic instability has led to a decrease in the natural balance, recording negative values.

Iasi County followed the same "saw tooth" general trend of development of natural balance. However, the rates were always positive, the provided economic opportunities being more varied than in other districts. First of all, the city of Iasi had the most important role. This city with a big university attracted young people that could insert easier in the labor market than in other counties and that settled in the county, helping to maintain a positive natural balance. Also, medical infrastructure and a system of health insurance controlled, to a certain extent, mortality rates stabilizing them at medium values. Other factors that contributed to maintaining the positive rates of the natural balance were of educational, religious and ethnical order (several locations in Iasi registering Roma population, with a profound natal behavior, doubled by the lack of education).

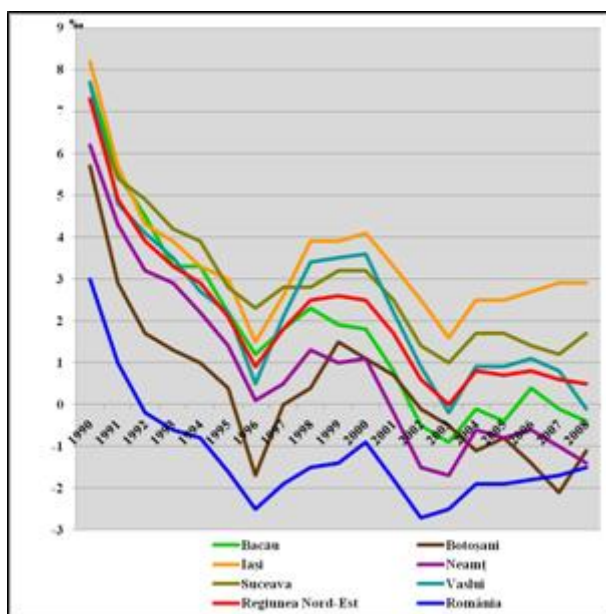


Figure 2 - The dynamics of the natural balance rates of the total population in the North-Eastern Development Region during 1990-2008

### 3. The natural balance of population in the urban area of the North-Eastern Development Region

The natural balance of the population has registered differentiated developments if we consider residential areas. During 1990-2008, the general natural balance of the urban areas of the North-Eastern Development Region, and of all its counties, dropped from 6 - 13 ‰ (in 1990) to 0.5-4 ‰ (in 2008). However, the rates were higher than the national average. The evolution of the natural balance has been marked by periods of rate decrease (1990-1996 and 2001-2003) or recovery (1997-2000 and 2004 -2008).

The decrease of the natural balance rate in the period 1990-1996 was driven by changes in the dynamics of internal migration flows of the population, by areas. Internal migration flows between urban and rural areas have experienced fundamental restructuring during the years of economic and social<sup>2</sup> transition.

Table 3. The dynamics of the natural balance rates of the population in the urban area of the North-Eastern Development Region's counties during 1990- 2008

Period	Counties						North Eastern Region	Romania
	Bacău	Botoșani	Iași	Neamț	Suceava	Vaslui		
1990	9	12.3	6.7	7.8	9.3	9.6	8.7	4.7
1991	6.7	9.2	3.9	5.2	6.5	6.1	6	2.8
1992	4.9	7.6	3	3.8	5.2	5.4	4.7	1.5
1993	3.6	6.5	2.4	3.2	4.4	4.5	3.8	0.8
1994	3.5	5.8	2	2.3	3.6	3.6	3.3	0.5
1995	2.8	4.8	1.6	1.8	2.3	3.1	2.6	-0.2
1996	1.8	3	0.8	0.9	2	2.3	1.6	-0.7
1997	2.1	3.9	1.5	1.1	2	3	2.1	-0.5
1998	2.5	4.3	2.3	1.8	2.2	3.8	2.7	-0.2
1999	1.9	4.1	2.1	1.8	2.4	3.8	2.5	-0.2
2000	1.9	3.8	2.1	1.2	2.4	3.7	2.3	0
2001	0.8	3.2	1.5	0.1	1.6	2.2	1.5	-0.6
2002	0	2.9	1.1	-0.5	0.7	1.8	0.9	-1.3
2003	-0.1	2.8	1.2	-0.2	0.8	1.7	0.9	-1
2004	0.6	2.1	2.6	0.6	2.6	3.2	1.9	-0.2
2005	1.3	2.8	3.1	1.8	2.6	3.5	2.5	0
2006	2	2.1	3.5	1.4	3.3	3.4	2.7	0.3
2007	1.6	1.5	3.3	1.2	2.5	3.2	2.3	0.1
2008	1.7	2.7	3.9	0.7	3	2.7	2.6	0.6

Source: NIS, Bucharest

<sup>2</sup> Ghețău, V (2007) - *Declinul demografic și viitorul populației României. O perspectivă din anul 2007 asupra populației României secolului 21*, Edit. ALPHA MDN, p. 36

Thus, since 1992, there has been a decline of rural population's migration to the urban areas. This was caused by economic disruptions, particularly in the industrial sector that attracted most of the rural labor force in the communist era. At the same time, the difficulties of the transition to a new economic system, on the market, doubled by the flexibility of the country's borders, led to a dynamic in the external migration flows. They have trained young people in particular. The effects were felt by lower rates of female fertility, birth, marriage and a change in the population's structure by age groups. Industry restructuring, unemployment, low living standards have resulted in lower rates of demographic indicators mentioned above and increased divorce rates and general mortality. In this context, the natural balance has recorded notable decreases. In this respect, the best example was Botoșani County, the rates decreasing dramatically from 12.3 ‰ (1990) to only 3 ‰ (2008). The natural balance recovery, which began in 2004, is linked to the economic measures to boost birth rates, adopted in 2003, that support the family. The 2003 ordinance on maternity leave and child allowance had the effect of increasing the number of births in the segment of working women, predominantly in the urban area. Thus, since 2004 the birth rate was higher in the urban area than in the rural area. This was doubled by a decrease in mortality due to a more efficient functioning of the medical system. The evolution of the two demographic indicators showed a recovery of the natural balance rate.

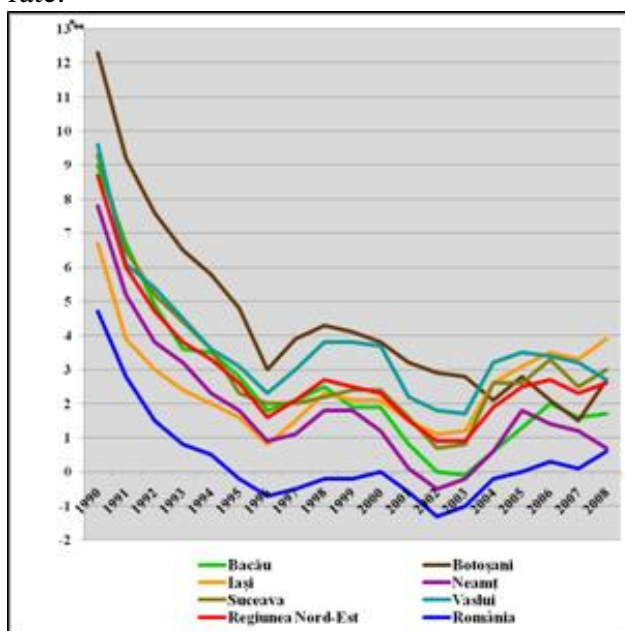


Figure 3 The dynamics of the natural balance rates of the population in the urban area of the North-Eastern Development Region's counties during 1990- 2008

#### 4. The natural balance of population in the rural area of the North-Eastern Development Region

In rural areas, overall rates fell from 2 - 9.5 ‰ (in 1990) to -4 ‰ up to 2 ‰ (in 2008). The Natural Balance has made an initial decrease during the period 1990-1996, with a sharp drop-down between 1990 and 1992, on account of losses suffered by the rural population because of the migration phenomenon. During 1990-1991, rural-urban migration intensified as a result of the removal of the law that didn't allow people to settle down in the big cities, perceived as closed cities.

Table 4 - The dynamics of the natural balance rates of the population in the rural area of the North-Eastern Development Region's counties during 1990-2008

Period	Counties						North East Region	Romania
	Bacău	Botoșani	Iași	Neamț	Suceava	Vaslui		
1990	6.6	2	9.5	5.3	6.2	6.6	6.2	0.9
1991	4.4	-0.8	7.3	3.8	4.8	4	4.2	-1
1992	4	-1.7	5.5	2.7	4.7	3.1	3.3	-1.9
1993	3	-1.9	5.4	2.7	4.1	2.7	2.9	-2.2
1994	3	-2	4.6	2.1	4	2	2.6	-2.4
1995	1.7	-2.4	4.4	1.1	3.2	1.6	1.9	-3.1
1996	0.5	-4.8	2.3	-0.5	2.6	-0.8	0.2	-4.5
1997	1.4	-2.5	3.8	0	3.1	1.5	1.5	-3.5
1998	2.2	-2.3	5.5	1	3	3.1	2.3	-2.9
1999	2	-0.3	5.4	0.4	3.6	3.2	2.6	-2.8
2000	1.7	-0.8	6.1	1	3.6	3.4	2.8	-2.1
2001	0.8	-0.8	5	-0.4	2.9	2.2	1.8	-3.1
2002	-1	-2	3.5	-2.1	1.6	0.3	0.3	-4.3
2003	-1.5	-2.5	1.8	-2.5	1.1	-1.4	-0.6	-4.2
2004	-0.7	-3.3	2.5	-1.2	1	-0.8	-0.2	-4
2005	-1.8	-3.4	2.1	-2.4	0.9	-1	-0.7	-4.3
2006	-1	-3.9	2.1	-1.9	-0.1	-0.6	-0.7	-4.3
2007	-1.7	-4.8	2.6	-2.4	0.3	-1	-0.8	-4
2008	-2.1	-3.8	1.9	-2.8	0.7	-2.1	-1.1	-3.9

Source: NIS, Bucharest

The downward trend continued until 1996, but the parameters are considerably reduced, as a consequence of the gradual reduction of rural-urban flow. This was, however, counterbalanced by another stream of migration, an external one, which influenced young people in particular. If up until 1989, rural population's evolution happened inside a virtually closed segment of the population, without external migration, after that (with the change of the political system) we are dealing with an open-evolution, where rural population dynamics at a national or territorial level is influenced not only by the natural movement



and internal migration, but also by emigration<sup>3</sup>. The downward trend of the rural population was accompanied by another demographic phenomenon, the aging of the residents of the villages.

The period of recovery began in 1997, revealing a new type of migration, return migration, which marked the return to the rural area of those who have left the countryside during industrialization. Behind this revival there were, primarily, the economic reasons: lower living standards, industrial restructuring, a high incidence of unemployment, difficulties in maintaining an apartment, housing costs were much higher than in the rural areas. The return to the rural areas has also been encouraged by the land reform. The adoption of the Land Law no. 18 of 1991 has resulted in the restitution of the land collectivized during the communist era to its owners.

The natural recovery (1997-2000) was followed by another decline in rates (2001-2003), as a result of decreasing female fertility, birth, marriage, due to the aging population. At the same time, there were the external migration flows, people were looking for a job abroad, which meant another demographic loss.

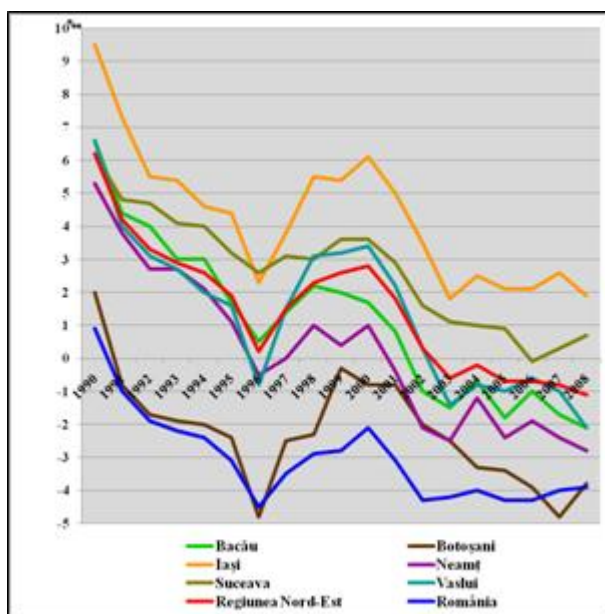


Figure 4 The dynamics of the natural balance rates of the population in the rural area of the North-Eastern Development Region's counties during 1990-2008

<sup>3</sup> Căndea, Melinda, Bran, Florina (2001) - *Spațiul geografic românesc. Organizare. Amenajare. Dezvoltare*, Edit. Economică, București p. 144

The end of the analyzed period has showed another recovery in the natural balance, due primarily to economic measures that stimulated birth rate, which were molded on a rural demographic behavior, a more traditionalist one. Recovery was not that obvious, being marked by high rates of mortality of the population, recorded on a background of poverty and precariousness of the health system. One example was Botosani County, whose rate of natural balance decreased from -2.5 ‰ (2003) to - 4.8 ‰ (2007). Moreover, the county registered the lowest rate, during the whole recorded period, below the North-Eastern Region's average and quite close to the national one.

### **5. The natural balance spatial distribution of the population in the North-Eastern Region during the census of 2002**

During the census of 2002, analysis of the natural balance spatial distribution of the population in the North-Eastern Region, at an administrative unit level, revealed interesting situations. These were determined by the particularities of the demographic indicators that affect the natural balance: birth and death rates, fertility, marriage, divorce, etc. Rates varied between -15.6 ‰ and 18.7 ‰.

Negative rates, ranging between - 16 ‰ and - 12 ‰ have been recorded in 8 administrative units of the region (1.6%). They formed two distinct areas located in the central and east-southeastern part of the region. The first complex included the northern part of Suceava Plateau, the Subcarpathian depression of Cracau-Bistrita, Siret Basin, Tutovei Hills. The east-southeastern area was situated in the Central Moldavian Plateau, Fălciu Hills and Elanului depression. The largest deficit was registered in a village from Vaslui County, called Vutcani (-15.6 ‰), due to high rates of mortality (29.2 ‰), population's structure by age groups showing a high percentage of people of 60 years and older.

Negative rates of natural balance between -12 ‰ and -8 ‰ have characterized a number of 27 administrative units (5.5%), while rates ranging between -8 ‰ and -4 ‰ were reported in 81 administrative units (16.4%). A first area was highlighted in the central part of the North-Eastern Region: Suceava Plateau, the Subcarpathian depression of Neamt and Cracău-Bistrița, Siret Basin and Tutovei Hills. The second complex included the eastern part of the region, namely physical and geographical units from the Moldavian Plain, Central Moldavian Plateau, Fălciu Hills and Prut alluvial plain. Isolated parts from the west of the region joined these areas, particularly the mountain area (Bukovina Mountain Chain, Suhard, Tarcău, Ciuc Mountains etc.).

A total of 149 administrative units (30.1%) registered negative rates, ranging between - 4 ‰ and 0 ‰. They have formed three compact areas: western, central and eastern. The western area was outlined in the mountain area

of the North-Eastern Region. The central area overlapped Suceava Plateau, Moldavian Plain, Tutovei Hills. The eastern area included the physical and geographical units of the Moldavian Plain, Central Moldavian Plateau and Fălciu Hills.

Positive rates between 0 ‰ and 4 ‰ were reported in 140 administrative units in the Region (28.3%). They have experienced a diffuse territorial distribution, with some tendency to concentrate in the central and eastern parts of the Region: Suceava Plateau, Moldavian Hills, Siret Basin, Moldavian Plain, Tutovei Hills, Fălciu Hills. Isolated parts from the west of the region were also noticed, particularly the mountain area (Bukovina Mountain Chain, Ceahlău, Bistrita, Nemira Mountains).

A total of 59 administrative units (11.9%) registered rates fluctuating between 4 ‰ and 8 ‰. These administrative units formed distinct areas in the north-central and central part of the Region (Suceava Plateau, Tazlău-Casin Subcarpathian Depression) and in the eastern part (Moldavian Plain, North Central Moldavian Plateau). Isolated, parts of the West Region were added: Dorna Basin, Hasmas Mountains.

Rates between 8 ‰ and 12 ‰ have characterized 22 administrative units totaling 4.4% of the North-Eastern Region. They formed two areas in the Region: a central one (overlapping Suceava Plateau, Great Hill- Harlau and Barlad Plateau) and an eastern one (Moldavian Plain and the northern part of the Moldavian Central Plateau).

The natural balance of the population registered rates between 12 ‰ and 16 ‰ in 5 administrative units of the Region (1%), dispersed, especially in the central part: Suceava Plateau and Tutovei Hills.

The highest rates of the natural balance, oscillating between 16 ‰ and 20 ‰ were reported in four administrative units (0.8%): Lungani (17.3 ‰) in the Moldavian Plain, Mironeasa (18.5 ‰) and Mădârjac (18.7 ‰) in the northern part of the Central Moldavian Plateau, this last one representing the maximum for 2002. High rates were also registered in Dragomirești (17.5 ‰), where the Central Moldavian Plateau and Tutovei Hills meet. These high rates of natural balance occurred on a background of distinct evolution of birth and death rates: high rates for the first demographic indicator and low rates for the second one. High birth rates could be connected with a series of socio-economic factors, such as ethnicity (high percentage of Roma population in Mironeasa and Lungani), religion (in Dragomirești, a good portion of the population is Pentecostal, Old Style Christian or Adventist), mentality, standard of living, household income, etc.

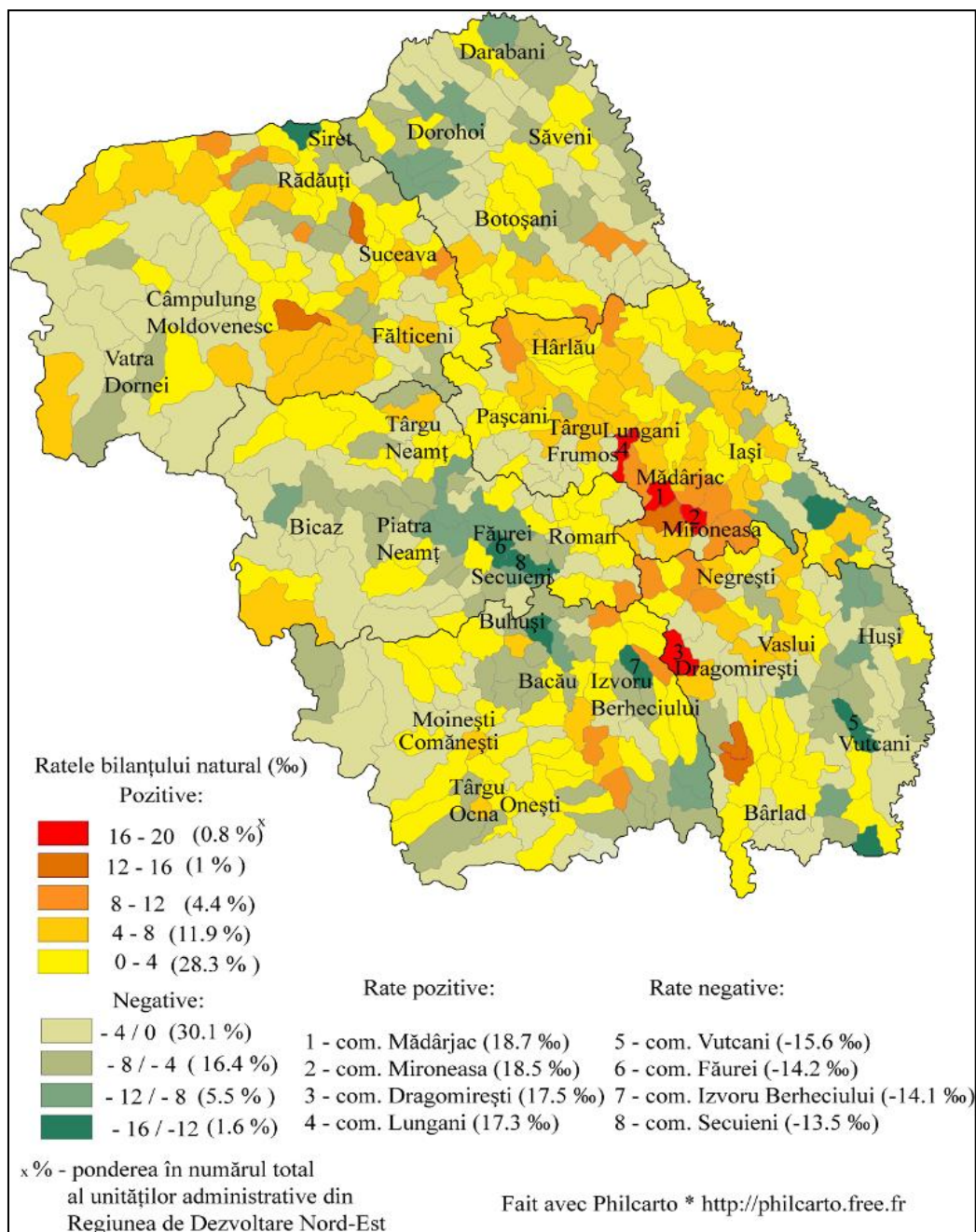


Figure 5- Spatial distribution of the natural balance of the North-Eastern Region's population in 2002

## Conclusions

During the recorded period, (1990-2008), the natural balance of the population in the North-Eastern Development Region was situated on a downward trend. This path has been ordered by a number of social factors (level of education and training, employment status) and economic factors (low income, insufficient job offers, economic development, etc.), with a great number of demographic consequences (low birth rates, alarming growth of death rates, increasing migration abroad).

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