



Geodemographical Disparities in Romania in the Light of the Evolution of the Rural Population

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Territorial differences in birth rate

After 1989, the legalization of abortion and the introduction of new and efficient ways of family planning have led to a drastic decrease of the birth rate. This tendency was emphasized even more by the economic instability. Therefore, in the last decade, we can observe a decrease in the number of children of a family and that the mother's age at the birth of the first child is constantly rising. This change is identical to the one that occurred decades ago in the Western and Northern European countries, where it became more and more common to have children at an older age. Overall, the effects of the post '89 period have led to the underlining of the demographic crisis accelerating even more the decrease of the population.

From the statistical data we can observe that in 1990 the number of newborns was relatively high (314746), but from this year on a larger and larger decrease in birth rate became evident, reaching even alarming numbers because, until the end of the year 2003, the deficit reaches 100 000, the number of newborns being around 200 000 in the entire country and of about 110 000 in the rural areas (decreasing from 14.3‰ to 11‰).

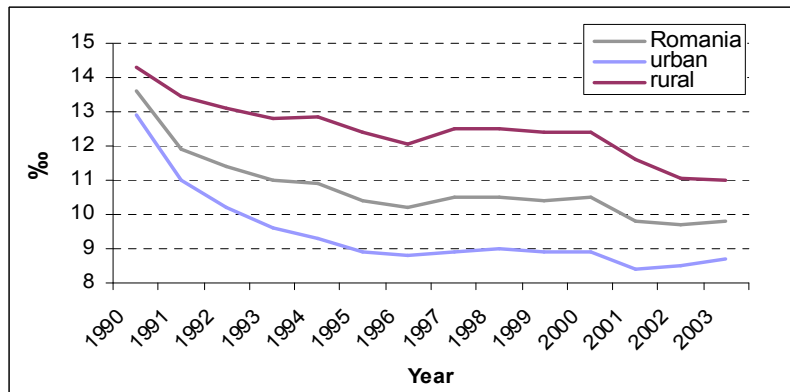


Figure 1. The evolution of the birth rate in different types of settlements from 1990 to 2003.

This negative wave reached its low point around 1990 and 1991 and the decrease between these two years is at least as much as in the following 10 years all together. The stabilization or even a slight growth of birth rate can be

seen only after the year 2003, and, considering the demographic and economic phenomena the question still remains: is this only temporary or it can be considered the beginning of a period of real growth?

If we consider the fact that the average value of the decrease is of 32.7%, in the rural space this decrease is a little more moderate (29.3%), but with considerable territorial differences. The strongest decrease can be found in the less developed, strongly built regions, where the main cause of this birth deficiency was the policy on migration during the communist regime, because young people had moved to urban areas leaving behind an older, ever decreasing rural population (Teleorman, Olt, Vâlcea).

The other cause of decrease in birth rate could be linked to the changing economic conditions, when, as a consequence of deindustrialization and structural changes, more and more people had moved back to their original place of residences (place of birth) or, hoping of better living conditions, they emigrated abroad (Maramureş, Alba, Hunedoara). Now let us look at how the numbers regarding the birth numbers evolved after the early nineties.

In the early '90s in the rural settlements the birthrate was around 14‰, but in the following two years, we are the witnesses of a dramatic decrease. The cause of this is on one hand the new political system, new reforms, and on the other hand, there is the tidal wave like emigration amongst the younger, fertile aged female population. This chaotic effect of the first two years seems to be slowing down during the following years, due to the less intense decrease in the number of newborns. The lowest values regarding the birth ratio in rural areas during the last decade of the 20th century were registered in 1996 (12,1‰), which happened as a direct consequence of the above-mentioned factors' aggregated effect. Although until the year 2000, the values of birthrate showed signs of stagnation, at the beginning of the century we registered the lowest values ever (in 2003, the rate of birth was around 11‰). The effect of migration on this level would be minor, in time, the main cause being the shift between marriages and birth giving. This process takes place differently in various counties and within these, in the different areas; however, I would like to reflect on some ostentatious cases and the general trend.

According to the general tendency on one hand we can see that in the regions with higher birthrates the decrease became stable at a lower level (mostly in the rural settlements of the North-Eastern Region - Botoşani, Iaşi, Suceava) than in the Southern Region, where alongside the lower indices we can notice an even stronger decrease (Teleorman -42,7%, Vâlcea -47,3%, Olt -39,2%). As it can be seen, this process further increases the inequalities amongst the rural population. Although after 2003, the stabilization or even a slight growth of birthrate in some areas gives reason for hope, it is still uncertain, if this positive change is due to the new dispositions regarding child care allowance, or if it is due to the positive effect of the directional change in the internal migration, on the younger rural population's willingness towards marriage and having children.

Therefore, the analysis of birth numbers on different types of settlements is also important because this greatly influences the evolution of the educational system.

The territorial disparities regarding death rate

The death rate had a significant role in the decrease of the Romanian rural population. Beside the low rate of fertility, the country has an ostentatiously high death rate which is the main factor influencing the decrease of the population. Death rate also indicates the health condition of the population as well as the country's sanitary system. The nutritional habits inherited from earlier decades, which are neither healthy, nor enough (that derive from different customs and lifestyles), the stress induced by the transition period, the incapacity to prevent the spreading of diseases and last but not least, the increased pollution, all contributed more or less to the constant growth of death rate over the last years. Whilst in 1990 the deaths per 1000 were around 13,9 (12,3‰ at a national level), in 2003 this value grew up to 15,2‰, which means a growth of 9%. This growth was continuous until 1996, when it reached its peak of 16,6‰, and although we witnessed a slight decrease, this is far from being significant, because after 2001 the value started increasing in most of the regions. The 1997–2000's decrease in death rate has had no effect over the situation whatsoever, because the Romanian death rate still towers above other European countries.

Considerable differences arise between the death rate of both men and women. If we search for the causes of the death rate, we unequivocally find the social reasons. The main reason for this surplus in death rate is the change in the age-profile, because the living conditions declined in certain age-brackets over the last years. Before I started analyzing the evolution of the death rate I consider that is important to study two other important phenomena: life expectancy at birth and the repartition of the population according to age-brackets.

Death rate is best characterized by the life expectancy at birth. This index at the beginning of the nineties was approximately 69,56 years at a national level; 68,7 years amongst the rural population. In 2000 this marginal value was overstepped, so it is somehow reassuring that nowadays it would be around 70,08 years, even if it is still well below the nationwide level (71.01). This was mainly due to the decrease in the death rate of the elderly population, but also amongst younger people. Like before, in this case we can also spot significant differences not only between the different regions, but also between genders. Women's life expectancy at birth

exceeds that of the male population with around six years in general. In 1990 men's average life expectancy was of 65,7 years while the women's was of 71,8 years; in 1995 this difference grew to almost 7 years (men: 64,7 and women 72,6). We witness an interesting change in the late nineties. Men's life expectancy got better with one year, while the women's got better with over two years that further enhances the already large disparity between the genders. This difference is mainly caused by the different lifestyles, namely the effect of alcohol and smoking in every day's activities of the male population.

The better living conditions of city dwellers is also indicated by the fact that people living in urban areas are expected to live almost two more years, that is to say women and men living in cities usually live 2,2 respectively 1,31 years longer, than those who live in the rural areas.

At a regional level, life expectancy is highest in the Ilfov area surrounding Bucharest, as well as in some rural areas of the Central Region (Covasna 71,43 years, Harghita 70,83 years, Braşov 71,35 years) – more than one year above average – plus a few counties from the Southern Region (Argeş and Dâmboviţa counties with an average of 70,8 years) and Vâlcea County from the South East Region. Life expectancy has its lowest values in the rural areas of the North-West and South-East regions: Satu Mare (66,61 years) and Constanta (67,57 years).

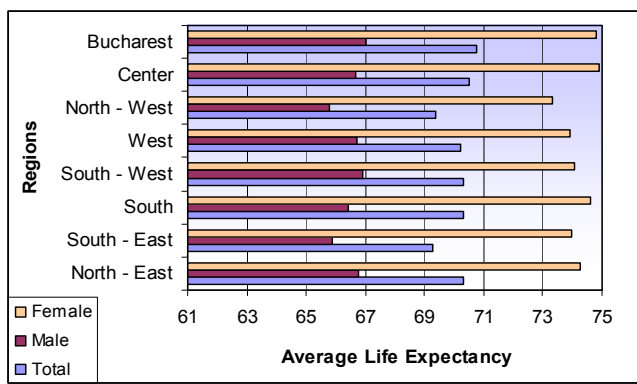


Figure 2. The evolution of the average life expectancy in rural areas of the regions in 2003.

The consequence of the growth of life expectancy, besides temporarily decelerating the decrease of the population, is the modification of the age profile, it increases the proportion of elderly people and eventually, in time, it influences the development of the death rate. It is a fact, that in Romania (such as in other European countries) the demographic ageing is a generalized trend with a slow and steady growth.

Because of the decrease in birth numbers, the rate of the population under 15 is also shrinking, of only 0,9% in the new millennium only, going from 19,7% to 18,8% in less than 15 years. In numbers, the grownup population decreased, as well, however, expressed in percentage, their rate grew with 1,4%. A significant increase can be seen in the rate of the population over 60 years old, also (from 23,4% in 1994 to 23,9% in 2002). Thus, for the first time in the last four decades, the population over 60 exceeded that of those below 15 both proportionally and in numbers.

Year	0-14 years		15-59 years		Over 60 years	
	Numbers	(%)	Numbers	(%)	Numbers	(%)
2000	2.012.187	19,7	5.700.851	55,9	2.477.569	23,4
2001	1.993.228	19,6	5.704.180	56,1	2.467.237	24,3
2002	1.952.195	19,2	5.785.920	56,8	2.448.043	24,0
2003	1.901.343	18,8	5.807.666	57,3	2.424.390	23,9

Table 1. The repartition of the rural population by age brackets between 1990 and 2003.

The analysis of the old age index obviously suggests a

demographic aging: this index had the value of 664 in 1990, i.e. 664 elderly people per 1000 children under 15, by 2000 it exceeded the marginal value of 1000 and by the year 2003 it reached a staggering 1149. In my opinion, it is substantial to analyze the data referring to the rural population in comparison with the data from the urban areas because there are important differences between the two of them. Whilst in 2003 in cities this index was a mere 1011, in rural areas it was already 1275. This largely relates to the emigration as well, because, although a few decades ago Romania was considered a „young” country compared to other Eastern European countries, beginning with the early nineties demographic aging grew stronger and stronger. As it can be seen, this process is stronger in the rural settlements, because the emigration process is more common amongst the younger population which has a direct effect on the decrease of births.

As we have seen, the growing life expectancy at birth, which also had an effect on the evolution of the age brackets and the decrease in birth numbers, the gradual ageing of the population, both can be held responsible for the growth of the death rate. However, the future

evolution of the death rate is uncertain, as the living conditions are constantly improving. As a consequence, in 2000, the numbers of death rate were 20.000 less (30.000 at a national level) than those of 1996, the year with the highest number of deaths. In this period the death rate fell back from 16,6‰ to 14,5‰ in the rural settlements and from 12,7‰ to 11,4‰ in the entire country. Even so, the fact that remains is of the sanitary condition of the population, and especially the rural one is still critical. This is the only way to define the current situation, which is also supported by the fact that, in Romania, beginning with the year 2000, the death rate once again starts showing signs of increase, since in 2002 it already grew to 15,4‰, a slight decrease being registered only after 2003.

In the rural areas the higher death rate is unquestionably related to the poor living conditions, the state of the sanitary system and it also sheds light on the county's social and economic development. Thus it is not surprising that the highest death rate can be found in Teleorman (21,7‰), Giurgiu (19,9‰) and Dolj (19,7‰) counties.

It is also very important to speak about another index, the infant death rate, which not only influences the evolution of the death rate, but it is also a value very much related to the state of the sanitary system and the extent of civilization. Apart from other demographic processes, the level of education and different cultural and psychological factors also influence the infant mortality. Thus, defining a country or a region's state of development is not simply based on social and economic factors, because the infant mortality, together with the life expectancy at birth are two of those indices, which are directly related to the country's level of civilization, culture and living conditions. In relation with the infant mortality, we must point out the fact, that this is the only index where the trend constantly decreased over the last three decades; moreover, after 1990 it has significantly improved, but as compared to other European countries, it still has pretty high values

At a national level the number of deaths referred to 1000 newborns was of 26,9 in 1990, it was of 29,7 in rural areas; this decreased to 19,4‰ in 2002 (17,3‰ in the entire country), which in ten years' time, compared to the living conditions at the moment, is a fairly good result. The problems, as in previous cases, also occur in rural areas, especially amongst the rural population of the South-East (Constanța 33,5‰ – highest value in the whole country), South (Călărași 27,1‰, Ialomița 24,3‰) and North East (Vaslui 25,8‰, Bacău 24,9‰, Iași 23,3‰ Botoșani 22,6‰) regions. At the same time, these territories represent a group of problematic regions where an increased intervention and developing would be required. The above changes are also illustrated in the map below.

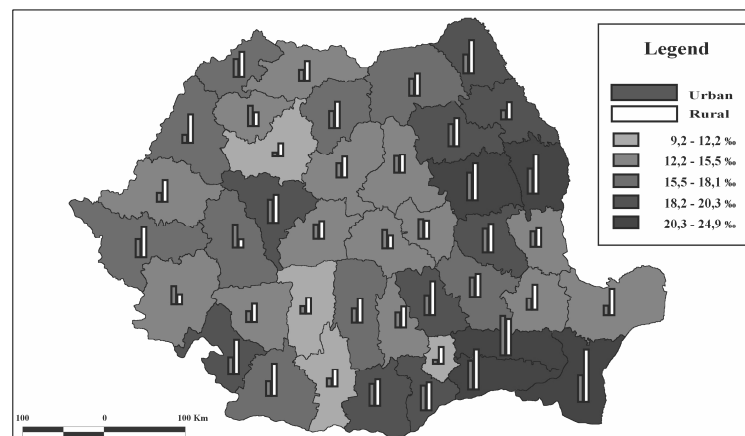


Figure 3. The evolution of infant mortality in rural and urban areas in 2003.

The lowest values of infant mortality can mostly be found in the rural settlements of the Transylvanian counties: Hunedoara 9,3‰, Caraș-Severin 11,3‰, Cluj 12,4‰. Separately analyzing this index, the differences are clearly visible between Transylvania, looking back to centuries of a higher state of development and Moldova, Oltenia, Muntenia.

The change of rural population in the light of natural increase

The 1989, the revolution triggered a fast and radical change in the social, economic and political life of the Romanian society. The orientation towards a market economy generated a double recession, both on an economic and on a social level, bringing on a quick decrease in the population's living conditions. As a consequence of the low fertility and high death rate mentioned before, the potential decrease of the population changed into a real decrease after

1992. According to the last census, the deficit between deaths and births was of 40.000 and the aggregated natural decrease in the last 10 years reached approximately the value of 200.000.

The map below pictures the changes occurred in the 1990-2003 period regarding the natural increase of the population. Whilst most of the country could be characterized by a natural decrease, we can clearly set apart some rural areas that in a 13 years period the analysis refers to, present a slight increase. These can be found mainly in the counties of Moldova, where the “highest” increase we find in Iași (9,4‰), Suceava (4,4‰), Vaslui (3,4‰), Bacău (3,1‰) and Neamț (2,0‰). In other rural regions of Moldova the scales still lean in the positive direction, even if the values are much lower, for a period of ten years after the revolution, considered to be the transition period.

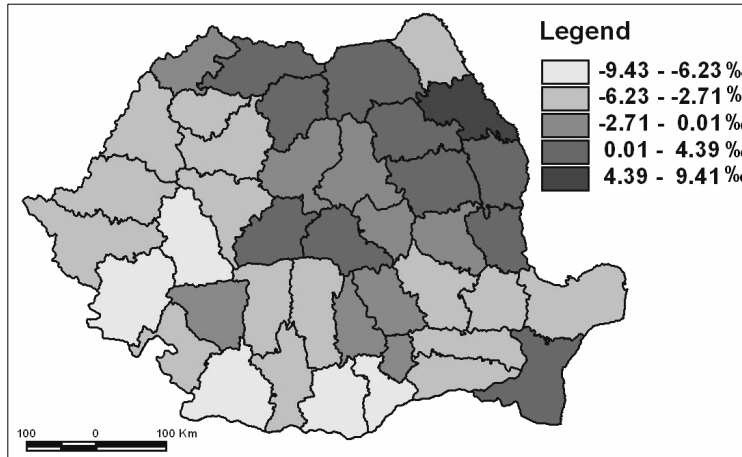


Figure 4. The evolution of natural increase in rural areas between 1990 and 2003.

Besides these, we can also find four Transylvanian counties, where, compared to the more traditional other ones, thanks to the higher birth rate, the natural increase is also positive. First of all Bistrița-Năsăud, Maramureș, Sibiu, and Brașov counties with an increase of 0,6-2,8‰. In these territories, the increase is mainly due to the increase of the roma

population especially in Sibiu County, and also in the rural settlements of Brașov County, with the century long state of development deriving from the rural-urban, rural-rural migration as well as the advantages offered by the attraction area of the big cities.

In the country's remaining territories the natural increase can be characterized by a negative prefix. The population is so old and the number of newborns is so low that there are much fewer births than the cases of death. This is mostly characteristic to rural areas, because at a national level, mostly the cities are the contributors to the positive increase. All this can be demonstrated with the help of the data referring to the different types of settlements, because, apart from the few counties mentioned above, where a slight increase can be observed in both areas, in most of the cases, the increase shows higher values (or the decrease is slower in other cases) in cities. Although in cities we usually come upon the low fertility model, the causes of change lie somewhere in the past, namely the socialist era, where the state of development was measured in industrialization and rate of urbanization. This was also the “golden age” of the village towards city migration.

The participants to this migration were mostly people representing the younger generation, living their villager lifestyle in the urban areas, thus the more moderate decrease compared to rural settlements. We also have to consider the much less favourable living conditions of the rural society, especially their access to different institutions and health care facilities and services.

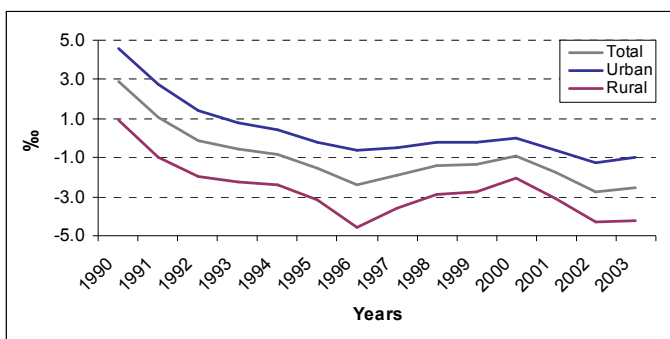


Figure 5. The evolution of the natural increase from 1990 to 2003.

Therefore, it is obvious, that an increase in birth numbers does not necessarily lead to a significant increase of the population, especially if it is associated with a high death rate. These changes are also presented in the graphic below.

Whilst in the case of the rural settlements the decrease sets in immediately, in cities, the tide shifts into negative direction only after the year 1995.

The natural decrease reached its low point in 1996, when the resultant of the two contributing indices (namely birth rate and the death rate indexes) had for the first time in history reached its lowest value ever: In the case of villages it was of approximately 4‰, whilst in cities it became stabilized around the 1‰ value. The country's social and economic instability in the following years is further demonstrated by the deflections in the natural increase and, although in both cases a slight increase can be observed after the year 2000, this positive trend is not too long, the decrease of the years to come being even faster than the all time average. All in all, the natural increase of the population, starting with the year 2000 entered a phase of decrease. This is also supported by the high value of the natural increase's correlation coefficient of following years, but also by the correlation between the first and last year of the analyzed period (shows a value of 0.80).

On the whole, we can say that, considering the demographic processes, Romania is characterized by significant territorial inequalities. We can distinguish a territory with a favourable age profile and a positive natural increase in the Eastern part of the country; however the Western and Southern parts being plagued by a severe natural decrease. The latter effect directly leads to the evolution of the educational system and later on, to the evolution of the labour market. Further on, this is demonstrated by the fact that the rate of people with the minimum of eight mandatory grades is constantly decreasing, from 23,6% in the early nineties to 21,3% nowadays.

If, based on the above analyses, we would build up a demographic balance, it is evident, that the main cause of the decrease in numbers is the negative natural increase, which, between 1992 and 2002, contributed with a staggering of 300.000 to the decrease of the Romanian population (more than 200.000 in the rural areas) plus another 200.000 lost to emigration.

After studying these demographic processes one by one, I would like to analyze their complex spatial pattern with the help of the cluster analysis. The main advantage of this method is that we can group our different territories using more indicators at the same time, the different areas being put in different clusters depending on how similar these different territories are according to the selected indicators. For this, I have selected the already mentioned demographic variables and I consider it is important to examine how the counties group together according to these indices referring to the rural population of Romania:

- birth rate (‰), 2003,
- death rate (‰), 2003;
- infant mortality (‰), 2003;
- life expectancy at birth (year), 2003;
- the ratio of the rural population compared to the whole country – realization - (%), 2003.

From these we can distinguish three indices that can also be used to determine the civilization and cultural level, in other words, the living conditions of a certain region. These are: the infant mortality, life expectancy at birth and the ratio of the rural population.

Firstly, (working with 41 counties) two clusters appear, namely Constanța and the rest of the country, which is anything but surprising given the fact that this county has by far the highest rate of infant mortality (33,5‰).

Secondly, we get one more cluster, represented by the Hunedoara County, because this is the county with the lowest rate of the rural population (23%) and, at the same time, it is also the area with the lowest rate of infant mortality (9,3 ‰), not to mention the life expectancy at birth, which is well above the national average (70,86 years compared to 70,08 years). All these values correlate with the century long averages.

Thirdly, two other counties break loose: Brașov and Sibiu counties, in many ways similar to the previous one, representing the more developed region of the Southern Transylvania.

Fourthly, we get another one county region, Ilfov, and the cause of its separation being the high rate of ruralization (89,2 %).

And fifthly, we already have six clusters with an interesting regrouping of the counties not mentioned above. As a consequence, besides the five earlier clusters, another group of six counties is being formed: Giurgiu, Teleorman, Dolj, Mehedinți, Călărași and Ialomița. The high death rate and the low birth numbers (in Teleorman County, death rate exceeds 21‰), also the high ruralization ratio and the high rate of infant mortality set this group apart from the rest. Here

I would like to make a small detour and analyze this group a little more. It is obvious, that the lower rate of development, which in our case is well represented by the territorial repartition of the rural population, the poor infrastructural provision, the sanitary conditions and the economy's low level of diversity gradually obliged the younger population to abandon its homeland, leaving behind a society made up of mostly elderly people, and characterized by a low birth rate. From a demographic point of view these counties, together with Constanța, give ground for impounding problematic regions, where the imminent intervention of the state and other organizations would be required.

Sixthly, the number of clusters grows once again with Botoșani, Vaslui, Bacău, Iași, Bihor, Tulcea, Satu Mare and Sălaj counties. Whilst the separation of the counties from Moldova was caused by high birth numbers (between 12,8‰ – 14,5‰) in the case of other regions the cause is the low value regarding life expectancy (66,61 years in Satu Mare County, which is the lowest value in the whole country). We can also add Tulcea County, with its low birth numbers (9,9‰).

The groups mentioned above are well presented on the map below:

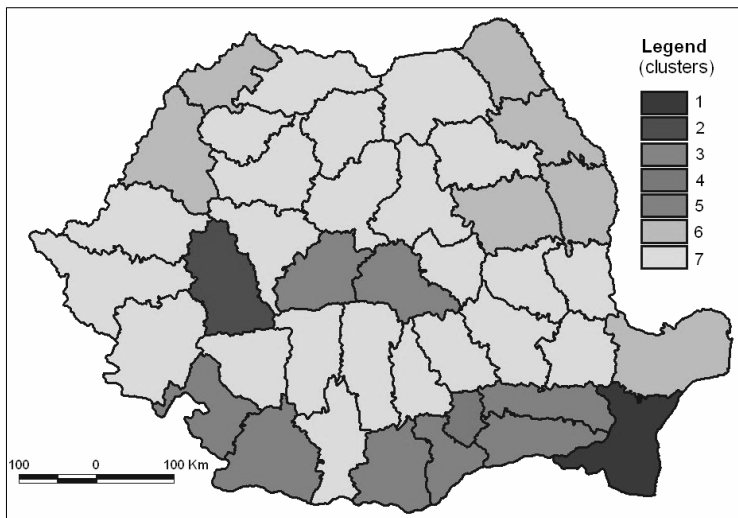


Figure 6. The grouping of Romanian counties with the help of cluster analysis.

All of these changes have an influence on the differences between counties regarding the population. The next thing to do is to examine the territorial inequalities based on different variables. The following graphic analyzes the evolution in time of some variables referring to disparities calculated for Romania's counties. In the case of all three indices I used the 1990 value as

a basis value and the purpose of this analysis is to determine the changes the population went through as compared to 1990.

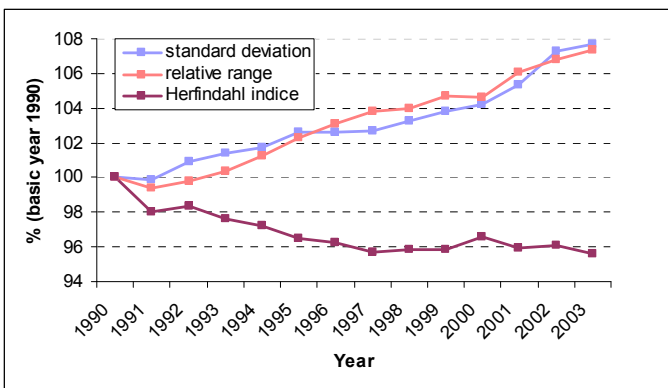


Figure 7. The territorial differences in the evolution of the population according to some disparity indices.

From the graphic we can see that, according to the values of the relative deviation and the relative range, territorial disparities regarding the rural population were relatively constant, but, beginning with 1991 both indices have started to rise, a trend they follow to present day. One of the causes is the negative natural increase, generalized after 1992, and

also the fact that, at the beginning of the nineties, the barriers stopping people from rushing into big cities disappeared. This greatly contributed to keeping the migration balance of the big cities positive and the decrease of the population in certain rural areas, as well, thus emphasizing territorial disparities regarding the repartition of the population. After 1995, the values of the relative range exceed even those mentioned earlier, caused by the massive decrease of the population in the already depopulated areas, due to the change in direction of the migration after 1997, although the phenomenon of suburbanization cannot be overlooked. Earlier on, this is brought forward by the decrease in concentration, which greatly correlates with the nationwide loss of population and stabilization, or even a slight growth after 1997. Although at a national level, both the relative deviation and the relative range show signs of decreasing,

therefore lowering the inequalities between counties, the problem can still be linked to the loss of population in rural areas.

Conclusion

The presented set of the demographic trends let us conclude that, after 1990, the country's capability to maintain its population values could be in danger. The number of newborns has greatly decreased, whilst the death rate is ever increasing. This process had an effect upon the entire country, but these effects had different amplitude on each separate county, which emphasized the territorial differences even more. The decrease of the population is not common only in the rural areas (due to the demographic ageing), but it can also be observed in big cities, caused by the structural changes suffered by the industry as well as the intensification of the urban-rural migration. Taking into consideration the demographic processes, the country can be divided into two zones: the North Eastern and partly the North Western counties, where the natural increase is more or less positive and the age profile is rather favourable and the Western and Southern parts, plagued by natural decrease.

This demographic situation is tightly linked to different economic factors but it correlates to public health situations and accessibility to different public institutions, as well. The improvement of the economic sector, the increase of income, the rising of living conditions could all bring the long awaited decrease of the death rate and the stabilization of the natural increase. Consequently, we could look forward to seeing birth rate restored to a normal level, or at least expecting to moderate the decrease, especially if this was possible during the period from 1997 to 2000, when above all, the country was in an economic recession.

In the decreasing of the actual disparities and the maintaining of the population's long-term evolution only a stabile social policy could lead to any results, which would wave to concentrate on raising the living standards, strengthening the desire to have children and a radical improvement of living perspectives. Nevertheless, this is only achievable with an economic growth that could provide at least to the younger population the possibility to live a decent life and not encourage emigration. All these could be obtained with diffusing investments rather than concentrating them, which would not only contribute to a more dynamic development of the entire country, but it would also trigger the diminution of disparities between different areas, and contributing to equalizing the demographic processes.

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