

After the flood – the advantages of demographic change - Fewer, older and happier?

Abstract

Population aging is an inevitable global demographic process. Most of the literature on the consequences of demographic change focuses on the challenges that economies and societies will face as people live longer and have fewer children. In this paper, we (a) describe key trends and projections of the magnitude and speed of population aging around the world, (b) review the literature on the economic, social and environmental consequences of population aging, and (c) investigate the opportunities that aging societies create. We argue that there are relevant positive unintended consequences of population aging that can be leveraged to address pressing environmental problems, and issues of gender inequality and intergenerational ties.

Will population decline and aging lead to less pollution, environmental damage and more sustainability? Will expenditures for the young and old balance if huge private downward transfers (inter vivo transfers or bequests) are taken into account? Will the younger generations increase the time spent caring for the elderly and receive higher transfers from the older generations? We address these and related questions using a wide range of data including National Transfer Accounts, projections of CO₂ emissions and our estimates of time transfers based on time use data.

I. Introduction

Economic research stresses primarily the negative effects of increasing life expectancy and declining fertility, such as the burden of increasing dependency ratios (Cutler et al., 1990), the dramatic effects on the labour market (Börsch-Supan, 2003, 2004b), and the effects of global aging on the economy (Bloom and Canning, 2008; Börsch-Supan, 2008). Changes in demographic indicators cause varying problems in different countries, depending mainly on the degree of reliance of the citizens on the public sector in old age and its size. Studies on the burden of aging on the branches of social security are also numerous.

Still, this mainly applies within the next 3 decades in which a decreasing number of producers has to care for an increasing number of consumers. After this transition period, we on average expect older and smaller populations and reduced costs induced by smaller cohorts entering retirement age. So while it is certainly true that the current and expected age structure changes will have a negative impact on for example public finances, we expect a levelling off in the long run. We can even find domains where population aging and shrinking could be advantageous. These could for example be: lower pollution levels, balanced intergenerational transfers as the upward public transfers for public pensions are compensated through higher inter-vivo transfers and bequests due to lower number of siblings, or increasing gender equality via higher female labor force participation and changes in time use. This paper wants to address some of the major areas where we expect a beneficial outcome as population occurs in the case of Germany. Germany is a forerunner not only as an aging society but also with very high level of public transfers and a huge industrial sector and therefore highly suitable for the envisaged analysis.

II. Methods/Data

The monetary estimates on intergenerational transfers are obtained by following the standard methodology of the National Transfer Accounts providing age specific economic variables, also decomposed by gender. The theoretical framework builds upon Samuelson (1958), Diamond (1965), and Lee (1994). Information about consumption, income, and the age utilization of public expenditures and revenues is provided in the database for Germany (Kluge 2009). To estimate production, consumption, and transfers in the household, the Time Use Survey 2001/02 is employed. Furthermore we use age profiles for CO2 emissions (Zagheni 2011).

III. Expected Results

We will focus on the following main areas:

- pollution levels, and recultivation of rural areas
- intergenerational transfers,
- gender equality,

- time transfers,
- and life expectancy and share of life spend in good health.

We will develop two scenarios to answer our research question:

1. What happens if the current conditions prevail? The population can be forecasted for the next decades, the main uncertainty here is on future fertility rates. The monetary age profiles of monetary, environmental and time use variables as observed today are used together with the projected age profiles in the future. This basic forecast can give important insights on how demography will alter the variables on the population level and if we will encounter a release in for example pollution levels after 2050 just by the fact that an on average older population means less CO2 emissions.
2. What happens if the age profiles change? We will assess how the profiles could be altered in the future. Is the time allocation of males and females subject to change through increasing female labor force participation rates? Can we expect lower pollution levels anyway due to advanced technology and what would be the additional “aging” effect. Will per capita bequests increase as smaller cohorts will have to share the wealth inherited and will this lead to higher inequality in wealth? Do we expect an increase in care as children tend to expect higher bequests in reverse?

IV. Implications for policy makers

The findings will be relevant for policy makers as they focus on the time after the baby boomers pass away. We will be able to show important features of an older and smaller population and how societal arrangements are likely to differ from the today’s observed. With our scenarios, we seek to demonstrate that the social security systems face the increased pressure only during the transformation phase and may be still suitable after the transition.

V. Discussion

The paper will assess the important long run question how major areas of life will be subject to change in on average older and smaller populations. We expect to find evidence that after the decades of transition, population aging will have a positive impact on the environment, on intergenerational relations, sustainability and recreation and gender equality. With the analysis we will be able to speculate about likely societal arrangements by the end of the 21st century.

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