

ALLOCATING PUBLIC AND PRIVATE
RESOURCES ACROSS GENERATIONS

International Studies in Population

Volume 3

The International Union for the Scientific Study of Population (IUSSP)

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Allocating Public and Private Resources across Generations

Riding the Age Waves—Volume 2

Edited by

ANNE H. GAUTHIER

*University of Calgary,
Alberta, Canada*

C.Y. CYRUS CHU

*Academia Sinica,
Taipei, Taiwan*

and

SHRIPAD TULJAPURKAR

*Stanford University,
California, U.S.A.*

 Springer

A C.I.P. Catalogue record for this book is available from the Library of Congress.

ISBN 978-1-4020-4790-9 (PB)

ISBN 978-1-4020-4480-9 (HB)

ISBN 978-1-4020-4481-6 (e-book)

Published by Springer,
P.O. Box 17, 3300 AA Dordrecht, The Netherlands.

www.springer.com

Printed on acid-free paper

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PREFACE

SHRIPAD TULJAPURKAR
C.Y. CYRUS CHU
ANNE H. GAUTHIER
NAOHIRO OGAWA
IAN POOL

Beginning in the last century and continuing into the 21st century, the populations of the world's nations have displayed large and long-lived changes in age structure. Many of these began with fertility change in the form of baby booms, busts, or declines, and are amplified by declining mortality and by migration within and between nations. These age-structural transitions have powerful effects on human affairs, from driving the demand for public and private goods and services for young and old, to determining the flow of resources across the different ages of the human life cycle. The consequences of age-structural transitions vary in emphasis and detail, but not in significance, across the spectrum of nations in different stages of economic development. Demography will matter in this century not by force of numbers, but by the pressures of waves of age-structural change.

In 1997 a committee of the International Union for the Scientific Study of Populations was charged with exploring age-structural transitions and their policy implications. The committee brought together distinguished scientists to examine the key demographic, social, economic, and policy aspects of age-structural change across a spectrum of nations at different stages of development. Readers will find a rich discussion of their work in *Riding the Age Waves*, a series of three books, "Population, Resources, and Development," "Allocating Public and Private Resources across Generations," and "Responses to Ageing in Advanced Industrial States." Volume 1 of the series contains discussions focused on developing countries and challenges from building human capabilities and creating jobs to creating industry, infrastructure, and institutions. Volume 3 of the series contains discussions focused on the highly industrialized countries and policy problems related to ageing and long run sub-replacement fertility.

The subject of this volume (volume 2) is intergenerational transfers, by which we mean transfers of all kinds (money, goods, services, time, culture, taxes and benefits, information, social capital) across generations. Some of the discussion also concerns intragenerational transfers that are often naturally intertwined with transfers across the age spectrum.

Why are intergenerational transfers important in an age of changing demographic structures? Intergenerational transfers are a key determinant of the well-being of individuals and

families, and of aggregate human, social, and financial capital. Intergenerational transfers of time, money, goods, and attitudes from parents to young children contribute to children's educational achievement and later employment trajectories, and to intergenerational class mobility. Similarly, intergenerational transfers from grown-up children to elderly parents have been shown to contribute to parents' well-being. At a macro level, the direction and magnitude of intergenerational transfers has been proposed as a key factor determining fertility transitions and levels. In the reverse direction, patterns of intergenerational transfer are strongly affected by shifts in age structure, kinship structure, and social networks. The macroeconomics of populations undergoing fertility and mortality transitions can be usefully analysed in terms of intergenerational flows to illuminate questions ranging from savings rates to the need for public support to different age segments of the population.

In many industrialized countries, population age structures today reflect large fertility declines that occurred a generation or so ago, with resulting baby booms that have aged and are moving through the labour force. Fertility declines have had and continue to have significant social and economic effects, e.g., on the growth of individual savings and thus aggregate capital investment, on family sizes and the shift from traditional family structures toward nuclear families, and on the thinning of traditional kinship networks. Mortality declines have resulted in rapid growth of the elderly population and an increase in old-age dependency ratios in both population, and families. Thus, the joint effects of intergenerational transfers and age-structural transitions will have short- and long-run effects on policy with respect to education, social services, welfare, old-age support, and on macroeconomic and fiscal policy.

Several features distinguish these books from past writing on the subject. First, a joint examination of dimensions of age-structural change that have often been considered in isolation from each other (for example, in multidimensional measurement of transfers, and in cross-national comparisons); second, the papers here bring together the many policy implications of these dimensions; third, the use of case studies to examine policy consequences and options of particular dimensions of change; fourth, the development of qualitative and formal methods to analyse the long-term dynamic nature and consequences of age-structural change.

The committee (Shripad Tuljapurkar, C.Y. Cyrus Chu, Anne H. Gauthier, Naohiro Ogawa, Rafael Rofman, Ian Pool, Hassan Youssif) thanks the many people and agencies who made this work possible. In addition to the IUSSP, we thank the Asian Metacentre at the Singapore National University, the Academia Sinica in Taipei, and the Nihon University Population Research Institute in Tokyo. The editors of the individual volumes were C.Y. Cyrus Chu, Anne H. Gauthier, Naohiro Ogawa, Ian Pool, Vipin Prachuabmoh, and Shripad Tuljapurkar.

ACKNOWLEDGEMENTS

This book is the result of an IUSSP (International Union for the Scientific Study of Population) seminar on *Age Structure Transitions and Policy Dynamics: The Allocation of Public and Private Resources across Generations* held in Taipei, Taiwan December 6–8, 2001. The seminar was organized by the IUSSP Committee on Age Structure and Public Policy (Shripad Tuljapurkar, Chair, C.Y. Cyrus Chu, Anne H. Gauthier, Naohiro Ogawa, Ian Pool, Rafael Rofman, Hassan Yousif) and the Institute of Economics of Academia Sinica. An editorial committee reviewed a selected subset of the many excellent papers presented at the meeting. Following the usual practices in this and the previous series the revised set of chapters was subject to independent scrutiny through the IUSSP. The editors and external reviewers requested revisions and the final revised papers are included in this volume.

THE AUTHORS

Juha M. Alho is Professor of Statistics at the University of Joensuu and holds a Ph.D. from Northwestern University. His main research interests are statistical demography and the application of statistics to forestry and sociology. Alho is a Fellow of the American Statistical Association and member of the International Statistical Institute.

Sumon Kumar Bhaumik is a Lecturer of Economics at Brunel University in the U.K. He is also a Research Fellow of William Davidson Institute of Michigan, Ann Arbor and of IZA—Institute for the Study of Labour, Bonn. His research interests include, among other things, intergenerational relationships, impact of socioeconomic contexts on decisions of couples regarding childbirth, and decision-making in the context of labour-force participation.

C.Y. Cyrus Chu is Distinguished Research Fellow, Institute of Economics, Academia Sinica, Taiwan. His research interest covers family economics and economic analysis of law. Right now he is working on a new monograph entitled *Understanding Chinese Families*, to be finished by 2007.

Philip N. Cohen is an Associate Professor of Sociology at the University of California, Irvine. His research concerns gender, race/ethnic and class inequality, focusing on inequality within and between families across various social contexts, as well as micro–macro linkages in labour market inequality.

Eileen M. Crimmins is the Edna Jones Professor of Gerontology at the Andrus Gerontology Center and Director of the USC/UCLA Center on Biodemography and Population Health, University of Southern California. Her recent research has addressed issues surrounding historical trends in the health and functioning of the older population.

Marcus W. Feldman is Professor of Biological Sciences at Stanford University and Director of Stanford's Morrison Institute for Population and Resource Studies.

Anne H. Gauthier is the Canada Research Chair in Comparative Public Policy in the Department of Sociology at the University of Calgary, Canada. She obtained her doctorate degree from Oxford University. Her research interests include family policy, children's well-being, and the transition to adulthood. She is the author of *The State and the Family: A Comparative Analysis of Family Policies in Industrialized Countries* (Oxford 1996).

Noreen Goldman is Professor of Public and International Affairs at the Woodrow Wilson School and a Research Associate at the Office of Population Research at Princeton

University. Her primary research interests are the social determinants of health, biodemography, and survey design. She has been involved in major data collection efforts pertaining to the social environment and health in Guatemala and Taiwan.

Janet C. Gornick is Professor of Political Science and Sociology at the Graduate Center of the City University of New York, and Professor of Political Science at Baruch College. She is also Associate Director of the Luxembourg Income Study, an international social research institute. Her research primarily concerns cross-national variation in social welfare policy. Professor Gornick is co-author (with Marcia K. Meyers) of *Families That Work: Policies for Reconciling Parenthood and Employment*, published in 2003 by the Russell Sage Foundation. She is currently Guest Editor of two forthcoming issues of the *Journal of Comparative Policy Analysis*; both issues concern work-family reconciliation policies in cross-national perspective.

Mark D. Hayward is Professor of Sociology and Director of the Population Research Center at the University of Texas. His recent research has focused on health disparities of the older population stemming from race and life-cycle social disadvantage. Dr. Hayward is a long-time collaborator of Dr. Eileen Crimmins.

Xiaoyi Jin is a doctoral student at Population Research Institute, Xi'an Jiaotong University.

Stefan Hrafn Jonsson is a Ph.D. candidate for a dual degree in Sociology and Demography, Pennsylvania State University, USA.

Nan Li is a mathematical and statistical demographer. He has been a professor at Xi'an Jiaotong University in China before becoming a Senior Research Fellow at the Max Planck Institute for Demographic Research in Rostock, Germany. He is currently a Research Scientist in the Program on Population, Policy, and Ageing in the Terry Sanford Institute of Public Policy at Duke University.

Shuzhuo Li is Professor and Director at the Research Institute for Population and Economics at Xi'an Jiaotong University.

I-Fen Lin is Associate Professor of Sociology at Bowling Green State University. Her research investigates parent-child relations across the life span, with particular attention to child support, intergenerational exchanges, and the quality of survey data on separated families.

Yu-Hsuan Lin is Section Chief at Bureau of Health Promotion, Department of Health, Taiwan. Her current research is in the area of public health and epidemiology. She has taken part in several national surveys in Taiwan.

Diane Macunovich is currently Professor of Economics at the University of Redlands, California. She received her Ph.D. in Economics from the University of Southern California in 1989, after receiving her undergraduate degree from M.I.T. in 1966 and then working for 17 years as an economic and demographic consultant in the United States, United Kingdom, Iran, and Canada. She specializes in research on economic and demographic feedback

effects: how population growth affects the economy, and how economic conditions affect population growth. Much of her work is presented in her recent book *Birth Quake: The Baby Boom and Its Aftershocks* (University of Chicago Press 2002).

Cem Mete is a senior economist at the World Bank. His current research focuses on the functioning of labour markets in transition economies and the evaluation of health sector reforms in Eastern Europe.

Robert Schoen is Hoffman Professor of Family Sociology and Demography at The Pennsylvania State University, University Park PA (USA). He holds a Ph.D. degree in Demography from the University of California at Berkeley and is an Associate of the Society of Actuaries. His current work explores issues in family and formal demography, including the analysis of population models with changing vital rates and the transition to first cohabitation, first marriage, and first birth.

T. Paul Schultz is Malcolm K. Brachman Professor of Economics and Demography, Yale University, USA.

Judith Treas is Professor of Sociology at the University California, Irvine, and Director of the Graduate Program in Demographic and Social Analysis. A specialist in family and ageing, she is currently engaged in cross-national research on the distribution of household labour and in a study of older people in America's immigrant families.

Shripad Tuljapurkar is Dean and Virginia Morrison Professor of Population Studies and Professor of Biological Sciences, Stanford University, USA.

Reijo Vanne is Chief Economist at the Central Pension Security Institute, Helsinki, Finland.

Alexander A. Weinreb is Lecturer in the Department of Sociology and Anthropology at Hebrew University. His research focuses on data collection methodologies in developing societies, and on the relationship between social networks (e.g., familial, political, social) and demographic behaviour. Most of his work, to date, has focused on fertility and HIV/AIDS in East Africa.

Maxine Weinstein is Distinguished Professor of Population and Health at Georgetown University where she has been a member of the faculty since 1987. She is a demographer whose primary interests lie in exploring the effects of the intersection of biological and behavioural factors on demographic phenomena.

Ruoh-Rong Yu is Associate Research Fellow, Center for Survey Research, Academia Sinica, Taiwan. Her main research interests include family economics, labor economics and survey design.

Zhenmei Zhang is assistant professor in Sociology at Bowling Green State University. Her research interests centre on health disparities arising from the family life course and gender.

INTRODUCTION

ANNE H. GAUTHIER
SHRIPAD TULJAPURKAR
C.Y. CYRUS CHU

Intergenerational transfers are a key determinant of individuals' and families' well-being, and of societies' aggregate level of human and financial capital. Intergenerational transfers of time, money, goods, and attitudes from parents to young children have been shown to contribute to children's educational achievement and employment trajectories in adulthood (Teachman 1987; Rindfuss 1999) and to intergenerational class mobility (Erikson and Goldthorpe 2002). Similarly, intergenerational transfers from grown-up children to elderly parents have been shown to contribute to parents' well-being (Chan 1996). At a macro level, the direction and magnitude of intergenerational transfers have been proposed as the key factor determining fertility transitions and levels (Caldwell 1976). The significance of intergenerational transfers is accentuated in populations undergoing age-structural transitions, which would include much of the world today. Age-structural transitions are driven by declines in fertility and mortality, and by migration, and result in shifts in age structure, kinship structure, and social networks, all of which can affect intergenerational transfers. The macroeconomics of populations undergoing fertility and mortality transitions can be usefully analysed in terms of intergenerational flows (Lee 2003) to illuminate questions ranging from the rapid increase in savings rates during a fertility transition to the sharing of risk and support in ageing societies. Rapid fertility declines have a large effect on dependency ratios both at the family level and at the national level, and can interact with cultural preferences to generate unusual shifts in the sex ratio of populations (see the chapter by Feldman et al., this volume). Rapid fertility declines also interact with traditional patterns of intergenerational transfers to pose challenges to rapidly industrializing countries in the provision of old-age support (Cameron and Cobb-Clark 2002; Zimmer and Kwong 2003).

In recent decades, there have been important theoretical and empirical studies on intergenerational transfers. Sociological and economic studies (e.g., Behrman, Pollack, and Taubman 1995; Harevan 1996; Mason and Tapinos 2000; Ythier, Kolm, and Gerard-Varet 2001) have contributed to our understanding of the complexities, multidimensionalities, and dynamics of intergenerational transfers. Yet, the nature of intergenerational transfers, their sources, direction, motives, mechanisms, and consequences are still not fully understood. As argued by Lee (2002), intergenerational studies are still under-researched.

The papers included in this volume make a significant contribution to the understanding of the nature and measurement of transfers, their motives and mechanisms, their macro-level dimensions, and their policy consequences for populations undergoing demographic and economic transitions.

1. The Dimensions and Dynamics of Intergenerational Transfers

The complex nature of intergenerational transfers means that studies have tended to capture only a fraction of all such transfers. For example, studies have captured money transfers or time transfers but rarely both; they have captured transfers from grown-up children to elderly parents or from elderly parents to grown-up children but rarely both; they have captured parent–child transfers, but rarely transfers between siblings, members of the extended family, friends, and neighbours; and they have captured transfers during a very short period of time (usually 12 months) but not during a lifetime. These limitations most often reflect the limitations of the data itself. But they also suggest multidimensionalities that are often not discussed in studies.

In order to prepare the ground for the empirical chapters that follow, we summarize in Table 1 the main dimensions of intergenerational transfers in terms of their types, timings, periodicity, direction of net flow, and donors and recipients.

Table 1. Dimensions of intergenerational transfers.

Dimensions	Categories
Types	Time (including help, services, and visits) Money Goods (including shared space and goods through coresidence)
Timing	Inter-vivos Post-mortem
Periodicity	Regularly One-off Irregularly
Direction	Upward (e.g., from children to parents) Downward (e.g., from parents to children) Lateral (e.g., from siblings to siblings)
Donors and recipients	Children Parents Kins Friends Neighbours Community
Household units	Intrahouseholds Interhouseholds

Source: Adapted from National Research Council (2001), p. 173.

The papers in this volume include innovative approaches to the measurement, description, and dynamic modelling of transfers and their policy implications. Thus, Weinreb considers bidirectional transfers among all potential kin, not only parents and children. Treas and Cohen provide a cross-national comparison of transfers as measured by coresidence and visits. Feldman et al. examine vertical and oblique transfers of cultural norms and their interaction with resource transfers. Chu and Yu take a network approach to explaining transfer patterns in Taiwan. Explicit dynamic models are used by Hayward, Crimmins, and Zhang to study chronic health, and by Schoen and Jonsson to examine fiscal costs and benefits in populations with periodic changes in birth cohort size. Alho and Vanne provide one of the few stochastic projections of age-specific transfers and their attendant fiscal burdens.

An overview of the studies included in this volume in terms of country, dataset, intergenerational transfers, and focus is provided in Table 2 and attests to their international coverage and multidimensionality.

2. Motives, Mechanisms, and Micro-Level Patterns

Following the seminal work by Becker (1974), the motive of altruism has dominated the literature on intergenerational transfers. According to this theoretical perspective, individuals engage in intergenerational transfers because they care about the well-being of the other generations. In contrast, the exchange model suggested by Cox (1987) posits that generations exchange time and goods because both generations perceive benefits from such exchanges. Since these seminal studies, several other motives for intergenerational transfers have been suggested in the literature including the corporate model, insurance, access to credit, comparative advantage, jural obligations, structural model, and “warm glow.”¹ It is beyond the scope of this introduction to review in detail these competing theoretical explanations and related studies. In general, the literature testing these different theoretical models has been inconclusive, showing support for the altruistic hypothesis in some studies, and for the exchange hypothesis in others (Cameron and Cobb-Clark 2002).

The paper by Lin et al. in this volume provides, in fact, support for both the altruistic and the reciprocal hypotheses—at least in the context of Taiwan. The paper also finds some evidence for a structural explanation by which parents who have more children are more likely to be recipients of intergenerational transfers. Their work adds to the growing body of evidence for multiple motivations underlying transfers in different countries (Schoeni 1997, Frankenberg, Lillard, and White 2002).

The other main issue that has been raised in the literature is the ways by which reciprocity is enforced in models that are based on the exchange model. For example, studies have raised the question of how can parents, who have invested in their children when they were young,

¹ The literature is inconsistent in the naming of these different motives, and in their number. For example, Altonji, Hayashi, and Kotlikoff (2000) identify six motives, while Lillard and Willis (1997) identify five (with only partial overlap between the two lists).

Table 2. Overview of studies included in this volume.

Panel A: Micro-level studies

Authors	Country of analysis	Data	Types of transfer	Direction of transfers	Reference period for transfers
Weinreb	Malawi	Malawi Family Transfers Project, 1999	Money and goods	Bi-directional transfers between kins	Last 9 months
Chu and Yu	Taiwan	Panel Study of Family Dynamics (PSDF), 1999–2000	Money and assets	Unidirectional transfers from children to parents	Monthly
Lin et al.	Taiwan	Survey of Health and Living Status of the Elderly 1989, 1999	Money	Unidirectional transfers from children to parents	Last year
Bhaumik	Germany	German Socio-Economic Panel (GSOEP) 1996, 1997	Money	Bidirectional transfers between kins (also unrelated persons)	Last year
Treas and Choen	Twenty industrialized countries	International Social Survey Program 1994	Coresidence and visits	Transfers between children and mothers	Last year
Feldman et al.	China	Survey of transmission of son preference and survey of marriage and old-age support	Money and goods	Unilateral transfers from children to parents	Last year

Panel B: Micro–macro and macro–level studies.

Authors	Country of analysis	Data	Focus
Mete and Schultz	Taiwan	Survey of Health and Living Status of the Middle Aged and Elderly, 1989, 1996	Impact of the introduction of national health insurance on labour-force participation
Gornick	Fourteen OECD countries	OECD Social Expenditures Database 1980–1996 and Luxembourg Income Study	Public transfers to elderly and children
Hayward et al.	USA	Health Retirement Survey 1992 and Assets and Health Dynamics Survey 1994	Impact of changes in aggregate educational attainment and mortality on active life expectancy and prevalence of functional problems
Macunovich	USA	State-level cross sections of personal consumption expenditures 1900–1982	Impact of changes in age structure on patterns of consumption and savings
Schoen and Jonsson	n/a	n/a	Impact of fertility changes and transfer systems on dependency ratios
Alho and Vanne	Finland	Official statistics on taxes, transfers, and expenditures	Impact of population ageing on intertemporal public liabilities

n/a: not applicable.

be assured (or can make sure) that their grown-up children will support them when they are old. Several mechanisms have been suggested as ways of enforcing such reciprocity including social norms, peer pressures, trust, and threat of disinheritance. For example, a study of intergenerational transfers by Lee (2000) in South Korea discusses the fact that in order to ensure that children comply with the expected reciprocity, “parents attempt to instill in their children such values as filial piety, respect for elders, and a felt obligation to support parents in old age” (p. 283). Very few papers, however, have empirically tested these mechanisms. In this regard, the paper by Chu and Yu is particularly interesting. The paper examines the fact that a large majority of parents in Taiwan divide their assets prior to their death. Moreover, and somewhat surprisingly, the child-to-parent transfer appears to be higher in families that have divided all their assets *inter-vivos* than among those who have not divided their assets or who have none. Chu and Yu explain this phenomenon through a theory of social network, which acts as a mechanism to enforce filial reciprocity.

Finally, another issue that has been raised in the literature is the intentional or unintentional nature of intergenerational transfers. Derived from a rational choice perspective, most of the literature has emphasized (or assumed) the intentional nature of transfers. The paper by Bhaumik challenges this assumption by examining the impact of predictable (e.g., marriage) and unpredictable (e.g., illness) events on intergenerational transfers. His analysis, based on the German Socio-Economic Panel Survey, suggests that events, such as marriage, divorce, and childbirth all increase the probability of private transfers and their magnitude.

These papers add useful empirical and theoretical dimensions to the current lively debate about the motives and structure of intergenerational giving. In particular they support the view that the standard economic arguments behind transfers are insufficient for complete understanding (Bawin-Legros and Stassen 2002; Cox and Soldo 2004).

Three other papers included in this volume do micro-level analyses that expose the multi-dimensional nature of transfers. The paper by Weinreb is particularly innovative in considering transfers among all potential kin—and not only between parents and children—and in considering both the giving and receipt of transfers. The paper also innovates in considering not only money transfers, but also goods. The paper shows that in Malawi a wide range of kin may be involved in inter- and intragenerational transfers, and that transfer behaviour is influenced by mortality within one’s network. Recent work by Agree et al. (2001) takes a similarly inclusive look at transfers by considering social networks and transfers between multiple individuals or households. They too document complex patterns of transfers among older parents and their children, and suggest that network measures of resource flows would provide new understanding of the nature of social support and its effect on individual welfare.

The paper by Treas and Cohen provides an unusual cross-national dimension. The literature on intergenerational transfers has been overwhelmingly restricted to the analysis of single countries. Treas and Cohen instead examine intergenerational transfers in the form of coresidence and visits for 20 industrialized countries. Results reveal large variations across countries in the prevalence of intergenerational coresidence. Results also suggest that coresidence and visits are not substitutes but are instead complementary forms of intergenerational support.

The paper by Feldman et al. is original both in the scope and measurement of intergenerational transfers. They study cultural transmission between generations, of a preference for sons over daughters and of marriage patterns in rural China. They use a general formulation of transfers, allowing for complex (vertical, lateral, and oblique) cultural transmission; these are similar to the modes of transmission analysed for material resources by Weinreb in his chapter. Feldman et al. relate cultural transmission to the intergenerational transmission of resources, and combine the two types of transfers to examine the dynamics of sex ratio at birth.

3. Macro-Level Transfers and Dynamics

Intergenerational transfers have also important macro-level dimensions. Four such dimensions are addressed in the papers included in this volume: (1) the impact of public programs on micro-level transfers; (2) the nature of welfare state transfers in terms of their age bias or neutrality; (3) the impact of demographic changes on aggregate savings; and (4) the impact of intergenerational transfers on mortality. Each of these dimensions would deserve a long treatment. Here we provide only a brief summary and refer readers to specific chapters for a more detailed discussion.

3.1. THE IMPACT OF PUBLIC PROGRAMS ON MICRO-LEVEL TRANSFERS

One of the questions that has been asked in the literature is whether or not the introduction of public transfers (such as pensions) provides disincentive to savings or transfers, or in other words, whether or not public transfers crowd-out private transfers (Cox and Jimenez 1992). The literature provides mixed results, suggesting that the extent of displacement (or crowding-out) varies depending on the form and type of public and private transfers (Ezemenari 1997). The paper by Mete and Schultz in this volume addresses this issue by examining the impact of the introduction of a public health care insurance in Taiwan in 1995. Results suggest that the introduction of this insurance did not provide disincentives to save for one's future health care needs and to stay in the labour force at older ages. Their results are consistent with recent findings from other countries (Cameron and Cobb-Clark 2002).

3.2. THE NATURE OF WELFARE-STATE TRANSFERS IN TERMS OF THEIR AGE BIAS OR NEUTRALITY

In a widely cited paper, Preston (1984) pointed to the increasing gap in the financial situation of children and elderly in the United States. While poverty among elderly in the United States has declined since the 1960s, the opposite trend has been observed among children. Preston explained this increasing age gap as a result of the electoral power of the growing elderly population, and its ability to influence the adoption of policies that increased its well-being. This hypothesis has been tested cross-nationally in very few studies, and has resulted in mixed findings (see for example Esping-Andersen and Sarasa 2000; Lynch 2001). The paper by Gornick in this volume, which complements the micro-level cross-national comparison by Treas and Cohen in this volume, examines the trends in the allocation of public resources to children and elderly in 14 industrialized countries. Her results suggest that while public expenditures on elderly have risen since the 1980s, so did

expenditures on children. The study, thus, raises some doubt as to the negative impact of population ageing on public investment in children. This is a potentially important finding given the concerns raised by Preston.

3.3. THE IMPACT OF DEMOGRAPHIC CHANGES ON AGGREGATE SAVINGS AND PUBLIC LIABILITIES

The phenomenon of age-structural transitions has been the subject of recent studies, including the volume by Tuljapurkar, Pool, and Prachuabmoh (2005, in this series). Demographic changes have in fact wide-ranging consequences, especially on the magnitude of the flow of private and public resources across generations. Lee (2003) shows how these consequences are likely to have shaped human affairs over long time periods, from the early evolution of human life histories to the modern creation of welfare states. Three papers in this volume examine this issue.

The paper by Schoen and Jonsson examines the impact of changing fertility on dependency ratios and on the costs and benefits of retirement systems. They construct a population renewal model that generates persistent cycles in cohort birth sizes, a stylized model for the kinds of birth cohort variation widely observed in the last century. They demonstrate that dependency burdens fluctuate cyclically by a cohort's year of birth, and they show how individuals' gains and losses fare under both defined contribution and defined benefit plans. Their paper is a useful contribution to the basic understanding of pension systems in unstable populations, extending the classic work of Keyfitz (1977).

The paper by Alho and Vanne is a sophisticated and major step forward in the analysis of the impact of population ageing on so-called intertemporal public liabilities, defined as the discounted future entitlements of all current and future generations (minus discounted taxes and public net wealth). Intergenerational transfers are the backbone of all public taxation and expenditure, and the proper accounting of demographic uncertainty is the key to making sound policy (Tuljapurkar 1992). Using the case of Finland, the paper constructs stochastic forecasts of population, taxes, and expenditures by age, and then evaluates the long-run balance of payments across generations. They demonstrate that although the current public wealth will be gradually consumed, "current and past generations are not leaving the future generations an inheritance of debt and misery."

Finally, the paper by Macunovich examines the impact of change in the age structure of the population on patterns of consumption and savings. Her paper is grounded in Easterlin's (2001) important work on the significance of cohort relative sizes and expectations. Using American historical data and a variety of models, her analysis supports the view that changes in the age structure of the population have had a major impact on the U.S. economy. The empirical analysis also suggests that children in high-income areas appear to motivate increased savings on the part of other members either through precautionary motives or to finance bequests.

3.4. THE IMPACT OF INTERGENERATIONAL TRANSFERS ON MORTALITY

As discussed at the beginning of this introduction, the downward intergenerational transfers of public or private resources (from the parent generation to the child generation) constitute

a major form of investment in tomorrow's generations. This investment has consequences on the levels of human, financial, and social capital. The paper by Hayward, Crimmins, and Zhang takes an interesting approach in examining the impact of changes in the aggregate educational attainment on the health of generations. Based on a series of simulations involving a multistate life table, the paper reveals the positive impact of social investment programs on the health of the older population, including a decline in the prevalence rate of functional problems and an increase in the active life expectancy.

Overall, this collection of papers contributes to a better understanding of the micro-level dimensions of intergenerational transfers and to their micro–macro connections. By covering countries at different stages of their economic development, this collection of papers also contributes to the still under-analysed area of cross-national variations in intergenerational transfers.

4. The Structure of this Volume

The first part of the volume includes papers that examine intergenerational transfers at the micro level. Within these papers, we start with an in-depth analysis of Malawian transfers (the paper by Weinreb) and then move on to papers that vary in terms of their types of intergenerational transfers and country of analysis.

The second part of the volume starts with an analysis of the impact of public programs on micro-level behaviour (the paper by Mete and Schultz) and then moves to macro-level analyses. Based on various datasets and various analytical techniques, the papers unravel the complex links between age-structural transitions, transfers, and countries' well-being.

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