HISTORICAL MOLDAVIA – FROM DEMOGRAPHIC EXPANSION TO A SHRINKING REGION

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La Moldavie historique – de l'expansion démographique à "shrinking region". L'analyse comparative de l'évolution de la population des territoires appartenant à la Moldavie historique démontre l'importance du facteur politique dans l'émergence des tendances spécifiques. La géopolitique compliquée de la région a profondément bouleversé la structure ethnique et l'évolution du réseau de peuplement. Utilisant la classification hiérarchique ascendante en tant que principale méthode d'analyse statistique, la démarche propose des conclusions qui confirment le rôle de certains vecteurs tels, l'attractivité urbaine, l'accessibilité, les politiques de colonisation, les transformations du système de peuplement, l'effet de barrière exercé par les frontières etc., dans la manifestation des différentiations spatiales. Pourtant, au-delà des particularités locales, se manifestent aussi des évolutions confirmant une certaine spécificité régionale, surtout dans le contexte d'un processus séculaire de marginalisation. C'est notamment le cas de l'évolution pendant les guerres mondiales et après la chute du régime totalitaire quand la région c'est transformé dans une des principales bases d'émigration de la main d'œuvre de l'Europe de l'Est.

1. INTRODUCTION

This study proposes a diachronic analysis of the numerical evolution of the population of historical Moldavia, extended over a period of two centuries (1772–2014). The purpose of this approach is first of all a comparative one, focussed on highlighting the similarities, or differentiations, manifest within this once unitary space, subjected to successive territorial reshuffles during the study period.

Occupying an area of approximately 94,862 km^2, this territory experienced, in time, a wide expansion of the settlement system, generated by its position and interference of the three great empires – Habsburg, Tsarist and Ottoman. This expansion followed a long period of demographic decline (1670–1774, especially in the first part of the interval), generated by conflicts between the neighbouring powers for which Moldavia was often the theatre of war (Roman, Vergatti, 2002, pp. 94–108). The mentioned authors estimated for 1700 a population of 1.2 million inhabitants in the Moldavian Principality, compared to only 0.77 million, registered in 1774.

The first part of the period, 1774–1860, known in the literature as a "new phase" of settlements, manifested itself similarly in a wider space of Southeast Europe in the context of the withdrawal of the Ottoman Empire, eliminating the danger of invasions from the Eurasian steppes, and showing greater interest in the agricultural market (Vâlsan, 1912; Tufescu, 1937). Having originally a predominantly organized character in the territories detached from historical Moldavia and annexed by the Habsburgs (Bukovina), or the Tsarist Russia (Bessarabia) and mostly spontaneous in the rest of the Principality,

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similar to the evolutions in Wallachia, the settlements system extending, at least during the 19th century, had similar effects on the demographic level. The strongest impact was felt by changing the ethnical structure, to the detriment of the indigenous population, especially in Bukovina and in the extreme north and south of Bessarabia. The differences that can be seen are related to the intensity and scale at which these effects have occurred in space. Thus, the relatively unitary character of the mediaeval Moldavian settlement system, diffuse, autarchic and lacking spatial consistency, gradually became increasingly complex, borrowing from the specific ways of territorial organization imposed by the occupying power, or demanded by socio-economic modernization (Muntele, 1998, p. 31).

During the twentieth century, beyond the partially divergent evolutions, historical Moldavia found itself within a rather unified context, not only during the interwar period, but also later, when the extensive process of urbanization and industrialization manifested itself under the totalitarian regimes, or during the crisis that followed their downfall. Transformed in the last decades into one of the most powerful emigration areas on the European Continent, this peripheral region seems to have entered par excellence, a new phase of evolution of its settlement network, which, unlike in its past, was marked by contraction. Its western part has been included in a study funded by one of the European Parliament's committees on the so-called "shrinking regions". A relatively new concept, but corresponding to some older realities, being used to name the regions affected by a generalized depopulation phenomenon, including shrinking cities, fairly corresponding to the recent evolution of the population of historical Moldavia (Grasland *et al.*, 2008). The contrast between the great period of demographic expansion, with strong syncopes caused by the world wars, resulting primarily from an exceptional vitality, and the recent decline, being broadly the essence of this study. Within this context, also the presence of some convergent evolutions in this politically-divided territory, with a long peripheral dominated status and relatively geographically isolated evidence (White, 2000, pp. 112–114).

Given the size of the space and the purpose of the approach, the proposed analysis is limited to the identification and characterization of some types of evolution able to capture territorial differentiations and spatial variations in the sense of the classical definition of the geographical population survey (Johnson *et al.*, 1998, p. 452). The analysis represents a necessary support for the deepening of some themes, such as the causality of the emergence of certain evolutionary models, or the systemic character of some tendencies.

2. MEANS AND METHODS

The combination of the means specific to historical demography, for the period before the organization of modern censuses, with the specific geographical survey of the population, forms the basis of the present paper. The chronological series are pursued through three components, which are considered essential: trend of evolution, cyclic character and conjunctural variations (Dumolard *et al.*, 2005, p. 211). Although the chronological series are the result of composite information, which can generate discontinuities and contradictions, it was considered useful to integrate the data prior to the first censuses in the study area (1859–1860).

The method of sliding means was used to adjust the integrated information in the statistical series retained for analysis. The adjustment was performed for time sequences equivalent to one decade in order to eliminate the length differences for which population numbers could be reconstituted and the missing of records timing (see appendix). In order to analyse the evolution of the population at the level of the whole region, the gross series obtained were used, the temporal reference being the records of the Principality of Moldavia (Kingdom of Romania after 1881).

For the main analysis, aiming at the clustering of types of evolution at the detailed scale (localities), the processing of gross adjusted series used as an essential indicator the annual average growth rate: $R = ((P_1-P_0)/t)/((P_0+P_1)/2)*100$, where P_0 is the population at the beginning of the interval, P_1 is the population at the end of the interval and t is equivalent to 10 years. Thus, a table with 24 decennial average growth indicators was obtained, the indicators being standardized using the Z-score method (Kitchin, Tate, 2000, p. 102). The derived, standardized table was the support of an agglomerative hierarchical clustering (ACH) done in XLSTAT. The Ward method, based on the minimal variance criterion, was retained as an option for class differentiation by the Euclidean distance and for the agglomeration of classes (Ward, 1963). The profile of the obtained types was reported at the adjusted annual growth rate, expressed as a percentage.

The graphical representation used 1:100 000 topographic maps to extract the main geographical elements (watercourses, administrative boundaries), processed in Adobe Illustrator. The cluster, the average profile and the profile of the cluster were included in the medallion to facilitate the analysis of the results.

Besides this main database, for purposes of explanation, other information on settlement loudness was also used, indicating the population density or information on the evolution of some demographic parameters within a regional context, after 1990. Their purpose was to illustrate the manifestation of processes such as urbanization, suburbanization, rural depopulation, metropolitan concentration, etc. Rural depopulation, the most significant for the region in the future, is understood in the sense defined by Rees and Kupiszewski, population loss from areas in which agriculture, forestry and fishing activities predominate" (1999, p. 15).

3. RESULTS AND DISCUSSIONS

3.1. General evolution of the population of Historical Moldavia

Following the statistical processing of the standardized information, 8 distinct types have been retained, grouped according to the general tendencies, or conjuctural developments. The interpretation of the resulting profile followed both the similarities and differentiations from the average profile, as well as the existence of some regional trends during certain time-sequences.

The average profile highlights a trend of constant population growth until the First World War, with relatively important variations induced by the change of the political status of some parts of the Principality, first in the northwest (Bukovina) and then in the east (Bessarabia). The decennial standardization of the growth rate thus indicates values between 1–2% annually, with two significant peaks: 1790–1800 and 1820–1830. These are consistent with the colonisations made by the Austrians in Bukovina and the Tsarist authorities in Bessarabia, sometimes on a massive scale. This long, relatively constant, growth sequence was replaced after 1910 with a highly variable evolution, the negative trends being assigned to the two world wars and, towards the end, to the effects of the fall of the totalitarian regime, unlike the positive tendencies, which can be explained through the delay of the demographic transition in the whole historical Moldavia (Fig. 1).

The general tendencies of evolution have fallen within the specific trends of Eastern Europe, with higher values than the continental average, Moldavia being one of the territories that experienced the most extensive expansion of the settlement system, especially in the first part of the nineteenth century. Between 1800 and 1914, its population grew from 1.1 to 5.4 million people almost five times, much more impetuous than in Europe as a whole, which from about 188 million reached 458 million in the same period, an increase of two and half times in the context of the industrialization and urbanization process in the Western countries (Livi-Bacci, 2003, p. 149). Generated primarily by the

valorisation of the agricultural potential, secondarily by the poor development of urban life, this strong growth was the premise of maintaining a notable demographic vitality over the next century. This vitality was also an expression of the significant delay of the demographic transition – early and intense marriage, high birth-rate, reduced life expectancy (Dupâquier, Bardet, pp. 613–614, 1998).For all this spectacular growth, the population density remained relatively low until 1900, compared to the European average, an expression of extensive and poor performance farming, second to weak urbanization (Murgescu, 2012, p. 318).

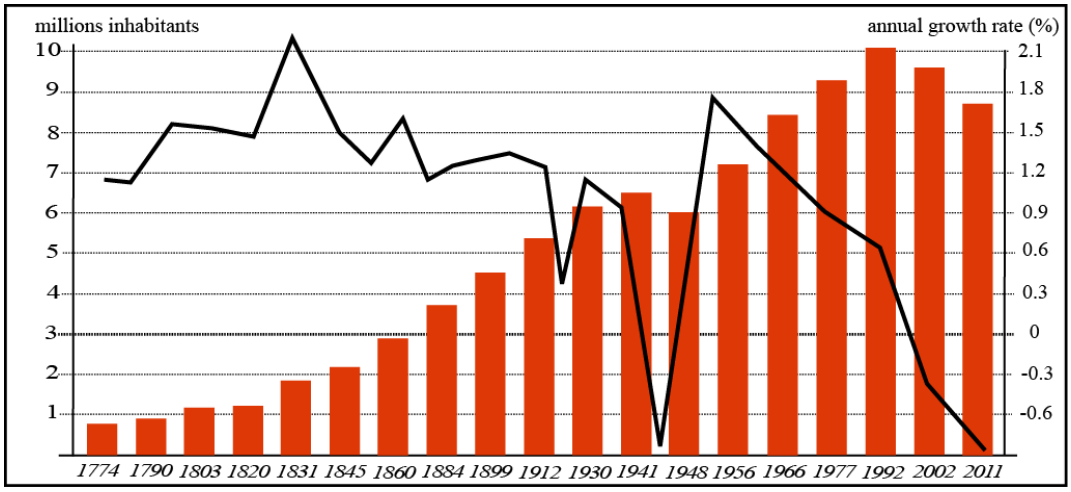

Fig. 1 – Numerical Evolution and Annual Growth Rate of the Population in Historical Moldavia.

Data source: see Appendix; Note: Time stamps are sometimes different for Bukovina (1808, 1910), for territories belonging to the Soviet Union between 1940–1989 (1959, 1989), for the Republic of Moldova and the territories belonging to Ukraine at present (2014).

3.2. Typology of the numerical evolution of population in the territory

The resulting typology highlights the existence of clearly outlined types of evolution, with sequences generally converging to the average of the region (Fig. 2).

The first of the eight separate types comprises mainly urban centres and differs significantly from the others. Slightly urbanized initially, Historical Moldavia experienced a rapid growth of the urban population until the middle of the first half of the 19th century, manifesting almost simultaneously under all administrative jurisdictions, stronger in Bessarabia and weaker in Bukovina, explainable by the repopulation of cities which had fully borne the effects of the Russian-Turkish wars, but also by the development of a dense system of boroughs needed for better territorial service, especially for commercial purposes, which claimed a large influx of population, especially Jewish (Schwarzfeld, 2002, p. 165).

This phenomenon also impressed, as mentioned, the peak of the 1820–1830 period. Being an almost exclusively commercial type of urbanization, at least in the 19th century, it could not maintain a vigorous growth rate for a long time; so, by the end of the century, a significant reduction in the growth rate occurring throughout the region, especially in its western part, mostly after the unification of the Danubian Principalities in 1859. Even its capital-city, Iaşi, experienced a long period of stagnation up to the post-war time. The population of Iaşi grew from about 23,000 inhabitants in 1803 to 68,478 in 1859, after which it recorded a much slower growth, to 79,406 inhabitants in 1912. Another

particularity of the municipalities related to this type is the much stronger manifestation of the negative effects of the two world wars, which massively eroded the number of population, by 1950 it being smaller than in 1900, almost without exception.

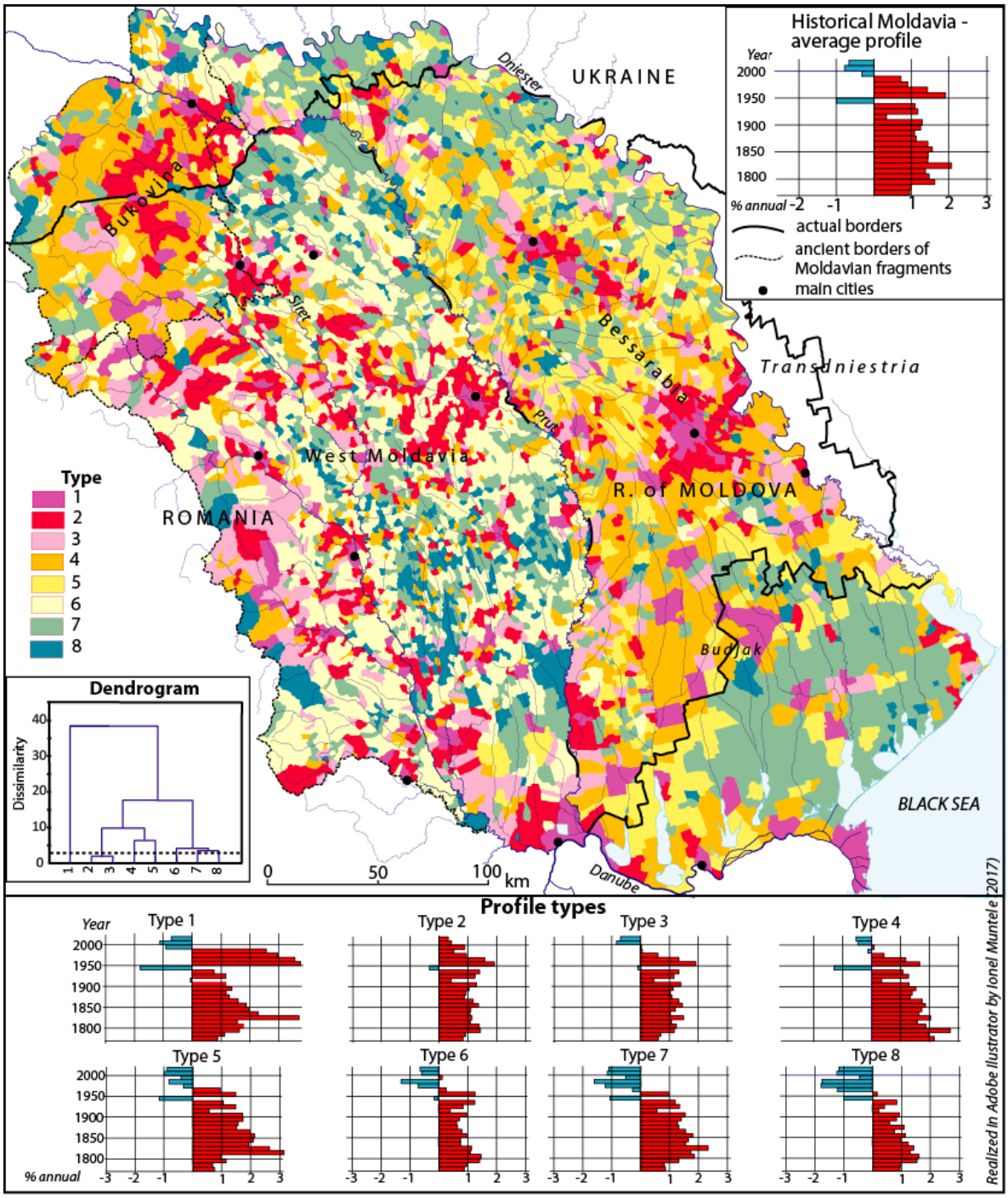

Fig. 2 – Typology of the numerical evolution of population in Historical Moldavia (1774–2011).

Data source: see Appendix.

In contrast, during the communist period, the 1950–1990s were marked by an unheard of expansion, with annual average values of around 3%, sufficient to increase by 3–4 times the population of most cities. For example, Chişinău, from 128,910 inhabitants in 1949 to 589,446 in 1989, Cernăuţi from 91,373 to 256,568, in the same period. Between 1948–1992, Iaşi increased from 92,368 to 344,425 inhabitants, Galaţi from 83,878 to 326,141 etc. Even more spectacular was the evolution of smaller towns: Bălţi from 25,070 to 157,608 inhabitants, Bacău from 34,461 to 205,002, etc. Forced industrialization, also claimed by the massive pressure of a relatively large rural population, still in full demographic transition, is the most frequent explanation for this spectacular growth (Ţurcănaşu, 2006, pp. 322–328, Matei *et al.*, 2017, pp. 156–160). Urban growth is most often seen as a result of the demographic transition, so the evolution described above is not at all surprising (Dyson, 2011, p. 51). However, the 40 years of massive expansion have been partially overturned by the reverse trend imposed by the effects of the fall of totalitarian regimes. After 1990, the massive decrease of the urban population led to the decline of many urban centres, even some of the most important ones (Galaţi, Bacău in Romania, Bălţi and even Chişinău in the Republic of Moldova, etc.), often by ¼, or even 1/3, of the whole population. In Galaţi, between 1992–2011, the population decreased by 23%, in Bacău by 30% and in Bălţi, by 37% between 1989–2014. Thus, in 2011, Galaţi counted only 249,432 inhabitans, Bacău 144,307 and Bălţi (2014) only 97,930 inhabitants. The deindustrialisation imposed by the inadequacy of the infrastructure to the market economy and the isolation of the region from Western Europe, accompanied by massive emigration, can explain this negative trend. Small urban centres, with a local polarization role, appear to have been irreparably affected. Larger urban centres have the minimal advantage of the development of some urban fringes around them, marked by a sustained population growth.

Types 2 and 3 have seen a relatively close evolution, which distinguishes them from the slightly higher growth rate values during the 19th century and, on the other hand, from the post-totalitarian behaviour. The explanations for these differences are given by the geographical location of the municipalities, which form distinct areas, often juxtaposed, either in suburban areas (especially type 2) or in specialized agricultural areas (Tecuci Plain, for example), or in the mountain area. These areas have shown increased attractiveness through the expansion of the rural settlements system or, in the case of the mountain area, the capitalization of previously poorly exploited resources. Practically, urban proximity was a vector of differentiation of these two types, initially unitary, manifested though the urban sprawl tendency, which is very visible in the case of big cities (Chişinău, Iaşi, Galaţi, Cernăuţi). There is, however, an exception, namely, the isolated presence of this type in small, often isolated areas, particularly in the western part of the region, explicable either by the ethnical factor (the presence of the Gypsy communities), or by the confessional factor (the presence of neo-Protestant communities), both cases displaying high natural growth values (Muntele, Horea-Şerban, 2011). Thus, in contradiction with an almost widespread decline, especially in the parts of Historical Moldavia affiliated to Romania and Ukraine, there are mainly rural localities which have seen a very strong increase after 1990 (eg. Voitinel in Suceava County, from 3,159 inhabitants in 1992 to 4,412 in 2011; Mironu in the same county, from 1,445 to 2,445 and the town of Crasna in the Cernăuţi region of Ukraine, from 7,769 inhabitants in 1989 to 9,142 in 2001 and 10,112 in 2015 according to official estimates, all falling into the above explanations).

Types 4 and 5 also experienced a relatively unitary evolution, but without a chronological overlap, not even periodically. Located almost exclusively in areas formerly under Habsburg or Tsarist occupation, they stand out though their strong spatial coherence. Their similarity comes from the spectacular growth in the early part of the studied period, earlier in type 4, present mainly in Bukovina and the central-southern part of Bessarabia, later in type 5, specific to Bessarabia as an extension of the previous one. Another element that brings them closer is the manifestation of a massive population decline during the Second World War, strongly recovered in the next decade. The first of these types is characterized by a relative constancy of growth up to 1900, resulting in an important accumulation

of population that led to the formation of a densely populated area in the hilly part of Bukovina, integrated into the densely populated area that accompanies the North-Eastern Carpathians, from southern Poland to northeast Romania. Massive colonization, especially with Germans and Poles, often in pre-existing settlements with native populations, explains this situation in this case. In the central-southern part of Bessarabia, the complete evacuation of the Nogay Tatar population and the repopulation of these territories, initially with a Romanian population originating from the rest of the Moldavian Principality, and after 1812 through a systematic colonization (with Bulgarians, Gagauz, Germans, etc.) performed during several decades and manifesting a certain inertia, explains this constancy. Rapid population growth in colonies, forced every generation to form new settlements, the last settlers arriving in 1856 (Nistor, 1991, p. 207).

In the case of type 5, the lower growth rates in the first decades are explained mainly by the affiliation of the villages to early populated areas that have often been the source of fluxes toward type 4 areas. The spectacular growth from 1810 to 1830 occurred either as a result of the creation of many new settlements during this period, or of the significant contribution of population flows spontaneously displaced towards pre-existing settlements with a small population. Another element that differentiates types 4 and 5 is their evolution in the last part of the communist period, the former having a strong resilience capacity despite the impact of the rural exodus specific to that period, in most cases due to the preservation of demographic vitality. For type 5, the decline started since the 1970s and increased since 1990. In this case, the divergence is also explicable by urban proximity and accessibility to the major transport infrastructure, the localities of type 5 being confined to more remote areas.

Types 6, 7, 8 form a third relatively unitary group. The first and the last of them show similarities in terms of their evolution during the 19th century, while the latter two had a common evolution in the post-war period. The frequency of types 6 and 7 is larger, as is their spatial coherence, the latter being more dispersed, but with some distinct, significant areas.

Type 6 is particularly specific to the western part of Historical Moldavia (including the northern parts of Bukovina and Bessarabia), much older and more intensely populated areas, somewhat more protected from the danger of nomadic invasions from the North-Pontic steppes. In that part of the Principality that remained autonomous after 1912 and which constituted one of the two components of the modern state of Romania, it is the most frequent type, the other types occurring against its background. The moderate growth, rarely exceeding 1% annually, with a relative decline in the 1860–1900 period, when the region was the source of important population flows directed to the colonization of agricultural areas, including outside the studied region, also stands out through a certain moderation in the manifestation of the rural exodus which, although led to a population decline after the 1960s, was not remarkably significant. Another characteristic is the repositioning of a part of the previously displaced rural population after 1990 within the context of abandoning collective farming (at least in Romania, Hirschhausen, 1997). Moderate growth and the decline resumed since 2000, amid the aging of the population and the massive emigration of the young population, causes a certain vulnerability.

Type 7 shows a particular spatial consistency, generally characterizing settlements that have experienced systematic or spontaneous colonization, especially in the early 19th century (Budjak, forest-steppe areas in the middle basin of the Prut, etc.), when it evolved in a similar manner to types 4 and 5, and especially to the latter. Such massive colonization characterized the Budjak, which before 1812, the year of Tsarist occupation, was populated by nomad Nogai and Moldovan peasants. In 1794, about 23,000 families lived here (Roman, Vergatti, 2002, p. 190), mostly evacuated to the Ottoman Empire, or to the North Caucasus. In 1809, the documents witnessed the presence of only 12,470 families, of which 3,425 were “old”, consisting of Moldovan peasants and 9,045 ”wanderers”, consisting of Christian refugees from the Balkans (Istrati, 1987, p. 385). Strongly affected by the last world war (especially the settlements in Budjak) they did not fully recover in the post-war period, gradually entering a more pronounced decline, mitigated in the first decade after the fall of the communist regime. The six decades of continuous decline greatly reduced the population number by at least one-third, involving an aging process that, as in the previous type, indicates a strong vulnerability.

Type 8, intermediate between 6 and 7, is primarily characterized by the extent of the decline, often installed since the interwar period. Dispersed among the other types, however, it forms some distinct areas, such as the lower basin of the Pruth, in its Romanian part. In this region, the Horincea Valley (468 km^2), relatively densely populated once, had more than 6,000 inhabitants at the end of the 18th century, with a relative increase until 1941 when the maximum number of inhabitants reached (15,455 in 1860 and 31,304 in 1941, corresponding to a density of 67 inh./ km^2) which at the last census registered a lower number than in 1860 (15,136, corresponding to a density of 67 inh./ km^2). Such examples are also in other isolated hilly and mountainous areas. Its more frequent presence in the western half of the region denotes a correlation with the age of the settlement, without excluding the presence of settlements emerging during the population expansion in the 19th century, disadvantaged by isolation, or less favourable natural conditions (less fertile soils, relative aridity, frequency of landslide stimulated by irrational land-use, etc.). A number of 59 settlements were already depopulated in 2011, some other dozens having a low (under 25 inhabitants) and aged population. The related villages are generally of small size, but there are also cases of large villages which experienced a rapid decline (Străoane, Vrancea County, Romania from 3,983 inhabitants in 1941 to 2,310 in 2011 or Bălanu, Râşcani district, Rep. of Moldova, from 3,141 inhabitants in 1941 to only 905 in 2014, etc.).

3.3. Regularities and territorial divergencesin the numerical evolution of the population

The image of the types distribution leads to some regularities that can be single out:

– the importance of the urban network, especially of large and medium-sized cities, in the tending to evolve, especially in the last decades. This is part of the modern population concentration process in metropolitan areas, with a significant temporal gap in the study region, explained by the precariousness of the economic structures. The administrative-political importance of the urban centres plays an important role in this context, the city of Chişinău, with its capital status, having a higher capacity of concentration of its population in the immediate neighbourhood, a capacity manifest especially during the Soviet period. The adaptation to the market economy and the connection to globalization networks are equally important, especially over the last decades. Thus, the city of Iaşi seems more prepared in this respect if we consider the dynamics of the population in the metropolitan area after 1990. The high density can be a factor in reducing the concentration capacity of the population (the case of Cernăuţi where, even in 1900, the threshold of 100 inh./ km^2 was exceeded in the metropolitan area – Table 1).

Table 1

The evolution of the annual growth rate and population density in the main metropolitan areas of Moldavia

Metropolitan area (only rural population)	Annual population growth rate (%)		Population density (inh./km^2)		
	1956–1992	1992–2011	1956	1992	2011
Iaşi	0.85	1.54	75	102	140
Galaţi	0.54	0.95	47	57	69
Chişinău	1.91	0.57	99	179	207
Cernăuţi	0.28	0.13	105	114	118
Total rural population	0.01	-0.43	63	63	58

Data source: see Appendix. Note: The metropolitan areas have been empirically delimited, including the localities located at least 20 km from the centre of relative cities.

– the importance of accessibility to the transport infrastructure, a favouring factor in the contemporary period, but a disadvantage in the past, when main roads were also used as invasion routes, or for the movement of troops to the theatres of war, the region being severely affected in the first part of the study period (wars between the Tsarist and the Ottoman empires). The settlements along the main railways and main roads experienced an appreciable expansion after the 1900s, with

frequent new settlements being established here. There is a significant difference between the situation in the western and eastern parts of Historical Moldavia. In the eastern part, the role of the main transport routes in population concentration seems to have decreased after 1990 (Table 2);

Table 2

Evolution of the population along several main roads and railways

Railway/Road	Annual population growth rate (%)					Population density (inh./km^2)		
	1774–1860	1860–1912	1912–1956	1956–1992	1992–2011	1774	1912	2011
Tecuci-Iaşi	1.17	0.88	1.16	0.22	0.53	9	37	75
Paşcani-Iaşi	0.98	0.78	1.18	0.60	0.87	13	44	111
Tighina-Chişinău	1.82	1.68	1.35	1.55	0.28	3	43	148

Data source: see Appendix. Note: the areas were empirically delimited, including the settlements located at least 6 km from the railway/road.

– the relevance of the colonization process in its various forms (organized, systematic, especially in Bessarabia and Bukovina, or spontaneous) for differentiating the numerical evolution of the population. The dynamics of new settlements resulting from colonization, or those which experienced a consistent increase in herds was largely determined by the ethnicity of the colonized population. Thus, in massive areas of colonization with a German population (Budjak), there was marked depopulation through repatriation in 1940 (Șandru, 2003, p. 83). The withdrawal of the Germans was an immediate effect of occupying Bessarabia by the Soviet troops after June 26, 1940, being decided under of the Molotov-Ribbentrop pact. At the same time, most of the German population in northern Bukovina, occupied at the same time by the Soviets, was also evacuated. Subsequent repopulation was unable to ensure the viability of all former colonies. A similar evolution was seen in the mixed settlements in Bukovina. By contrast, the areas colonized with Bulgarian-Gagauzian population on the western side of the Budjak, had a different evolution, being less affected by the consequences of the last conflagration. The agricultural colonization through land ownership, conducted by the state through successive reforms, was practiced in the western part of Historical Moldavia (1864, 1884), especially in the steppe and forest-steppe regions, but also in Bessarabia (1868, 1905). The 1923 agrarian reform, applied throughout the Kingdom of Romania, led, as in the past, to the appearance of a large number of settlements. The evolution of the population in these settlements followed a similar trend, after the initial expansion, a continuous decline followed, with an insignificant influence of the last world war. Remarkable is the rural return recorded after 1990 in the western part of Historical Moldavia, which temporarily halted the decline (Fig. 3);

– the change in preferring defence sites in hilly and fragmented plateaus (wide peaks, reception pools of secondary tributaries), by moving villages to the valleys, often by setting up new settlements, or duplicates of existing ones. The relative depopulation of the interfluves has long been noticed (Chiriac, 1976). The decline of some settlements began after 1860, but it became more visible during the communist period and continued after 1990, especially in deeply rural hilly areas, such as the Bârlad Plateau and Central Bessarabia (Table 3);

Table 3

Evolution of population in the Tutova Hills (Bârlad Plateau)

	Annual population growth rate (%)					Population density (inh./km^2)			
	1774–1859	1859–1912	1912–1956	1956–1992	1992–2011	1774	1912	1956	2011
Interfluves	1.2	0.4	0.4	-1.3	-0.3	16	55	67	39
Valleys	1.3	0.7	0.8	-0.2	0.2	8	50	70	68

Data source: see Appendix.

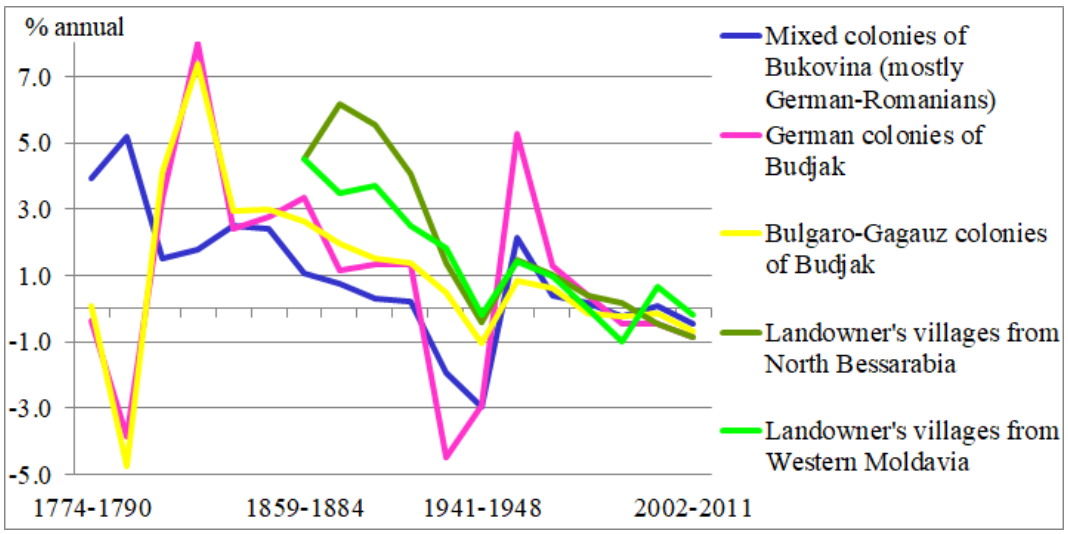

Fig. 3 – Population dynamics in the settlements of systematic colonization in Historical Moldavia.

– the high degree of originality of the combination of types from the three major fragments of Historical Moldavia: the Autonomous Principality (Western Moldavia), the Austrian province of Bukovina and the Tsarist province of Bessarabia. The influence of the political factor in directing the settlement system seems indisputable, imposing periodically, besides the similarities that can be attributed to some trends ahead of the separation, specific evolutions. Differences become significant especially from the point of view of the summary analysis of population density (Table 4). The moderate growth in Western Moldavia is opposed to the rapid one, but more vulnerable to major political risks, such as the two world wars in Bessarabia and Bukovina. The latter area, however, has a stronger demographic inertia after 1989, the lower population decline, including the effect of preserving a positive demographic balance, this becoming the most densely populated part of Historical Moldavia. The analysis of the evolution of the natural growth during the 1990–2016 period highlights the existence of divergent national models, but which ultimately tend towards convergence (Fig. 4). This is explained by the specific way in which every national / regional demographic system has accommodated itself to the shock created by the fall of the communist regime.

Table 4

The evolution of population number and its density, by large historical divisions

Region	Surface	1774	1803	1860	1912	1930	1941	1956	1992	2011
	Km^2	Thousand inhabitants								
Western Moldavia	38635	442	630	1338	2146	2449	2803	3079	4235	3677
Bessarabia	45726	236	300	1013	2424	2866	2747	3410	4714	3866
Bukovina	10501	90	213	508	790	835	772	795	1122	1085
Density (inhabitants/km^2)										
Western Moldavia		11	16	35	56	63	73	80	110	95
Bessarabia		5	7	22	53	63	60	75	103	85
Bukovina		9	20	48	75	80	74	76	107	103

Data source: see Appendix; Note: Time stamps are sometimes different for Bukovina (1808, 1910), for the territories belonging to the Soviet Union between 1944–1989 (1959, 1989), for the Republic of Moldova and the territories belonging to the Ukraine at present (2014).

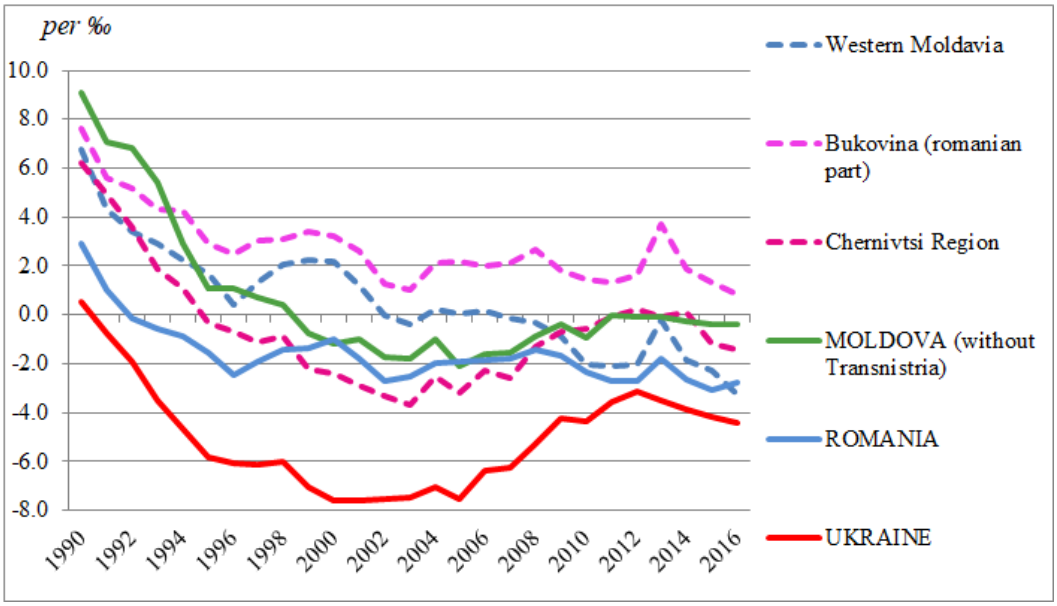

Fig. 4 – Evolution of the natural population growth in a regional context.

Data sources: Tempo Online, INS Romania; National Bureau of Statistics of Moldova; Statistics Committee of Chernivtsi Oblast (oblstat@cv.ukrtel.net); State Committee for Statistics of the Ukraine.

– the relative importance of borders, older or newer, which create a noticeable barrier effect. Both within sustainable political limits (the boundary of the Pruth border, or that limiting Bukovina from the rest of Moldavia) and those resulting from the additional fragmentation of the region as a result of the last world war, noteworthy differences can be observed due to the different status of the areas along them. In the case of Romania, the Pruth border has always been repulsive, its opacity, induced by the controversial relations between Romania and the Tsarist Empire (the Soviet Union), resulting in the deepening of the rural character; over a distance of 450 km, no urban centre (with the exception of Ştefăneşti Town, recently officially resuscitated) is located. In contrast, on the left bank, several small and medium-sized urban centres appeared and developed, the rural area in their vicinity being rather attractive. The border that divided Bukovina into two parts generated a similar, but smaller effect. Major differences can be observed on both sides of the borders, resulting from the separation of Bessarabia in 1940. In this case, the border areas belonging to the Ukrainian regions of Odessa and Chernivtsi have turned into relatively repulsive areas, due to the distance from the regional centres, or to the main urban centres, unlike the neighbouring areas affiliated to the Republic of Moldova, somewhat more stable from the demographic point of view during the Soviet period, without being able to rely entirely on particularities induced by the ethnical structure. These border sectors separate mixed ethnical areas: the Novoseliţa, a district in the Cernăuţi region, is predominantly Romanian, while in the Briceni and Ocnita districts of the Republic of Moldova, lives an important Ukrainian minority; in the Bolgrad and Tarutino districts of the Odessa region Bulgarians and Gagauzians predominate, as well as in the neighbouring districts of the Republic of Moldova. Although of limited length, the border resulting from the annexation by the Soviet Union of the Herţa County in 1940 created a similar effect on the Pruth border. This region, of 350 km^2 and a population of 34,000 inhabitants in 1940, almost exclusively Romanian, has been annexed by the Soviet armies, although it did not appear in the Final Note addressed to the Romanian government on June 26, 1940. Today, it is part of the Cernăuţi region of Ukraine. After 1990, the most vulnerable border areas became those related to the Republic of Moldova, while the Romanian-Ukrainian frontier in the Bukovina sector became the least sensitive to the barrier effect (Table 5).

Table 5

Evolution of the average annual growth rate and population density in the areas along the current borders (the maximum distance of 10 km from the border, excluding the urban population)

		Average annual growth rate (%)							**Density (inh./km^2)**				
Border area	*Border side*	*1774–1803*	*1803–1860*	*1860–1912*	*1912–1941*	*1941–1956*	*1956–1992*	*1992–2011*	*1774*	*1912*	*1956*	*1992*	*2011*
Bukovina	Romanian	2.62	1.57	0.99	0.32	-0.09	0.33	-0.05	5	56	61	68	68
	Ukrainian	2.77	1.59	0.78	-0.09	0.11	0.61	0.56	4	46	45	54	63
Hertsa County	Romanian	1.77	1.00	0.69	0.73	-0.30	-1.00	-0.54	18	79	93	65	58
	Ukrainian	2.38	0.84	0.86	0.02	-0.44	-0.27	0.39	16	85	79	73	80
Hotin County	Moldavian	0.56	1.46	1.53	0.61	-0.08	-0.26	-0.79	11	74	87	80	66
	Ukrainian	0.87	1.54	1.61	0.46	0.34	-0.56	-0.80	9	74	90	77	63
Pruth River	Romanian	1.33	1.04	1.13	1.08	0.52	-0.63	-0.29	9	43	64	51	48
	Moldavian	0.91	1.45	1.59	0.89	0.45	0.51	-0.47	6	45	63	74	66
Budjak	Moldavian	-0.54	2.58	1.81	0.92	0.34	0.43	-0.61	2	38	53	61	52
	Ukrainian	-1.98	3.01	1.79	0.72	-0.31	-0.44	-0.58	2	35	41	36	31

Data source: see Appendix; Note: Time stamps are sometimes different for Bukovina (1808, 1910), for the territories belonging to the Soviet Union between 1944–1989 (1959, 1989), for the Republic of Moldova and the territories belonging to the Ukraine at present (2014).

– the major role of the gradual enhancement of external migration after 1990 in the manifestation of regressive tendencies in the entire region, especially in the territories afferent to Romania and the Republic of Moldova. The reconstitution of the demographic balance (both natural and migratory) for the 1990–2016 period, based on the sources mentioned in Figure 4, shows that Historical Moldavia provided an enormous number of emigrants during this period. The migration balance amounted to about 1.9 million, or almost 1/5 of the population it had in 1990. Out of these, about 980,000 came from the Republic of Moldova (without Transnistria), 807,000 of the eight northeast Romanian counties and over 100,000 of the territories belonging to the Ukraine (Chernivtsi region and the southwest of the Odessa region). In the former Soviet territories, an important part of this flow, especially in the years 1990–2000, was represented by the repatriation of an important part of the Russian minority, partly compensated for by the return of the displaced native population, especially in the Russian Federation (Matei *et al.*, p.173, 2017). However, most of the number covers massive post-2000 emigration, mostly to Western Europe and North America, but keeping a significant flow towards the Russian Federation. A significant number of citizens of the Republic of Moldova chose Romania as destination (160,000 between 1991 and 2016, according to the National Institute of Statistics – INS). The quoted source shows that most of them settled in the western part of Moldavia, so that the real balance of emigration in this part can be estimated for the 1990–2016 period at about 1 million people. Practically, at European level, only the south-west of the Balkans (Albania, Kosovo) still have such a high level of emigration, but given the size of Historical Moldavia, which is significantly larger and more populous, it can be said it is the most important source of continental migration.

4. CONCLUSIONS

The aim of the study, to highlighting the emergence of converging trends of population evolution in a territory marked by successive divisions, vectors of manifesting divergent political trends, is certified by the results of the typological analysis. Apart from the differences separating the fragments in which present Moldavia is divided, there are a number of co-ordinates that still provide some coherence, at least in terms of demographic evolution. These seem to be imposed primarily by the peripheral status of the region, both towards the European and national power centres (obviously, if we exclude the particular situation of the Republic of Moldova, a small state with a fragile

functionality). The peripheral position generated in the first part of the studied period (end of the eighteenth and nineteenth centuries) a relative attractiveness of the region, expressed by a rapid population growth. During the 20th century, the region gradually became repulsive, correlated with the successive division / split again of the territory, but also with the relative overpopulation induced by the precariousness of the social-economic structures (Northeast Romania is the least developed region of the country, as is the Chernivtsi region within the Ukraine, while the Republic of Moldova is the European country with the lowest gross domestic product per capita). Efforts to industrialize and modernize agricultural systems during the totalitarian period, somewhat delayed the installation of a demographic decline specific to peripheral regions, alongside with preserving demographic vitality. This latter aspect was generated not by maintaining higher fertility indicators but by the favourability induced by the preservation of a young population structure (the so-called population momentum, "population growth after reaching the 2.1 threshold of the specific fertility indicator, within the context of maintaining a young population structure", after Bongaarts, Bulatao, 1999).

The opportunity to have a demographic dividend throughout the region during the communist period was not properly exploited, as the region's rising degree of rurality is still a disability. The timing mentioned above masks the population's stress in the sense of a demographic development superior to the supportive nature of the natural environment (Chi, Chak Ho, 2018). The population stress was accompanied by the environmental stress (according to the Commoner' definition, 1991). This especially in the Republic of Moldova, where rapid population growth between the 1950s and the 1990s was accompanied by the modernization of agriculture, in particular through the massive use of chemistry, with serious effects on the quality of the environment. Thus, the fall of the totalitarian regimes after 1989 has inevitably led to the confrontation of the region with the rigours of the transition that brutally occurred, generating a massive emigration trend that has strongly eroded demographic structures, although it provides much of the revenue through remittances, without which the situation would be even more disastrous (Simone *et al.*, 2018). Emigration can also be seen in the context of the specific evolution of the demographic transition, as a mechanism for regulating the population, along with marriage and fertility control (Reher, 2011, p. 24). Most of the income earned from working abroad is predominantly directed towards the construction or purchase of houses, the entrepreneurial spirit being poorly represented (Sandu, 2010, p. 188).

As it emerges from this analysis, the decline of the region, at least from a demographic viewpoint, is in full swing, unquestionably falling into the category of "shrinking regions". Possible solutions to stop these trends cannot be conceived beyond reducing isolation and developing regional co-operation. The current position, one of contact between the European Union and the eastern neighbourhood, although seemingly favourable, is counteracted by the poor development of the infrastructure, inefficient connections and the existence of some outbreaks of instability in the post-Soviet space.

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Appendix

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