

The Effects of Demographic Change on the Generational Economy: Financial Sustainability, Intergenerational Inequality, and Material Living Standards

Background

Countries around the world are experiencing important demographic changes. Many higher-income countries are experiencing population aging, as large proportions of their populations move into the older ages of the life cycle. In many lower-income countries, in contrast, large proportions of the populations are move from the younger ages to the middle ages of the life cycle. Because there is a clear patterning by age with respect to economic life – with workforce participation and labour income being lower during younger and older ages and higher during the middle of the life cycle, while consumption is more evenly distributed – these demographic changes have important economic implications. Population aging is placing growing pressure on the material standards of living in many higher-income countries. At the same time, the movement of people from the younger ages to the middle ages of the life cycle in many lower-income countries provides these countries with an opportunity to reap a demographic dividend in the form of higher material living standards.

That aspect of the economy that pertains to the economic activities of – as well as the economic relationships between – different ages and generations is referred to here as the “generational economy”. The relationship between changes in the population age distribution and material living standards is one aspect of the generational economy. This paper examines the relationship between changes in the population age distribution and three criteria on the basis of which the performance of generational economies can be evaluated, namely:

1. The financial sustainability of the generational economy.
2. The intergenerational inequality that the generational economy creates.
3. The material living standards associated with the generational economy.

The population age distribution is shaped by the demographic processes of fertility, mortality, and international migration. The paper examines, in particular, the effects that changes in these demographic processes have on these three criteria. How these effects vary between higher-income and lower-income countries is also examined.

Methods

In this paper the performance of generational economies in terms of financial sustainability, intergenerational inequality, and material living standards is assessed under a variety of demographic scenarios. The approach adopted is similar that described in Rice et al. (2022). How financial sustainability, intergenerational inequality, and material living standards are assessed is described below, as are the demographic scenarios.

Evaluating the Generational Economy

Financial Sustainability

In this paper the financial sustainability of generational economies is assessed by way of the time-interval support ratio, as described in Rice et al. (2022). The time-interval support ratio is a summary measure that compares labour income and consumption across an extended time period. It is equal to the total present value of labour income during this time period, expressed as a proportion of the total present value of consumption. It indicates the proportion of consumption that can be funded by labour income. The remaining consumption must be funded by resources other than labour income. These other resources can include those based on the utilization of assets, such as asset income and dissaving, as well as transfers received from other economies.

Intergenerational Inequality

The intergenerational inequality that generational economies create is assessed by way of two summary measures of inequality in the consumption experienced by different birth cohorts. The first of these measures is the IGI index described in Rice et al. (2021), applied in this case to consumption. At its core the IGI index summarizes inequality between birth cohorts in, say, consumption by calculating the Gini coefficient across estimates of the relative inequalities between birth cohorts in lifetime consumption. The second of these measures is the indicator of equalizing redistribution for consumption, as described in Rice et al. (2022). This indicator assesses what proportion of the total present value of consumption during an extended time period must be redistributed in order to attain absolute intergenerational equality in consumption during this time period.

Material Living Standards

The material living standards associated with generational economies is assessed by way of growth rates of age-specific, per capita consumption during an extended time period.

Demographic Scenarios

The demographic scenarios are based on the United Nations' 2024 Revision of World Population Prospects, which present population estimates and projections for over 200 countries or areas from 1950 to 2100. A range of population projections are presented, based on various assumptions concerning fertility, mortality, and international migration. This range of population projections makes it possible to examine the effects that changes in fertility, mortality, and international migration have on the financial sustainability, intergenerational inequality, and material living standards of generational economies.

Data

In order to calculate the measures of financial sustainability, intergenerational inequality, and material living standards described earlier, estimates of age-specific, per capita consumption and labour income are required. These estimates are sourced from the National Transfer Accounts project (ntaccounts.org). Through this global project, estimates of age-specific, per capita consumption and labour income are available for over 60 countries. Low-income, middle-income, and high-income countries are included among these 60 countries.

Apart from these National Transfer Account estimates, the major source of data used in this paper is the 2024 Revision of World Population Prospects, mentioned earlier.

Expected Findings

Using a similar approach to that adopted in this paper, Rice et al. (2022) found that in Australia, because of population aging, consumption can only grow at a substantially lower rate than labour income if financial sustainability is to be maintained. This is also expected to hold in most other higher-income countries. In contrast, it is expected that in most lower-income countries consumption will be able to grow at a substantially higher rate than labour income, while still maintaining financial sustainability, as these countries reap a demographic dividend from the movement of people from the younger ages to the middle ages of the life cycle.

Rice et al. (2022) also found that increasing net international migration is a distinctly useful policy tool for meeting the challenges posed by demographic change, since increasing net international migration both increases material living standards and decreases intergenerational inequality. This pattern is expected to be found in other countries, although its salience may vary from one country to another.

References

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