

The European National Transfer Accounts (NTA): Data and Applications

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Abstract: Population ageing exerts pressure on the funding of public transfers. It is important to understand how population ageing affects the public transfers and how the transfer system can adapt to the changing demographic structure. Using National Transfer Accounts data, we illustrate the different organisation of the age reallocation of resources across European countries. By comparing measures of economic dependency across countries we gain insights into which strategies might be effective in adapting public transfers to demographic changes.

Keywords: National Transfer Accounts; intergenerational transfers; economic dependency; public transfers; private transfers

1 Introduction

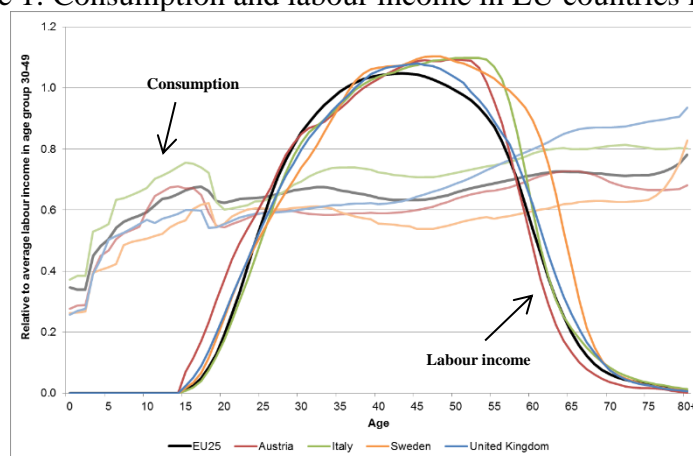
A characteristic of the economic life course is that there are periods of economic dependency in childhood and old age. During these periods part of consumption, which is not financed through labour income, has to be financed through transfers (public and private) and by asset-based reallocations such as asset income and the disposal of assets. In old age, the most important transfers are public transfers in form of pensions and health services. The increasing share of dependent elderly persons exerts pressure on the funding of the public transfer systems. To adapt the system to the changing age structure, it is necessary to either increase the tax burden on the working-age generations, decrease the level of benefits paid to elderly persons, or have people stay longer in the labour market.

The degree of economic dependency and the relative importance of the different channels of age reallocation of resources are different across countries. Consequently, population ageing affects the European countries to a different degree and in different ways. We use National Transfer Accounts (NTA) to measure important dimensions of the age reallocation systems across Europe and to analyse the consequences of demographic changes. NTA measure age-specific income, the redistribution of income among age groups through public and private transfers and the age-specific use of income for consumption and saving. By comparing the different organisations of transfers across countries, we identify strategies that can be used to deal with the consequences of population ageing.

2 Evidence and analysis

The consequences of population ageing are determined by the degree of ageing and by the design of the economic life cycle. Figure 1 presents the age pattern of consumption and labour income for four selected European countries as well as the average of all 25 EU countries. The basic pattern is common in all the countries. The market consumption of very young children is low, but increases strongly once they enter the educational system. Education is responsible for the peak of the consumption age profile at age 10–14. The age profiles reflect the lower average consumption at age 40–50, when income and consumption goods are shared with the own children. There is another peak of consumption at older ages due to the high private consumption around age 60 (consumption no longer shared with their children any more since they moved out) and the consumption of health and long term care services at older ages. The labour income is concentrated at the age groups 20–60 with zero or very low values in childhood and old age.

Figure 1: Consumption and labour income in EU countries in 2010

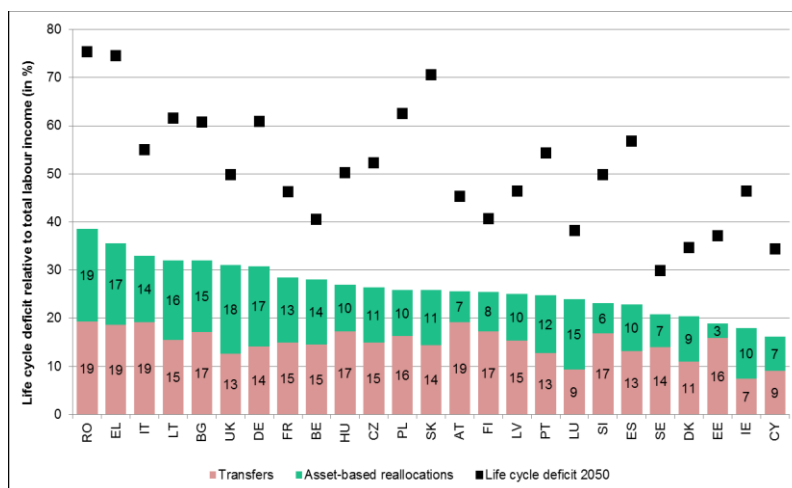


Source: EU-SILC 2011; HBS 2010; Eurostat database; authors' calculations.

However, there are also important cross country differences that will determine the consequences of population ageing for the transfer system. In Sweden, for example, people stay in the labour force longer than in other countries. A higher employment rate at older ages is positive for the sustainability of the public system and makes it less vulnerable to population ageing. It turns out that by converging to the age pattern of labour income in Sweden, the EU countries could neutralise most of the projected increase in public expenditures due to the population ageing

(Loichinger et al., 2017). On the other hand, Italy is characterised by a high level of consumption which, together with an old population, will translate into high economic dependency of elderly people (see Figure 2). Austria and the UK have similar age patterns of labour income, but per-capita consumption in old age is considerably higher in the UK. The reasons are a different age pattern of consumption and a low savings rate in the UK compared to Austria, with the consequences that consumption relative to income is higher.

Figure 2: Financing the difference between consumption and labour income of elderly people in EU countries in 2010 and 2050



Source: EU-SILC 2011; HBS 2010; Eurostat database; various other sources; authors' calculations.

3 Economic Dependency – the Life Cycle Deficit and Economic Surplus

The difference between consumption and labour income in childhood and old age can serve as a measure of economic dependency. In the NTA framework this difference has been termed “life cycle deficit” (LCD). By adding up the age specific LCD of the elderly population we receive the aggregate LCD for the elderly population. To facilitate comparison among countries we relate aggregate LCD to the total labour income. The indicator measures total consumption of the elderly population that is not covered by their own labour income relative to total labour income in a country. The results are shown in Figure 2 together with the share of the LCD that is covered by transfers and asset-based reallocations and projected values of the LCD in 2050.

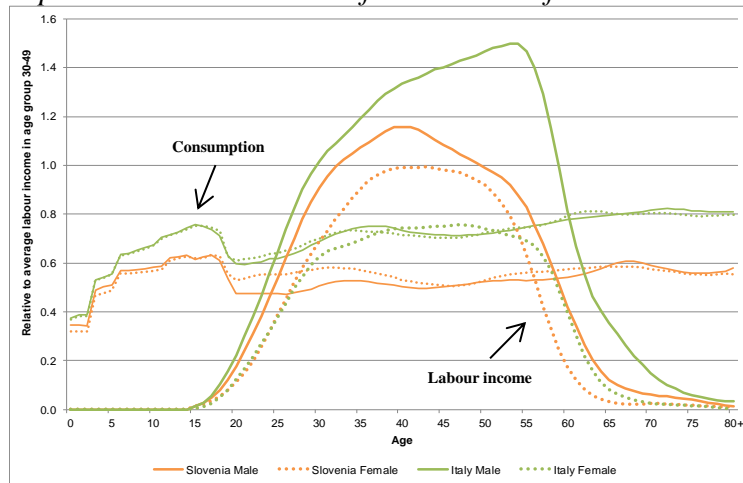
The total LCD of the elderly population amounts to 16–19% of total labour income in Cyprus, Ireland and Estonia and 36–39% in Greece and Romania. The size of the life cycle deficit reflects the population structure, but also age-specific patterns of economic activities and the level of consumption and labour income. In Romania, average labour income falls short of consumption already at the age of 54, while the corresponding age for the average EU citizen is 58. Greece and Italy are characterised by a pronounced public redistribution to the elderly population, low saving rates, low labour force participation rates and high unemployment. The LCD of elderly people in relation to total labour income in Greece and Italy is therefore among the highest across all the countries. On the other hand, in Sweden and Denmark, high labour force participation at older

ages is reflected in the comparable low aggregate LCD. In these two countries average consumption only starts to exceed the labour income at ages 64 and 62, respectively. To simulate the aggregate LCD until 2050, we keep age specific economic characteristics constant at the level observed in 2010 and only vary the population structure according to the Eurostat population projections (2015). The highest LCD in 2050 is projected for Romania and Greece with an LCD of around 75% of total labour income. Such values are clearly impossible to maintain in the long run and emphasise the need for changes in the age pattern and level of intergenerational transfers. It is particularly alarming that the countries with a high LCD in 2010 are also those confronted with a fast and strongly ageing population. On the other hand, high employment rates combined with relatively favourable population projections lead to the lowest LCD in Sweden, accounting for only 30% of the total labour income in 2050. In contrast, the ranking of some countries is projected to change substantially. The population is ageing at a moderate pace in Belgium and France, consequently reflected in a moderate increase of the LCD. Slovakia, Poland, Spain and Germany, on the other hand, are ageing more rapidly, which is reflected in a strong increase of the LCD.

Not only the level but also the channels through which old age dependency is financed are of utmost importance for the economic consequences of population ageing. In countries where elderly people rely on asset based reallocation (like a funded pension system or interests and dividends from private savings) the strain on the public sector will be lower. Savings and investment also have positive effects on the economy (Mason & Lee, 2007; Prskawetz & Sambt, 2014). On the other hand, if elderly people mainly rely on transfers, the economy is vulnerable to an increasing ratio between the elderly and the working age population. Therefore, Figure 2 distinguishes the part of the LCD that is financed through transfers and the part financed through asset-based reallocations. For example in Romania, Greece, Italy and Austria the LCD that is covered through transfers amounts to 19% of total labour income. The corresponding values are 7% in Ireland and 9% in Cyprus and Luxembourg. The old age dependency in the UK, Germany, Luxembourg and Ireland reduces considerably once we take into account only the part of LCD financed through transfers.

Population ageing clearly increases the share of the economically dependent elderly population and the LCD. The pressure that this development exerts on the funding of public transfers depends on the ability of the working age population to provide these transfers. In analogy to the LCD we use the age-specific values of consumption and labour income to calculate the life cycle surplus (LCS), defined as the difference between labour income and consumption. The level of the surplus depends on individuals' age; however, there are also large gender differences in the surplus that individuals generate during their prime age (see Figure 3). There is a redistribution of income between genders within households; therefore, the differences in consumption are rather small. The gender differences in the LCS are thus mainly caused by gender differences in the labour income. These differences mainly reflect cross-country variations in gender specific enrolment and labour market participation rates, and also differences in the gender wage gap of fully employed males and females. In Italy the labour income of females exceeds their consumption only around ages 40–50, while in Slovenia the average labour income of women exceeds consumption for almost 30 years during the life cycle.

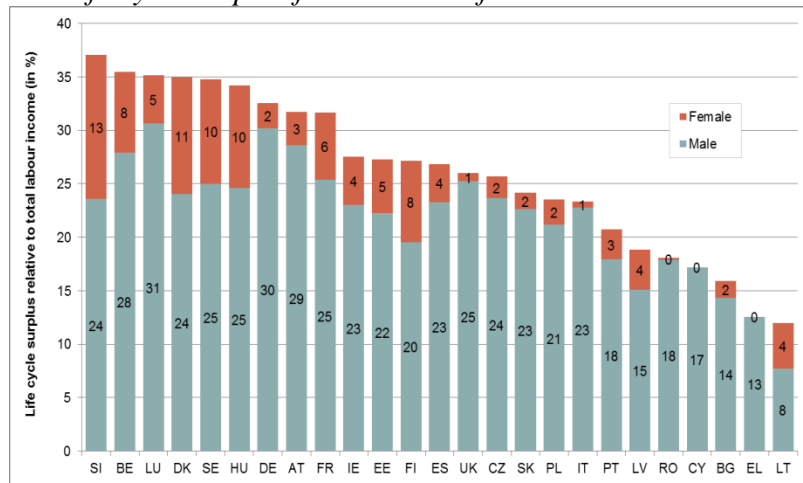
Figure 3: Consumption and labour income for males and females in EU countries in 2010



Source: EU-SILC 2011; HBS 2010; Eurostat database; authors' calculations.

In Figure 4 we present the total value of LCS relative to the total labour income, decomposed by gender. The total LCS ranges from 12–13% of labour income in Lithuania and Greece, to more than 35% in Slovenia, Belgium and Luxembourg. We observe a relation of the LCS and the contribution of women to total labour income. The contribution of females to the LCS is highest in Slovenia, Denmark, Sweden and Hungary. These countries are also among those with the highest total LCS. In Cyprus, Greece, Romania, Italy, Slovakia and the UK the surplus is (almost) entirely generated by males. These countries have potential to increase their LCS and improve sustainability of the public system by increasing the labour market participation and the labour income of women.

Figure 4: Life cycle surplus for males and females in EU countries in 2010



Source: EU-SILC 2011; HBS 2010; Eurostat database; various other sources; authors' calculations.

Conclusions

The economic consequences of population ageing depend on the degree of ageing and on the age patterns of economic activity. While there are common patterns of economic activity across

European countries, there are large differences in the degree of dependency, as well as the length of the period an average person is dependent. This cross-country variation allows us to identify strategies that could be successful in reducing the negative consequences of population ageing, in particular the pressure on the funding of public transfers. These strategies generally include: 1) a reduction of the economic dependency of the elderly population and 2) an increase in the ability of the working-age population to support others.

Among the most efficient strategies to decrease the economic dependency in old age is an increase in the labour force participation of elderly people. Sweden is clearly a role model in this regard, with an average citizen staying in the labour market for about 5 years longer than in the majority of European countries. Additionally, a reduction of the consumption level of the elderly population is inevitable in some countries with particularly high dependency ratios, such as Italy. The overall saving rate of Italy was negative in 2010. To avoid a steady deterioration of economic conditions and a decrease of the capital stock, consumption expenditure relative to income has to decrease.

A high economic dependency in old age is not necessarily related to a high pressure on the funding of public transfers. In all countries, part of consumption in old age is financed through asset based reallocation. The UK is characterised through a comparatively high consumption in old age, but elderly Britons finance a large part of consumption through their own savings. The elderly population in Austria, in contrast, finance their consumption mainly by means of generous public transfers. The consequences of ageing for public transfer are therefore more severe in Austria than in the UK.

The dependent elderly population can be supported if the surplus of the working-age population is large enough. This in turn depends largely on employment rates. The negative consequences of population ageing can be avoided if it is possible to increase the employment rates of the working age population, including a decrease in unemployment and an increase in the labour force participation rates of women.

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