INSTITUTE OF PUBLIC POLICY

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PROJECT 3 – REPORT 2

Demographic changes and intergenerational transfers in Portugal

Follow-up report: an analysis for 2010

Pedro Pita Barros ppbarros@novasbe.pt

Paula Albuquerque pcma@iseg.ulisboa.pt

Gabriel Salvitti salvitti.gabriel@gmail.com

Jorge Pinheiro jorge.pinheiro90@gmail.com

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1. Introduction

This project aims to carry out an analysis of the effects of aging on the economy in Portugal. The application of this analysis to Portugal is particularly interesting given the high degree of population ageing and because it would allow to observe the way different policy measures influence the distribution of resources among different age groups.

From this analysis, valuable lessons can be learned to understand the determinants of the well-being of individuals, especially those dependent on other age groups. The analysis is also useful to study the sustainability of the welfare state in different economic situations and how public policies can respond to demographic challenges.

This report covers the intergenerational dynamic referring to the year 2010 for Portugal. Afterwards, the analysis exposed here will be reproduced for other periods so one can observe the consolidation of the welfare state in Portugal throughout time, along with the effects of demographic and educational transitions.

2. The NTA methodology

The National Transfers Accounts (NTA) approach was developed in the early 2000s following an international project led by the University of Berkeley and the University of Hawaii. Currently, more than forty countries around the world participate in this project. The NTA estimation method has been approved and published in a United Nations (Population Division) manual.

NTA consist of estimating, for each moment of time and for a given economy, all the flows of resources that take place among the different age groups of the generations that live contemporaneously. In economic terms, people's life cycle can be broadly divided into three major stages: early childhood-youth, active age and retirement age. Intergenerational transfers occur because the relation between how much people produce and how much they consume changes along these stages. When individuals consume more than they produce (childhood and old age), they need cash flows from productive age groups in order to maintain their consumption level. These flows are sustained by governments (public transfers such as education, health care or pensions), by families (private transfers between mainly family members inside the same household or in different households), or through capital markets (savings, borrowed loans, interest payment or reception, asset returns). Families, the public sector and markets are therefore the intergenerational redistribution mechanisms that allow the necessary transfers for children and the elderly to consume and meet their needs.

The difference, for each age, between labour income and consumption is the life cycle deficit (LCD). Inevitably, people have to face a deficit during the stages in which they do not have the capacity to generate income from work (childhood and old age), while for a good part of their active life they will generate a surplus (consumption lower than the labour income). The LCD must be financed through the three intergenerational transfer mechanisms mentioned above: family transfers, public transfers or reallocations of assets through the markets themselves. The importance of these three mechanisms is different in each country and has most likely undergone significant variations throughout history. The goal of this project is precisely the analysis of this temporal evolution, for Portugal, studying the interaction between the three mechanisms of intergenerational redistribution of income.

The procedure for estimating intergenerational transfers is complex and demanding in terms of searching and processing statistical data at the micro level. NTA provide not

only consumer and labour income age profiles, but also age profiles of all the variables in which they can be broken down, as well as the different mechanisms of financing the consumption needs. All profiles are obtained per capita and at an aggregate level (multiplying each profile by population in each age group). Aggregates must match those provided by each country's National Accounting, so that NTA are consistent with National Accounts.

3. NTA estimates: analysis of available data sources

NTA estimation is an intensive and thorough task, due to the large amount of data that needs to be analyzed. On the one hand, income and consumption microdata are needed in order to determine their distribution by age. For Portugal, income microdata is taken from the European Union Statistics on Income and Living Conditions (EU-SILC), while consumption data comes from the Household Budget Survey (HBS).

The Household Budget Survey (HBS) in Portugal has been conducted by Statistics Portugal since the 60's. The first survey was the one of 1967/68. The survey of 2010/2011 was the first one to make use of electronic recording of the daily consumption of goods and services. Consumption is disaggregated according to the Classification of Individual Consumption by Purpose (COICOP), which amounts to almost 14.000 products.

The EU Statistics on Income and Living Conditions (EU-SILC) is an annual survey, also conducted by Statistics Portugal since 2004. The objective of this kind of survey is to produce statistics on the income of individuals and families living in EU countries and to measure and compare poverty and social exclusion between countries. It has come to replace the former European Community Household Panel. In the case of Portugal, the sample is selected from the 2001 Population and Housing Census (2001 Census) data. Some social aggregates such as collective housing (hotels, hostels, etc.) as well as dwelling for reasons of social support, education, military, prison, religious, health, work and others were excluded, meaning they are not part of the EU-SILC sample. The collection of data for 2010 took place between May and July of the same year. The information was collected by direct interview to individuals using a personal computer (Computer Assisted Personal Interview) (INE, 2011).

In this project it is estimated the detailed NTA for 2010, which, later, will be expand for other periods for which there is sufficient data to create the age profiles for consumption and income, while estimating resource flows across ages and consumption patterns of public goods. The evolution will be analysed.

Income is broken down into several categories. In particular, it is necessary to distinguish between labour income (wages and income from self-employment, including unpaid work in family businesses), housing rents (both real and imputed), capital income, private transfer income (intra and inter-household), and public income

(pensions, unemployment insurance, etc.). Labour income is what is used to subtract from consumption to obtain the LCD. It is obtained based on data from the EU-SILC.

To identify resource flows across different ages, consumption data must be broken down into education, health, and other categories, and for all of them, distinguish between public and private consumption.

Information on private health consumption is available in the HBS itself, while the public component is not collected there. The research team is trying to obtain the information either from the Ageing Working Group (AWG) or from OECD. Until now it has not yet been possible to get access to this information – that is why this report does not analyze, so far, any NTA variable that relates to public health consumption. If not possible to obtain Portuguese specific information, one alternative may be to apply an age profile similar to Spain.

In terms of education, the HBS contains information on the educational level of each individual, as well as his/her private consumption of education in the reference year. To obtain the public consumption of education, it is combined information provided in the OECD and Eurostat. From the former it is possible to obtain the number of students enrolled by educational level, and from the later the amount spent on each educational level. With this information, it is finally possible to obtain profiles of the public consumption of education, by age.

Public consumption other than health and education (basically, public transfer inflows in kind) is also estimated based on EU-SILC data.

The Eurostat database is also used to assess information regarding population by age and by gender, as well as to calculate the aggregate controls.

4. NTA estimates: preliminary results for 2010

Here it is presented some preliminary results of the NTA estimates for 2010. Figure 1 shows the per capita labour income age profile. As expected, labor income is clearly concentrated in active ages. What is particularly interesting about the Portuguese case is the late peak in labour income immediately after age 50, which is not observed in many other Europeans countries. See, for example, the labour income age profile of Sweden, in Figure 3.
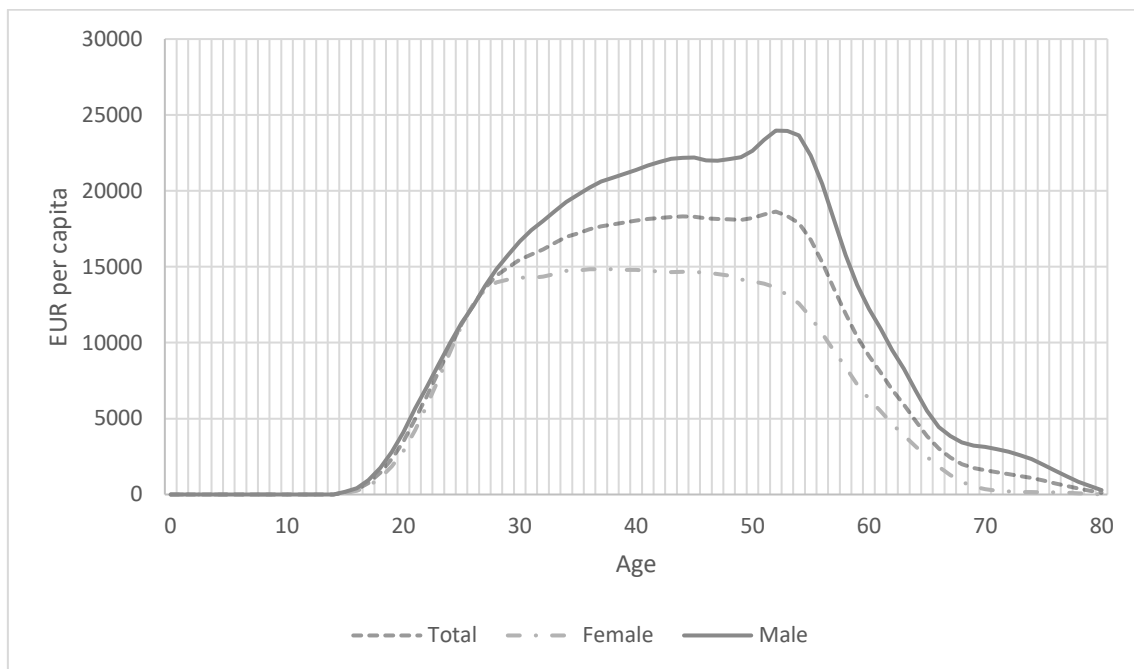
Figure 1 – Labour income profile by age, Portugal, 2010
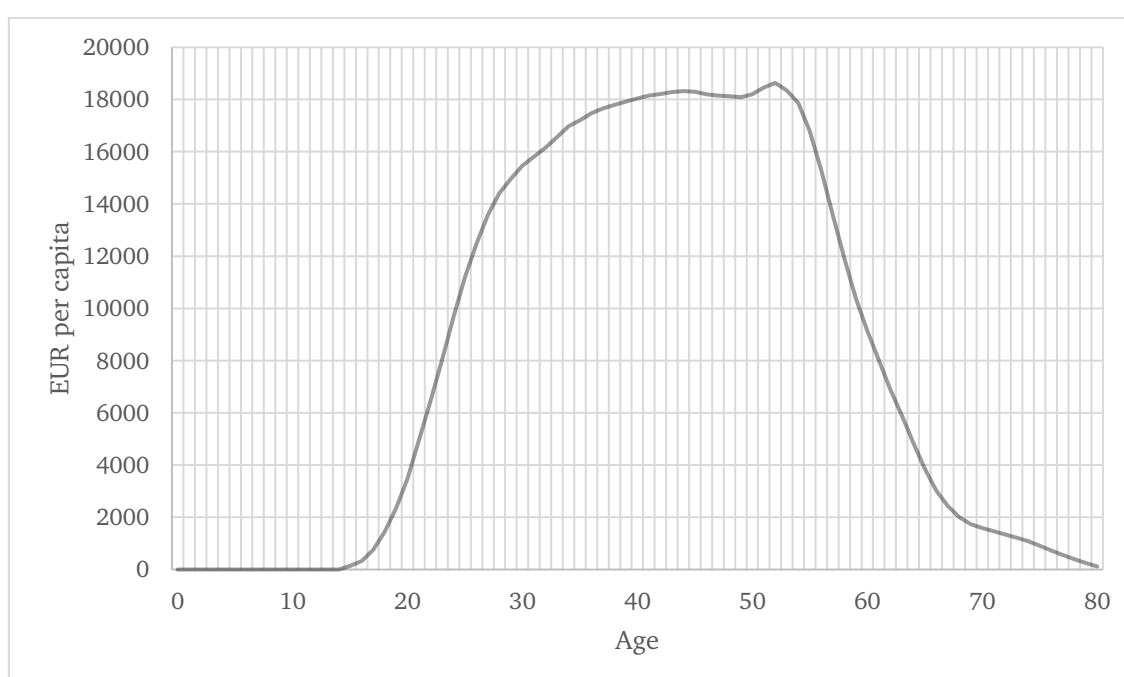
Source: Eurostat (Population data, aggregate controls); EU-SILC 2011; Authors' own calculations.

If we disaggregate the labour income age profiles in Portugal according to gender (Figure 2), it is clear that the peak after age 50 is driven by male workers, which leads to an increase in the gender income gap around this age. Another peculiar characteristic is how the labour income gap is basically nonexistent for unexperienced workers (until the age of 27), unlike, for example, in Sweden, where it is present since young ages (Figure 3). The pattern of labour income is reasonably flat for Portuguese women in the range of ages from about 27 to around 49.

Figure 2 – Labour income profile by age and by gender, Portugal, 2010

Source: Eurostat (Population data, aggregate controls); EU-SILC 2011; Authors' own calculations

Figure 3 – Labour income profile by age, Sweden, 2010

Source: European National Transfer Accounts, http://www.wittgensteincentre.org/ntadata
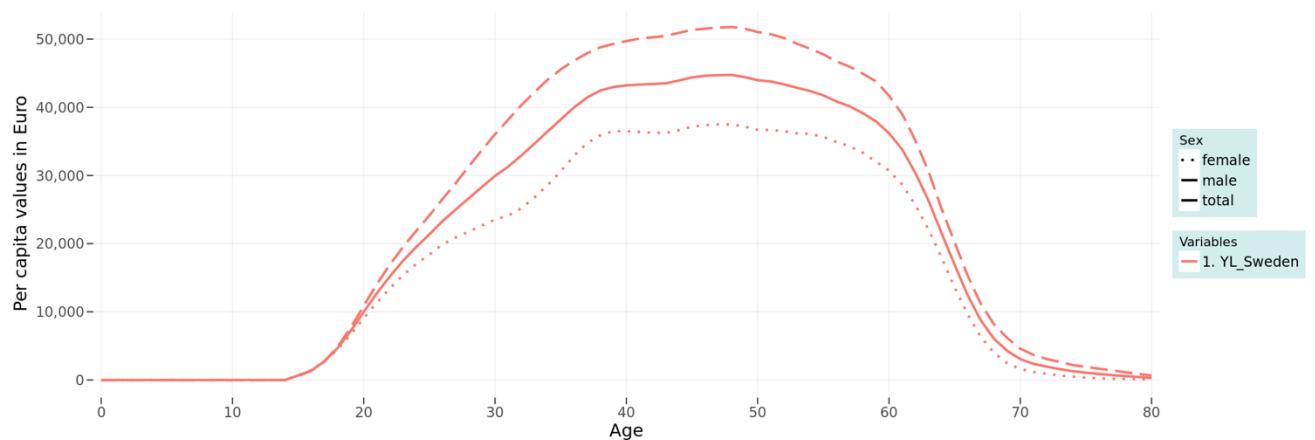
Figures 2 and 3 also reveal that, while men and women stop earning at similar ages in Sweden, the same is not observed in Portugal. Labour income reaches the bottom for Portuguese female workers around the age of 70, whereas for men this only takes place around the age of 80.

It was also estimated inter-household private transfers. These transfers inflows and outflows capture only financial transfers and are estimated directly using the age and gender-specific averages of EU-SILC variables and adjusted to match net private transfers from the rest of the world (ROW) (Istenič et al., 2016). Figure 4 shows the

gender differences in inter-household transfers for Portugal, in 2010. This kind of transfer takes place between households, and it includes direct transfers between them (e.g. alimony payments and gifts), as well as indirect household transfers mediated by the non-profit institutions serving households (e.g. donations), but it excludes the capital transfers such as bequests. The difference between inter-household transfer inflows and outflows are net private transfers from/to the ROW (UN, 2013). It is important to stress that the NTA methodology assumes that all inter-household transfer inflows happen between each household head, since that is no detailed data about who exactly is responsible for the outflows or receives the inflows. That is why the net transfers are basically null for children, because they are never the household head.

Figure 4 – Net inter-household transfers profiles by age and gender, Portugal, 2010
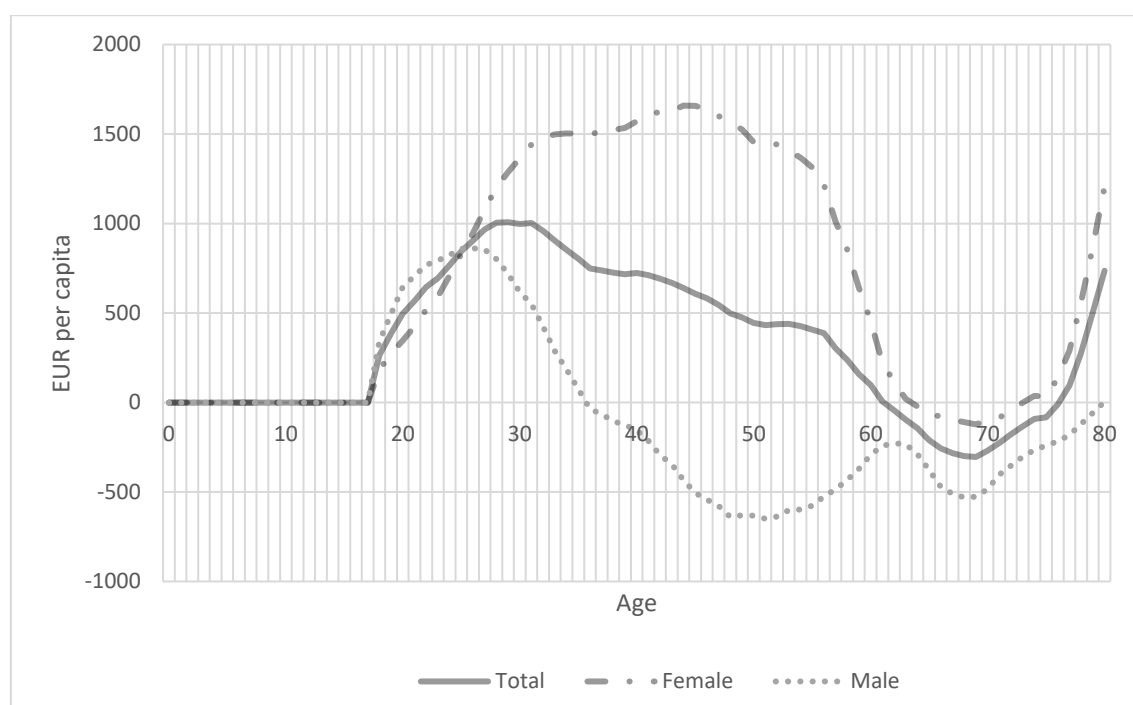
Source: Eurostat (Population data, aggregate controls); EU-SILC 2011; Authors' own calculations.

Net transfers are inflows minus outflows. For Portugal, the estimate of net inter-household transfers is positive up to age 60, and again after age 76. Only between these limit ages do people give more than they receive in these inter-household exchanges. Once more, the gender differential is notorious, with men having negative net flows through more than half of their adult life, whereas female heads-of-household are net receivers most of their lives.

The pattern of net inter-household transfers for Portugal is clearly different from the patters of countries such as Germany or Greece (Figure 5). As it can be seen, the

German population have negative net transfers due to large net private transfers to the rest of the world, while the Greek individuals receive a significant amount of resources, particularly as young adults.

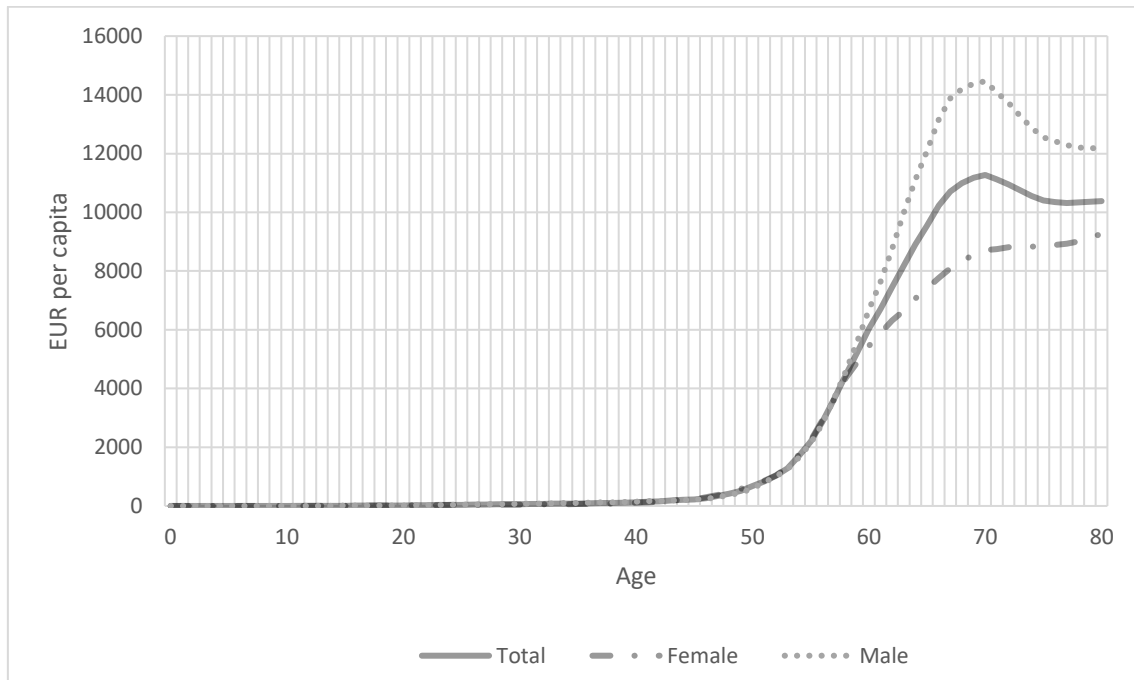Figure 5 – Net inter-household transfers profiles by age and gender, Germany and Greece, 2010

Source: European National Transfer Accounts, http://www.wittgensteincentre.org/ntadata
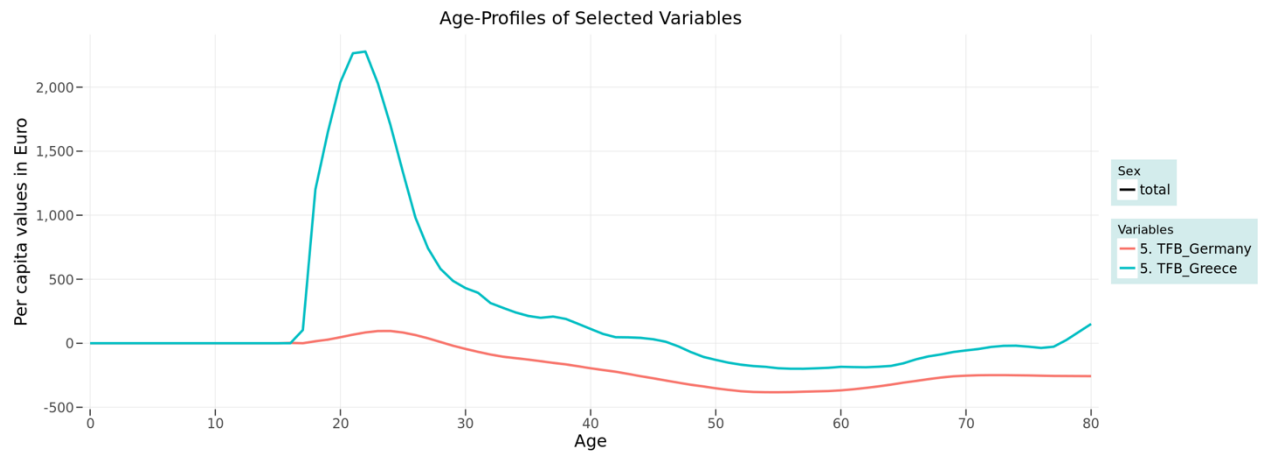
It was also done some calculations of public transfers. Notwithstanding, because of the already mentioned unavailability of an age profile for public health expenditures, age profile of total public transfers is also non available. It is presented here the age profiles for retirement pensions and for unemployment benefits.

Pensions inflows are registered from age 45 on (Figure 6). For people who retire considerably early (before age 60), there is no systematic difference between the values received by men and women. After that, pension benefits for women are always lower than for men. In addition to the difference in level, there is also a difference in the qualitative shape. Before age 70, men's pensions start decreasing, whereas it does not happen with women's pensions.

Unemployment benefits, received in the active ages, increases the same way for men and women until age 30, which expresses the very low labour income gap that we observed in Figure 2 but also similar levels of unemployed people. From age 30 on, the age patterns of unemployment benefits are very different, with a peak for women at around age 40, but much later, in the range age 53-57, for men. In fact, looking at the number of unemployed people per age groups in 2010, in Portugal (Statistics Portugal), the age group 55+ is the only one with more men than women in unemployment. This adds to the higher levels of labour income for men than for women, particularly pronounced in the 5th age decade.

Figure 7 – Smoothed public transfer inflows in cash profiles by age and gender, for social protection (unemployment), Portugal, 2010
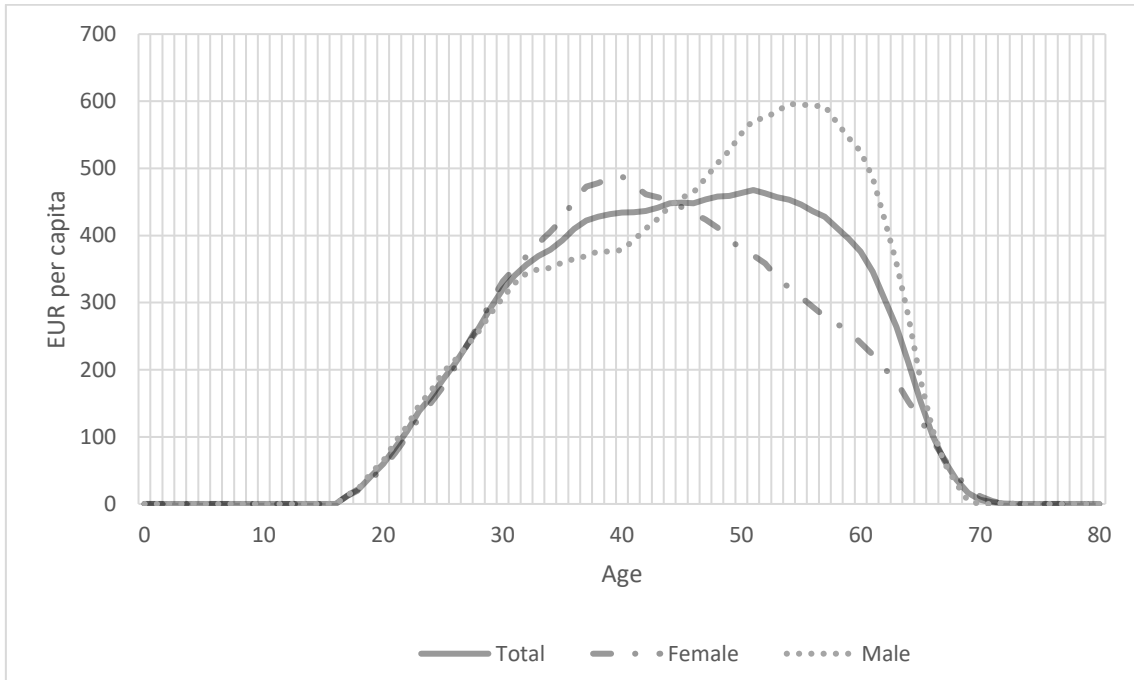
5. Upcoming goals

The next steps in our project are as follows:

- Determine the age profile that it will be use in the public consumption of health and, consequently, to calculate the LCD;

- Collect further data and estimate NTA for other years/periods;

- Detailed analysis of the results in coordination with the rest of the subprojects.

References

Abio, G., C. Patxot, E. Rentería and G. Souto (2015). "Taking care of our elderly and our children. Towards a balanced welfare state", in M. Gas-Aixendri and R. Cavalloti, Family and Sustainable Development, Thomson Reuters, pp. 57-71.

Albertini, M. (2016). "Ageing and Family Solidarity in Europe: Patterns and Driving Factors of Intergenerational Support". Policy Research Working Paper 7678, Poverty and Equity Global Practice Group, World Bank Group.

Albuquerque, P. C. (2014). "Intergenerational Private Transfers: Portugal in the European context". European Journal of Ageing, 11(4), 301-312.

Altonji, J., F. Hayashi, L. Kotlikoff (1992). "Is the extended family altruistically linked? Direct tests using micro data". American Economic Review, No. 82:1177–1198.

Auerbach, A. J., J. Braga de Macedo, J. Braz, L. J. Kotlikoff and J. Walliser (1999). "Generational accounting in Portugal", in Auerbach, A. J., L. J. Kotlikoff and W. Leibfritz (editors), Generational accounting around the world. The National Beareau of Economic Research.

Bloom, D.E. and J.G. Williamson (1998). "Demographic Transitions and Economic Miracles in Emerging Asia", The World Bank Economic Review, 12(3), 340-375.

Esping-Andersen, G. (2002a). "Why we need a new Welfare State". Oxford University Press.

INE. (2012). Inquérito às despesas das famílias 2010/2011.

INE. (2011). Inquérito às condições de vida e rendimento 2010/2011.

INE, IP. (2009). "Projecções de população residente em Portugal 2008-2060." Destaque, Lisboa-Portugal.

Istenič, T., Hammer, B., Šeme, A., Lotrič Dolinar, A., & Sambt, J. (2016). "European National Transfer Accounts". Available at: http://www.wittgensteincentre.org/ntadata.

Lee, R. and A. Mason (2011). "Population Aging and the Generational Economy. A Global Perspective", Edward Elgar.

Mason, A. and R. Lee (2011). "Population aging and the generational economy: Key findings", in A. Mason (Eds), Population Aging and the Generational Economy. A Global Perspective, Edward Elgar.

OECD (2014). "Society at a Glance 2014: OECD Social Indicators", OECD Publishing. http://dx.doi.org/10.1787/soc_glance-2014-en.

Patxot, C., E. Rentería and G. Souto (2015). "Can we keep the pre-crisis living standards? An analysis based on NTA profiles in Spain", Journal of Economics of Ageing, 5, pp. 54-62.

Patxot, C., E. Rentería, M. Sánchez-Romero and G. Souto (2011). "How intergenerational transfers finance the lifecycle deficit in Spain", in R. Lee and A. Mason, Population Aging and the Generational Economy. A Global Perspective, Edward Elgar, p.241-255.

Patxot, C., E. Rentería, M. Sánchez-Romero and G. Souto (2012). "Measuring the balance of government intervention on forward and backward family transfers using NTA estimates: the modified Lee arrows", International Tax and Public Finance, 19, p. 442-461.

Pinheiro, J. (2018). "Generational Accounting for Portugal". (Unpublished master dissertation). Universidade Católica Portuguesa, Lisbon, Portugal.

Rentería, E., G. Souto, I. Mejía-Guevara and C. Patxot (2016). "The effects of education on the demographic dividend", Population and Development Review, 42 (4), p. 651-671.

Sánchez-Romero, M., G. Abio, C. Patxot, G. Souto (2018). "Contribution of Demography to Economic Growth", SERIEs Journal 9, pp. 29-64.

Tiefensee, A., & Westermeier, C. (2016). Intergenerational transfers and wealth in the Euro-area: The relevance of inheritances and gifts in absolute and relative terms.

UN (2013). National Transfer Accounts Manual. Measuring and Analysing the Generational Economy. Population Division, Department of Economic and Social Affairs, United Nations, New York.

PROJECT 3 – REPORT 1

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Autors: Pedro Pita Barros, Paula Albuquerque, Gabriel Salvitti, Jorge Pinheiro

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