

## **IS THE POLICY-INDUCED ROMANIAN DEMOGRAPHIC BOOM AFFECTING THE LABOR MARKET?**

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### **Abstract**

*The effects of Romania's policy-induced demographic boom from 1967 on the labour market were not assessed so far as stronger influences on the labor market, such as transition to a market economy and emigration, were at play. This paper explores whether the demographic boom affects the age distribution of the labour force as a whole and for major occupation groups. Results show some impact on most occupation groups, with cohort increases that were accommodated by the Romanian labour market. These results may inform policy making and suggest potential future developments in which a shrinking population could lead to labour shortages.*

**Keywords:** demographic boom, labour market, occupational groups

**JEL classification:** N34, J00, J21

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### **1. Introduction**

Despite the fact that mainstream economic analysis focuses on economic models explaining socio-economic developments from an economists' perspective, demographic developments have always played a role in explaining economic developments, either as a cause or as effect.

Demographics asserted itself as an important science in the first part of the 20th century. The role of industrial revolution in effecting population growth is key to explaining the first demographic transition (Lesthaeghe, 2010), and the role played by increased economic opportunities that effect lifestyle changes defines the second demographic transition theories. In developed countries, demographic issues rose to the top of public, policy and academic attention since the 90s due to aging of the baby boomers, which are large cohorts born after the 2nd World War, and are now retiring in large

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numbers. Their impacts on public finances, size and structure of the labour force are likely to have a major effect on economies during the first decades of the 21st century. They have triggered policy responses such as increases in mandatory retirement age, and expansion of defined contribution pension plans to replace the currently unsustainable pension plans based on the pay-as-you-go principle (Hicks, 1996).

In Romania demographic developments were distinctly different from those of other countries. Their major characteristic is the policy-induced baby boom, which maintained birth rates at a relatively high level from 1967 to 1990. Its impacts on labor markets started in the 90's, and will lead to massive retirements since 2030s. Also, the subsequent drop of the birth rate in the 90s, is effecting a strong population aging effect.

The recent past history was not favourable to assessing the impact of demographic developments on the economy and society. The transition to a market economy has been characterized by major changes in the economic and social fabric of the country, where topics like macroeconomic stabilization, containing inflation, industry conversion and worker reorientation held the top spots in terms of policy focus and media attention.

Presently, with the economic transition mainly finished, an economic environment characterized by stability and medium to high economic growth, it is likely that the effect of demographic developments on the labour market will receive more attention than in the past. There is research pointing out the impact of future massive retirements of the large cohorts born after 1967 (Seitan et al, 2012).

Thus, as Romania's economic environment is fairly stable and the demographic impact of the post 1967 generations is not fully explored, this paper will attempt to fill this knowledge gap. It will attempt to see whether the policy-induced demographic boom has an impact on the labour force, and whether different professions are likely to be affected by a larger size of the working-age population. The analysis will focus on data from 1996 onwards. As the data available captures to a small extent the 90s cohorts, their limited impact on the labour force will also be analyzed.

The findings will be of major importance in assessing whether demographic pressures may contribute to labour surpluses or shortages. They may inform potential future developments in the coming decades, and point out which profession groups are either unaffected by demographic developments, or show fluctuating numbers in line with cohort size.

## **2. Literature review**

Demographic developments have gained a lot of attention since the 1990s, as the retirement of the baby boom generation in developed countries was perceived to have a major impact on the economy and society. The most prominent example is Canada. During the 1945-65 period, defined at the period where the baby boom occurred, fertility reached extremely high levels, and large birth cohorts have altered various aspects of economic activity in major ways (Foot and Stoffman, 2000).

Population ageing alone also has an impact on the dynamics of the labour force. One of the most important effects of aging is shown using the demographic pyramid, which shows the transition to an ageing society as it changes shape. A triangle shape, characteristic for younger societies, to an amphor-like shape, characteristic for ageing societies, and a stog-like shape for aged societies (Sora and Mihaescu, 2006). As an ageing society, Romania's demographic pyramid has the amphor-like shape, with a share of seniors of 13% in 1999 that surpassed the 12% threshold characteristic for an aged/old population (Sora and Mihaescu, 2006).

A challenge of an ageing society is the mismatch between the amphor-shaped structure of the relative cohort sizes and the triangle-shaped hierarchical structure of the jobs. This mismatch is responsible for a relative lack of promotion and advancement opportunities in aging societies (Foot and Stoffman, 2000).

Based on current trends, it appears that aging will be a persistent phenomenon. This phenomenon is known as the second demographic transition, which states that the current trends in natality and lifetime choices led to below-replacement fertility levels (Lesthaeghe, 2010) across developed world. Romania's fertility rate matches the ones showed by developed countries, being below replacement levels (Ghetau, 2007).

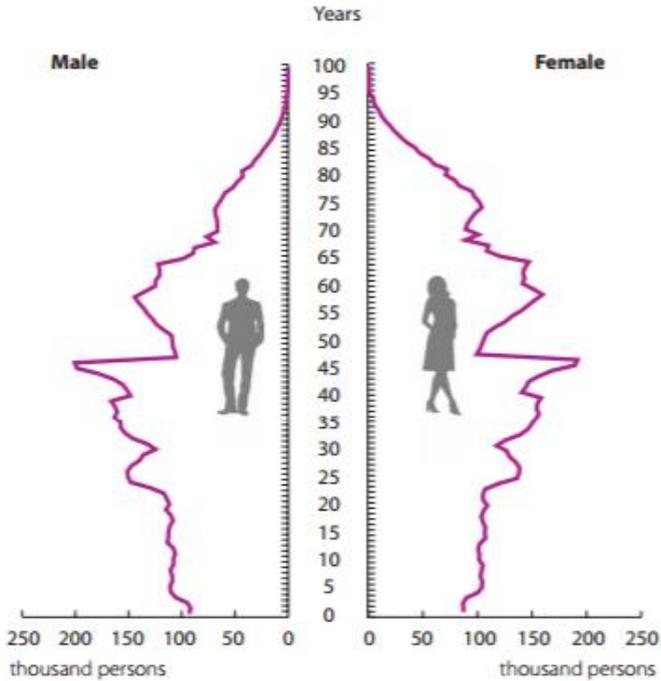
Impact of demographic developments in Romania have been explored to some extent from the perspective of population ageing and its impact on the burden of a larger share of seniors and youths on the working-age population (Ghetau, 2007). The same author points out that, even in the event of a rebound of birth rates, the population decrease and its aging is unlikely to be reversed until 2025. Emigration is also mentioned as a demographic "wild card", which, despite its positive economic effects, may worsen the process of population aging and decline of the labour force (Ghetau, 2007), as generally emigrants are relatively young, aged between 20 to 40 years (Otoiu, 2015).

### **3. Data and analysis**

In analyzing the impact of the policy-induced demographic boom on the size of the labour force, an overall assessment will be done in order to see the impact of the former on the latter. The analysis focuses on the shares of 6 major age groups in total labour force, and for different occupational groups. The age groups are 15-24, 25-34, 35-49, 50-64, and 65 and over. In order to keep details to a minimum and highlight the change over time, the analysis was done over two decades, using 1996, 2006 and 2016 as reference years. These years correspond to a good extent to periods when the demographic boom impacted the 35-49 age group in 2016 (1967-1981 birth cohorts), and the 25-34 age group in 2006 (1972- 1981 birth cohorts). The demographic boost of the 90's, only affected the 15-24 age group in 2016 (1992- 2001 birth cohorts) and the impact is limited as this age group has a low labour force attachment. However, in some cases, it helped spot some developments for this age group for some worker categories, to be detailed in subsequent analyses.

The demographic pyramid, shown in Figure 1, depicts the demographic situation for Romania as at 2014. The policy-induced demographic boom can be clearly seen as a sharp increase in the population aged 45 to 50, with a relatively high population seen for ages 35 to 40, induced by the pro-natalist policy in effect. A decline in the size of the newer generations (cohorts) which are now aged in the early 20, corresponds roughly to the early 90's generation.

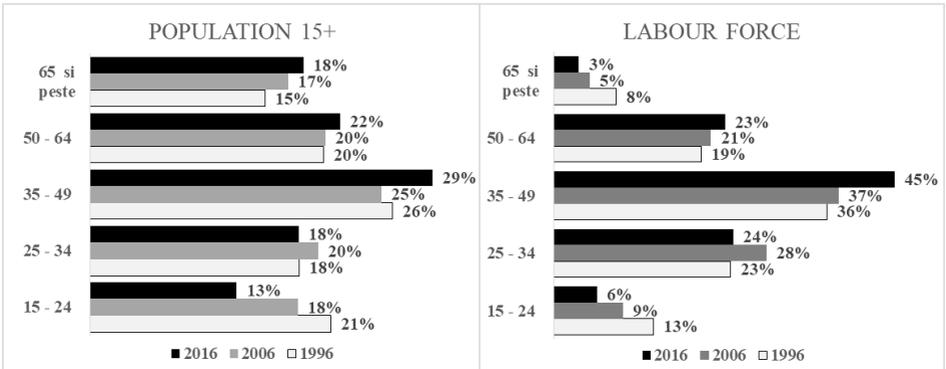
**Figure 1. Demographic Pyramid of Romania as of January 1<sup>st</sup>, 2014**



Source: Chiuchea et al. (2015)

These evolutions have also impacted the labour force numbers, depicted in figure 2. Thus, the largest share of population corresponding to the policy-induced demographic boom can also be traced in the labour force for the 35-49 age group. Due to the fact that activity rates for this age groups are among the highest, a corresponding increase of 4 percentage points occurred between 2006 and 2016 for the population corresponds to an 8 percent increase in labour force.

**Figure 2. Demographic Pyramid of Romania**



Source: [www.insse.ro](http://www.insse.ro), author's compilation

The demographic bust since the 90s is also clearly impacting the population and labor force share of the 15-24 age group, which experiences rapid declines from 1996 to 2016. This decline is also impacted by the lower labour force attachment of young workers aged 15-24, whose share more than halved during the same period.

In order to assess whether fluctuations in the size of population can impact the labour market fortunes of different generations, a hierarchical structure of the labour force, as described by Foot and Stoffman (2000), is impossible to achieve. The present knowledge and collection methods are unable to provide data that can accommodate and make a classification of jobs by their relative hierarchical status compatible across all employers.

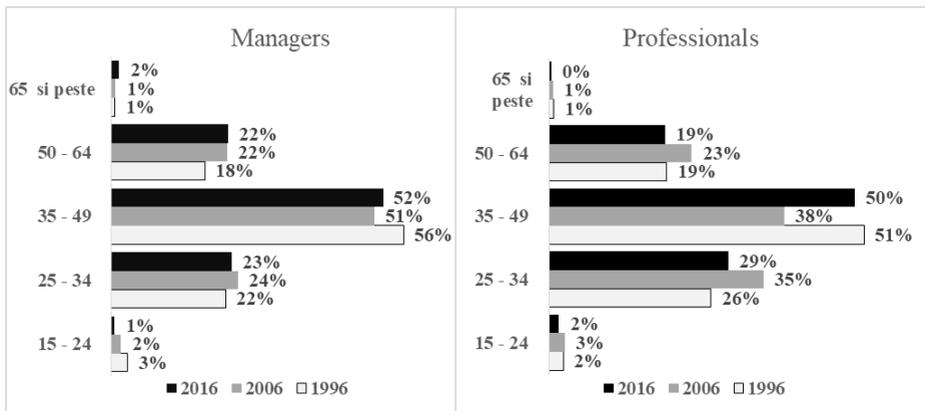
However, the Romanian National Institute of Statistics disseminates labour force statistics that group jobs based on their broad characteristics, by taking into account the level of responsibility the level of education required to occupy them. Occupation groups changed from year 2010 onwards, hence series needed to be matched in order to allow us assess the evolution of the labour force. In most cases, there were no major differences between occupational groups as the labour force structure before and after 2010 were similar. The occupation groups chosen and analysed below are: managers (including executives), professionals, technicians, sales and service workers, agricultural workers, unskilled workers and crafts and trades workers. Clerks

and other occupations were not analysed due to the large share differences that could not be reconciled in the absence of detailed data by occupation, and, for other occupations, the ambiguity surrounding their definition and perceived heterogeneity of the labour force comprised by this category.

The evolution of age distribution for managers and professionals, shown in Figure 3, is completely different than the one seen for the population or for the total labour force. For managers, there were only minor changes during the analysis period, showing that cohort size may have little influence where it comes to management and executive positions.

Professionals showed a slightly different situation, with relatively large fluctuations for the 25-34 and 35 to 49 age groups. Indeed, the share jump from 35% to 50% from 2006 to 2016, preceded by a similar drop, cannot be explained by the demographic trends alone. It seems that the economic restructuring had a strong impact on the numbers of professionals, and the policy-induced demographic boom may have contributed to increasing their share as they may have possessed the appropriate education and skills to take up relevant professional positions.

**Figure 3. Labour force structure for managers and professionals**



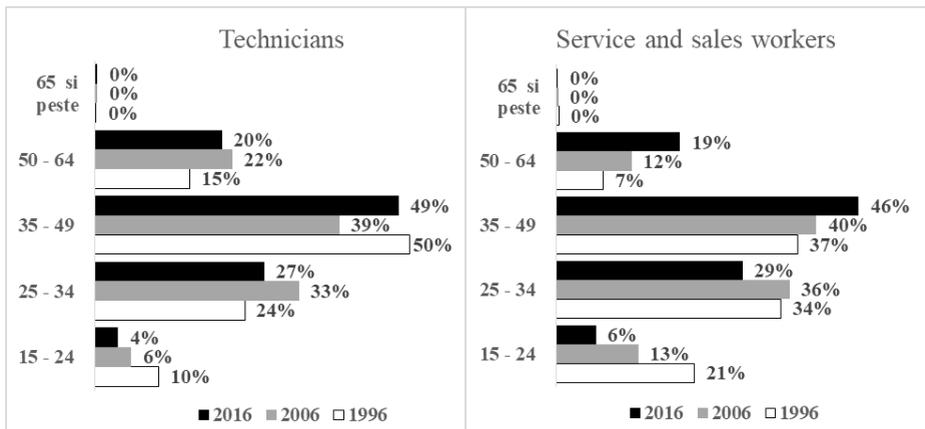
Source: [www.insse.ro](http://www.insse.ro), author's compilation

Trends for technicians, shown in figure 4, which are defined as skilled workers that do not have higher education, were similar to those for professionals. Here, it appears that the demographic boom provided the necessary labour force that matched the demand of workers having the

appropriate credentials and education to fill the jobs available during and after the economic transition. The only distinctive feature is given by the higher share of the youths aged 15 to 24, which experience declines similar to those observed in the total labour force.

Sales and service workers were mostly affected by the demographic boost of the 90s, although trends in education and rising parental income may have accelerated their drop in share from 21% in 1996 to a mere 6% in 2016. Another trend worth noticing is a stronger decline from 2006 to 2016 for the age group 25 to 34, which may be explained by the fact that some workers moved up to technician and professional jobs, therefore boosting the demographic boom cohort effect.

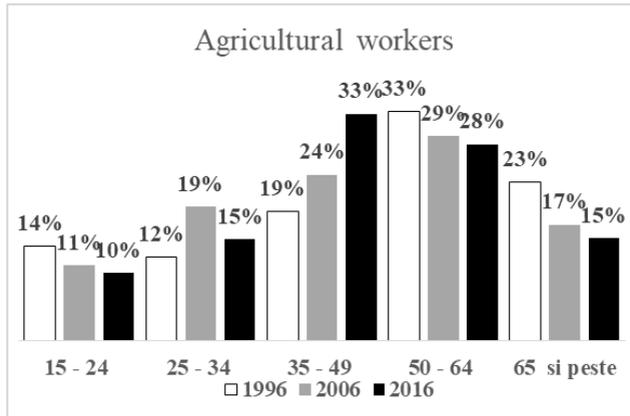
**Figure 4. Labour force structure for technicians, sales and service workers**



Source: [www.insse.ro](http://www.insse.ro), author's compilation

Figure 5 shows that the age group shares of agricultural workers have the most balanced profile, with the demographic impacts clearly shown in the evolution of their shares. They mirror the evolution of the total labour force for the 25 to 34, and show matching increases for workers aged 35 to 49. However, share changes may be impacted by a more balanced age profile, with large shares of workers over 50 and under 25, which may act as buffers for overall labour force trends characterized by lower shares of these age groups, and can reflect a limited range of labour market opportunities for workers located in rural areas.

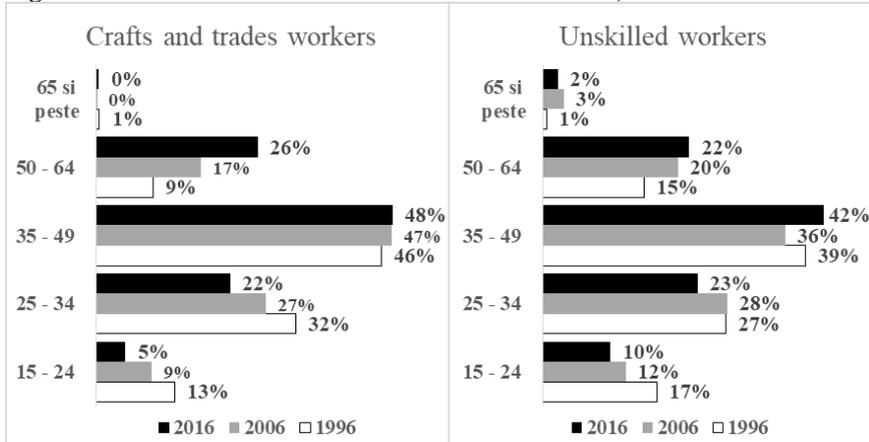
Figure 5. Labour force structure for agricultural workers



Source: [www.insse.ro](http://www.insse.ro), author's compilation

Nevertheless, it seems that the fortunes of workers belonging to the demographic boom have not been negatively impacted; rather, the job market offered matching opportunities, resulting in large share advances for the age groups 25-34 from 1996 to 2006, and for the 35-49 from 2006 to 2016.

Figure 6. Labour force structure for crafts and trades, and unskilled workers



Source: [www.insse.ro](http://www.insse.ro), author's compilation

The situation for crafts and trade workers, and unskilled workers, shown in Figure 6, is rather mixed compared to the overall labour force. Except for the bust in young workers aged 15 to 24, for which demographic forces may have been amplified and even surpassed by an increased time devoted to education, and rising parental income, that made working less attractive, the situation was atypical for the age groups 25 to 34 and 35 to 49. Only in the case of unskilled workers, the share of those aged 25 to 34 decreased from 2006 to 2016, and the share of those aged 35 to 49 increased from 2006 to 2016.

For crafts and trades workers, it seems that trends for workers aged 25 and over followed different paths, with a gradual shift in shares from workers younger than 35 to older workers over 50, and a stable share of workers aged 35 to 49, which were largely unaffected by the demographic boom. It may be that shift away from these professions is the main driver behind their evolution, with decreasing younger cohorts and increasing numbers of older workers as evidence.

#### **4. Conclusion**

While demographics helped explain the overall evolution of the labour force, through the effect of the demographic boom from late 60s and the bust since 90s, it seems that its effects were sizeable with respect to most occupation groups. Managerial and executive workers are largely unaffected by demographic trends; moreover, their relatively flat profile shows their resilience to changes in the economy and, contrary to perceptions, shows no potential age discrimination.

Other groups were likely sensitive to demographic changes: professionals, technicians, sales and service workers, agricultural workers, and, to some extent, unskilled workers. However, more in-depth analyses are needed in order to disentangle the demographic influences from other factors, e.g. economic restructuring, emigration, a shift to a service-based economy.

While economic restructuring was strong, especially from 1996 to 2006, it seems it had no adverse impact on the labour market performance of the demographic boom cohort of the late 60s. Rather, the strong increase in their numbers, and the shrinking share of workers aged 25-34 from 2006 to 2016, which corresponds to the aftermath of the policy-induced demographic boom, shows that the demographic boom was rather beneficial for the labour market,

providing a supply of workers that was able to take advantage of the opportunities of the market economy.

Thus, it seems that the combination of a dynamic economy and a demographic boom can generate positive effects for the economy and society alike. However, the reverse may be true in the coming years, as the demographic boom generation of late 60s moves toward retirement, and into age groups of 50 and over with relatively low activity rates. This, combined with lower birth rates and smaller generations since the 90s onwards, may lead to labour force shortages that have the potential of undermining economic growth. However, there could be a silver lining, as a shrinking labour market may give improved opportunities for smaller future cohorts.

## 5. References

- Chiuchea A., Badea, D., Pisica S., et al. (2015) Romania in Figures, Statistical Abstract 2015, Romanian National Institute of Statistics, [www.insse.ro/cms/files/publicatii/Romania\\_in\\_figures\\_2015.pdf](http://www.insse.ro/cms/files/publicatii/Romania_in_figures_2015.pdf)
- Foot, D. K., Stoffman, D. (2000) Boom bust & echo: Profiting from the demographic shift in the 21st century. Toronto: Stoddart
- Ghetau V. (2007) Declinul demografic si viitorul populatiei Romaniei O perspectiva din anul 2007 asupra populatiei Romaniei in secolul 21, Alpha MDN, Bucharest
- Hicks, P. (1996) The Impact of Aging on Public Policy. The OECD Observer, No. 203, December 1996/January 1997. Available at SSRN: <https://ssrn.com/abstract=2194186>
- Lesthaeghe, R. J. (2010) "The Unfolding Story of the Second Demographic Transition." PSC Research Report No. 10-696. 1 2010. <https://www.psc.isr.umich.edu/pubs/pdf/rr10-696.pdf>
- Notestein, F. W. (1945) Population — The Long View. In Theodore W. Schultz, Ed., Food for the World. Chicago: University of Chicago Press, pp 36-57.
- Otoi, A. (2015) Analiza cantitativa a pieței muncii, Meteor Press, Bucuresti
- Sora, V., Mihaescu, C. (2005) Metode cantitative in demografie si statistica sociala, Ed. Oscar Print, Bucuresti,
- Șeitan, M., Arteni, M., Nedu, A. (2012) "Evoluția demografică pe termen lung și sustenabilitatea sistemului de pensii", Editura Economică, Bucharest.
- UN (2013) World population policies 2013, UN, New York. <http://dx.doi.org/10.18356/22e83351-en>