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Introduction: Special issue on exploring the generational economy

The interplay between demography and economics is a rich and important area of interdisciplinary study involving researchers from economics, demography, sociology, political science, anthropology, psychology, and other fields of study. In the past, economic analysis incorporated demography using highly stylized models. Many studies and even the System of National Accounts takes the household as the basic decision-making unit treating the household as a black box. This obscures many important aspects of economic behavior, such as, the roles and economic effects of children, the elderly, and gender. In the past, macroeconomic models ignored population age structure or relied on highly simplified models of age structure. Population and labor force were treated as equivalent or populations were assumed to consist of only two or three adult age groups. These highly simplified representations of the world have been very valuable and yielded important insights about intergenerational transfers, credit markets, economic growth, and other macroeconomic processes, but they have obvious limitations.

Research on the interplay between demography and economics has shifted over time to using more realistic models of the generational economy. In part, this is a natural outgrowth of the increase in computer power available on researchers' desks (or in their laps). In part, it reflects the need to provide richer accounts of the demographic transition being experienced in almost every developing and developed country. Since the 1970s Family Economics has extensively explored decision-making within the family about childbearing, marriage, and divorce. The role of altruism and other motives for intergenerational transfers have been extensively explored. Models have also bridged the gap between the micro and macro levels of analysis, leading to a body of work sometimes called "family macro". The demographic transition has led to dramatic improvement in life expectancy that is an outcome, in part, of economic change but also represents an increase in welfare that is poorly captured by many economic models and economic statistics. The demographic transition has led to sharp changes in population age structure with more to come that are having a pervasive influence on our economies.

The papers in this special issue were selected from among those presented at the Ninth Global Meeting of the Working Group on Macroeconomic Aspects of Intergenerational Transfers hosted by the University of Barcelona and held at Faculty of Economics and Business, 3–8 June 2013. The conference was attended by members of the National Transfer Account network and other researchers working to improve our understanding of the connections between economy and demography.

An overview of National Transfer Accounts

National Transfer Accounts (NTA) provides a conceptual framework and a system of accounts for the generational economy (Lee and Mason, 2011). The generational economy refers to the social institutions and economic mechanisms used by generations or age groups to produce, consume, share and save resources. Understanding the generational economy is important due to a fundamental feature of all societies – the economic lifecycle. Over an extended period at the beginning of life in all societies, children consume more than they produce through their labor – a gap we refer to as a life cycle deficit. This is followed by a lifecycle surplus over many years during which humans produce more through their labor than they consume. Over the final phase of the economic lifecycle in all contemporary societies for which we have estimates (other than some hunter–gatherer and subsistence swidden groups), humans again experience a lifecycle deficit consuming more than they produce through their labor.

The significance of the economic lifecycle depends on the economic mechanisms and institutions that enable its existence. A very substantial portion of every nation's resources must be reallocated across age – from the lifecycle surplus ages to the lifecycle deficit ages. The needs of children and youth are met through transfers – private transfers from their families and public transfers through government with the relative mix varying across countries. To a limited extent, young adults may rely on credit markets (student loans, consumer debt). The picture is very different for older adults. The relative importance of public and private transfers to the elderly varies greatly from country to country. Moreover, in many countries the elderly rely heavily on assets (asset income or dis-saving) to fund their lifecycle deficits.

NTA has been developed to complement National Accounts by adding an age dimension, and in most respects is consistent with National Accounts. The focus on the individual in NTA rather than the household, however, leads to a much richer description of public and private transfers than in National Accounts. NTA provides estimates of transfers by purpose and by the age of the provider and the recipient. Estimates of both inter- and intra-household transfers are constructed. Moreover, NTA provides a consistent set of data on how asset income, debt, and assets vary over the lifecycle.

NTA are constructed using a variety of sources of data from National Accounts, administrative records that document taxes and public spending, household surveys that contain information about income, consumption, and demographic characteristics, labor force surveys, and population censuses. More recently, time

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use surveys are used in many countries to construct estimates of home production activities including child and elder care time. The methods for constructing basic accounts are described in the NTA Manual recently published by the United Nations Population Division United Nations Population Division (2013). Research teams in over 50 countries have constructed or are currently constructing NTA, sometimes for multiple years. Estimates for at least some components of basic NTA are available for 40 countries on the NTA website (Lee and Mason, 2014).

The initial goal of the NTA network was to construct and analyze accounts for a recent year in countries that varied greatly in their political and economic systems, level of development, quality of data, and so forth. This collaborative effort allowed us to evaluate and to refine NTA methods. It also proved to be very useful for improving our understanding of the generational economy and the macroeconomic implications of changing population age structure. The contribution by Oosthuizen on the demographic dividend in South Africa is an excellent example of this kind of analysis.

Many of the papers in this volume employ NTA data for multiple years to explore how features of the generational economy are evolving over time as populations age and as economies develop or respond to economic crisis. This is an important development and will lead to many research opportunities for exploring synthetic cohort data. Vogt and Kluge use NTA time series data of this sort to look at the role of West–East transfers in the convergence in life expectancy after reunification. The Patxot et al. paper decomposes changes in NTA across time, with the purpose of testing the sustainability of the per capita levels of Spanish consumption before the 2007 international financial crisis in face of population ageing. The paper by Racelis, Abrigo, and Salas compares the NTA estimates for 1999 and 2007 for the Philippines exploring also the role of migrant's remittances, quite relevant in this country. The paper by Lai and Tung takes a longer perspective by investigating changes in the structure of transfers from 1985 to 2005. Finally, Albis et al. take a longer term perspective to analyze the evolution of the French lifecycle deficit for more than two decades (1979–2005).

The value of NTA can be enhanced through other extensions that are explored here. One active areas of research is to explore how the lifecycle and the age reallocation system varies by socioeconomic groups. NTA values in the basic accounts are aggregates or per capita values (averages). This is ideal for some applications, but for other applications it is important to know how lifecycle issues, intergenerational transfers, systems of support, etc. influence low- or middle-income groups. Papers by Mejia-Guevara and by Jimenez-Fontana introduce disaggregation by socioeconomic status (mainly measured by education) for Mexico and Costa Rica, respectively.

Another important area of work is to use a broader measure of economic flows incorporating the value of goods and services that are produced primarily at home. Time transfers are a very important part of the intergenerational support system. Mothers, in particular, provide valuable services through childrearing, caregiving, and other activities that occur outside the market place. Estimating National Time Transfer Accounts (NTTA) provides a more realistic view of the costs of children, the economic contributions of women, and the costs and contributions of the elderly. The development of NTTA has been essential to another NTA-related enterprise – estimating accounts separately by gender. The papers by Zannella, Jimenez-Fontana, and Gal et al. illustrate this approach for the cases of Italy, Costa Rica and Hungary, respectively.

Many of the papers in this special issue explore the implications of incorporating a more complete assessment of the economic value of work and the intergenerational transfers that arise primarily between family members. Hammer et al. provides a comparative analysis on the economic dependency ratio in eight European countries using both the NTA profiles and a first approximation of the NTTA profiles. Going deeply into the role of transfers, the paper by Gal, Szbo, and Vargha uses NTA and NTTA profiles from Hungary to show the extent to which the cost of the elderly and of the children are socialized. The authors extend the work previously done in other countries by Lee and Donehower (2011) and Patxot and Rentería (2012) using NTA profiles, to include the time transfers (NTTA) in the picture.[1] This reinforces the result that public transfers to children are far less important than public transfers to the old. This phenomenon, which occurs in other countries, is quite surprising if one takes into account that transfers to the old given to finance long-term care, pensions and health care, are by far more substitutable in the market than transfers to children.

The first two papers in the special issue, authored by Tobias Vogt and Fanny Kluge and by Morne Oosthuizen, were selected as the outstanding papers presented at the conference, a prize sponsored by the *Journal of the Economics of Aging* and Elsevier.

The paper by Vogt and Kluge "Can public spending reduce mortality disparities? Findings from East Germany after Reunification" investigates the impact of public spending on mortality disparities. The paper mainly focuses on the German case. The reunification of East and West Germany in 1990 and the improved conditions in the East thereafter provide a natural experiment that is used in this paper to evaluate the effect on mortality at older ages of increased pension benefits and increased health care spending. Before reunification, the gap between life expectancy in the East and West was large and growing. After reunification, life expectancy at 65 in the East increased rapidly and converged with that in the West, in contrast to Czechoslovakia, Hungary and Poland where mortality conditions are still similar to those in East Germany in 1990. This suggests that greatly increased financial transfers and spending on health care following reunification with West Germany played an important role. To investigate this idea more formally, a difference-in-differences analysis is used, finding that a one euro expenditure on health or pensions for older people in the East raised the length of life by 3 h. In further analysis, equations are estimated separately in East and West for the log of age and gender specific mortality by cause, where the covariates include average health care and pension expenditures by age, sex, region and period. The results show that expenditures on both pensions and health care reduce mortality, but health care is most important. Furthermore, expenditures in the East led to greater improvements than similar expenditures in the West.

Morne Oosthuizen, in his paper "Bonus or Mirage? South Africa's Demographic Dividend", explores a very important issue throughout the developing world – how best to achieve more rapid economic growth by harnessing the demographic dividend. The South African experience is important in many respects. Its fertility has declined further than elsewhere in the region and South Africa has had to deal with many serious problems arising as a consequence of apartheid. Oosthuizen addresses the first demographic dividend showing how the support ratio in South Africa is influenced by the particular features of labor income and consumption. Realizing the first dividend in South Africa has been a challenge because labor income is so low among young adults, a feature that has been found in some other African countries as well. Consumption patterns have also had an important influence on the support ratio. As Oosthuizen observes, however, it is unclear what policies might be pursued to influence consumption patterns in contrast to how low youth productivity might be addressed.

Oosthuizen goes on to explore the second demographic dividend – how demographic change can be translated into higher

[1] Patxot et al. (2012) discuss the related economic literature.