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DEMOGRAPHIC CHANGES AND LABOUR MARKET IN ROMANIA

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Abstract

Romania is facing a rapid demographic ageing, mainly due to negative natural increase after the dissolution of the former regime. The demographic behaviour was associated with birth postponement, a decreasing total fertility rate (1.3 at present), emigration (mainly in the early '90s). In 2000, the elderly exceeded the young population in number and percent.

The demographic model tends to cope with the model of the European developed countries, but the race is regulated by the dynamics and effectiveness of the economic and social reforms.

Working age population will significantly decrease after 2005. It will be associated with major imbalances by age groups, which may equally cause demographic, economic and social problems. The economic dependence ratio is worsening. Of the inactive people, 40 percent are pensioners and 29.4 are pupils/students. Labour migration potential is high, especially among upper secondary and university graduates. On long term Romania may turn into an immigration country with an important contingent of natives working abroad.

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INTRODUCTION

By population (about 22 million inhabitants at the beginning of the millennium), Romania ranks the ninth in Europe and the second among the EU candidate countries. Like many other countries *Romania is facing a population diminution, but its labour potential is still high and under-used*. The gap in the demographic transition of over one decade between Romania and the European countries makes of Romania an (still) attractive source of younger, high-skilled and relatively cheaper labour force¹. The migration for labour from the East to the West is favoured by the EU member countries contrary to the South to North migration of less skilled labour.

But, in turn, Romania is expected to face, especially after 2005, a gradual decrease in the national labour resources, showing major imbalances by age group, which may equally cause demographic, economic and social problems. The dramatic change in the population profile at a faster pace than in the developed countries in the absence of adequate policies will cause alarming economic and social troubles. A society having less and less young people and more and more old people and being unable to ensure self-generation and necessary wealth becomes a pressure factor in the region with quite unpredictable consequences².

The intergeneration tensions are a real problem in Romania at present. The economic dependence ratio is worsening. Moreover, the children's education is more and more expensive and the need for the aged population's health insurance is increasing. The systems of protection of such categories are insufficient under financed and improper to face the present and future challenges, and the household income cannot meet the deficit. Considering the features of Romania's population evolution, we try to present the picture of Romania's medium and long-term labour resources and the possible constraints and required policies for providing human resources able to support the economic and social progress and sustainable human development.

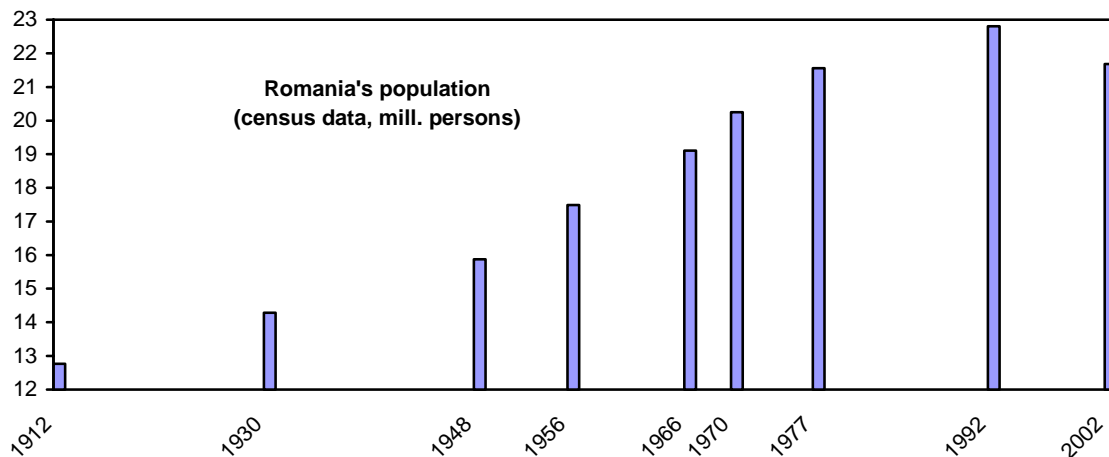
¹ "...the OECD calculated that immigration might have to be between five and ten times its current level just to neutralise the economic effects of ageing population. Even today's inflow is causing political strains, with anti-immigration politicians like France's Jean-Marie Le Pen, Italy's Umberto Bossi and the Netherlands' late Pim Fortuyn popping up all over Europe" (The Economist, 17 July, 2003)

² The specialist show deep concern about the possible international implications of the population ageing in the developing countries and under different economic and social conditions. „While the industrialised nations first became richer and then older, the developing countries are becoming older before getting richer" (Gro Harlem Brundtland, WHO Director General, as quoted in „The elderly situation over 1990-2002", NIS, Bucharest, 2003).

1. THE EVOLUTION OF ROMANIA'S POPULATION IN THE LATE 20TH CENTURY. FEATURES

In the last century, the population evolution was influenced by economic, political and social changes. The early part of the 20th century, dominated by the two World Wars, and the latter part as well as the first decade of transition to the market economy represented distinct periods of the population evolution.

The rising population trend, specific to the early century continued (sometimes characterized by forced growth) until the early 1990s; then, the population dynamics (marked by free will) followed a lowering trend (very significant) that was supposed to accentuate in the future. What we had gained over 15 years by a pro-birth policy, i.e. the population growth by about 1 million people between 1977-1992, was lost in ten years (1992-2002).

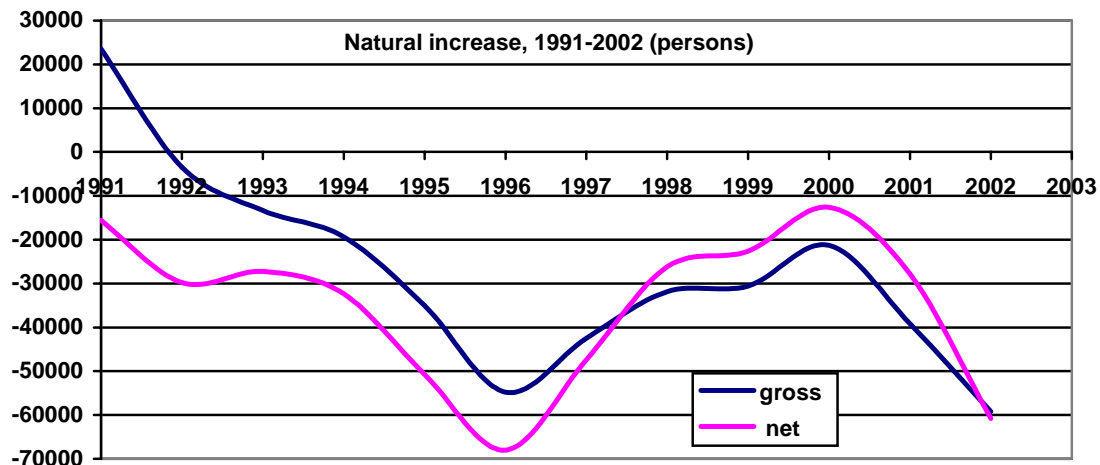


1.1. Factors influencing the population evolution

The population increase was influenced by several demographic, economic, social and political factors that covered distinct periods of different intensity or significance. Romania's demographic model before 1989 was intended to be a regulatory and political one characterized by invasive measures for the "adjustment" of the demographic factors: fertility and birth rate, migration. After 1990, the liberalisation of the demographic behaviour was associated with the birth postponement, migration, etc. At present, the demographic model tends to cope with the model of the European developed countries, but the pace is regulated by the dynamics and effectiveness of the reforms in the economic and social field.

The **natural increase** was positive until 1991, especially due to the forced pro-birth policy (ban on abortion between 1967 and the collapse of the totalitarian regime). But the birth rate diminished continuously from 27.4 live births to 1000 inhabitants in 1967 to 9.7

in 2002. The death rate was before 1980 (with one exception: 1969) up to 10 people to one thousand of inhabitants and then grew constantly to 12.7 in 1996. Afterwards it diminished slightly. The above trend shows, on the one hand, the occurrence of the population ageing and, lately the deepening of the process and, on the other hand, the steady worsening of the population's health condition by age group³.



Source: Statistical Yearbook, 2002, INS

Other two demographic components evolved in a specific way in Romania:

- a) **The infant death rate**, although increasing (116.7 infant deaths per 1000 live births in 1950), was still very high, quite alarming for an European country: 26.9 in 1990 and 17.3 in 2002.
- b) **Emigration**, unrecognised officially by the former regime, “burst out” in 1990-1992 when the number of emigrants exceeded the emigration flows of the next ten years. It has to be mentioned that the emigration diminution was associated with a rising trend in the immigration and repatriation and with the (more attractive and easier) alternative option for the circulating emigration. It caused a shift in the specialists’ interest from the (final) emigration estimation to the temporary migration for jobs.

If we try to calculate the “net” natural increase, then the demographic dynamics changes in both intensity and direction. According to the available data, between 1991-2002, 2.87 million infants were born and 3.2 million people died. The total population diminution by 330 thousand people was amplified by the migration flows that were negative over the whole period. The annual increases were negative or diminishing before 1997 and

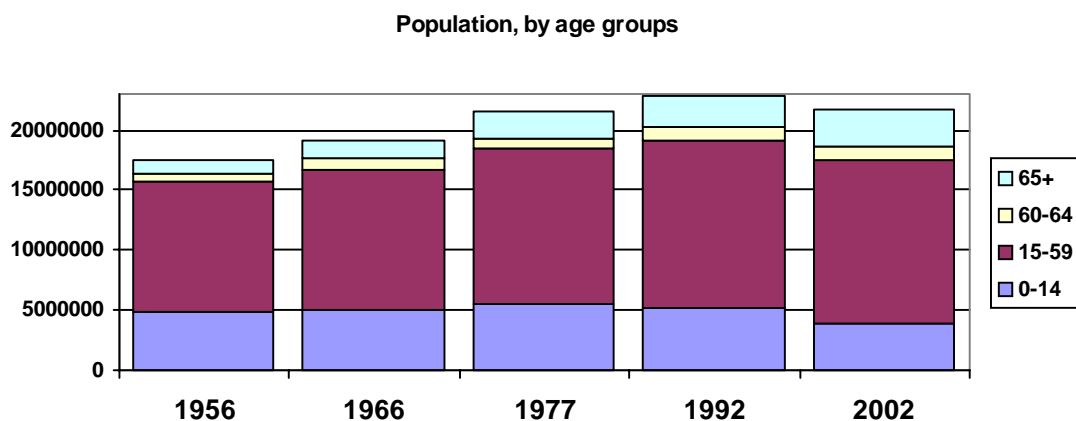
³ The worsening of the health care system has caused a diminution in the average life expectancy and a high rate of avoidable deaths. For example, in 2000, 10 percent of all deaths, could be prevented (of which two-thirds of men). Of all avoidable deaths 57 percent were caused by poor health care and secondary disease prevention, and other ones were caused by poor primary disease prevention and ineffective and sometimes inadequate health policy on the national level. (The population projection by groups and main trends in the population increase, 2000-2010, NIS, Bucharest, 2000).

positive and increasing from 1998 on, which caused a reduction in the effects of the negative gross natural increase in the last period (Annex 1).

1.2.Changes in the population structure by age groups

The population decrease was accompanied by major changes in the structure by age groups. The changes are part of the long ageing trend specific to the European nations⁴.

The low birth rate, associated with a total fertility rate fewer than 2 after 1990, caused the diminution in the proportion of the youth. On the 1st of January 2000, it was the first time that the young population was exceeded in number and percent by the elderly. The 0-14 years children were 3 percent less than the population of 60 years and over.



Source: NIS data.

The ageing effects on the labour market will occur after 2005 when the working age population is supposed to include the smaller generations born after 1990. The 15-59 years population increased to almost 13.9 million in 1992, maintaining a share of 60-63 percent of all population. The under-14 years age population increased slowly (from 4.8 million in 1956 to only 5.18 million in 1992), which brought about a diminishing share in all population from 27.5 percent in 1956 to 22.7 percent in 1992. The ratio of the 15-59 years old population to the rest was 1.72 in 2002 as against 1.67 in 1956 or 1.56 in 1992. At first sight, the ratio seems adequate but it **includes major changes by age groups** as against the previous years as follows:

- While in 1956 the ratio of the young people (0-14 years) to the elderly (60 years and over) was 2.8 children to 1 old person of 60 and over, in 1992 it diminished to

⁴ In Europe the people are elder than in America. According to Bill Frey, a demographer at the University of Michigan, the median age in America in 2050 will be 36.2. In Europe it will be 52.7. That is stunning difference, accounted for almost entirely by the dramatic ageing of the European population. At the moment the median age is 35.5 in America and 37.7 in Europe. In other words, the difference in the median age is likely to rise from two to 17 years by 2050 (the Economist, August, 24-th, 2002)

- 1.4 and in 2002 it went below unit, i.e. 0.9. It means that in the future the working age population group will be supplied with diminishing contingents, under the replacement level, thus reducing the country's labour potential due to the smaller absolute amount of active age individuals.
- The extension of the retirement age to 65 years means a further increase by 5 percent in the potentially active population but with a comparatively smaller productivity, which is to be added to the old adult group, thus exceeding one quarter of the working age population.
 - The largest working age group shifts towards the older groups: in 1966 the largest group was that of the young people of 15-19 years, while in 1977 and 1992 the highest share was held by the 20-24 years group, and in 2002 most of the people were 30-34 years old (Annex 2).

2. DEMOGRAPHIC TRENDS HAVING AN IMPACT ON THE POPULATION INCREASE IN THE 21ST CENTURY

A broader approach to the shifts in the Romanian population model reveals the following features to be considered when dimensioning the future labour resources:

- Not only the country's population is getting older but also the elderly are.
- The Romanian countryside ceased to be the source of the population youthfulness (the young people have been leaving the rural area for urban centres)⁵.
- The woman's emancipation as she is eager to carry on her education and be more active on the labour market.
- The change in the demographic behaviour: the marriage postponement, giving birth to children at a later time, family size diminution from the traditional formula of 2+2 or more to the 2+1 formula or children born at a later time and outside a family.

2.1. Romania's population at the beginning of the 21st century. The census of the 18th of March 2002. Dimensions

According to the latest census, carried out in 2002, Romania's demographic situation is close to a "crisis". The synthesis data, as absolute figures or comparative values as against the 1992 census, reveal the major demographic problems in the present but especially in the future (Annex 3). Among them we find:

⁵ Before 1990, the forced industrialisation caused major rural-to-urban flows. During the transition period the internal migration flow went on but at a decreasing rate (from three quarters in 1990 to less than 20 percent in 2000). At the same time, the urban unemployment increase and reversion of the farming land by Law 19 of 1991 caused reversed (urban to rural) flows that in 1997 became prevalent. It is not the youth who returned, but pensioners and people over 45 years, the unemployed unable to be (re)integrated on the labour market. In comparison with the population already living in the countryside, they are usually more skilled, more demanding in relation to amenities in infrastructure of the living area, thus influencing positively and speeding up the modernisation the countryside.

- Romania ranks the ninth in Europe and the second in Central and Eastern Europe by population resources, but there is a **demographic imbalance that tends to aggravate**.
- Although more men are born, there are 1051 females per 1000 males, and the population feminisation tends to speed up (due to the higher death rate of males at an early age). Although diminishing, the infant death rate was several times higher than the rate in the EU member countries (in 2002, 17.3 of the infant deaths per 1000 live births).⁶
- **The birth rate is low and further decreasing**. More than one-third of the females of the fertile contingent have no children, the contingent index of fertility is 1.3, and the number of live births per 1000 women has diminished in the last 10 years by about 10 percent (1648 in 2002).⁷
- The death rate was close to the rate in countries such as Denmark, Germany, Sweden, the United Kingdom (Council of Europe, 2002), but **the death rate by age groups differed very much**. The death rate at an older age was comparatively higher, and at a younger age it affected to a greater extent the generations born during the pro-birth periods. Comparatively, the generations born after 1989 were healthier and the death rate by age was sensibly lower than the rate of the generations of the same age born earlier.
- **The life expectancy at birth** was again slightly increasing (from 1995), but still **remained at a low level for a European country** (70.53 years, 67.3 for men and 74.2 for women) with a 7 years gap.
- The proportion of the elderly increased (307 people of 60 years and over per 1000 people of 15-59 years) and the proportion of the youth diminished (279), as the ageing was faster than in other European countries. **The proportion of the youth diminished faster than the increasing proportion of the elderly** (-25 percent as against + 14 percent in 1992). Therefore, **the median age increased** by 2.7 if compared to the previous census to a total figure of 37.3 years.
- The population was more educated, the schooling average level improved (on the basis of the upper secondary schooling and higher education). The gross **migration potential of the graduates**⁸ was about 25 percent for the higher education graduates and about 60 percent for the upper secondary school graduates (!). Of 8.2 million legal emigrants in 2002, 3972 were 24 to 34 years old, highly trained and qualified.
- **The active population diminished in absolute terms** (-1.6 million people as against 1992) and in relative terms (-5 pp of all population). The ratio is 1.449 inactive to 1 active person and in the case of women it is 1.7 times higher than in the case of men (1.913 as against 1.098 inactive persons to one active person); of the inactive people, 40 percent were pensioners and 29.4 were pupils/students.

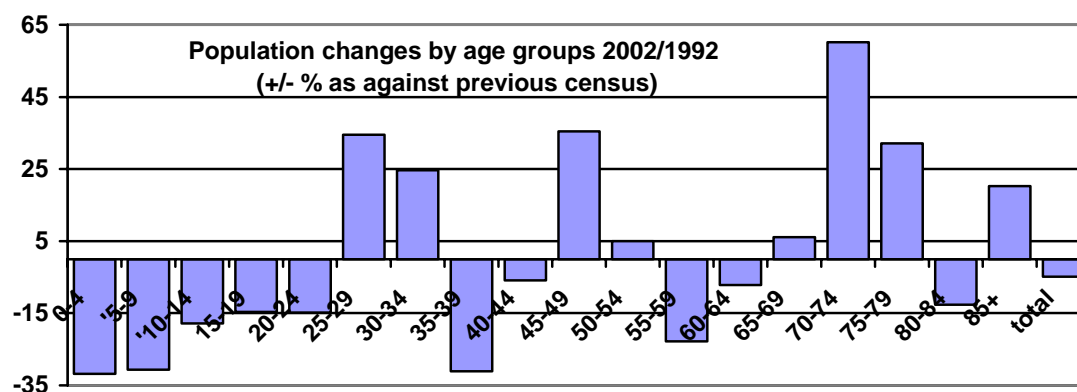
⁶ The main causes of the infant death were the breathing system diseases that accounted for two-thirds of all infant deaths.

⁷ In 2002, there were 210.5 thousand live birth, that is 9.8 thousand less than in the previous year. Live-birth rate decreased at 9.7 live births per 1000 inhabitants, **the lowest figure in the last century**. The live-birth rate diminution was mainly caused by the smaller rate in the rural areas, but the figure was still higher than in the urban areas (11.0 to 8.5).

⁸ As a ratio of number of graduates per education levels to the corresponding educated population.

2.2. The demographic evolution as against the 1992 census. Impact on the labour potential

In the last ten years of the period, Romania's population decreased by about 1 million people. In 2002 the **population** number was comparable to the 1997 one, but **strongly divided by age groups**. The 15-59-age population, although diminishing in absolute term as against the previous census by 219 thousand people, the share in all population increased from 60.9 percent in 2002 to 63 percent. The structural change was caused by the increasing share of the old adults (higher in the case of women and in rural areas). By age groups, major increases in the population of 25-34, 45-49 and 70-79 years and decreases by about one-third in the contingents of 0-9 and 35-39 years.



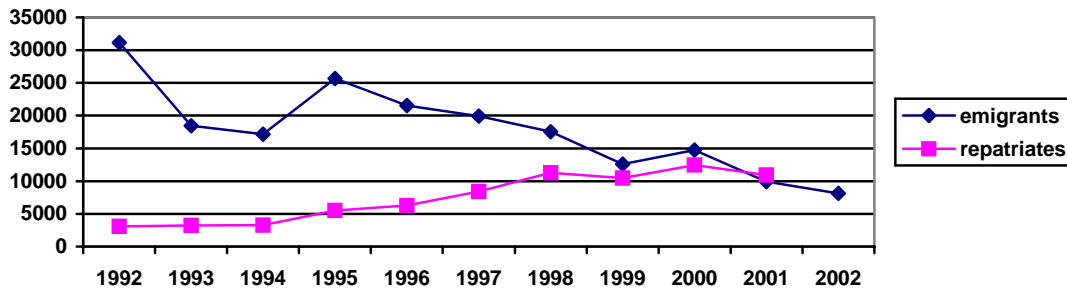
Sources: NIS data –census

The diminution in the demographic dependence ratio due to the diminution in the segment covered by the young persons will cause economic and social problems. There will be less and less working age people to support economically the inactive ones, that is the adults must face a heavier social burden as they provide for their families, the education of the young generation and financial support to the pensioners. The size of the demographic imbalance measured by the ageing index is more serious the more so as it shows a higher dynamics. If in 1992, the number of elderly to 1000 children was only 722; in 2002 it increased a 1098 persons, that means an increase by more than 50 percent in just 10 years (annex 4).

The population's spatial mobility to adapt to the labour market needs and to balance the labour market throughout the country **is low**. Romania's population (for tradition-inertia and financial reasons) prefers commutation and/or temporary circulatory migration to residence/household movement. Less than one-third of the population changed the residence at least once in their life, but tending to diminish. The migration distance by changing the residence was relatively short. 48 percent of all did not exceed the county limits. Inside the country about 6.7 million people migrated at least once in their lifetime, while over the period 1992-2000 about 197 thousand people migrated abroad and 75

thousand repatriated themselves and the annual flows were decreasing (under 10 thousand people every year).

The external mobility by residence changing



Source: NIS data.

As regards the emigration, the annual loss of less 10 thousand people was not a major factor of influencing the labour market size, but the **circulatory migration for labour** if it had followed the last trend, **could turn into a significant constraint**. In this respect, the census data provide a partial picture just like the data provided by the Ministry of Labour, Social Solidarity and Family (MLSSF) which is in charge of the labour contracting for working in other countries. But we cannot get the whole picture of that. The people working temporarily abroad for one year were not distinctly indicated by the census. The MLSSF records revealed only a few tens of thousands of people every year⁹. If we add to it the work permits issued directly by the embassies in small number¹⁰, then the circulatory migration increased but not in significant proportions. The Romanian citizens residing in Romania who had left for more than one year (for education or work) amounted to 159426 (census data). The people “missing” from Romania’s population according to the 2002 census were 600 thousand in number and could be (legal or illegal, permanent or temporary) labour migrants. At present, the above people “ease/de-tension” the labour market and diminish the short-term unemployment, thus creating the false impression of positive influence. Qualitatively, the loss by migration from the professional potential and production capacity (circulatory migration or emigration) is very important because it is the trained young persons who leave (brain drain and brain shopping) and those working temporarily abroad agree to be professionally underused for financial advantages, losing their skills (the job offers are mostly for medium and low skilled jobs - services, agriculture, etc.).¹¹

⁹ In 2002, for example, the number of contracts signed under MMSSF authority was around 24 thousand for Germany, 12 thousand for Italy 24 hundred for Spain 18 hundred for Sweden (MMSSF data).

¹⁰ In the same year 2002, work permits for a longer period 58 to persons for Belgium, 119 for Greece, 34 for Finland, 456 for France, 4 for Luxemburg, 153 for Sweden etc.

¹¹ **Romania’s „contribution” to the migratory flows to the EU member countries may be considered as insignificant** i.e. 29175 people between 1995-1999 or 15.7 percent of all immigration from the candidate countries and 2.1 percent of all immigration from all countries. Romania’s contribution varies by the receiving country from few persons in Portugal to few thousands in Germany. For further details see

The women's demographic behaviour followed the emancipation trend of the last decades. *The extension of the schooling time and then their more active presence in the labour market* influenced the negative dynamics of the specific demographic indicators. The mother's average age at the first birth is older (22 years in 1990 and 24 at present¹²); the number of children per one woman is smaller (1,249 in 2002 as against 1,467 in 1992). The proportion of women having children diminished to less than two-thirds and the proportion of the women having 1-2 children increased (about 50 percent of all women of 15-49 years). It is worth mentioning that there is *a rising trend in the woman's reproductive health*. There is a smaller number of undesired children, modern contraception procedures are used and the society as a whole accepts more easily children born to non-married people. In 2002 they accounted for about 26 percent of all births. The young people agree to consensual union as a transitory form of living together (of 3.8 percent of the population who declare to live in a consensual union, almost half of them are 20 to 34 years old).

Changes in the population structure by education level. The rising educational potential of the population brings about, on the one hand, the propensity for increasing participation after graduation in active life and, on the other hand, allows for an improved correlation between the labour market demand for education and the educational system supply. There are two significant aspects in this area: a) the increase in the proportion of graduates associated with the decrease in the disparities by gender, and b) the mobility of the graduates' structure by occupations and specialty.

The increase by 10 percent in the participation of the women in the schooling system of initial education caused that in 2002 they were in the majority among the persons attending higher education (53.8 percent), secondary schooling (53.2 percent), post-secondary or foremen training (65 percent)¹³.

By education field there are major changes, just partially correlated with the labour market demand for skills and professions. Two-fifth of the higher education graduates have technical training, 16 percent have economic training and almost one quarter have university training. The number of law graduates increased 2.6 times as against 1992, the economic graduates number increased 1.9 times and the medical and pharmaceutical graduates number is about one-third higher. The question is whether the national labour market is able to absorb significant contingents of high skilled personnel (by creating new jobs or restructuring the existing ones) since the supply of highly skilled workers as against a very low demand (by number or by qualification structures they are smaller or

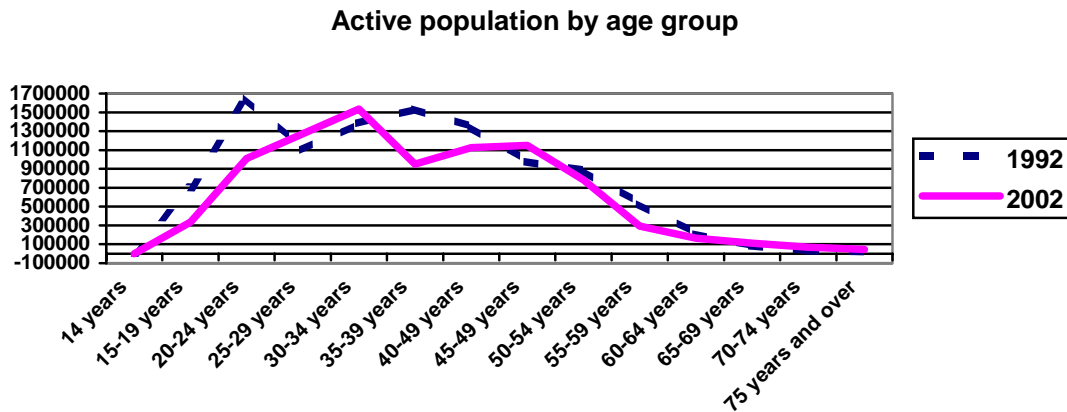
Valentina Vasile, „Migration abroad” in *Procese, fenomene caracteristice și tendințe în circulația forței de muncă în România* (Processes, characteristic phenomena and trends in labour circulation in Romania), 2003.

¹² The specific fertility rate was diminishing in all age groups but at a different pace. The fertility rate of the women in the 20-24 years group continued to be the main source of the new contingents. One may notice and increase in the share of the live birth in the 30 and over group of women (22.9 percent in 2002 as against 21.3 percent in 2001).

¹³ The private educational network is increasing. In private units one fifth of total persons in university education level and one third in the post secondary level are enrolled.

non-compatible) is, under the present economic conditions in Romania, an excess that we cannot afford.

The worsening socio-economic structure. The 2002 census confirmed the continuation of the 1992 trend: the active and employed population diminished, the population's participation in the economic activity decreased.

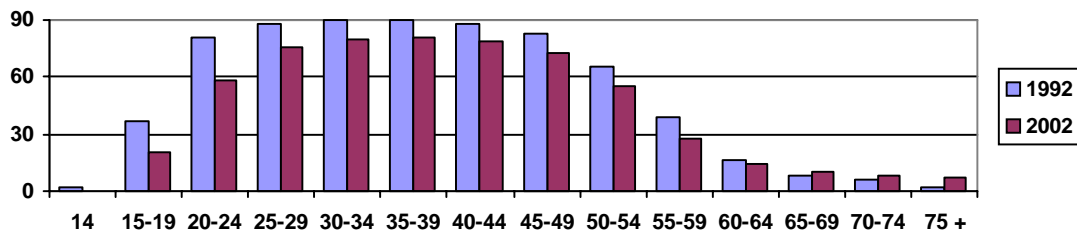


Source: NIS data.

The population's participation in the active life by age groups at present is about 58 percent in the case of the working age population and 45 percent in the case of the population of 14 years and over, i.e. 10 percent and under 1 percent, respectively, smaller than in 1992. The highest activity rate was specific to the 35-39 years persons. As against 1992, there was a lower rate of activity specific to the youth under 24, which revealed the postponement of the entry into the labour market due to the longer schooling. If compared to the latest census, the activity rate of all working age groups diminished by 2-23 percent, the people that exceeded the retirement age intensified their participation in the active life. They either postponed the retirement or got a job after the retirement (especially to increase their incomes).¹⁴ As against 1992, the activity rate of the 65-69 years people increased by 2.2 percent, the rate of the 70-74 years one by 1.8 percent, and of the people over 75 by 4.8 percent. On the average, the activity rate was 17 percent higher in the case of men: 22.2 percent in urban areas and 25.5 percent in rural areas. The women living in towns were more active than those living in rural areas (52.7 percent as against 45.3 percent).

¹⁴ The Romanian law allows for the retirees' re-employment, half-time or full-time. In the case of some groups of active people, the retirement time could be at an older age than the retirement age (e.g. the university professors and senior researchers retire when they are over 70). At the same time, the employees may continue their activity after the retirement age if the company managers agree to it.

Activity rate, by age groups, 1992 and 2002



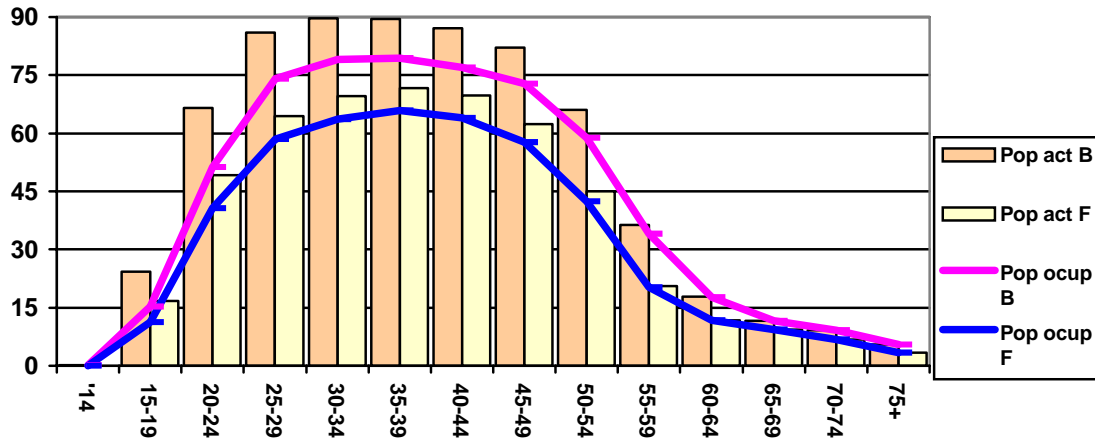
Source: NIS data.

In 2002, the employment rate of the active population was 88.2 percent, and the employees accounted for two-thirds of the employed population. The employers and private entrepreneurs accounted for 2 percent of the employed population.

The participation in the active life diminished after 50 years in the case of the women and 55 years in the case of men due to the retirement before the superior working age limit, mass lay-off and discouragement because the older unemployed adults had less opportunities for professional re-integration. Those groups left the labour market: some people returned to the rural areas (cheaper cost of living) and other ones became active on the underground labour market, as they were no longer interested in a full social insurance system (from which they benefited anyhow as pensioners).

That demo-economic structure was the combined outcome of the demographic behaviour and the economic and social state of Romania. Although the activity rates could be considered as being high on the average, they were “supported” by age group rates incompatible with the objectives of the economic restructuring and effective integration into the EU labour market. The labour resources with a productive potential and high creativity were not fully used, and the older adults and the people older than the retirement age adopted a surviving employment model, totally or partially illegal.

**Active population and employment
(as share in total age-group population)**



Sources: NIS data-2002 census

3. THE POPULATION'S PROJECTIONS

Romania's labour potential is one of the pillars of the sustainable development of the society in the third millennium. The completion of the economic and social reforms and the functional effectiveness of the economy in the post-transition period depend to a great extent on the nation's productive capability as well. Moreover, the intergeneration support seems to be more important than estimated. The projected social assistance and insurance system is closer to the future integration exigencies and is based on major changes in the population's economic and social behaviour.

Is the Romanian people able to fulfill the requirements for the sustainable development in the next decades? The answer includes two important aspects. The first one refers to the **demographic behaviour** (the present one is, as we saw, far from the adequate one), and the second one refers to **the participation in the active life** (both the quantitative component and, especially, the qualitative one: education potential and innovative-productive capability). Romania will be part of depopulated and ageing Europe and, in turn, will face a major demographic decline. While the latter part of the millennium was characterized by a fierce competition on the goods and services market (based on technological gap and the capability to assimilate the technical progress), in the next decades *the labour market will hold a central position within the confrontation for comparative advantage*. The ability to attract and use the best labour resources will compensate for the loss in the demographic evolution.

At the beginning of the 15th year of the economic transition in Romania, the demoeconomic and social picture is not very encouraging if we consider the medium and long-term challenge:

- If compared to 1989, the population number is smaller by one million and the underused labour potential worsens gradually, the knowledge renewal rate is smaller than the economic changes. The initial education in schools has poor prospects and the lifelong education adjusts mainly the present demand for knowledge.
- Our national economy – now in an ascending trend (Annex 5) – is oriented to recover the cost of transition. According to our expectations the 1989 GDP level is to be reached this year, but generated by other production structures. The extent to which the new architecture of the economy (still to be completed) is **adequate** to reach the proposed targets (sustainable economic growth, integration into the European economic area, into the EU economic structures) is under discussion.

3.1. The demographic projections as tools to define the potential labour resources

It is not our intent to make a broad approach of the recent estimates of the population evolution in Romania, but we present in brief three forecasts: the UNPD forecast for international comparisons, the National Institute of Statistics forecast (the official one) and a forecast worked out by Romanian demographers¹⁵, who, according to their assumptions, point out the disturbing demographic factors specific to Romania, having a major impact on the size of the labour supply.¹⁶ The forecasting alternatives selected to present and analyse the potential results assume that the fertility rate increases gradually due to a regulatory approach and not as a simple trend developed from the evolution in the last 15 years.

UN Forecast on Romania

The UNO includes Romania among the countries facing a major population diminution, irrespective of the projection alternative considered.¹⁷ For the period ending in 2005, the average estimate shows, for example, a natural increase rate of -0.20 that is the tenth among the world countries with the lowest increase rate. Romania is also on “top” as regards the estimated population diminution in 2000-2050: ranked the 16th due to a 19.3 percent diminution, that is about 4.4 million people. Among the transition countries ranked high on top of the losses, Romania holds a medium position, as it is outranked by Slovenia (the 14th with a 21.1 percent diminution), Hungary (the 11th, -24.2 percent) and Bulgaria (the 4th, -35.1 percent).

¹⁵ The estimation of Romania’s population size in different future moments is a concern of the national institutions assuming responsibility in the field (National Institute of Statistics, National Commission for Forecasting), of international organisations (UN Population Division) as well as of demographers or human resources experts. **Since the purpose of the study is to present the impact of the population evolution on the labour market** (and not own demographic forecasts), it is advisable to deal in brief with the results of the projections that, in the author’s opinion, allow by construction for the most probable estimates of Romania’s future labour potential.

¹⁶ For coherence, all projections are based on the RUP Program developed by US Census Bureau.

¹⁷ From among the alternatives suggested by the UN, we selected only the average evolution (medium) variant, which is, in our opinion, a possible (and desired) estimate on Romania.

According to 2002 Revised Projections, Romania will face with important age pyramid shape changes that reflect faster demographic ageing if compared with European countries as a whole (Annex 6).

National estimates

*The National Institute of Statistics*¹⁸ confirms in the population projections (reviewed in 2003) the continuation of the population ageing. In the next 23 years (up to 2025) the number of under-15 years age people diminishes by about 1.3 million, and the number of the elderly increases by 130 thousand. Therefore, the young persons will account for 14.8 percent of all population in 2010 and only 12.9 percent in 2025, while the elderly account for 19.8 percent and 22.5 percent, respectively. The share of the 60 and over population increases to a greater extent in 2025 when among the elderly we find even more “very old” people (Annex 7).

As regards the projections worked out by our specialists in demography and economy, the global results are similar but the intensity is different (Annex 8). If, for example, the *forecasts made by demography specialists* are based on the **necessity to stimulate a pro-birth behaviour of the young population**, but warning that the present trend causes a sharper diminution than that estimated by the NIS or UNPD.

But if we consider *the economists' forecasts*, one may notice that they are more moderate in relation to the “orientation” of some demographic behaviours of the fertile female generations and young family in general, and take into account also the severe “constraint” imposed by the dynamics of the economic and social environment, and especially by its capability to “support/stimulate” proper demographic developments. That is why their projections within the 2025 horizon reveal more total population than the NIS pessimistic alternative, but with less working age population. The above difference may be explained by the different perception of the evolution over the period: while the demographers envisage a relatively sooner improvement of the natural increase, the economists estimate that the sustainable economic growth and the improvement of medical care and social services, in general, may have positive effects on population but at a relatively later time. It is worth mentioning that, on the one hand, the women’s rate of participation in the active life in Romania as against the developed European countries will remain higher and, on the other hand, the trend of the last years towards the extension of active life after the retirement age will go on, and according to some estimates will speed up, at least on medium term.

The population diminution and accentuate ageing trend will bring about the medium-age increase by at least 8 years until 2025 and other 4-6 years until 2050. The effects will be stronger on the labour market both directly by changing the age structure in favour of the elderly, and indirectly by increasing economic dependence rate of the old people. The

¹⁸ Three population projection variants are selected: constant, pessimistic and optimistic. The optimistic one is closer to the assumptions of the UNPD forecast as an average alternative, so we consider only the corresponding potential results.

population of 65 years and over will reach about 4 million in 2025 and about 5 million in 2050, and its share in all population will be one-fifth and one quarter, respectively.

3.2. Estimates of Romania's labour potential in the first decades of the 3rd millennium

Although the total population diminishes gradually, in the last two decades the working age population has increased at an average annual rate of 0.4 percent, especially due to the inclusion in this category of the larger generations born during the war and between 1960-65. Therefore, no major structural changes have occurred as the population pertaining to this age segment has accounted for less than three-fifth of all. The pro-birth policy implemented before 1989 will cause that until 2005 the 15-64 years population would be around 15 million in number. Afterwards, the group of the working age population will include the less numerous generations born after 1990 and lose the generations born during the war. The working age population will diminish gradually and the age structure will change substantially due to the continuous growing-up of this population segment.

The diminution in the working age population will be at least 1.5 million people in 2025 (according to some forecasts, more than 2.2 million) and will decrease below 11.5 million or even below 10 million in 2050 by some very pessimistic estimates.

Working age population (15-64 years)

	2002	Optimistic alternative		Pessimistic alternative	
		2025	2050	2025	2050
Census data	14810				
2002 UNPD Forecast		14218	11402	14037	9810
NIS Forecast		13548	-	12990	-
DRC Forecast		12655 (20-64 years)	11622 (20-64 years)	12563 (20-64 years)	8969 (20-64 years)
NCF Forecast		-	-	12600	-

Source: UNPD, NIS, NCF data

The demographic dependence ratio will increase, irrespective of the kind of forecast or alternative considered. While in 2002 the total dependence ratio of 45.7 young and old people per 1000 working age people was determined by the young people group (25.3 to 20.5 old people), the 2025 estimate shows, with small differences from one forecast to another, a dependence close to 50, but **dominated by the elderly** who will hold more than half of the total indicator value. Within the 2050 horizon, the UNPD forecast suggests an increase in the dependence ratio up to 70, with a distribution of 45 old people and only 25 young people to 100 working age people (Annex 9).

Since the forecasting of the working age population with their demo-economic features is not quite easy for long periods, we deal below with only the probable estimates up to 2025. We present briefly only the estimates of the National Commission for Forecasts since, in our opinion, they are more prudent and, unlike to the UNPD and NIS forecasts

(focused mainly on the demographic aspects), take into account the possible global changes in the labour market.

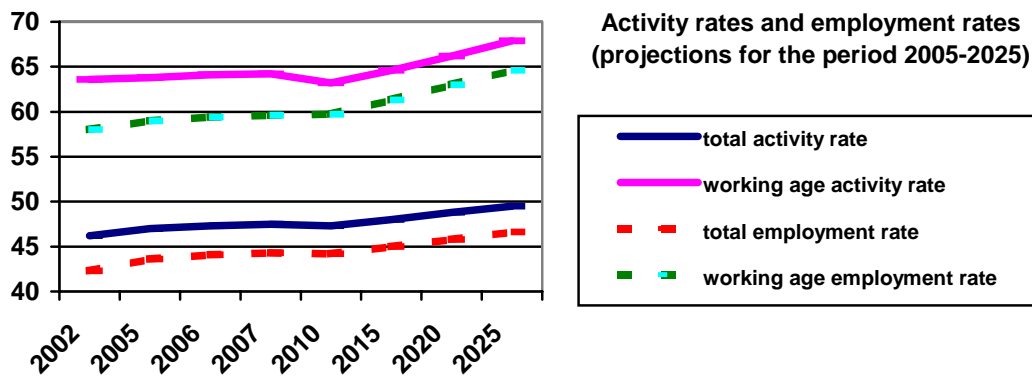
The analysis of the labour resources based on the total dimensions reveals (Annex 10):

- The working age population diminution rate is higher than the total population dynamics up to 2020.
- The active population of working age diminishes faster than the total active population.
- The total employment decreases slowly than the total active population, but the decrease rate of the working age employment is similar to that of the active working age population.
- A gradual ILO unemployment diminution is estimated from an unemployment rate of about 8 percent at present to 6 percent after 2020.

The analysis of the probable evolution of the activity and employment rate as a whole and by the working age population groups reveals:

- The estimated trend is positive and the proposed pace of economic growth requires major labour resources.
- The variations over the period 2015-2020 are mainly caused by the activity inflows and outflows and the working age group incoming and outgoing of the after-1990 generations.
- The estimates are quite prudent and with estimated levels under the limits proposed by the EU member countries (70 percent employment rate in 2010, for example). Working age employment rate is estimated to be almost 60 percent in 2010 and 65 percent in 2025.
- There is consensus concerning the size of the external labour flows, but at present the size and impact of the East-to-West migration is underestimated. It is quite obvious that such flows will worsen the supply in the national labour market and will be a factor of precarisation of the labour market since Romania's role as a country of transit towards the developed countries in Western Europe will be more significant (especially after the integration, when it becomes the eastern border of the EU).¹⁹

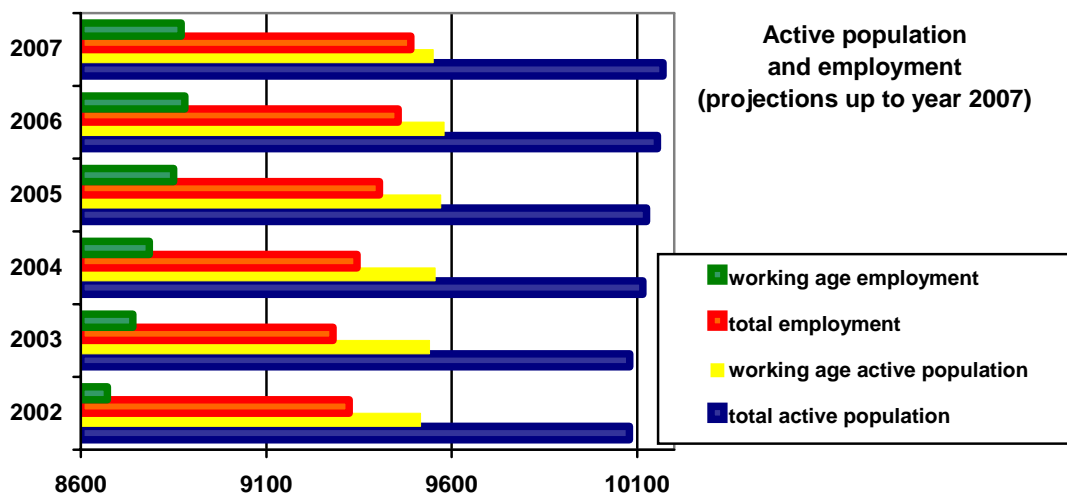
¹⁹ The EU enlargement will cause, at least in the first years after the enlargement, the increase in the active population, which will seek jobs in the more developed countries, and the migration will be characterized by legal but uncontrollable movement. But we should not omit that our country, as an EU member, will attract population flows from the underdeveloped countries, that in time will be a major source to cover the labour deficit (National Commission for Forecasting, 2003).



Source: NCF data

As Romania is close to completing the negotiations for accession in 2004, the 2007 integration horizon is very important from the labour market point of view. The economic and social objectives to be fulfilled over this period are quite daring (further economic growth by 5 percent a year, one-digit inflation, social reform completion, etc.). Considering the achievements in the last 2-3 years, the objectives seem possible and could provide adequate means for the sustainable development. The latest estimates reveal the following features of the demo-economic indicators:

- Due to the annual decrease in all population by about 0.4 percent, the working age population increases slightly up to 2005, and then diminishes faster than all population.
- The total active population increases gradually over the entire period in view, while that including the 15-64 years population decreases after 2006. A similar evolution occurs also in the case of the employed population, but the intensity is higher.

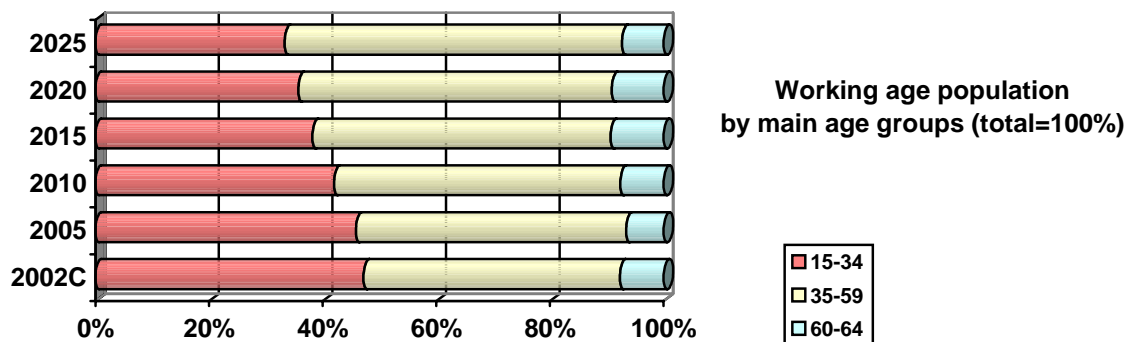


Source: NCF data

4. LABOUR SUPPLY STRUCTURE AND TRENDS. LABOUR MARKET IMBALANCES.

The long-term demographic prospects are not very encouraging as regards the labour resources. The objective factors²⁰ mix with the specific, subjective ones. Even on the optimistic assumption regarding the elimination of the contrary effects of the factors determining the population evolution (birth rate, death rate, emigration), the available labour resources will diminish due to the population ageing and income increase (that cause poverty and require that all family members work to survive).

The NIS forecast concerning the labour resources evolution shows, within the 2025 horizon, small contingents, in all smaller by less than 10 percent, but causing major structural changes: a diminution by almost one-third in the young groups and an increase in the contingents of the elderly by over 140 percent (Annex 11).



The most significant structural changes with a major impact on the labour market are:

- **In number**, the most important decrease occurs in the 20-24 and 25-29 years groups. While in the first case the diminution of almost 40 percent may be mostly related to the initial education continuation, therefore the preoccupation with the higher vocational training, beneficial to labour market, the 37.5 percent diminution in the 25-29 years group (but also in the 30-34 group by one-third) may have only negative effects. The demographic diminution affects the labour supply, but additionally (what is very serious) the young contingents with a higher working potential (some being highly skilled) “vanish” from the national labour market by migratory labour flows. Such societal losses cause imbalances in the national labour market and diminish Romania’s competitiveness in the international and EU markets. But such individuals cover the deficit and diminish the imbalances in the labour markets in the beneficiary countries, thus increasing their productive and creative power. One should note that

²⁰ It is the well-known thesis of the reciprocal determination of the economic progress and human resources as a production factor. The economic development induces constraints on the labour resources, that is the quantitative diminution along with the qualitative improvement. In other words, progress is equal to demographic decline and population ageing.

the policy implemented by such countries **would be more and more selective**.²¹ Thus, *by its own human resources, Romania faces deeper and deeper market disadvantages*.

- The fastest growth over the whole period, but especially up to 2010, is in the 35-39 years group. Its presence in the labour market, at least in the present, is a factor that guarantees the productive and even creative capability within certain limits. The people around 40 years, professionally mature, may contribute significantly to the economic progress, support or even determine major qualitative changes in the technological, organisational fields, etc. Considering their past work (they were present in the labour market during the early transition) are more mobile than the older generations which worked during the totalitarian regime, and are a “pillar” of the sustainable development of the knowledge society.
- The 50-59 years labour force increases throughout the period, which is a factor of potential tensions in the labour market. At this age, the professional mobility diminishes, and after dismissals the re-integration is more difficult when unemployment is long, thus causing discouragement and marginalisation.
- The median age of the working age population increases further, more aged contingents hold the highest share in the age structure of the labour force. The estimates show that up to 2005 the 30-34 group will be the largest in number by 12.3 percent of all and after 2010, every five years, the largest population will be represented by the next age group, as the generation replacement is based on ever smaller contingents. In 2025 as against 2002, the new generations entering the working age category are smaller by 3-4 pp.

The labour market imbalances caused by the demographic structure of working age population are amplified by the failure to significantly diminish the quantitative, qualitative and behavioural gaps in the market.

There are three major aspects:

- a) **There is a diminution in the working potential due to a lower living standard** than in the Western European countries as the society cannot compensate for the loss by other factors or mechanisms (high technology, immigration, including brain shopping, etc.).

²¹ In the developed countries, especially the European ones, there is permanent labour scarcity and the demographic decline is generally compensated by labour resources from abroad. While soon after the World War II the shortage was global (as there were no deeply unbalanced fields or professions), then, along with the countries' development, the shortage remained in extreme segments of the labour market, on the one hand, being of low quality and, on the other hand, of high competence. At present, in the EU there are two kinds of imbalance regarding the labour supply and demand: a) young labour shortage of professions of high complexity and competence; b) labour supply shortage of professions of medium competence in services (health, hotel business, constructions, etc.) or in some industrial fields/occupations; c) especially seasonal supply shortage of low-skilled or unskilled labour (especially the kinds of job which the domestic labour force is not eager to accept). Therefore, the definitive or temporary migration of the labour force from the candidate countries on the basis of agreements between governments or specialized organisations/institutions or Internet are, in spite of some theoretically accepted principles, **selective** as regards the recruitment (NCS, 2003).

- b) The national market **cannot retain the required labour force** through its attributes, as it is disadvantaged as against the EU market that offers at least higher incomes.
- c) There is not yet a **work culture** to cope with the new context. The skills are self-preserving, to the possible extent, instead of adapting to the Western pattern which is more efficient. The Romanian worker's behaviour is modeled/adjusted in relation to the environment and very flexible/adaptable to the jobs abroad, and too conservative in the national labour market. The efficiency comes mainly from imposed behaviour (especially by foreign or mixed companies). There are national exceptions but not enough to change the working behaviour.

The NCF forecast concerning Romania's work potential reveals the possible evolution and, in comparison with the objectives set by the Lisbon Treaty, the size of the gaps on medium-term (just before integration) and long term.

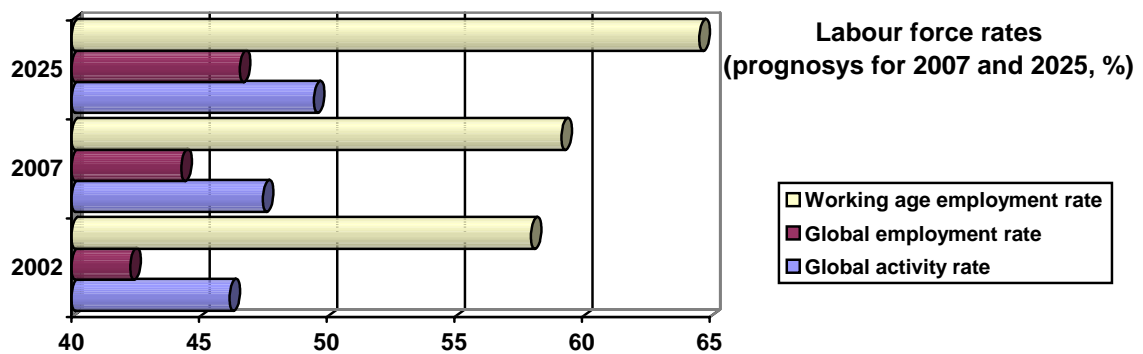
Evolution of the labour market potential indicators in Romania
(as against 2002=100 percent)

	2007/2002	2025/2002
1. Working age population (15-64 years)	99.7	84.3
2. Inactive population of 15-64 years	99.2	76.4
3. Available labour resources (row 1-row 2)	99.9	88.8
4. Total active population	100.9	96.8
5. Total employed population	102.8	99.4
6. ILO unemployment	80.5	68.6
7. Labour shortage (row 3 – row 4)	117.2	232.7

Source: NCF.

While the total active population grows slightly up to 2007, in 2025 we will face contingents of all population categories under the 2002 level. Even if the estimates show a diminution in the inactive population by one quarter and in the unemployment rate to 5-6 percent, the available labour resources will be 12 percent smaller in 2025 and the labour shortage will worsen substantially (by 17 percent in 2007 and over 2.3 times in 2025). While the labour shortage is calculated by correlating the expected economic growth with the potential labour productivity, then it will be even worse. The shortage covering by labour force from outside the working age group, especially pensioners may cope with the additional needs. The domestic human resources will not be enough to cope with the proposed high rate of development.

Thus, the long-term forecast indicates a higher relative number of employed population that is a higher employment rate. The 2025 estimate employment rate of about 47 percent is lower than the EU objectives. Similarly, the employment rate of the working age population will not exceed 65 percent.



Source: NCF data

Besides the above quantitative attributes, there will be major performance gaps: lower productivity and technical level. The continuing vocational training (CVT), already considered a national objective, will help the labour supply cope with economic environment demand, but action should be taken to attract and keep in place the trained ones (the industrial parks are already trying to achieve this objective, but they are addressing a very small segment of the potentially active population). According to the ANOFM statistics, about 250 thousand jobs a year have been created, but the occupational profile has not been quite dynamic to meet the requirement for the future economic growth. The occupational and qualitative supply of labour force is less prospective than the expected dynamics of the national economy.

Therefore, the (quantitative and structural labour demand could be met in two ways: either extraordinary improvement of labour-intensity, which means significant efforts to improve training and actions to bring inactive population in the market or stimulation of immigration to meet the requirement (what even the developed countries do). In this context we agree with the EU experts that “the decision to consider as an objective rather the employment rate than the unemployment rate is more consistent as it points out the active policy for creating new jobs than re-organising the unemployment structure.”²²

5. INTERVENTION VERSUS SELF-ADJUSTMENT. DEMOGRAPHIC POLICIES. EMPLOYMENT POLICIES

Romania’s labour resources in the next two decades are generally defined by the demographic evolution to the present. The preservation of the present demographic behaviour could cause an unacceptable population decrease. The pessimistic demographic forecasts indicate about 18-20 million people within the 2025 horizon and about 16 million in 2050 (Annex 12).

²² Meeting the Challenge: Economic Reform in Europe, February 2003, HM Treasury, in „Estimări privind evoluția resurselor de muncă pe termen lung”, NCS.

The most optimistic alternatives take into account the (gradual) fertility increase to the simple replacement threshold envisage a larger population only in 2000. In this context, the working age population (around 15 million between 1990-2000) will be 1-1.5 million less numerous in 2025 and about one-third in 2050. Under such conditions, it is necessary to implement **adequate policies** for the demographic improvement (in number and structure) able to supply the more and more dynamic labour market.

Regarding **the types of necessary and possible policy**, there are various opinions and arguments. Some Romanian specialists agree that the alternative is only an interventionist/regulatory one in the demographic behaviour, since “Romania’s demographic future depends on the birth rate and only an improvement in this respect may have positive and lasting effects” (Ghețău, 2003). Others agree that the elimination of the cause of the demographic disturbances, especially in the last 15 years, is the first possible and necessary step to improve the demographic behaviour. They go on further considering that it is necessary to create a system to correlate the economic and social supporting policies able to have expected demographic effects. Although hard to achieve (especially if we consider the history of the unstructured and uncorrelated reforms promoted in Romania in the last 15 years), the latter alternative seems more probable, at least for the following reasons:

- The decision on the birth rate has to be made first by the individual and the couple, as well as the promotion of a healthy life pattern.
- Romania’s demographic experience reveals that the administrative, artificial control results in adverse effects (the ban on abortion did not reduce the number but caused a higher maternal death rate, birth of undesired and unhealthy children, abandonment.
- The desire for welfare will be further directed towards getting a better-paid job to satisfy the personal needs. Preservation and intensification of the economic growth cannot bring about a major diminution in the economic gap between Romania and the European developed countries (and not only). Therefore the propensity towards the circulatory migration for jobs will go on and one should not ignore that the countries lacking domestic labour force stimulate such flows.²³
- Moreover, the human development trend, the demographic transition and the changing in the demographic pattern existing in the European developed countries are also present in Romania.²⁴

²³ The Western European countries have to implement immigration policies to cover the labour force deficit in the domestic market due to the demographic decline (McDonald, Kippen, 2001). In this respect, the present agreements between Romania and some EU countries concerning the Romanians working there aim at setting some annual quotas by skills and professions (for example the Convention concerning the guest workers concluded by the German and Romanian Governments, GD 402 of July 1992 concerning a quota of 500 workers a year).

²⁴ The present opinions that the fertility increase to the generation replacement level is not possible (Dudley, 1996; Hohn and Dobritz, 1999; Bongaarts, 2002) It should be considered for a proper analysis of the prospects for demographic increase in the countries facing first of all a fertility diminution. The present Western cultural pattern favours late births, smaller number of children, while the income level is not an „obstacle” or a restriction, but the other way round.

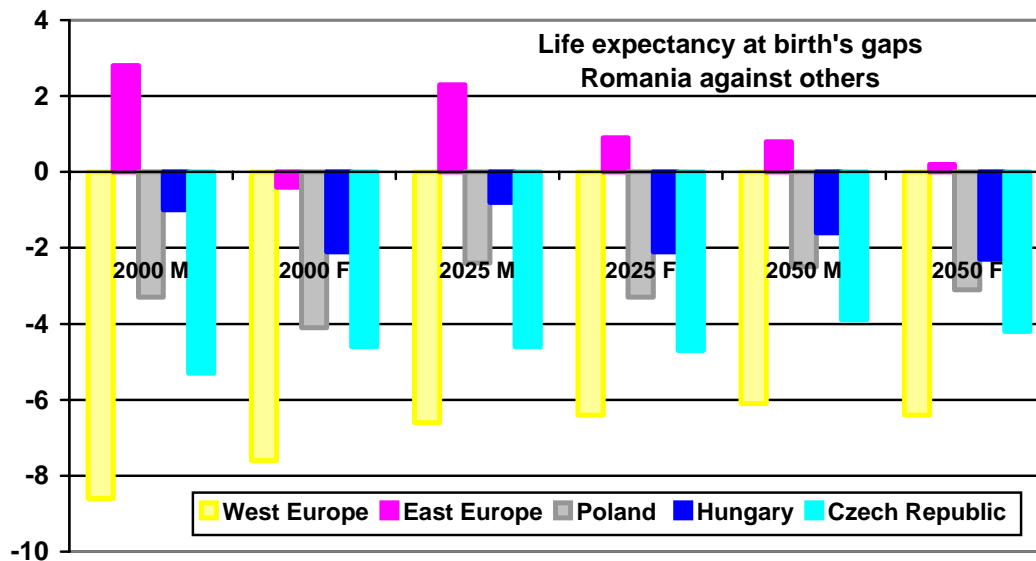
The labour market in Romania should not be left at the mercy of the “natural adjustment”. Given the present conditions and especially Romania’s integration and then its international activity as an EU member, a co-ordination of the labour market adjustment through active measures is required to support the supply and its compliance (in amount, structure and quality) with the national demand for labour. This implies support in relation to the demographic, educational and social-economic developments by active measures to stimulate the desired behaviour and not the administrative-regulatory behaviour that proved ineffective during the former regime.

First steps should be taken to slow down the demographic deterioration, to stop the birth rate decline and stimulate births.²⁵ This equally implies specific measures for the education of the youth, counseling of the young families, etc., and programmers for supporting the families with children, especially in the first years of life. Romania’s tradition implies the promotion of the families that ensure the simple reproduction of the population, but the economic and social problems of the last 15 years (lower standard of living, promotion of unsatisfactory wages, housing problems, restrictions or lack of services to support the couple or the family, etc.), but also the woman’s emancipation delayed the second birth or even marriage.

Second, **we expect a diminution in the death rate per age groups** along with the favouring evolution in the economic and social fields. The connection between the death rate and the living standard is more direct and stronger than in the case of birth rate. The population’s health condition and the capability of the individual and of the society to preserve it are the first step in adjusting the demographic structure by age by reducing the death rate of the young groups, especially the infant death.

Although regarding the life expectancy at birth the 1990 drawbacks have been overcome, the UN forecast and the national ones take into account a major gap between Romania and Western Europe and the most developed East-European countries (Annex 8).

²⁵ The Romanian demographers warn against the risk that the demographic evolution of the last 15 years go on „without the improvement of the present level, since the demographic situation will reach a dramatic stage after 2020 ... the deterioration of the age structure will be so profound that such a situation is no longer able to find recovery mechanisms and the population decrease becomes a self-generating process”(Ghețău, 2003).



Third, there is the question of the **labour market capability to attract, retain and use the potential labour supply**. In this context, it is required to implement employment policies with targets, including the actions aimed at ensuring/anticipating the demand, (re)training, market-oriented training courses, (re)qualification, etc. Support should be provided for individual initiatives for additional training or (re)training at the trainees' expense. Usually, this kind of improvement of the quality of the work potential is more efficient (there is more motivation and the completion of the course is followed by (re)employment in accordance with the new specialty), but it is relatively restrictive from the financial point of view as only a relatively small part of the working age population can afford financially vocational training (in this respect, the state support is below the requirement).

6. SOME FINAL REMARKS

6.1. As we tried to demonstrate in this paper, the demographic evolutions, even when there is a specific trend on long periods of time, are “adapting” to the economic and social conditions. *The demography-population and vocational training-labour market-social security interdependence is stronger and more flexible*. Romania is facing several convergences/divergences, disparities/gaps if compared to the European and world situation. The option for integration requires a behaviour and policies of convergence and/or harmonisation of the labour market as well.

The labour market supply is modeled by both the near demographic past, quality and structure of the schooling-education-training system and the comparative advantages of the labour market: income level, working conditions, career, opportunities for mobility (profession, jobs, work time, etc.).

6.2. The demographic situation of Romania is not a singular one in the European and world contexts. The world's demographic transition, significant ageing of the population of the developed countries, especially of the European ones, the demographic decline and "crisis" in the transition countries are common factors within a broader or narrower range (both territorially and temporally). To them one should add the factors specific to Romania: the demographic past (the pro-birth control), significant economic decline during the transition, worsening of the social assistance and security systems, especially the medical one, etc. ***The demographic deterioration after 1990 is still continuing***, and the recovery implies joint action in various areas: healthy demographic behaviour, economic and social support to the families and for children's growing and education, assistance specific to the elderly. Also, major changes are required in the education and culture starting with the promotion of contraceptive means for the poorest people and intergeneration support inside and outside the family, especially for the unfavoured groups (including the very old ones).

6.3. ***Within a farther horizon, Romania may turn into an immigration country with an important contingent of natives working abroad.*** It will become a source for the East-to-West emigration and a receiver of the South-to-North and East emigration. The effects on the labour market will be negative: deterioration of the labour supply and non-correlation with the national market demand, on the average, a lower level of education and vocational training of the labour force present on the labour market as against the structure of the graduates from the initial education system and, consequently, a lower creative potential, employment precarisation, increasing job insecurity, relatively lower productive performance. If we consider, on the one hand, the quantitative and qualitative requirement for human resources to comply with the exigencies for an EU member country and, on the other hand, the work potential "ensured" by the demographic evolution, when the labour market picture is gloomy, even discouraging. The structural deficit in labour force has already occurred in the domestic labour market and the quantitative one will worsen.

6.4. As we tried to prove above it is difficult to adopt proper pure demographic policies. The people's behaviour cannot be modeled on short and medium term, and of course not by regulatory-restrictive measures, at the most, it may be re-oriented, but at a generational level. ***The solution to the demographic problems in Romania consists in the combination of methods and mechanisms concerning the demographic phenomena and behaviour with those specific to a sustainable economic growth, effective on the individual and societal level.*** Thus, we may induce and harmonize the expected demographic structures. As for Romania, the demographic recovery is dependent on the economic and social developments.

The economic growth resumed three year ago is the first step to rebuild the economic structures, to complete the reforms and the operation/optimisation of the economic-social-demographic connections able to harmonize the demographic trends with the economic and social environment. The structural adjustment adds to the estimated growth

of the GDP by over 5 percent a year and of the investment rate of over 25 percent of the GDP and helps the employment structures recover.²⁶

²⁶ The high employment rate in agriculture, a well-known feature of Romania is the major challenge to the employment policy. The population's attraction towards the tertiary sector by the local development of production or consumption services could be the first step in this respect. But the funding is the major problem.

Annex 1

Net natural increase,1991-2002

Year	Live births	Deaths	Emigrants	Immigrants	Repatriates	Gross Natural increase	Migration balance	Net natural increase
1991	275275	251760	44160	1602	3443	23515	-39115	-15600
1992	260393	263855	31152	1753	3077	-3462	-26322	-29784
1993	249994	263323	18446	1269	3257	-13329	-13920	-27249
1994	246736	266101	17146	878	3304	-19365	-12964	-32329
1995	236640	271672	25675	4458	5507	-35032	-15710	-50742
1996	231348	286158	21526	2053	6265	-54810	-13208	-68018
1997	236891	279315	19945	6600	8432	-42424	-4913	-47337
1998	237297	269166	17536	11907	11287	-31869	5658	-26211
1999	234600	265194	12594	10078	10467	-30594	7951	-22643
2000	234521	255820	14753	11024	12442	-21299	8713	-12586
2001	220400	259600	9921	10350	10950	-39200	11379	-27821
2002	210500	269700	8154	6582		-59200		-60772
Whole period	2874595	3201664	241008	68554	78431	-327069	-94023	-421092

Note:

-gross natural increase = live births - deaths

-net natural increase = gross natural increase – emigrants + immigrants + repatriates

Source: NIS data.

Annex 2

Working age population, by age groups

Age groups	1956	1966	1977	1992	2002
Total 15-64 =100					
15-19 years	13.69	12.60	12.05	12.68	11.05
20-24 years	13.80	10.04	12.92	13.51	11.75
25-29 years	13.50	12.33	11.59	8.31	11.41
30-34 years	11.89	12.38	9.11	10.23	13.02
35-39 years	7.41	12.06	10.68	11.33	7.96
40-44 years	9.78	10.80	11.12	10.10	9.71
45-49 years	9.61	6.40	10.57	7.76	10.73
50-54 years	8.03	8.54	9.57	8.91	9.55
55-59 years	6.92	8.13	5.90	9.02	7.10
60-64 years	5.37	6.71	6.49	8.15	7.72

Source: Census data

Annex 3

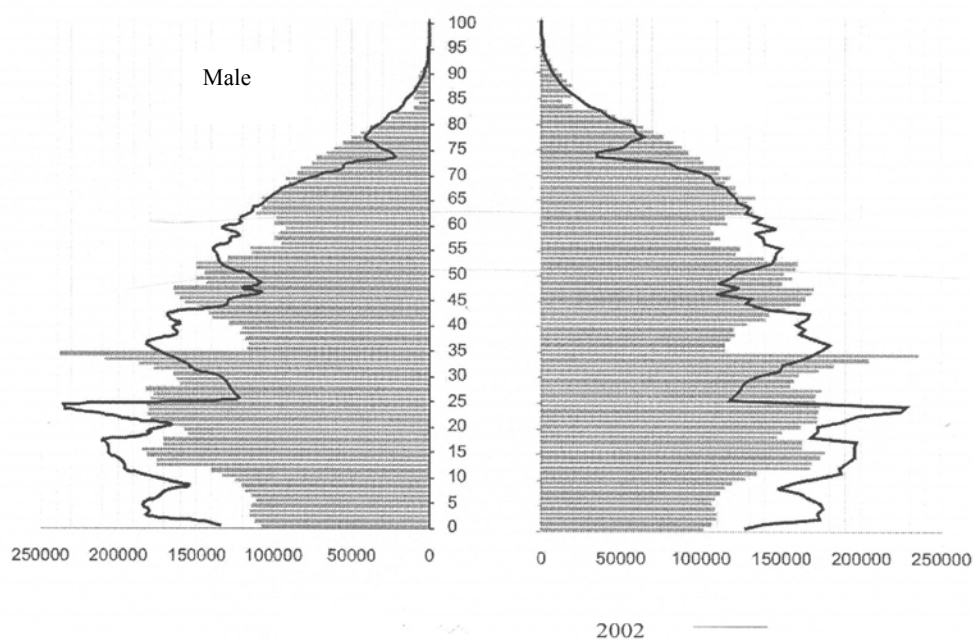
Romania's population dimensions

Indicators	1992	2002
All population (million)	22.81	21.68
Number of females per1000 males	1034	1051
Average age, total	34.6	37.3
Women	35.7	38.6
Men	33.4	35.9
Demographic dependence ratio, total [(0-14 years)+ (60+)]/(15-59)	642	586
-young	373	279
-elderly	269	307
Share of graduates in all population		
-higher education	5	7
-post-secondary and foremen	1.9	3.0
-secondary	17.7	21.4
-vocational	13.6	15.3
Active population share in all population	45.9	40.7

Source: 1992 and 2002 census, NIS Bucharest.

Annex 4

Age pyramid in 1992 and 2002



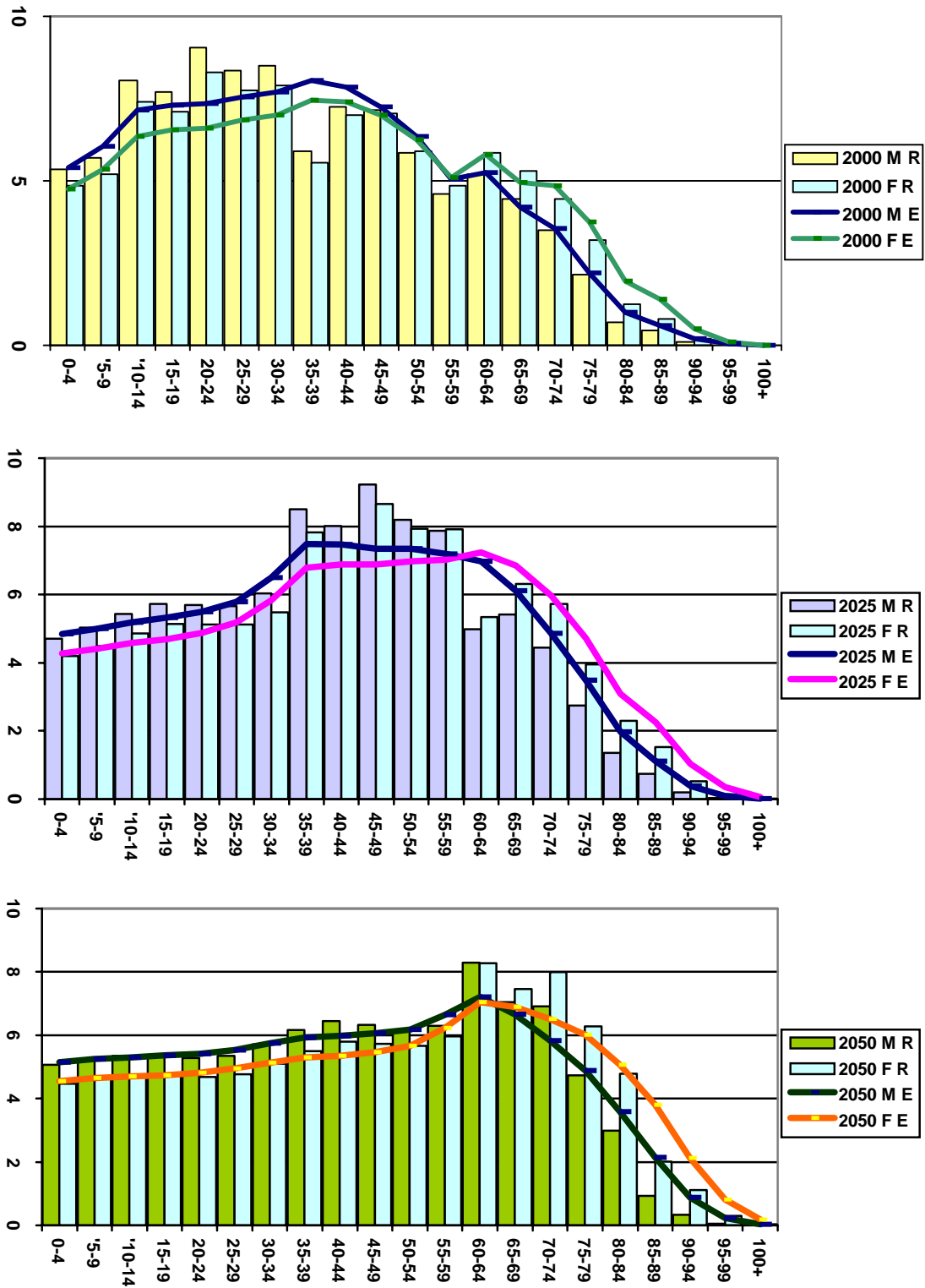
Main economic indicators, near past and future

	2000	2001	2002	2003	2004	2005	2006	2007
1. GDP - (1)	+2,1	+5,7	+4,9	+4,8	+5,5	+5,2	+5,1	+5,2
Of which (2):								
- Industry	+5,9	+7,9	+7,2	+5,2	+5,5	+5,1	+5,0	+4,8
- Agriculture	-18,1	+25,2	-3,9	-2,4	+4,7	+4,2	+3,3	+3,0
- Construction	+6,3	+5,3	+6,9	+7,7	+8,1	+7,1	+6,6	+6,1
- Services	+5,5	+0,8	+5,3	+5,4	+5,6	+5,3	+5,2	+5,6
2. Final consumption	+1,5	+6,0	+3,0	+3,7	+3,6	+3,5	+3,5	+3,5
- personal	+0,2	+6,6	+3,0	+3,8	+3,7	+3,7	+3,7	+3,7
- collective	+20,5	-0,3	+2,1	+2,0	+2,0	+1,0	+1,5	+1,0
3. Gross fixed capital formation	+5,5	+9,1	+8,3	+10,5	+13,0	+11,0	+10,0	+10,0
-Investments' rate (% of GDP)	18,9	20,5	21,1	22,6	23,9	24,7	25,6	26,6
4. Domestic demand (1)	+4,3	+8,2	+3,9	+5,1	+5,5	+5,2	+5,0	+5,2
5. Net exports (3)	-2,3	-3,0	+0,7	-0,7	-0,4	-0,3	-0,2	-0,3
6. Export FOB -mill. Euro	11273	12722	14668	15850	17200	18500	19750	21000
- % (1)	+41,3	+12,9	+15,3	+8,1	+8,5	+7,6	+6,8	+6,3
7. Import CIF-mill. Euro	14235	17383	18886	20480	22275	24000	25680	27360
- % (1)	+43,4	+22,1	+8,6	+8,4	+8,8	+7,7	+7,0	+6,5
8. Import (FOB)-mil euro	13140	16045	17432	18900	20560	22150	23700	25250
- %	+43,4	+22,1	+8,6	+8,4	+8,8	+7,7	+7,0	+6,5
9. Balance- mil. Euro								
- (FOB-FOB)	-1867	-3323	-2764	-3050	-3360	-3650	-3950	-4250
- (FOB-CIF)	-2962	-4661	-4218	-4630	-5075	-5500	-5930	-6360
10. Current account - (% in GDP)	-3,7	-5,5	-3,4	-4,2	-4,4	-4,5	-4,6	-4,6
11. Consumer price indices - average against previous year (%)	145,7	134,5	122,5	115,2	111,5	108,0	106,0	104,0
12. Average number or employees - thou pers.	4623,4	4619	4660	4700	4725	4760	4800	4840
- % (1)	-2,9	-0,1	+0,9	+0,9	+0,5	+0,7	+0,8	+0,8
13. Gross average wages -% (1)	+47,8	+48,6	+29,2	+21,4	+16,1	+12,9	+10,6	+8,4
14. Real wages indices - %	104,6	104,9	104,5	104,6	104,6	104,5	104,3	104,2
15. Registered unemployed, end of year - thou pers.	1007	827	761	720	700	685	665	655
16. Unemployment rate - %	10,5	8,8	8,1	8,0	7,8	7,6	7,4	7,2

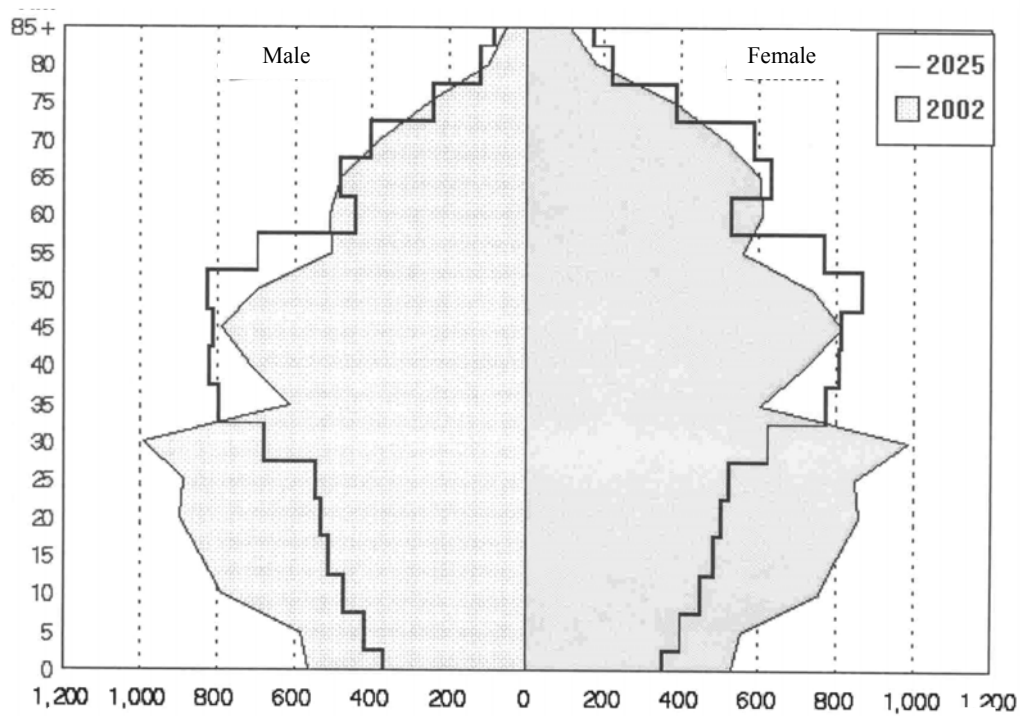
(1) percentage modification against the previous year;(2)Valoarea adăugată brută; (3)Contribution to real GDP growth (percent)

Source: NCF

Population by age groups, Romania and Europe, 2000, 2025 and 2050 (UNPD projections, medium variant)

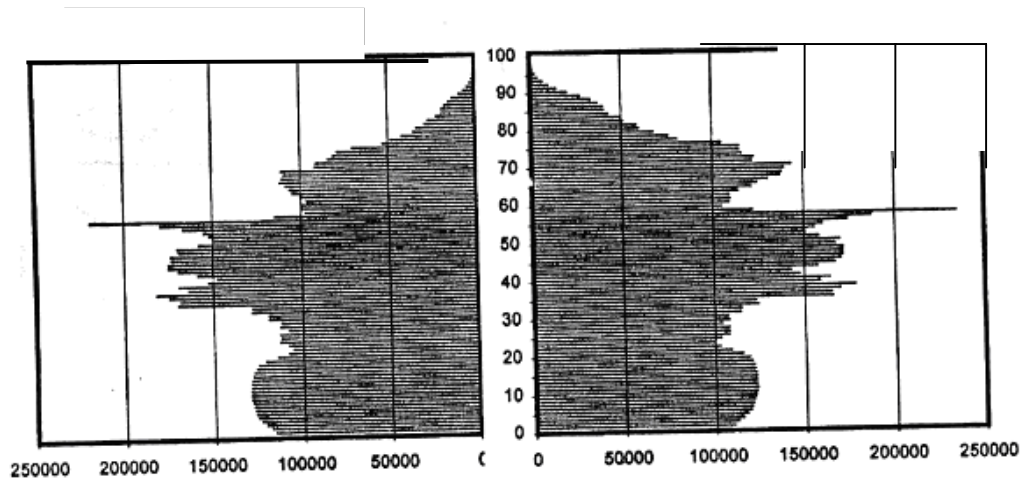


Romania's age pyramids in 2002 and 2025
(NIS projection, optimistic variant)

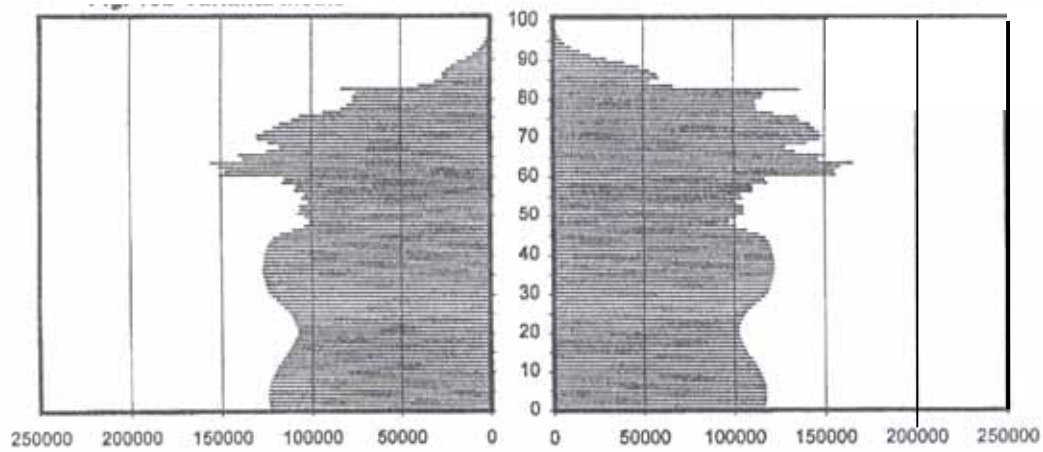


**Age pyramids
(projections worked out by Romanian demographers)**

Year 2025



Year 2050



Note: medium variant

For 2025: population=21377 thou pers; median age = 42.2 years; pop 60+ = 22.9%

For 2050:population=20289 thou pers.; median age = 43.4 years; pop 60+ =32.2%

Source: Ghetau 2003

Annex 9

Demographic dependence ratio

	Variant	2002 Census	2005	2010	2015	2020	2025	2050
Total (*)	UNPD 2002, medium NIS optimistic	- 45.7	43 43.8	42 42.3	43 44.0	46 47.5	47 49.4	70 -
Young people (0-14 years)	UNPD 2002, medium NIS optimistic	- 25.3	22 22.9	22 21.7	22 22.7	22 23.8	21 23.8	25 -
Old people (65 years and over)	UNPD 2002, medium NIS optimistic	- 20.5	21 20.9	20 20.5	21 21.3	24 23.8	26 25.6	45 -

(*) total = [(0-14)+(65+)]/(15-64) *100

Source: UNPD and NIS prognosis.

Annex 10

Labour market indicators

	2002	2003	2004	2005	2006	2007	2010	2015	2020	2025
Total population – (thou. pers.)	21814	21750	21640	21550	21460	21400	21120	20710	20300	19700
Total population –increasing rate	-	-0.3	-0.5	-0.4	-0.4	-0.3		-1.9	-2.0	-3.0
Working age population (15-64 years) thou. pers.	14951	14985	14995	15005	14950	14880	14600	13890	13220	12600
Working age population (15-64 years) increasing rate	-	0.2	0.1	0.1	-0.4	-0.5		-4.9	-4.8	-4.7
Total active population – (thou. pers.)	10079	10080	10115	10125	10155	10170	9985	9945	9900	9760
Total active population – increasing rate	-	0.0	0.3	0.1	0.3	0.1		-0.4	-0.5	-1.4
Working age active population (15-64 years) thou. pers.	9516	9540	9555	9570	9580	9550	9220	8970	8750	8550
Working age active population (15-64 years) increasing rate	-	0.3	0.2	0.2	0.1	-0.3		-2.7	-2.5	-2.3
Employment –thou. pers.	9234	9280	9345	9405	9455	9490	9335	9320	9300	9180
Employment –increasing rate	-	0.5	0.7	0.6	0.5	0.4		-0.2	-0.2	-1.3
Working age employment – (15- 64 years) - thou.pers.	8671	8740	8785	8850	8880	8870	8710	8520	8330	8140
Working age employment – (15- 64 years) – increasing rate	-	0.8	0.5	0.7	0.3	-0.1		-2.2	-2.2	-2.3
ILO unemployment –thou. pers.	845	800	770	720	700	680	650	625	600	580
ILO unemployment rate (share of ILO unemployed persons in total active population - %)	8.4	7.9	7.6	7.1	6.9	6.7	6.5	6.3	6.1	5.9
Real average wages- increasing rate -%	4.5	4.6	4.6	4.3	4.3	4.2				

Source: NCF.

Annex 11

Dynamics of the working age population (2002 Census=100%)

Age groups	2005	2010	2015	2020	2025
TOTAL	101.5	101.2	98.0	94.6	91.5
15-19	98.6	78.9	65.9	64.5	67.7
20-24	97.2	92.5	74.0	61.9	60.6
25-29	102.2	99.6	89.0	75.9	63.5
30-34	96.3	88.9	86.7	82.6	66.0
35-39	141.9	155.8	143.9	140.4	133.8
40-44	83.3	114.7	125.9	116.5	113.7
45-49	94.8	73.5	101.4	111.3	103.1
50-54	108.9	102.5	79.6	110.1	120.9
55-59	116.6	138.7	130.9	101.7	141.2
60-64	87.2	99.0	118.1	111.6	86.9

Source: based on NIS data

Annex 12

Romania's population decrease

-thou.people-

	2002	Optimistic alternative		Pessimistic alternative	
		2025	2050	2025	2050
Census data	21681	-	-	-	-
2002 UN Forecast		21192	19807	20407	16448
NIS Forecast		20237	-	18341	-
CCD Forecast		22199	22093	20010	16290
NCF Forecast		19700	-	-	-

Source: NIS, UNPD, NCF data

Life expectancy at birth, Romania and others (UNPD prognosis)

	2000		2025		2050	
	Male	Female	Male	Female	Male	Female
Romania –UNPD prognosis	66.4	73.8	71.8	77.9	74.7	80.4
Romania –demography specialists' prognosis	67.8	74.8	73.0	79.0	76.0	82.0
West Europe	75.0	81.4	78.4	84.3	80.8	86.8
East Europe	63.6	74.2	69.5	77.0	73.9	80.2
Poland	69.7	77.9	74.2	81.2	77.2	83.5
Hungary	67.4	75.9	72.6	80.0	76.3	82.7
Czech Republic	71.7	78.4	76.4	82.6	78.6	84.6

According to UNO classification: West Europe includes: Austria, Belgium, France, Liechtenstein, Luxembourg, Monaco, Netherlander, Switzerland. East Europe includes: Belarus, Bulgaria, Czech Republic, Russian Federation, Poland, Romania, Slovakia, Hungary, and Ukraine

Source: UNPD, UNPD, Council of Europe

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