Session 1- Demographic Transition and Macro economy

Do changing population age distributions and NTA profiles drive macroeconomic change? A decomposition analysis

Ronald Lee

How did changing population age distributions affect the US economy between 1960 and 2011? While it is easy enough to project changes on the assumption of fixed NTA age profiles combined with changing population age distributions, does the macroeconomy in fact respond in the way projected? Or do general equilibrium feedbacks or random perturbations dominate the outcome, overwhelming the projected impacts? This question is of fundamental importance for policy makers, policy analysts, NTA researchers, and macroeconomists.

The role of demography in macroeconomic development after the financial crisis in Finland

Risto Vaittinen, Finnish Center for Pensions (ETK) and Reijo Vanne, Finnish Pension Alliance (TELA)

A distinguishing feature of Finnish society is that, compared with the situation in other countries, the post-war baby-boom generation is exceptionally large. Finland has already entered the stage of demographic transition where the share of the working-age population is declining because of population aging. The large post-war generation entered retirement age during 2008–2013, causing a sharp decline in the share of the working-age population. This decline will continue at an accelerating rate during the next decades. The change in demographic structure has coincided with the financial crisis.

Demographic transition and economic growth in Benin

Barthelemy Biao, Idossou Jean-Baptiste Oga, and Dètondji Camille Guidime

Around the world, countries are experiencing substantial changes in their age structures. Particularly, fertility is declining and the support ratio is rising in the developing countries. These changes have many implications for economic growth. The aim of this paper is to estimate the economic lifecycle deficit of Benin and generate evidence on Benin's Demographic Dividend. We found that consumption is greater than production below age 30 and above age 61. The group in the middle, at age 30–61, supports these young and old people. A big part of the lifecycle deficit comes from the young age group. The overall lifecycle represents 30.7

percent of gross domestic product (GDP). The results also show that Benin began to enjoy its first Demographic Dividend in 1998. As main policy implications of our findings, the government needs to facilitate access to jobs for young people and improve social protection for the elderly.

Analyzing economic growth through an integrated economic and demographic framework: The case of the Netherlands

Arjan Bruil and Jan W. van Tongeren

This paper studies the impact of a graying population on the totals and age profiles of macro-economic aggregates such as household consumption, household disposable income, saving, and investment, as well as on pension funds and other social insurance schemes. It also deals with the effects on the composition of household disposable income between the components of labor income (compensation of employees and mixed income of own-account workers), social transfers, and asset income, and how this influences wealth and worth of the household sector in terms of fixed assets, pension funds, other asset holdings, and transfer worth.

Age structure changes and economic growth in Vietnam

Pham Ngoc Toan and Giang Thanh Long

Demographic changes have various impacts on economic growth via shrinking labor force and productivity growth. Using the population projections of the General Statistics Office (GSO) for Vietnam for the period 2009–2049, we apply the NTA framework to estimate age-structure changes on employment and industrial productivity, from which we estimate demand for investment in human development as well as job creation in the coming decades for Vietnam.

Session 2- Demographic Transition and Demographic Dividend

The contribution to change in dependency ratios from fertility and mortality declines during 1960–2010: An analysis of 201 countries

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Rapid reductions in fertility and mortality during the past half-century triggered a major shift to a favorable population age structure in many countries, which has proven to be conducive to economic development. Countries with a high

proportion of working-age population are better able to use their human resources for economic development due to reduced expenditures related to caring for children. The efficient utilization of the economic opportunities that result from a favorable demographic transition is known as the Demographic Dividend. Changes in both fertility and mortality have impacts on the population age structure. Our aim is to estimate the contribution of the change in the dependency ratio of the non-working-age population (younger than 15 and older than 64 years) to the working-age population (15-64) from the decline of each component of demographic transition, fertility and mortality, during the past half century.

Decreasing fertility, aging populations and life cycle deficit: The case of South Korea

[author??]

This research examines population-development linkages in South Korea using the NTA framework to estimate age profiles of labor income and consumption over the lifecycle. An important feature of the NTA is the central role played by intergenerational transfer of resources in explaining the link between population and development. This research quantifies inter-age monetary flows of labor income and consumption and subsequent economic lifecycle deficits based on the NTA framework using South Korean data for the years 2009 to 2010. The age profile of labor income is found to be an inverse U-shape curve, which starts from age 17, gradually increases with age, reaches a peak in the early thirties, and thereafter declines with age till the age of 84. The age profile of consumption shows rising levels of consumption when entering school and then remains nearly flat during the economically active period and into old age. Public consumption tends to be higher for children and the elderly than for the working-age population.

Session 3- Fiscal and Public Transfer

The fiscal dividend and its demise: Public-sector finances in developing and developed countries

Andrew Mason, Ronald Lee, and Maurizio Bussolo

Changes in population age structure over the demographic transition have a profound impact on public finances. Many countries are realizing a fiscal dividend as the number of taxpayers is rising relative to the number of beneficiaries. Public sectors have responded to demographic forces and other factors in ways that vary widely around the world. Some countries have exploited favorable demographics to enact major expansions of public-sector programs for education, health, and pensions, for example. Others have undertaken more modest expansions of public-sector programs, exploiting favorable demographics to maintain lower taxes and/or to improve public finances. In the rich and some middle-income countries, the fiscal support ratio will undergo a long period of decline leading inevitably to a long period of shrinking benefits, rising taxes, and/or deteriorating public finances. Lower-income countries are at an earlier point in this process, with relatively under-developed public sectors and the prospect of a substantial fiscal dividend in the coming decades. We will explore the implications of alternatives for the size of the public sector and spending on health, education, and pensions, public finances (deficits and debt), and intergenerational equity. The prospects for public sector finances are declining in part because people are healthier and living longer than in the past. Can people work longer and public pensions be delayed? Can healthcare spending on older adults be reined in? We will address these issues and explore the extent to which appropriate public-sector reform can offset the impact of population aging.

Social insurance transfers in Poland

Agnieszka Chlon-Dominczak

This paper investigates age profiles of social insurance transfers in Poland. It looks at long-term benefits such as old-age, disability, and survivor pensions and early retirement transfers as well as short-term benefits such as sickness, maternity, and work-injury compensation. The analysis includes changes in these profiles observed between 2004 and 2012 and also age profiles of contribution revenues for the same period. Age profiles are estimated separately for men and women. Estimation of age profiles allows identification of the scale of intergenerational transfers in the public pay-as-you-go scheme as well as selected tax-financed transfers, such as social pensions and pre-retirement benefits and allowances.
By observing changes in these age profiles over time, it is possible to assess the impact of policy changes, such as the reduction in access to early retirement benefits that came into force in 2009. The selected time period makes it possible to see how changing economic conditions and a worsening labor market have affected social insurance contribution flows and the extent to which they cover social insurance benefit expenditure. Age profiles make it possible to identify the impact of policy and socio-economic changes for different gender and age groups. Changes in the age profiles of social insurance benefits allow assessment of how the social insurance system is adapting to population aging and estimation of long-term sustainability, understood as the capacity of the working-age population to fund social-insurance transfers from current contributions.

The fiscal impact of population aging: The case of Brazil

Cassio M. Turra, Bernardo Queiroz, and Elisenda Renteria
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This analysis examines the fiscal impact of future changes in the age distribution of the Brazilian population. We apply a novel simulation methodology developed by the NTA team to examine the extent to which population aging will affect public transfer outflows and inflows for pensions, public health and education during the next three decades. Net public transfers are already larger for the elderly than for children (on a per capita basis) even though Brazil is still in the middle of the demographic transition process and there is high demand to expand the country's human-capital stock. Current public policies in a context of population aging will add fiscal pressure and limit Brazil's economic growth and development. We expect our simulations to reveal probable scenarios for fiscal imbalances in the future and cast light on ways to mitigate the fiscal risk that arises from the demographic transition.

Session 4- Lifecycle Deficit in General

National Transfer Accounts for Turkey

Nazli Sahanogullari

The purpose of this research is to build aged-based consumption and labor income profiles for the Turkish population following the National Transfer Accounts (NTA) methodology. Turkey's per capita and aggregate lifecycle deficits and surpluses are obtained for the year 2006. In addition, aggregate lifecycle deficits for future years are presented using United Nations demographic projections. Results show that per capita labor income exceeds consumption between the ages of 29 and 62, implying that the Turkish economic lifecycle has 33 years of surplus.

Demographic change and the economic lifecycle deficit for Malaysia

Sharifah Azizah Haron, Tengku Aizan Hamid, Maliki Achmad, Jariah Masud, Mohd Sofi Ali, and Alim Jihen

This study assesses the extent of the Lifecycle Deficit (LCD) for Malaysia in 2009 and discusses implications for public policy. The results show that total consumption has four peaks—at ages 15, 31, 57, and 95. The first peak, at age 15, is due to education costs, while the last peak, at age 95, may due to healthcare costs.

The other two peaks are probably related to recreational and cultural expenditures such financing children's weddings. The government of Malaysia has invested heavily in public education. The analysis shows that public consumption of education is especially high at ages 6 through 19, i.e., for primary to high school education. A high level of private consumption, especially during adulthood, is mostly contributed by "other consumption." The labor income profile follows the usual bell-shaped pattern, with labor income peaking at age 46. The profiles of consumption and labor income over the lifecycle show that child dependency occurs through age 25, while old-age dependency occurs from age 58 onwards. The period of lifecycle surplus spans 31 years, from age 26 to 57.

How the lifecycle deficit is financed in Senegal

Latif Dramani, Fahd Ndiaye, Ouarmé Alaya

Policymakers in Africa can maximize the Demographic Dividend related to falling fertility and mortality rates by increasing investment in the human capital of children through improved education and enhanced healthcare delivery. Analysis of National Transfer Accounts (NTA) in Senegal provides estimates of per capita consumption and labor income at each age as well as assets held and transfers received and paid out for each age group

Private consumption in Taiwan, 1981–2011

Kevin Hsieh, Nicole Mun Sim Lai, and An-Chi Tung

Per capita private consumption, whether in real terms or as a percentage of gross domestic product (GDP), exhibits a long upward trend in Taiwan. Some studies report that the consumption age profile estimated each year varies considerably over time, and younger cohorts experience faster consumption growth than older ones. These findings pose a strong challenge to the consumption smoothing predictions of the Life Cycle/Permanent Income Hypothesis (LCPIH).

The literature has mixed empirical results on LCPIH and does not agree on the relationship between growth, demographic change, and consumption (or saving). With better methodology and more up-to-date data, we re-examine these issues by estimating the age, period, and cohort effects of private consumption, test whether prudence and habit formation determines consumption, and study how economic growth and demographic change affect the level, shape, and change in consumption patterns.

Our data are estimated under the NTA framework, based on the Family Income and Expenditure Surveys of 1981-2011, which can be re-arranged by cohorts. For our dependent variable, we experiment with different definitions (all, non-durables, or by sub-category) and estimating techniques (equivalence scale or regression). For the independent variables, besides the usual age, period, and cohort dummies, we may include real income (to reduce the over-sensitivity of consumption data), income uncertainties, and so on. We employ dynamic pseudo-panel models. We begin with an age-period-cohort analysis, then test various consumption theories, and study whether there are structural breaks (e.g., whether the implementation of National Health Insurance in 1995 greatly reduced the private consumption of health services).

Our findings have important implications for the future. Simple exercises will be performed to compare the impacts of different economic growth rates with different population forecasts. The results suggest how economic stagnation and population aging, the two challenges Taiwan faces now, will alter consumption growth in the future.

On the effect of forward and backward family transfers on capital accumulation

Gema Abio, Concepció Patxot, Miguel Sánchez Romero, and Guadalupe Souto

There is an ongoing debate on the extent to which the demographic transition occurring in most developed countries is driven by economic factors. In this context, it is clear that the role of the welfare state is not neutral as long as it alters the way in which resources move across age groups in the economy. In this paper we aim to shed light on this issue by developing an overlapping generations model calibrated using the National Transfer Accounts (NTA) data set, which contains the flow of resources moving from one age group to another by means of private and public transfers or through the capital market. By assuming that the observed set of public and private transfers—and other key variables measured in the NTA estimates—are constant in the future, we analyze the extent to which savings—the residual variable in NTA—and wealth are affected by demographic change. Cross-country comparisons will allow as to disentangle the role of public and private transfers on capital accumulation.

Session 5- Gender Inequality and Effect

Who benefits from women's invisible work in India?

Laishram Ladusingh

Women's domestic work is largely for consumption by members of the household and does not conform to the definition of work as remunerated and market related.

This makes women's work invisible in the market-based. Women in India spend on the average 4 hours 30 minutes a day on preparing, cooking, and serving food and beverages, cleaning house, laundry, and house maintenance, compared with about 20 minutes a day on the average contributed by men. On a per capita basis, children age 6–14 years consume 1 hour 15 minutes of women’s domestic work per day, adults age 15–59 consume 2 hours 15 minutes, and the elderly age 60 and above consume 1 hour of women's time on household management and maintenance. On average, women spend 40 minutes a day caring for children, the sick, and the elderly, but women age 20–34 spend 1 hour 10 minutes on caregiving as they tend to have the dual responsibility of caring for their own children plus looking after sick and elderly members of the household. Out of total caregiving time, per capita consumption is 45 minute for children, 15 minutes for the elderly consume, and 10 minutes for adults age 15–59 years. Failing to take account of women’s household work grossly underestimates the contribution of the informal sector to India’s Gross National Product (GDP) and underestimates GDP as a whole by up to 30 percent.

Gender differences in cognitive abilities among the elderly poor of Peru

Javier Olivera, University of Luxembourg; and Rafael Novella, Inter-American Development Bank.

The decline of cognitive abilities in old age is a well-documented fact in human biology, which has also been demonstrated by large-scale, representative household surveys aimed at assessing the well-being of the elderly. As any other indicator of accumulated human capital, cognitive ability depreciates at a certain rate, although individuals can take measures to retard or smooth cognitive depreciation. Working is an important protective measure against the accelerated decline of cognition in old-age. In addition, factors such as educational attainment, health, and nutritional status help explain the stock of cognitive abilities and the rate of decline. Some studies suggest that in developed countries there are no significant gender differences in cognitive functioning, while in developing countries there are important differences to the detriment of women. The usual explanation for this disparity is rooted in important gender differences in educational attainment and nutrition in early childhood. These results lend support to calls for equalizing education opportunities for and girls as a means to reduce disparities in cognition in old age.

The relative size of the elderly population is growing in many countries because of the demographic transition, and the share of elderly women is also growing for biological reasons. This represents a growing public health problem. In addition to affecting elderly individuals themselves, cognitive decline indirectly affects other family members who have to allocate resources and time to take care of the elderly. In this scenario, individuals with larger cognitive impairments might represent a burden on their families. For poor households, this might be particularly detrimental given tight budget constraints.

The literature that focuses on gender differences in old-age cognition in developing countries and rural areas is scarce. It is possible that among the poor, gender differences in educational attainment, health, and nutrition indicators are less evident as everyone in this group is in the bottom part of the distribution. But another possibility is that gender differences in education and in the other variables are even more pronounced if cultural or economic reasons for favoring boys over girls are more entrenched among the poor. In this paper we assess this empirical question by looking at the gender disparity in cognitive functioning among elderly poor Peruvians from the Survey of Health and Well-Being of the Elderly (ESBAM). This is a recent survey of the poor age 65–80, which includes questions on cognition and a large set of socio-demographic and subjective and objective health measures.

This paper contributes to the empirical literature on gender differences in old-age cognitive abilities by controlling for a comprehensive set of confounders, such as schooling, sex, age, urbanity, ethnic group, community-level unobserved characteristics, and objective and subjective health indicators. After controlling for these attributes, we find that females perform better than males in some cognitive measurements, including episodic memory (measured with immediate and delayed word recall) and command (a series of commands to be orderly followed by the interviewed), but perform worse in orientation and drawing ability. In an overall measure of mental intactness that includes orientation, command, and drawing scores females perform worse than males. Furthermore, we find that educational attainment, other variables related to childhood, are current nutritional status are very important in determining the level of cognitive functioning. We present evidence of differential effects of education by sex, meaning that education tends to boost the cognitive abilities of females more than males.

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An analysis of gender disparities in time transfers according to individual characteristics, household structure, and regional differences: The case of Italy

Marina Zannella , Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU)

Non-cash familial contributions to the welfare of family members are almost invisible and pose several measurement issues. Although non-market production of goods and services is less significant today than in the past, it still represents a fundamental component of the intergenerational transfer of resources. The importance of informal care provides a particularly strong argument to go beyond the traditional focus on cash transfers, especially in the context of an aging population and the consequently increasing differentiation and complexity of needs.

Gender disparities in household production, and consequently in time transfers, are affected by a complex interaction of micro- and macro-level factors. Among the former, individual (i.e., education, level of income, labor-market participation) and household (i.e., number of children, age of the youngest child) characteristics appear to be of particular relevance. Among macro-level factors, social policies, labor-market regulations, and the underlying socio-economic context exert a strong influence.

This analysis builds on micro-data from the latest Italian Time Use Survey (2008/2009). As a complement to existing studies of gender disparities in unpaid work, the research measures intergenerational transfers, accounting for household production, consumption, and time transfers according to individual, household and country-specific characteristics. In particular, given the existence of significant socio-economic differences across Italy, it provides estimates at three regional levels: the North, the Center, and the South.

Eliminating reproductive risk factors and reaping female education and work benefits: A constructed cohort analysis of 50 developing countries

Qingfeng Li and Amy Tsui
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Proponents of the Demographic Dividend (DD) framework recommend investing in human-capital quality, including schooling, nutrition, healthcare, and job-skills training, to boost economic growth and productivity in the first phase and continuation through the second. The gendered perspective advocates prioritizing investments in the female population to capture their potential contributions to the DD. Our analysis assesses the impacts of reproductive risk factors prevailing at the time of daughters' births on their subsequent health, reproductive, and socioeconomic outcomes in adulthood. Measuring the benefits for female schooling and paid work achieved by eliminating the risks associated with early childbearing, higher-parity births, and short birth intervals can provide insights on the DD's potential in low and/or middle income countries and the Sub-Saharan

region.
The first study aim is to test a pseudo-cohort approach to gain a longitudinal perspective on life-course changes. Second, we assess whether a daughter born to a young mother (under age 18), at high birth order (parity 4 or more), or soon after the previous sibling (within 18 months) shows elevated probabilities of experiencing adverse reproductive and adult health and social welfare outcomes, particularly with respect to years of schooling or paid work in adulthood. We simulate for adult female cohorts the expected mean years of schooling and mean proportion with paid work given the elimination of reproductive risks. Third, we examine if these cohort summary measures differ appreciably for the Sub-Saharan Africa region.
Single-year birth cohorts are constructed using birth histories and socioeconomic data from cross-sectional rounds of Demographic and Health Surveys (DHSs) conducted in 50 developing countries between 1986 and 2012. Overall 2,542 cohorts, including 1,386 for Sub-Saharan Africa, are linked by year of birth across DHS rounds such that risk conditions at birth for daughters come from birth histories provided by their mothers as female respondents in the first DHS round and adult socioeconomic outcomes are provided by female respondents in subsequent DHS rounds belonging to the same birth cohort year. Generalized linear modeling is used to estimate the effects of each reproductive risk on outcome proportions. Post-estimation simulation is carried out with the systematic elimination of each reproductive risk factor.
The results show that eliminating early childbearing and short birth spacing can increase average years of schooling for female cohorts from an observed 6.42 years to 6.63 and 6.99 years, respectively, For Sub-Saharan Africa cohorts, the increase is from an observed 5.21 years of schooling to 5.22 with no early childbearing and 6.14 years with no closely spaced births. Eliminating high-parity births in Sub-Saharan Africa cohorts increases the average years of schooling to 6.20 years or by nearly one year. The elimination of all three risks generates a predicted gain of 0.81 years for all cohorts and 1.94 years for Sub-Saharan Africa cohorts. Across the three reproductive risks, eliminating early childbearing shows the highest gain in the mean proportion having paid work—from 0.286 to 0.326. The individual elimination of the other two risk conditions does not increase the mean cohort proportion with paid employment; however, the elimination of all three raises the mean proportion with paid employment from 0.286 to 0.305. Eliminating any or all risk conditions in the Sub-Saharan Africa cohorts does not increase the mean proportion with paid work.

Demographic Dividend in Bangladesh: An application of national time

transfer accounts with age and gender

Muhammad Moshiur Rahman

The Demographic Dividend for Bangladesh is described for 2010 based on age and gender. According to data for 2010, the Gross Domestic Product (GDP) of Bangladesh is Taka 7,967 billion, and aggregate household consumption is 5,969 billion. According to the population census of 2011, the total population is 149.8 million with a male/female ratio of 100.3:100. Using information from the household income and expenditure survey (HIES) of 2010, the labor force survey (LFS) of 2010, the time-use survey (TUS) of 2012, and the population census, we estimate the National Transfer Accounts (NTA) and the National Time Transfer Account (NTTA) for Bangladesh. We show how gender and age groups in the population are contributing to the economy through formal and informal economic activities. We also demonstrate that Bangladesh is experiencing a Demographic Dividend with its huge working-age population and how this contributes to national income through labor income. Moreover, we show how private and public consumption affect macroeconomic activities. Finally we discuss policy issues related to the Demographic Dividend, population aging, and gender.

Session 6- Health and Human Capital

India's proposed universal health coverage policy: Evidence and implications for age structure transition effects and fiscal sustainability

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Health expenditure is predominantly private in India, paid for by households. In 2009, India's National Health Accounts showed that private health expenditure was 78.5 percent of the total health expenditure of INR133.77 billion. Household health expenditure was 71.1 percent of total health expenditure and 91.1 percent of total private health expenditure. Total health expenditure was 4.3 percent of India's Gross Domestic Product (GDP), with private health expenditure accounting for 3.4 percent of GDP and public health expenditure accounting for less than 1 percent. India's share of public expenditure in the total expenditure on health, at 21.5 percent, was lower than in China (where the public share was 38.8 percent), Malaysia (at 44.8 percent), Indonesia (at 46.6 percent), Sri Lanka (at 46.2 percent), Bangladesh (at 29.1 percent), and Nepal (at 28.1percent).

Optimal revenue structure of public health insurance in South Korea: Political economy approaches

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We try to identify the optimal revenue structure for South Korea's public health insurance (PHI) from the political economy perspective. We have shown that: (i) an increase in the proportion of PHI revenue obtained from general taxes, stemming from a change from a basis of taxes on wage income alone to a basis of taxes on whole income plus consumption, increases public health expenditure; (ii) a rise in the progressivity of the tax burden increases public health expenditure; and (iii) the proportion of tax financing in PHI revenue is higher in countries with higher tax progressivity. These results indicate two political economy perspectives for the determination of public health expenditure. Firstly, increasing dependence on a subsidy provided by tax revenue is likely to reduce the incentive of the healthcare administration to control public-health expenditure because the administration does not have to make much effort to increase its revenue. Result (i) supports this budget-maximizing behavior. Secondly, results (ii) and (iii) indicate that the median voter theorem may apply to this problem. Under a progressive tax structure, a revenue-neutral increase in tax financing will reduce the fiscal burden of the median voter and induce a political equilibrium, with PHI policy parameters causing larger health expenditure.

The effects of children on households' fixed and transitory wealth: Insights from a longitudinal study of periurban communities in Ghana and Ethiopia
Amy Tsui, Qingfeng Li, Julia Driessen, Assefa Seme, and Emmanuel Nakua
Asset indices have been used to gauge household wealth and occupants' welfare. Their construction circumvents a number of issues plaguing direct measures of income and wealth, such as expenditure data. The standard household asset index used in multi-national surveys comprised of items related to ownership of property, housing construction quality, and amenities. Principal components analysis has been applied to derive household scores.
Asset goods stand in contrast to consumption goods owned or purchased by the household, the latter often relevant for a short period of time. Because of the transitory presence of these household goods, they are not considered reflective of a household's true long-term economic status, and instead may represent temporary fluctuations in a household's economic resources. The resources required to support young children, e.g., school fees, health care, and food, can reduce or increase household transitory wealth in the short term. Little research evidence on this relationship is available for households in low and/or middle income countries, particularly based on longitudinal studies.
This study aims to better understand the relationship between the number and ages of children under 15 years and transitory and permanent wealth. It also looks at whether recent medical expenditures (health shocks) and recent births (fertility

shocks) lower transitory and permanent wealth.

The data come from two waves (rounds) of the Family Health and Wealth Study (FHWS), conducted in 2009/2010 and 2011/2012. The objective of this study is to investigate individual- and family-level health and economic consequences of childbearing patterns. Two (Ethiopia and Ghana) of the six periurban study sites have acceptable follow-up and completion rates to warrant inclusion in this panel analysis. Criteria for household eligibility include having a resident married couple with the wife of childbearing age.

Household data on ownership of home, basic furnishings, and consumer assets, housing construction materials and quality, available water and electricity, and cooking fuel comprise the fixed wealth index (FWI), while ownership of non-essential consumer items (e.g., microwave, washing machine, electronics) and expenditures (on eating out, clothing, books, newspapers, child care) as well as household financial health (spending on taxes, having no debt, making loans, and having savings) comprise the Transitory Wealth Index (TWI). The latter index is aimed at capturing expenditures that rely on disposable household income and thus are vulnerable to reallocation by significant life events, such as births and health care needs. Principal Components Analysis was used to construct each score which was then normalized.

Guided by micro-economic household theories, we construct a panel model to assess the effects of Round 1 predictors on Round 2 wealth measures. Following exploratory data analysis, we estimate two models for each of the two measures using OLS for each of the two sites. The Round 2 values for TWI and FWI are modeled separately and for each of these models, one model adds two covariates--recent births (between Round 1 and 2) and its statistical interaction with the wife's parity (4 or more births). The covariates of interest, largely measured at Round 1, are of three types: Round 1 Fixed Household Wealth, fertility and health needs, and characteristics of the partners. Fertility is measured through the presence of children in the household under age 5 and at age 5–14, number of births since Round 1, and wife's high parity status. A second household economic "shock" measure is the percent of total household income spent on health care in the past. The partner covariates include the husband's and wife's years of schooling and her age.

Session 7- Public Transfer Transition

Thailand fiscal projections

Suphannada Lowhachai and SangHyop Lee

Over the past decade, Thailand has experienced rapid demographic change leading toward population aging. In order to formulate appropriate policies, it is important to investigate the potential economic and social impacts of this changing demographic structure. As part of the Aging and the Changing Nature of Intergenerational Flows in Developing Countries project, this paper analyzes the fiscal impact of changes in age structure of the Thai population. The latest National Transfer Account (NTA) data for Thailand will be used as the main data source for analysis. The paper will use the two recently developed models—one that incorporates economic feedbacks and another that does not. It will first look at the population-aging situation in Thailand. Then, the fiscal impacts from such demographic change will be analyzed in order to arrive at policy implications.

Socioeconomic differences in the lifecycle deficit in Spain and consequences for the Demographic Dividend

Elisenda Renterïa Pérez, Guadalupe Souto, and Ció Patxot

The Demographic Dividend refers to the impact of changes in the age structure of a population, depicted by the dependency ratio, on economic growth. The National Transfer Accounts methodology makes it possible to improve the measure of age dependency by introducing the concept of economic dependency and using the ratio of producers over consumers instead of working-age groups over non-working age groups. The relationship between producers and consumers can be further decomposed into the contribution of each educational group. Here, we decompose the Demographic Dividend into the change of age structure along with the composition of each educational category, showing that an expansion of educational attainment among producers can have a positive impact on economic growth.

Changing patterns of transfers in Slovenia in the last three decades: Transition from socialism to the market economy

Jože Sambt, Tanja Istenič, and Janez Malačič

In the paper we present the historical National Transfer Accounts (NTA) for Slovenia for 1983, 1988, 1993, 1998, 2000, 2003, 2005, 2008, 2010, and 2012. We use detailed and comparable data that are available for years 2000–2012. During this period, the average retirement age was postponed by about three years, but the average age of entering the labor market was postponed by about the same amount of time. Compared to results for 2004, the main characteristic of the more recent NTA results remains a “narrow” labor income age profile, with labor income exceeding consumption for only about 32 years. This is particularly worrisome in the light of high and rapidly increasing longevity (with life expectancy at birth increasing by almost four years in one decade to 80 years in 2012), low fertility, and baby-boomers starting to retire. It is the shortest interval of labor income exceeding consumption among European NTA countries and one of shortest among NTA countries all over the globe. During 2000–2012, the share of public transfers relative to the private transfers for financing the consumption of children gradually increased. Thus, the public sector continues to overtake families in providing support for children. We are now finalizing the results for the period 1983–1998. The aggregate controls are not fully comparable due to a change in the definition of GDP and because the survey data on income are available only at the household level but not at the individual level. These estimates will be particularly interesting, however, because at the beginning of the 1990s Slovenia changed from a socialist to a market economy. We will present how this change in the socio-economic system is reflected in the NTA results.

The effect of public transfer on private transfer in South Korea between 2006 and 2011

Namhui Hwang, Korea Institute for Health and Social Affairs, Seoul, Korea

South Korea has increased public expenditures for the social welfare of the elderly since considerably the mid-2000s. The Basic Old-age Pension System began supporting the low-income elderly in January 2008, and the Long-Term Care Insurance System was introduced to improve old-age health and stabilize living conditions in July of the same year.

We do now know whether the elderly began enjoying a better quality of life after these systems were introduced because we do not know whether increased public transfers simply crowded out private transfers. If there was crowding out, then the economic burden simply shifted from the family to the government without improving the elderly population’s quality of life. This issue has received very little research attention. This study attempts to address this deficit by using National Time Transfer Accounts from 2006 to 2011 to analyze the effect of public transfers on private transfers in South Korea, focusing on the macro level. Although the time series is not sufficient to fully explore the relationship between public and private transfers, it can shed light on the roles of families and the government in the era of population aging.

Benefit incidence of public transfers: Evidence from China

Shen Ke, Wang Feng, and Cai Yong

Over the past three decades, China’s economic hyper-growth has been accompanied by an equally rapid increase in the level of inequality. In response to concern about rising inequality, the Chinese government has made great strides in increasing public transfers in education, healthcare and pensions to benefit citizens, especially the young and elderly population and other disadvantaged groups. Utilizing the framework of the National Transfer Accounts, this study systematically examines how public transfers have recently been distributed across generations and across income groups in China.

Our analyses are based on micro-level data from the 2010 wave of the China Family Panel Study as well as macro-level data from the System of National Accounts and government financial statistics. We estimate age profiles of per capita total public transfers, including education, healthcare and pensions, and then further disaggregate age profiles of public transfers by sector and by income quartiles.

The results show that current public transfers largely tilt towards the elderly: per capita total public spending per person aged 65 and above is twice the spending per child below age 19. Disaggregation of public transfers by sector and income quartiles provides further insights. Three lower-income quartiles follow a similar age profile of per capita public education transfer, while the top quartile receives more government transfers for pre-primary and college education largely due to higher enrollment rates. Although public healthcare transfers are almost equally distributed across income groups under age 60, they are skewed in favor of the richer groups at senior ages. Among the elderly, richer groups, most of whom are urban dwellers and were engaged in the formal sector before they retired, tend to be covered by more generous health insurance, which would significantly increase their utilization of public health services. The incidence of per capita public pensions is strongly regressive, with older people at the top of the income distribution enjoying much higher pension benefits than others. This is attributed to both higher contributions before retirement and more generous pension packages for wealthier groups.

The results from this study highlight the challenges faced by the Chinese government in its effort to deliver essential and equitable social services. Generational imbalances in benefit incidence should be corrected. Otherwise, expansion of elderly populations, combined with higher levels of spending on the elderly than on children, will exert heavy pressure on government fiscal budgets in coming years. Furthermore, the currently fragmented health insurance and pension systems need to move towards unification to reduce inequalities in benefits across income groups.

Session 8- Time Use and Methodology Development

Can we measure time consumption for unpaid work? An analysis for

European countries
[authors??]
During the past decades, time devoted to housework and family care has received increasing recognition for its economic and social value. There have been many different efforts to evaluate the extent of household production based on satellite accounts, while a more limited number of studies have focused on gender differences in unpaid domestic work during the life course. The National Transfer Time Transfer Accounts (NTTA) has greatly contributed to research in this field, extending the analysis to the consumption, in addition to the production, of unpaid work. The difference between consumption and production at each age provides a measure of time transfers. Estimating the consumption of unpaid work is a fairly complex task, however, given the very limited, or completely absent, date in this area. This paper uses time use survey (TUS) data to estimate equivalence scales for the consumption of different housework and care activities, focusing on European countries. Different approaches and assumptions on the age patterns of non-market consumption will be tested, relying on a number of countries with detailed TUS data.

What is the time and monetary value of caring for children, the sick, the disabled, and the elderly in Mexico? Current and future estimates
Estela Rivero and Anairis Hernández Jabalera
The causes and consequences of the sexual division of labor are fairly well known. Something that has not been as well documented, and that can have important implications for women, their families, and society in general is that population structures are changing in many countries, and with this transition will come a change in caregiving needs. With the objective of providing a guideline for the formulation of public policies in Mexico, this paper analyzes the need for caregiving, in time and monetary units, at present and over the next 50 years. We also analyze who is responsible for these tasks. A last component of this paper links the demographic changes predicted for the next 50 years with the demands for caregiving in order to demonstrate how the dynamics of these two phenomena will interact if current trends continue. This exercise is useful to illustrate the possible consequences of the increased demand for caregiving in the future and the costs that this will imply for society.

Bayesian estimation in NTA frameworks
Jan W. van Tongeren and Arjan Bruil
This is a parallel paper to the first paper on “Analyzing economic growth through

an integrated economic and demographic framework: The case of the Netherlands." It is not about NTA concepts and analysis, but about the methodology of compilation of NTA. It includes an explicit NTA framework, with age profiles for an extended household sector, but also data for other sectors without age profiles. Explicit links are included between the inflows and outflows of the household and other sectors and the balance sheets of those sectors. A concept of transfer wealth is included in the household sector. The data based on the 2010 national accounts for the Netherlands are included in order to illustrate the conceptual framework, and micro data are used to estimate age profiles of the data. Discrepancies between micro data totals and macro aggregates of the national accounts are explicitly included, so that they can be reconciled in a Bayesian estimation process. Structural ratios characterizing the graying population in the micro data, such as consumption, composition of disposable income, and wealth/worth of different age groups, are measured only for 2010. For an earlier year, 1990, macro totals are measured, so that measurements can be made of macro ratios characterizing the graying population. The changing ratio values are used in alternative scenarios for projections of data.

Four levels of intergenerational indicators

Robert I. Gal and Lili Vargha

Indicators of intergenerational reallocation can be calculated at the level of public programs (such as pensions or health care), more generally at the level of the general government, and in an even further generalized way at the level of the national economy. For example, the Economic Support Ratio, which captures both the effect of the age composition of the population and the age patterns of producing and consuming income by comparing the effective numbers of producers and consumers, can be defined at other levels of the reallocation system. The Fiscal Support Ratio compares the numbers of effective taxpayers and effective beneficiaries. The Pension Support Ratio repeats the same exercise with the effective numbers of contributors and pensioners.

We extend these measures by incorporating time transfers into the reallocation system. We introduce a generalized version of the support ratio, the Total Support Ratio (TSR). The TSR extends the age profile of labor income with the age profile of the value of unpaid household labor and the age profile of consumption with the age profile of the consumption of unpaid household labor. In this way, reallocation patterns in the total economy are taken into consideration. Estimates of the age profiles of produced and consumed household labor are based on the Time Use Survey. We demonstrate that the conclusions drawn from the support ratios defined at these four different levels are varying, and the projection of TSR predicts a significantly less dramatic effect of aging on society than other predictions.

We extend this generalization to other intergenerational measures, the Benefit Generosity Ratio (BGR) and the Elderly Bias of Social Spending (EBiSS), two similar indicators measuring the generational asymmetry of public expenditures along with the Lee arrow, which indicates how "old" a reallocation pattern is. We demonstrate that incorporating production and consumption of unpaid household labor largely rewrites the conclusions drawn by these indicators.

Comparison of internal rates of return from intergenerational transfer systems
Michael R.M. Abrigo
Income flows do not necessarily match consumption levels at different stages of the lifecycle. Transfers among different generations are thus necessary to cover this income-consumption gap. While the extent to which different economies mix public and private institution-mediated transfers is well studied in the literature, the mechanisms to arrive at the optimal mix are not well understood. Using modified internal rates of return calculated for different public and private transfer systems, gains (or losses) from the different systems are compared. Preliminary results show a striking conundrum—among the intergenerational transfer systems surveyed, economies with higher-than-market implied rates of return rely more on asset-based reallocations rather than transfers to finance the lifecycle income-consumption gap.