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Demographic Challenge - Economic and Social Aspects in Romania

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Abstract: This paper aims at capturing the fundamental changes recorded in the current evolution of the Romanian population and also foreshadowing of weather. The decreasing of the population in our country is a very worrying phenomenon, and that is why we believe that the topic is of interest to both academic debate and also for the country; thus is for implementing executive some emergency measures to stop this phenomenon that punctuate effects on future generations. It is true that a slowdown in population growth is registered in the entire European continent, but what is registered in Romania is much worse, even compared only with the eastern continent. In this approach we intend to study some initial traits of evolution population in Europe, detect a number of negative traits and subsequently fit the evolution of Romania's population, thus framing Romania following European evolution. An aging population is another major phenomenon, with Romania registering more than 210,000 people over 65 than young people under 14 years. This situation is due to a part of a policy of ultra-restrictive and contrary to human dignity from the communist period and the changes in rural life since 1989. In order to tackle these issues we used some quantitative and qualitative methods, with the tools like: statistics, graphics and mathematics order are necessary in the measurable results, and in the development of predictions.

Keywords: decreasing; population; aging population; the age pyramid.

Motto: *Facts do not cease to exist because they are ignored.*

Aldous Haxley (1894-1963)

1. Introduction

"This model of demographic change remains a central preoccupation in contemporary population studies" (Szreter, 1993) noticed Simon Szreter (1993) and demographic transition theory is generally considered to have been given its classic formulation in two separate publications, by Frank W. Notestein and by Kinslay Davis, both composed in 1944 and published in 1945.

But the theory of demographic transition, or "demographic revolution" was first proposed by Adolphe Landry (1874-1956) in his seminal "La revolution demographique" (Landry, 1987, pp. 731-740), published in 1934 (Landry 1934/1982). (Laundry, 1934). The theory was thereafter reformulated between 1945 and 1953 by the American demographer Frank W. Notestein (1902-1983), which

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ascertained that: to understand the variety of demographic regimes found across the world, it is necessary to understand the history of demographic change globally (Notestein, 1953). Work by Warren Thompson (1887-1973) which observed changes, or transitions, in birth and death rates in industrialized societies over the previous 200 years[1] and Kingsley Davis (Kingsley, 1987) (1908-1997) which was internationally recognized for his expertise in world population growth and resources, the history and theory of international migration, world urbanization, demographic transition and population policy and also contributed to the intellectual foundations of the theory. Anyhow, (overall) the demographic transition theory (perhaps the most dominant theory in demography) is an attempt at a comprehensive, even universal description of the demographic change. The theory has a practical and operational dimensions inasmuch as it can help design policy interventions and/or define assumptions to calculate demographic projections.

Graziella Caselli, Jacques Vallin and Guillaume Wunsch (Caselli, Vallin, & Wunsch, Massachusetts, United States) published a long overdue about demography, analysis and synthesis thorough treatment of the field that offers a "one-stop shop" for those who need non-technical summaries.

Vladimir Trebici and Ilie Hristache (Hristache, 1986) analyzed in their work the number of population from Romania and its territorial spreading, with its structure of population - at that time.

David Coleman (2006) (Coleman, 2006) spoke about ethnic and social transformations which are brought about "by high levels of immigration of persons from remote geographic origins or with distinctive ethnic and racial ancestry".

Charles Hirschman (2003) (Hirschman, 2004, pp. 425-431), refers to the fact that demographic phenomena are linked to the socioeconomic factors. "Population and development generally refers to the study of the consequences of population trends on socioeconomic development, human welfare, and the natural environment".

John F. May (May, 2012) analyzes the demographic situation in the countries, that are confronted with the post-transitional imbalances. The author also makes references to the population policies in the developing countries.

Tim Dison (2010)[2] expertly guides the reader through the demographic transition's origins in the Enlightenment and Europe, through to the rest of the world; the author examines how its processes have underlain previous periods of sustained economic growth.

Ronald Lee (2003) (Lee, 2003) precised in his work that "the transition began around 1800 with declining mortality in Europe. It has now spread to all parts of the world and is projected to be completed by 2100. This global demographic transition has brought momentous changes, reshaping the economic and demographic life cycles of individuals and restructuring populations. Since 1800, global population size has already increased by a factor of six and by 2100 will have risen by a factor of ten".

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[1] Thompson,Warren (2003). *Encyclopedia of Population",* Macmillan Reference. 2003. Pp. 939–40.
[2] Tim Dison, *Population and Development: The Demographic Transition* Paperback – 14 Oct 2010, pp. 8-49

2. Presentation

Although at first examination might seem like vulgar human characterization by Henry George[1] that "The Man is the only animal whose desires increase as they are fed; only animal never satisfied". It contains a great truth: the creator of the material and spiritual goods has come to be experienced in some parts of the world, with its problems of evolution, providing a workforce to support economic development and social and why not perpetuate it.

We refer to the population of the European continent, which, despite the steady growth in the postwar period recorded lower growth rates than the global rate. Thus, as can be seen from Figure No. 1 on the left of the world's population has grown from about 2.5 billion in 1950 to about 7.5 billion while Europe's population increased from 550 million to 750 million inhabitants. These increases the asymmetric global population and determine Europe's share of the European population as to reduce significantly across the globe, reducing it from 22% in 1950 to only 10% in 2015 (see Figure no. 2). the development in this regard uneven population continents is presented in dynamic Figure no. 3.This chart reveals the number on the one hand the European population globally and, on the other hand rhythms more reduced growth compared to those recorded by other continents. Table No. 1 shows the main sizes of the changes and also offers a better ranking of growth rates. As it can be seen coefficient of variation, modification of the European population during 1950-2015 was the lowest, only 8.48%, that which denotes that the population of this continent recorded the lowest change. 6-fold difference in coefficient of variation of the European population from that of the African continent and 4 times at the Asian continent determine how much to finally share in Europe compared to the population of globally to reduce so drastically. Maybe that was the foundation of this situation that prompted the admission of immigrants on the territory of Europe.
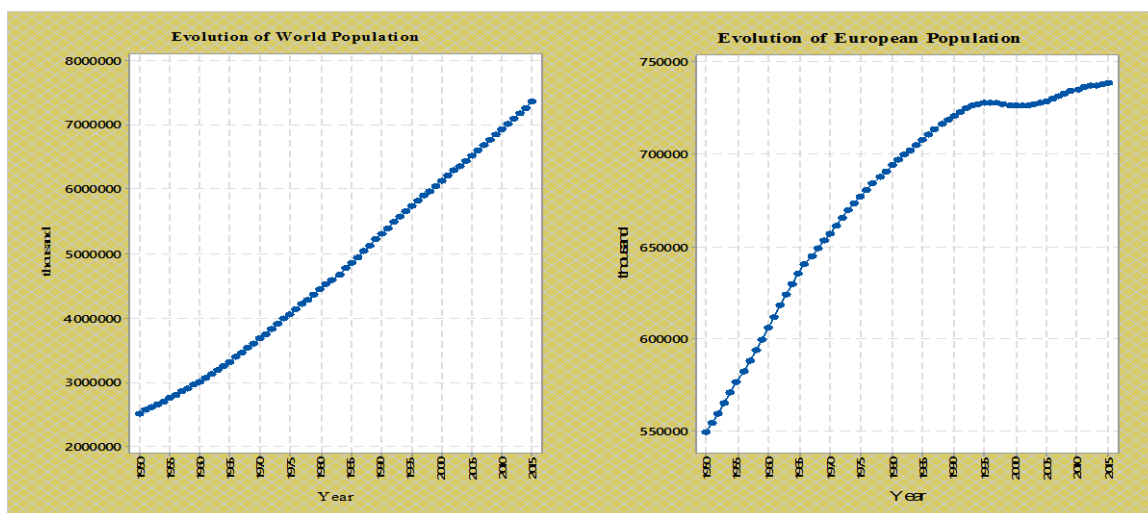

Figure 1.

Source: UN Population Division Department of Economic and Social Affairs

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[1] Henry George (2nd September, 1839 – 29th October, 1897) was an American writer, politician and economist
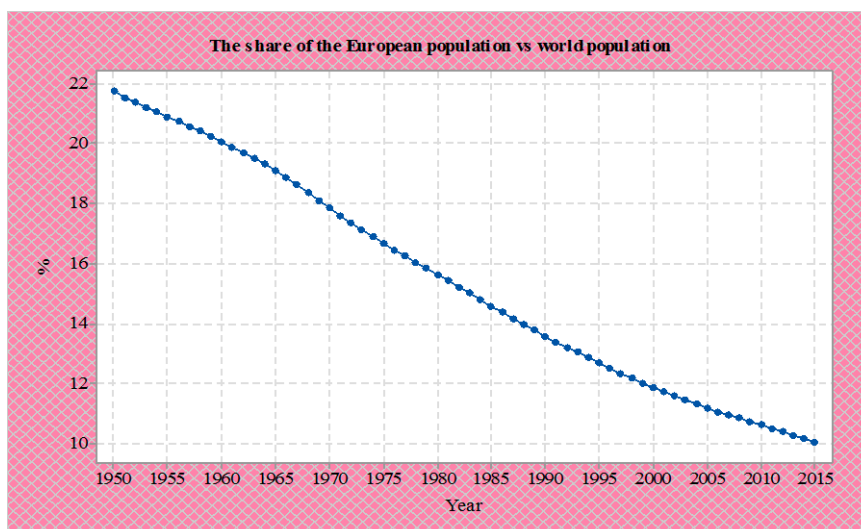
Figure 2.

Population growth has been achieved at different rates during the period analyzed, so while increasing European population was achieved in rates relatively constant over the decades in Africa, Asia and South America, the rhythms are becoming larger towards the end of the period. These dynamics are expressed in graphical form in Figure no 4. In other words, the phenomenon of asymmetry on population growth on the continent was emphasized in recent decades, a phenomenon that is assumed will continue in future periods.
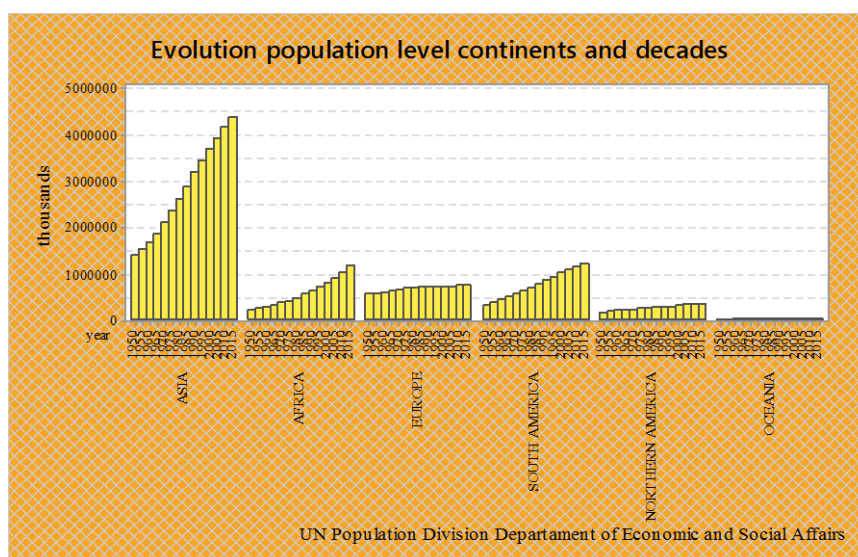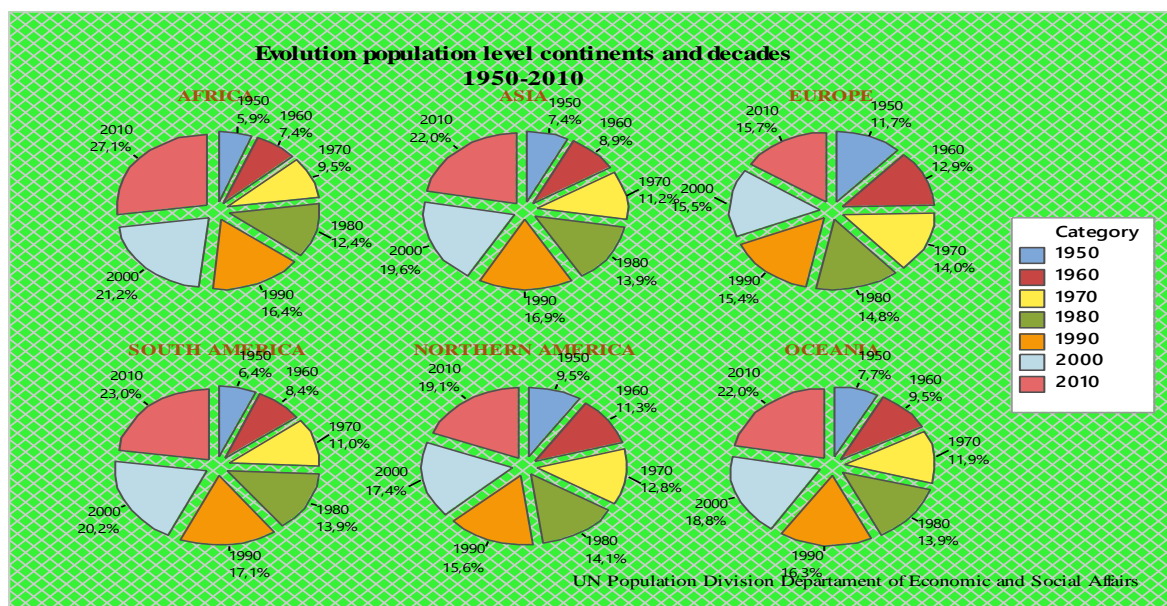

Figure 3.

Figure 4.

Table 1. Descriptive Statistics: Evolution of the population by continents

Variable	Mean	SE Mean	StDev	Variance	Var	Minimum	Maximum
Africa	578.812	34.665	281.621	79.310.279.279	49	228.902	1.186.178
Asia	2.809.853	116.462	946.140	895.181.000.000	34	1.394.018	4.393.296
Europe	679.369	7.088	57.585	3.316.027.627	8	549.089	738.442
South America	751.115	34.475	280.077	78.443.231.466	37	320.612	1.225.574
Northern America	263.961	6.621	53.791	2.893.471.038	20	171.615	357.838
Oceania	24.581	943	7.658	58.651.600	31	12.682	39.331

Including across the European continent there are major differences between the main areas regarding the pace of population change. Thus, only the Eastern Europe registered consistently above 40% of the total population of the continent, as it could be seen in this Figure no 5.
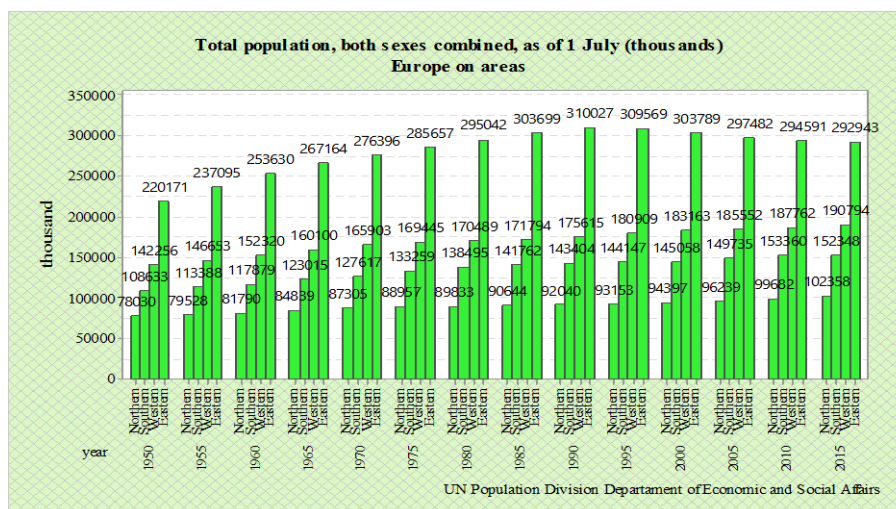
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Figure 5.

Rates of change of the European population in the decades 1950-2010 period are relatively constant so as anyone can see in Figure number 6, and the coefficients of variation in Table No. 2.
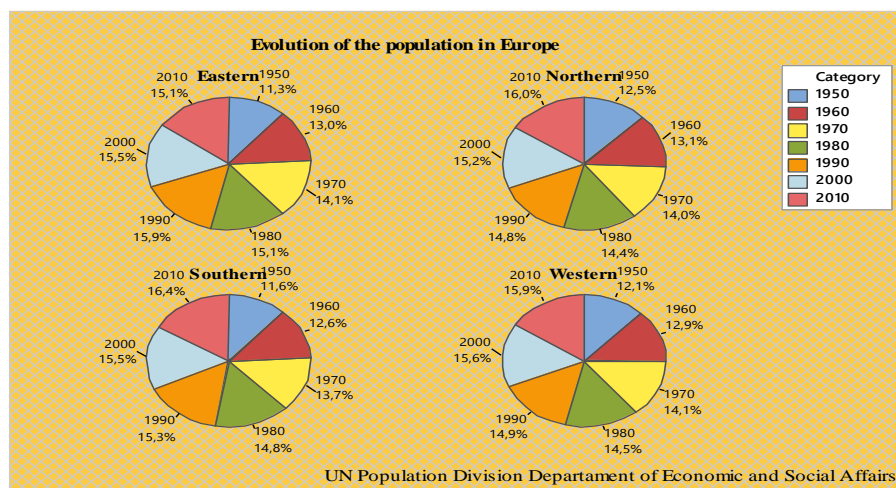

Figure 6.

Table 2. Descriptive Statistics: Evolution of population in Europe

Variable	Mean	SE Mean	StDev	Variance	Coef Var	Minimum	Maximum
Eastern	283.590	3.116	25.314	640.781.682	9	220.171	310.686
Northern	89.886	800	6.497	42.213.317	7	78.030	102.358
Southern	135.468	1.675	13.606	185.111.541	10	108.633	153.451
Western	170.424	1.724	14.009	196.242.090	8	142.256	190.794

Population evolution has been marked by increasing average age of the population who in the analyzed period increased by about 10 years in both sexes, as seen in Figure no. 7. This can be attributed to the recorded economic growth reflected in living conditions in consequence, it is first of

increasing life expectancy, as age population in the first category, namely between 0 and 5 recorded a halving of the share of about 10% give only 5% .is the wording of a very unfavorable phenomenon on future periods or aging population, see Figure no. 8.
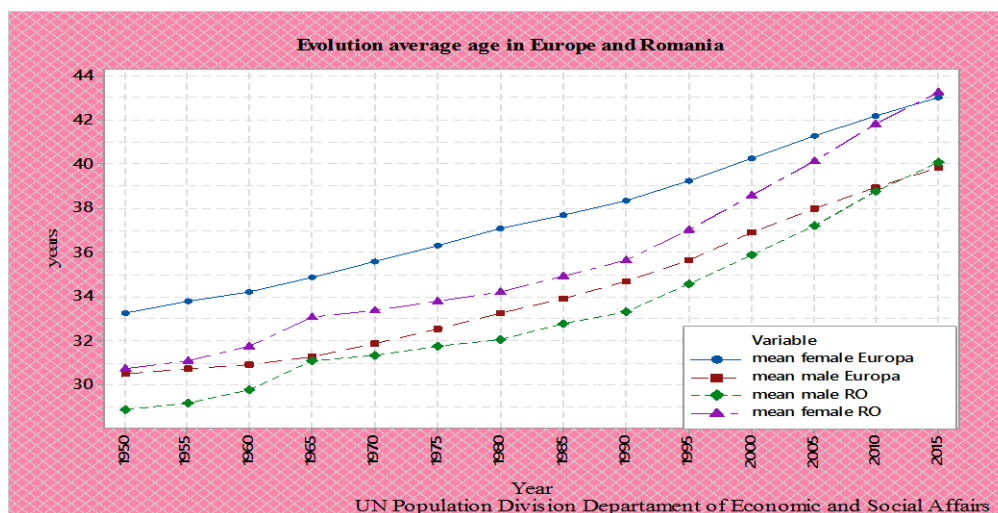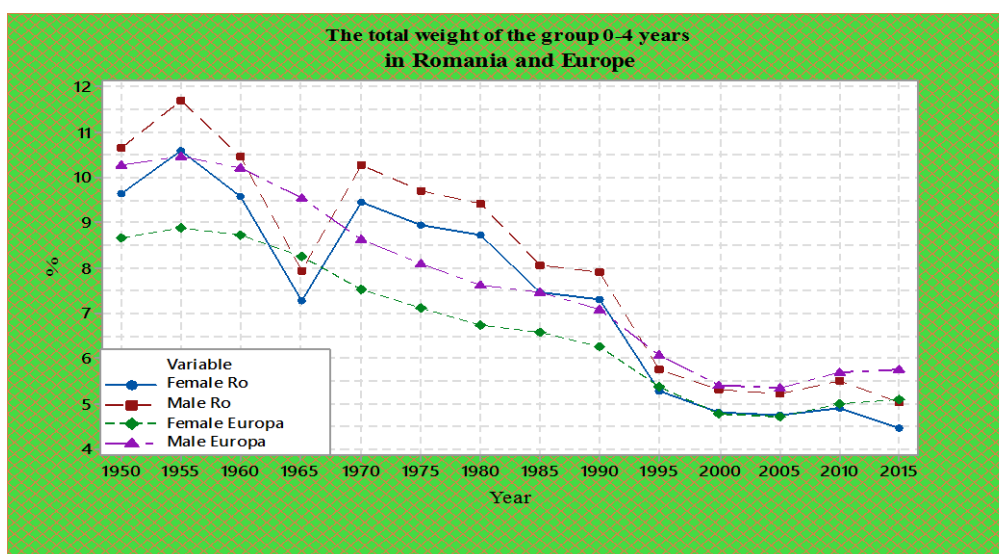

Figure 7.

Figure 8.

In this negative trend both in terms of quantity and quality enroll and Romania's population, but so will be seen as negative phenomena are much wider.

If Europe population growth rates, the evolution of Romania's population by sustained growth until 1990 recorded a very pronounced decline.

Romania enroll unfortunately one of the most restrictive legislation and also primitive about population growth, we refer to Decree 770/1966[1], a normative act despite demographic boom contributed to the death of many mothers trying to circumvent it. Despite a lack of transparency in official statistics as well as some deformity causes of death is estimated, however, that only the last year of the communist dictatorship scored 1193 deaths[2], there were recorded as a result of this outrageous act. The justification lies on one hand in decrease of the growth rate of birth, in 1965 the number of abortions reaching 1.115 million that which represented a doubling from the level recorded in 1959, and on the other hand the high number of divorces, Romania recorded in 1964 the highest index of divorces comparing to the number of marriages in Europe, an average of five marriages when one is falling apart and in capital completed half of marriages through divorce[3].

We believe that despite these unfavorable situations resorting to brutal and dictatorial measures on private life was one of a series of laws imposed by the communist leadership in the demographic field. We are considering increasing the number of children that permit abortions taxes for families without children, etc. and to order bureaucratic measures that allowed divorce.

In some sectors, divorces attracted even reductions from their jobs, even despite a long experience and some remarkable results. The required measures and how to apply them, being given a lack of education of the population and birth control failure made this area to be the most unpopular communist period and unfortunately to propagate even in the aftermath 1989. As an expression of unpopular character this decree was among the first acts abolished immediately after the 1989 revolution.

Unfortunately, the lack of a coherent and an education precarious in the field, liberalization has contributed to Romania's population to record a downtrend. It is due to mention that in 1990 10% of the female population between 16 and 50 years have used a break legal task in Figure no. 9.
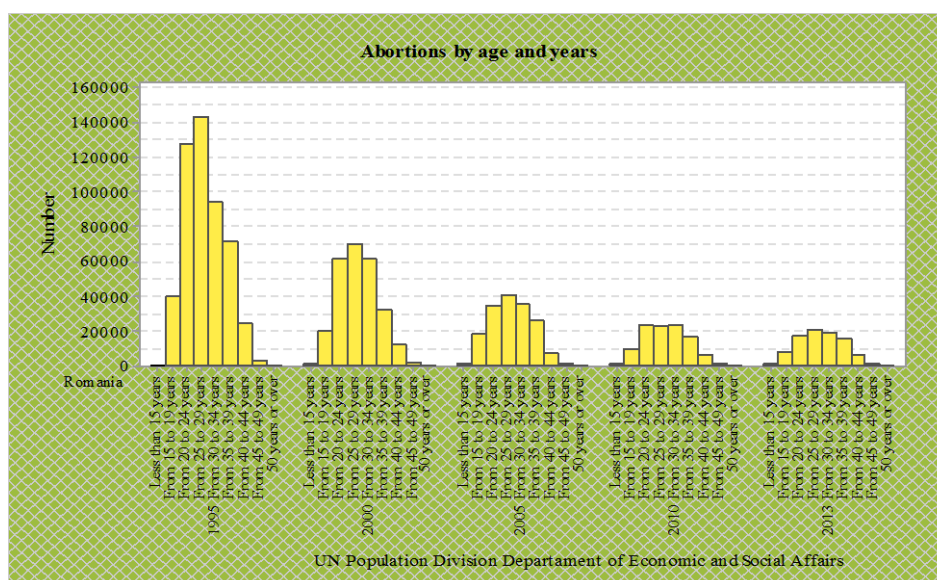

Figure 9.

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[1] Decree No. 770 of 1st October 1966, published in the Official Bulletin No.60 of October 1, 1966
[2] See Lavinia Betea Life Ceausescu's Decree anti-abortion, prostitution and "Decree" http: / /adevarul.ro 11 November 2012
[3] Ibidem.

Table 3. Descriptive Statistics: Abortions by age and years

Variable	Mean	SE Mean	St Dev	Variance	CoefVar
1995	55.871	18.521	55.564	3.087.303.024	99,45
2000	28.652	9.539	28.617	818.915.737	99,88
2005	18.151	5.520	16.560	274.245.553	91,24
2010	11.324	3.355	10.064	101.286.298	88,88
2013	9.604	2.791	8.374	70.122.525	87,20

The graph and data in Table no. 3 reveals a decrease in the average annual number of interruptions statutory task and also the reduction coefficients of variation that designates a dispersion less between age groups, i.e. greater uniformity by age disruptions task.

Evolution of the population of Romania during 1950-2015 is shown in Figure no. 10 which ultimately synthesize the two tendencies, one upward respectively until 1989 and remains bearish subsequent period. For the entire period from 1950-2015 Romania population's evolution can be modeled based on a parabolic trend, see Table no. 4 in this respect, both the form and explaining the chosen model that is statistically representative.
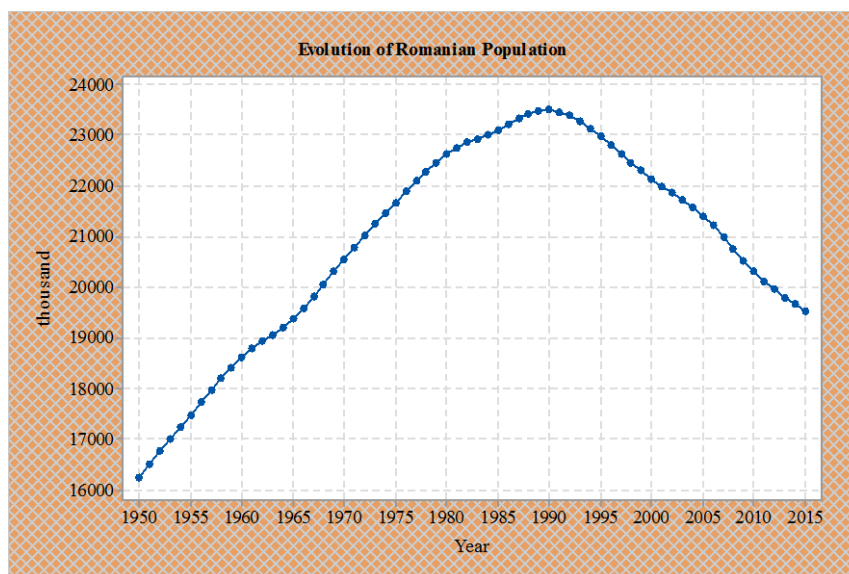

Figure 10.

Source: UN Population Division Department of Economic and Social Affairs

Table 4. Polynomial Regression Analysis: Romania versus time

The regression equation is

Romania = 15062 + 391,3 time - 4,923 time^2

S = 398,891   R-Sq = 96,3% R-Sq(adj) = 96,2%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2,00	258.752.038,00	129.376.019,00	813,10	0,00
Error	65,00	10.024.194,00	159.114,00		
Total	67,00	268.776.232,00			

Sequential Analysis of Variance

Source	DF	SS	F	P
Linear	1,00	90.321.341,00	32,39	0,00
Quadratic	1,00	168.430.697,00	1.058,55	0,00

The model chosen allowing for harsh weather I've evolution of population in the country. Thus, we obtained the model predicted 2030 population evolution, see Figure no. 11. As can be seen in the next period Romania's population will continue to decline. They also find that around the 2030's Romania's population will return to the level recorded in 1950. It is a phenomenon that totally unfavorable for our country will face serious demographic imbalances with repercussions that will affect the economic and social economic development, pensions etc.
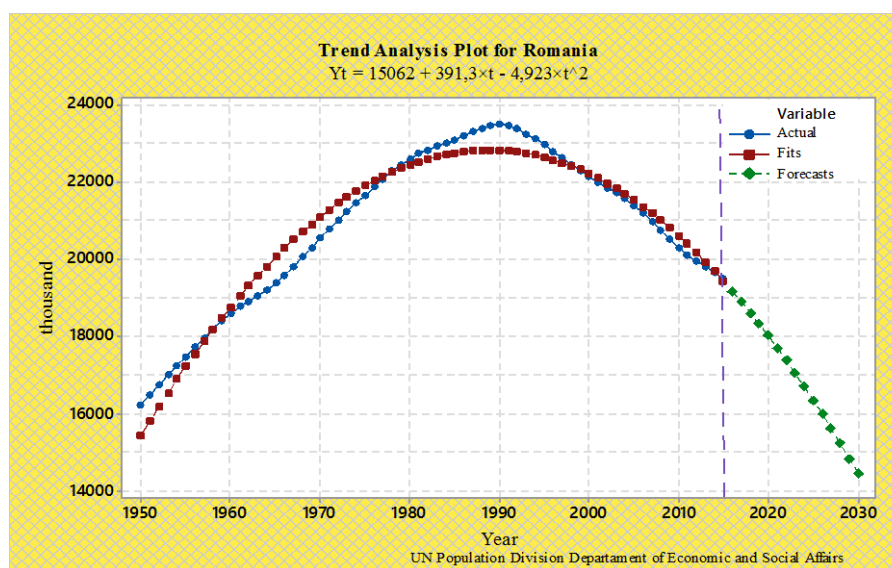

Figure 11.

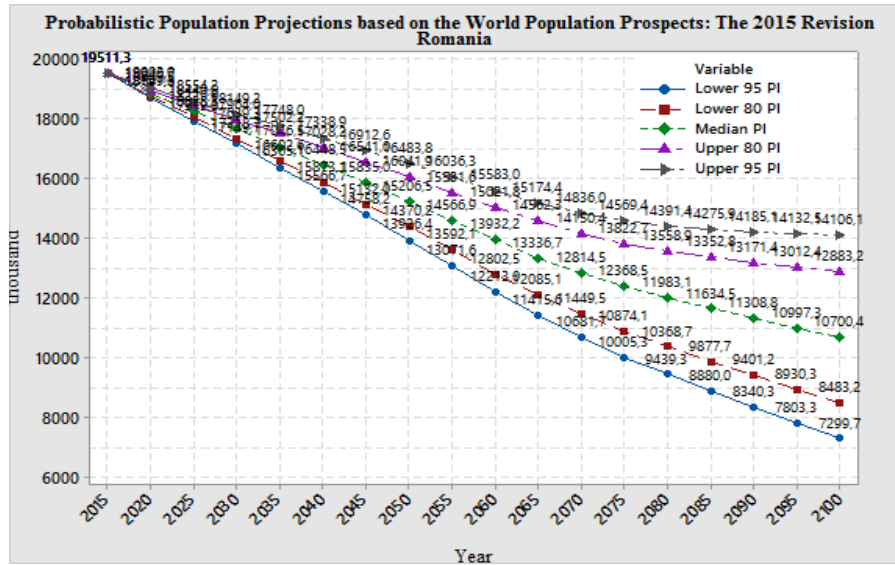*Source: UN Population Division Department of Economic and Social Affairs*

Figure 12.

Source: UN Population Division Department of Economic and Social Affairs

Similar conclusions reached and UN Population Division Department of Economic and Social Affairs which carries a term forecast, by 2100. After respectively as shown in Figure no. 12, in 2100 Romania will register a population of only 10 million inhabitants.

Another phenomena with multiple implications on population trends is the aging population. It is the consequence of the growth of a middle age as a result of improving living conditions appreciated as a positive phenomenon, and on the other hand to reduce the share of young population, which cannot be considered as a negative phenomenon. How "Everyone wants a long life, but no one wants to be old"[1] cause with the decline several major imbalances at the macroeconomic Romania: reducing potential GDP, maintaining dependence on foreign capital and increase pressure on the state budget[2]. These phenomena reduction and aging population are shown in the graphs in Figure no. 13, which convey the pyramids ages in the years 1990, 2015, 2050 and 2100. It could be noticed that with time, on the one hand a narrowing of the pyramids, on the other hand smoothing the population by age.

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[1] Jonathan Swift 1667- 1745 was an English writer, one of the most important representatives of the Enlightenment period of the first English realism.
[2] Dan Popa - Romania is shrinking and aging. Some economic effects and possible solutions, Hotnews, February 10, 2016.
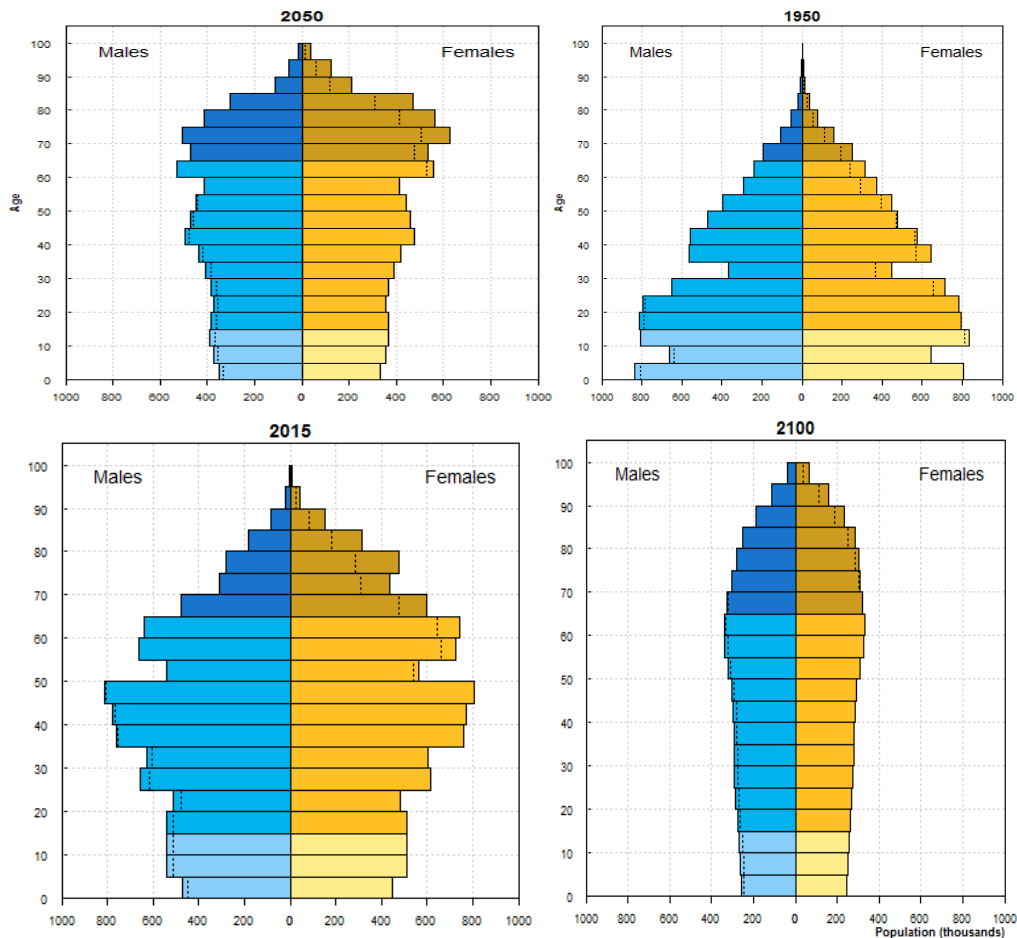
Figure 13. The age pyramid

Source: UN Population Division Department of Economic and Social Affairs

3. Conclusions

These are just some of the demographic challenges facing Romania as a result of that will worsen in the coming period. The result also resulted that these issues are recorded in the entire continent, but the magnitude of negative phenomena is much greater than those within Europe. We believe that these come primarily from the change of lifestyle of the Romans after 1989, when responsibility for work, fear of job loss, and that measures reaction to the absurdity of the communist period.

Regarding the measures that are being taken in order to stop these phenomena, scientists have launched a number of ideas that would be required to be applied. Thus, the director of National Statistics Institution[1].

Proposes to the French model, which consists of three sets of measures, namely:

1) fiscal measures directed to families with children;

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[1] Apund Tudorel Andrei Dan Popa, Romania is shrinking and aging. Some economic effects and possible solutions, Hotnews, February 10, 2016.

2) measures concerning the nature of these families for example the development of nurseries, development establishments in which children can be educated and can allow parents to take an active life following the birth of a new baby in the family;

3) measures of facilities so-called tax exemptions or tax deductions for certain categories of families.

In turn, Director of the Center for Demographic Research of the Romanian Academy, Vasile Ghetau argues that to apply a policy to stimulate the birthrate should be performed extensive research to detect the optimal set of measures.

From our point of view we consider it necessary to review and amend all legislation relating to birth and growth clot in a code. Providing real greenhouse facilities for families with children and improving education and health System in which to sustain population growth. The existence of a specialist teacher on age levels is essential in a child's life. Unfortunately, even in a city like Iasi, the first university was established on Romanian territory there are only two teachers who pass through each week nursery city and have activities during this stage[1]. Thus, we believe that the deficit of about 40-42%[2] of doctors reflect on the entire medical system in Romania, but also reflects the demographic situation, both through the quality of care provided to children, but also through prevention and education in the field. This situation is so serious that lead to the closure of some hospitals, pediatric Slobozia Hospital[3]. We also appreciate that improved credit system "First Home" also need to be revised in the sense of mutual aid with several young children, knowing that one of the reasons given by young people in starting a family consists of homelessness.

Of the presented wanted to present some aspects of deep crisis which is registered in the evolution of Romania's population and also that this area should constitute a priority objective that cannot be resolved through measures sequential, but only by a strategy, encompassing an aggregate measures.

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[1] Http://www.ziaruldeiasi.ro / 17.03.2016 Paula Scinteianu
[2] http://www.mediafax.ro/ September 5, 2014 interview with President Vasile Astarastoae medical College of Romania (CMR)
[3] http://www.independentonline.ro/2015/05/07.

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