

Part Two

Interim Reports by Each Team

2.1 Takayama-Aoki Team on Pensions, Declining Fertility and Technological Innovation Policy

1) Research Program on Pensions

Scope and Objectives

Intergenerational issues in pensions have become critical under the population aging/decline. However, up until now, studies are not sufficiently accumulated within or outside the country. Takayama-Aoki team has the following four research objectives on pensions.

First, the long-term sustainability of a pension system depends incentive compatibility and compliance. It is especially important to design a system where young people and companies do not drop-out. The research will provide concrete design for such a system.

Second, the balance sheet approach is effective in public pension reform. However there are large discrepancies in its tabulation method among different countries. The research will co-ordinate with experts from all over the world to work on the standardization of the balance sheet.

Third, adjusting the pension system to the increasing mobility and diversification of employment is a pressing necessity in some countries in the world including Japan. Atypical workers (such as part-time or temporary workers and dispatched workers) have been increasing in number in Japan and their handling on social security pension provisions will be examined taking experiences of other countries into account. Individualization of pensions and/or pension splitting among married couples will be also analyzed.

Fourth, implementation and record keeping of social security pensions are studied, focusing on the Japanese case.

Major Findings

Japan already has the oldest population in the world. It has built generous social security pension programs, but, since 2002, the income statement of the principal pension program has turned into a deficit. Its balance sheet suffers from huge excess liabilities, and distrust of the government commitment on pensions is growing. Indeed, increasing drop-out has been observed from the basic old-age income protection for non-salaried workers.

The Japanese are increasingly concerned with the “taste of pie” rather than the “size of pie” or the “distribution of pie.” When it comes to social security pensions, the most important question is whether or not they are worth buying. It has become a secondary concern how big or how fair they are. The basic

design of the pension program should be incentive-compatible. Contributions should be much more directly linked with old-age pension benefits, while an element of social adequacy should be incorporated in a separate tier of pension benefits financed by sources other than contributions.

The Swedish-type NDC arrangement will be the only way for Japan to overcome such a problem of incentive-compatibility. Of course, the switch to NDC schemes has to be accompanied by other proper measures for handling the legacy pension problems of Japan.

How to reform the basic pension is also a hot issue in current Japan. Switching to a universal pension is expected to smooth pension burdens among different generations. Taking the fiscal constraints into account, however, shifting half the basic pension to a universal pension can be a realistic option.

Japan has devoted considerable effort toward the coverage of all people with social insurance pension systems. The coverage, overall, is among the highest in the world, with only 1.6% of the elderly currently not receiving social security old-age pension benefits. Due to a rapidly aging population, however, Japan has been hiking contributions to finance social insurance pensions, which have induced an increased drop-out rate from basic protections schemes. Furthermore, a growing number of atypical and irregular employees are losing their entitlement to an earning-related pension in social insurance programs. A strengthened scheme of social pensions will be required in the future to close the coverage gap.

There arose a serious pension record-keeping problem in Japan from May 2007. Around 50 million pension records of social security were found to be floating, not being integrated to the unified pension numbers. The pending records are due to human errors made by enrollees, their employers and agencies. There has been no integrated collection of taxes and social security contributions in Japan, and additionally no monitoring organizations have been effectively implemented in pension administration. The general public was under the illusion that government officials were able to do and did everything correctly without committing any errors. However, human errors are inevitable anywhere. Regular and prompt examinations over possible errors are required for proper record-keeping of pensions. Upon any no-match identified, an interactive notification and confirmation with correction should follow in due course. The trustworthy government with its competent and neat implementation is, thus, the basis for any pension system.

In addition, integrated collection of tax and social security contributions saves administrative and compliance costs. The task of pension contribution collection should be shifted from the Social Insurance Agency to the National Tax Agency also in Japan.

In Anglo-Saxon societies, a contract once made is unchangeable as a common rule, whereas in Japan, it is not always illegal to reduce the absolute amount of occupational pension benefits even for the existing pensioners, as the Panasonic case shows. If an unexpected situation arises, and the expected rate of

return from investment drops sharply for several years, it becomes legal in Japan for occupational pensions to reduce the benefits.

Research Monographs

1. Takayama, N. and Werding, M. eds., *Fertility and Public Policy*, MIT Press, forthcoming.
2. Takayama, N., *Pension Implementation in Japan*, Tokyo: Iwanami, forthcoming. (in Japanese)
3. Holzmann, R., Robalino, D. and Takayama, N. eds., *Closing the Coverage Gap: the Role of Social Pensions*, World Bank, June 2009.

Progress made so far

It has progressed beyond the initial research plan, with additional studies on pension record keeping issues in Japan.

Schedule of an International Seminar

A large-scale three-day international seminar on Priority Challenges in Pension Administration is scheduled to be held in Tokyo in January 2010, co-hosted by the Ministry of Health, Labour and Welfare, Japan, and the International Social Security Association.

2) Research Program on Declining Fertility

Scope and Objectives

First, our study presents new approaches of economic analysis of low fertility by incorporating new factors such as a network effect of childrearing and the substitution between consumption and children. We also provide policy implications. Second, investment in innovation will require a new emphasis as the age distribution changes as result of low fertility and longer life expectancy. We analyze patents and other intellectual property taking into account possible changes that must occur in view of the new innovation environment. We expand the analytical framework to law and economics.

Major Findings

a) Consumption and Childrearing Trade-off

We first present a theoretical model incorporating consumption–childrearing trade off to explain a positive relationship between female labor participation and fertility. We then verify the relationship empirically.

Using prefectural cross section and time series data, we regress consumption and female labor force participation (FLFP) on total fertility rate (TFR). The positive relationship between FLFP and TFR disappears or become negative once consumption is taken into account.

We show that the relationship between fertility and population depends on maturity of technology. In an economy where technology is mature (an increase in product due to an increase of skilled labor is declining), a decline in population leads to increased fertility via deterioration of quality of goods available.

However when the technology is in infancy so that the return from skilled labor is large, a population decline results in more skilled workers in labor force and higher quality of product. This leads to a decline in fertility.

b) Network Effect of Childrearing

We introduce the cost of childrearing that decreases with the number of children in society, i.e., there is a network effect of childrearing.

Once opportunity costs of raising children increase as a result of higher wages, the number of households with children decline. This will increase the cost of having children, which leads to even lower birthrate. The society falls into a vicious circle.

We show that opening the economy exasperates this effect. In an open economy, interest rate must decline in order to counter the rise in final goods price resulting from a smaller population. This leads to lower domestic investment, the so-called “Wimbledon Effect”, which leads to a further decline in birthrate since wages must rise.

3) Research Program on Technological Innovation Policy and Institutions

Major Findings

Patent system balances the forgone social surplus from monopoly power it generates with information disclosure that patents provide. Disclosure of patent applications (a system in existence in EU and Japan, and under consideration in US) is designed to increase the amount of information disseminated. However, because not all applications become patents, there is a risk that information becomes public without any patent protection when applications are disclosed before granting decisions are made. We argue that as a result, disclosure of patent applications may result in fewer patent filings and therefore less information when we take into account the rational behavior of firms that do not file because risk is too great.

We analyze the effect of research exemption whereby firms are able to use a patented technology without a license as long as it is for research, and not for commercial purpose. We first show that such an exemption will always benefit the follower when the leader’s pioneering technology is patented. However, social welfare may decline because research exemption discourages ex-ante licensing which

would promote pioneering innovation by the leader. We then analyze the case where innovation goes on for infinite periods. There is no distributional effect from research exemption because all firms become leader and follower over many periods. However, exemption increases the difference in profits for the leader and follower which increases the incentive to innovate.

Because of the positive externality that a patent pool imposes on non-members, pool members may have an incentive to leave the patent pool to become an outsider. We show that this incentive is even greater for firms that only own IPs and do not manufacture. We argue that rules for distributing patent licensing revenue among members should be adjusted to take this fact into account in order to maintain pool stability.

We analyze the effect of patent pools on incentives to invest in technologies and IPs that constitute the pool. In general, patent pools are welfare enhancing because they promote innovation by making successful innovations more profitable although there may be excessive investment in some cases. A patent pool may also promote innovation when one technology has only one possible innovator (monopoly) while the complementary technology has many innovators (competitive). In this case, patent pool may be used to increase return for the competitive firms by transferring rent from the monopolist. This benefits the monopolist because the complementary technology is more likely to be developed successfully.

Major Publications

Aoki, R. and Spiegel, Y., "Pre-Grant Patent Publication and Cumulative Innovation" *International Journal of Industrial Organization*, forthcoming

Schiff, A. and Aoki, R., "Differentiated Standards and Patent Pools", *Journal of Industrial Economics Web Notes*, forthcoming

Aoki, R., and Schiff, A., "Promoting Access to Intellectual Property: Patent Pools, Copyright Collectives and Clearinghouses", *R&D Management*, 38(2) 2008, 189-204.

2.2 Genda Team on Labor Study

Scope and Objectives

Our labor study project examines several generational issues in the labor market and human resource management. We especially focus on the three aspects of the relationship between generation and employment. First, we study the cohort effects in the labor market. Then we find the uniqueness of the cohort effects in the Japanese labor market in comparison with the United States. Second, we investigate the ageing and demographic effects within the firms as well as in the entire labor market. Then job creation, working conditions, and skill developments and transformations are especially focused on based on the examinations by several kinds of micro data. Third, we attempt to find how poor working situations of parents have succeeded to their children in the family. Such difficulty in working continued down through generations (reproduction of poverty) has become increasingly serious in Japanese society.

For these purposes we utilize the microdata collected by the government and investigate our problems using the original surveys, as well.

Major Findings

Fact 1: In Japan, labor market conditions at graduation from school and the cohort size persistently affect subsequent wages, turnover and employment status of people who belong to the same cohort, which is defined by age, gender and educational background. These long-term effects have been known as “cohort effects” in the labor market. This paper surveys existing studies on the cohort effects, and then reviews recent findings that cover cohorts who graduated during the post-bubble recession. A high unemployment rate at graduation raises the probability of non-regular employment and joblessness and lowers earnings in subsequent years, especially for high school graduates. In addition to the vulnerability to business cycle fluctuations, the lack of opportunities for reevaluation and high mobility costs make it difficult for high school graduates to obtain a regular job after they fail to obtain one at graduation. To recover employment of the “ice age” generation, it is necessary to facilitate screening job applicants outside of the school-based hiring system in addition to public training programs. These facts are shown in Article #1 (see below).

Fact 2: We examine effects of entering the labor market during a recession on subsequent employment and earnings for Japanese and American men, using comparable household labor force surveys. We find persistent negative effects of the unemployment rate at graduation for less educated Japanese men, in contrast to temporary effects for less educated American men. The school-based hiring system and the dismissal regulation prolong the initial loss of employment opportunities for less educated Japanese men. The effect on earnings for more educated groups is also stronger in Japan, although the difference between the two countries is smaller than for less educated groups. These facts are shown in Article #2.

Fact 3: We empirically examine the determinants of non-employed young Japanese people, the number of whom increased from the 1990s to the beginning of the 2000s. Non-working unmarried persons aged 15–34, who do not attend school, are classified into ‘job seekers (type 1)’ who search for jobs, ‘non-job seekers (type 2)’ who express a desire to work but do not search for jobs, and ‘non-job seekers (type 3)’ who do not express any desire to work. These type 2 and type 3 of non-job seekers are totally defined to be the ‘NEET’ who are not in Employment, Education, or Training in Japan. Multinomial logistic regression results show that young persons whose expected returns from working are low, such as females, older people, the less educated, and the long-term jobless, tend to refrain from working and become non-job seekers. There is an evidence of the income effect that makes youths from wealthy families more likely to be type 3 non-job seekers. However, the number of jobless youths from lower-income households has been increasing and hence, the income effect on type 3 jobless persons has been less relevant recently. Young less-educated males from poor families have been more likely to lose the wish to work rather than those in middle-income families. These facts are shown in Article #3.

Fact 4: We briefly studied the effect of aging on employment in the Japanese labor market, examining in particular the unemployment rate at the macro economic level and the employment growth rate at the establishment level. The former specifically focused on the demographic shifts toward aging labor forces in the overall economy and attempted to capture the extent to which the labor supply shifts affected the unemployment rate. It is common in the United States that aging itself contributes to a lowering of the unemployment rate, as it reduces the proportion of young workers whose propensity to be unemployed is relatively high. Without aging and higher average education, the unemployment rate in 2000 would exceed the actual overall unemployment rate by 0.6 percentage points, about half of which can be equally accounted for by aging and higher educational attainments. However, the aging effect on unemployment is slightly negative in Japan, in contrast to the United States, because the unemployment propensity of older workers (aged 60–64) is exceptionally high in Japan, and the aging shifts increase their contribution. The bulk of the rapid increase in the unemployment rate after the 1990s was attributable to the change in unemployment propensity within each age group rather than to the change in demographic composition. In this sense, aging, under demographic shifts, or the labor supply shock, has little impact on the overall unemployment rate in Japan. These facts are shown in Article #4.

Fact 5: The other aspect of aging, however, had a strong influence on the decline in job opportunities in the 1990s; that was the decrease in labor demand at establishments with a large component of middle-aged or older employees. Our detailed analysis using microdata suggests that establishments with a higher proportion of middle-aged workers experienced, on average, negative employment growth in the 1990s. With the high adjustment cost of employment and inflexible wage payments, the large decline in labor demand because of recession and high labor costs mainly suppressed the hiring of young workers instead of dismissing existing workers. Consequently, the large contractions in labor demand for younger workers through the 1990s have been due to the job displacement effect by the graying workforce, especially within large firms. These facts are shown in Article #4.

Major Publications

- #1. Ohta, S., Genda, Y., and Kondo, A., “The Never Ending Ice-age: A Review of Cohort Effects in Japan.” (This paper will be translated into English and published as an article in *The Japanese Economy*, forthcoming).
- #2. Genda, Y., Kondo, A., and Ohta, S., “Long-term Effects of a Recession at Labor Market Entry in Japan and the United States,” *Journal of Human Resources*, forthcoming, 2010 Winter.
- #3. Genda, Y., “Jobless Youths and the NEET Problem in Japan,” *Social Science Japan Journal*, Vol.10, No.1, 2007, pp.23-40.
- #4. Genda, Y., Teruyama, H., Ohta, S., Kambayashi, R., and Ishihara, M., “Ageing and Employment in Japan,” in *Ageing and the Labor Market in Japan*, edited by Koichi Hamada and Hiromi Kato, Cheltenham: Edward Elgar Publishing Limited, pp.1-23, 2007.

Future Schedule

Using the original surveys, we will attempt to publish books on the relationship between generation and employment in Japan. We continue to accumulate academic papers.

2.3 Shimizutani Team on Retirement Study

Research Design

When one continues to work and stops to retire is one of the most fundamental issues for any analyses on intergenerational economic issues. The retirement decision provides a basic for the design for pension, medical and long-term care policies since most of those policies need to determine who are the beneficiaries. However, it is not an easy task to define “retirement” since the nature of retirement is a long process and employment status for the elderly cannot be captured as a dichotomy between work and no-work. Moreover, retirement decision has been largely unexplored though presumably it is affected by a variety of factors including a worker’s ability, health status as well as work environment and family relationship. Furthermore, Japanese experience in the later retirement attracts other developed countries which suffer from early retirement.

Unfortunately, however, there has been little research on retirement process in Japan, mainly due to the lack of individual-level large-scale data set containing information on health, economic, employment and family status. The purpose of this project is to construct the first “world standard” panel data set in Japan so that we contribute to scientific analysis on retirement process and to evidence-based policy making especially in the domain of aging related policies. As a “family” member in an international consortium, the data set called JSTAR (Japanese Study on Aging and Retirement) is comparable with other international projects on retirement and aging including Health and Retirement Study (HRS) in the U.S., English Longitudinal Study of Ageing (ELSA) in the U.K., and Survey of Health, Ageing and Retirement in Europe (SHARE) in the continental Europe. Together with those other efforts, we aim to contribute innovative and interdisciplinary scientific knowledge on retirement process.

Current Status of the Project

In collaboration with Research Institute of Economy, Trade and Industry (RIETI), the first wave of JSTAR was performed in 2007. Aided by strong cooperation from each municipality, the response rate was 60 percent which is remarkably high in Japan and is comparable with that in other “family” surveys, despite the high reporting burden; the interviews are self-filling leave-behind questionnaires and takes one and a half hour per person on average.

The questionnaire of JSTAR wave is comparable with other “family” members. In addition, JSTAR links the data with other sources including the self-filling nutrition survey. Moreover, we asked the

respondents to cooperate with us to provide official record on medical and long-term care use (and health examination in Shirakawa) which are kept at municipalities and match the data with JSTAR. Those efforts to link with official sources are praised by “family” members in other countries.

The Principal Investigators of JSTAR were invited to attend an international conferences held by HRS/ELSA/SHARE or the harmonization meeting. Shimizutani attended the SHARE consortium meeting in Germany and Professor Ichimura joined in Spain and the harmonization meeting in India. The participants of those conferences include Professors David Weir (Director of HRS, University of Michigan), Robert Willis (former director of HRS, University of Michigan) and Axel Boersch-Supan (The coordinator of SHARE, University of Mannheim) and many other team leaders. In addition, we communicate with those researchers on a daily basis to discuss survey methodology and exchange experiences. JSTAR is now recognized as a family member of the international research project on aging and retirement and the representative from Japan.

One of the most important messages from the first wave of JSTAR is that we should not rely on a dichotomy of work and retirement as employment status for the elderly. Retirement is a process and we need to consider a variety of pathways from prime job to retirement. We should emphasize that the intermediate process is more important in Japan than in European countries.

The share of workers declined along with age; more than 50 percent in the mid 50s to a quarter in the mid 70s in JSTAR. Those figures are much higher in Japan than in European countries which see those are zero for the individuals aged 67 and over in SHARE. The high work rate in JSTAR is not attributed to the “definition” of work since more than 90 percent of those workers works more than 15 hours per week. On the other hand, the share of the retired is close to zero for the individuals in 50s but it increases with age and reaches 30 percent for those aged 73-75. The share of the retired is much higher in European countries where 80 % of the individuals aged 65 and over retire. The share of those who do not work nor retire occupies 50 percent for those aged 73-75 while it does 20 percent for the corresponding age cohort in European countries.

We should note that the pattern of work and retirement differ across gender and municipalities. The share of work for Japanese male is higher than that for European while that for Japanese female is comparable with north European countries. Moreover, even confining the sample to those who are healthy, we observe a large variation in the proportion of work across gender and municipalities and the share of the retired among the healthy individuals is much lower than that in Europe.

Unemployment and disability pension are often discussed as pre-retirement forms. JSTAR reveals that the share of the unemployed occupies more than 2 percent for those aged 65 and over (zero for European countries) while the share of the disabled is only 1 percent in Japan, which is much lower than in Europe.

Attainments

In terms of response rate and data quality, the first wave of JSTAR was successful and highly evaluated by other countries. We also expect a high response rate from the second wave which is planned in FY 2008 since 90 percent of the respondents in the first wave agreed to have an interview again. Thus, we are sure that JSTAR is the first “world standard” panel data on retirement and aging which is comparable internationally. The baseline data of JSTAR has already provided many scientific findings which attract much from other countries which is obvious in some offers for joint research from abroad. We are confident that the project is more successful than expected.

Strategy Onward

We will continue to perform the project as planned. In FY 2009, we will start to analyze the second wave of JSTAR in FY 2008. The object of the second wave is the individuals in the first wave which enables us to construct panel data and to perform in-depth analysis on causal relationship, program evaluation and distinction between age and cohort effects. At the same time, we plan to publish a book on the first and second wave in English and Japanese and submit academic papers to journals abroad. Moreover, we plan to strengthen international cooperation with other projects and produce new scientific knowledge which is generated by JSTAR which makes the position of JSTAR as a real interdisciplinary and international project on retirement and aging. In addition, we will open the data to researchers with a strong protection of privacy and compliance.

In FY 2010, we will perform the third wave of JSTAR as planned. We will accelerate our research on retirement using the information on the three observations per individuals and publish a book on the summary of the third wave and submit academic papers. On top of those efforts, we will perform a comprehensive and systematic analysis on the retirement in JSTAR with policy implication for age related policy.

Published Works

(1) Academic Journals

Shimizutani, Satoshi and Izumi Yokoyama “Has Japan’s Long-Term Employment Practice Survived? Developments since the 1990s,” *Industrial and Labor Relations Review*, forthcoming. Refereed.

Mitchell, Olivia, John Piggott and Satoshi Shimizutani “An Empirical Analysis of Patterns in the Japanese Long-Term Care Insurance System,” *Geneva Papers on Risk and Insurance – Issues and Practice*, vol.33, no.4, pp.694-709, October 2008. Refereed.

Noriko Inakura and Satoshi Shimizutani “Did Lower Interest Rates Reduce Japan’s Household Savings Rate since the 1990s? Evidence Based on the Maturation of Postal Savings Certificates,”

Economics Bulletin, vol.5, no.22, pp.1-8, August 2008. Refereed.

Noguchi Haruko, Satoshi Shimizutani and Yuichiro Masuda “Regional Variations in Medical Expenditure and Hospitalization Days for Heart Attack Patients in Japan: Evidence from the Tokai Acute Myocardial Study (TAMIS),” *International Journal of Health Care Finance and Economics*, vol.8, no.2, 2008, pp.123-144. Refereed.

Sawada Yasuyuki and Satoshi Shimizutani “How Do People Cope with Natural Disasters? Evidence from the Great Hanshin-Awaji (Kobe) Earthquake in 1995,” *Journal of Money, Credit and Banking*, vol.40, no.2-3, 2008, pp.463-488. Refereed.

Sawada Yasuyuki and Satoshi Shimizutani “Consumption Insurance against Natural Disasters: Evidence from the Great Hanshin-Awaji (Kobe) Earthquake,” *Applied Economics Letters*, vol.14, no.4, March 2007, pp.303-306. Refereed.

Shimizutani, Satoshi and Noriko Inakura “Japan’s Public Long-term Care Insurance and the Financial Condition of Insurers: Evidence from Municipality-level Data,” *Government Auditing Review*, vol.14, March 2007, pp. 27-40. Not refereed.

Noguchi Haruko and Satoshi Shimizutani “Nonprofit/For-Profit Status and Earning Differentials in the Japanese At-home Elderly Care Industry: Evidence from Micro-level Data on Home Helpers and Staff Nurses,” *Journal of the Japanese and International Economies*, vol.21, no.1, March 2007, pp.106-120. Refereed.

Shimizutani, Satoshi “The Expansion in Long-Term Care Use in Japan: A Case of Supplier-Induced Demand?” *Swiss Journal of Economics and Statistics*, Special Issue 2006, pp.91-95. Not refereed.

Shimizutani, Satoshi “Japan’s Long-term Care Insurance Program: An Overview,” *Swiss Journal of Economics and Statistics*, Special Issue 2006, pp.23-28. Not refereed.

Noguchi, Haruko and Satoshi Shimizutani “Do Non-Profit Operators Provide Higher Quality of Care? Evidence from Micro-Level Data for Japan’s Long-term Care Industry,” *Hitotsubashi Journal of Economics*, vol.47, no.1, June 2006, pp.125-135. Not refereed.

(2) Presentations

Satoshi Shimizutani “Active Aging in Japan: Policies and Plans for Elderly People,” Forum 2008: Third economy: More values from the elders, Stresa, Italy, December, 2008.

Satoshi Shimizutani “Preview of First Results from the Japanese Study of Aging and Retirement (JSTAR),” SHARE Consortium Meeting, Edesheim, Germany. August, 2008.

Oshio, Takashi and Satoshi Shimizutani “Does Social Security Induce Withdrawal of the Elderly from the Labor Force and Create Jobs for the Young? The Case of Japan,” NBER International Social Security Project (Phase V). Lisbon, Portugal. May, 2008.

Oshio, Takashi and Satoshi Shimizutani “Does Social Security Induce Withdrawal of the Elderly from the Labor Force and Create Jobs for the Young? The Case of Japan,” NBER International Social Security Project (Phase V). Taormina, Italy. May, 2007.

Satoshi Shimizutani “Bonus Payments and Expenditure Patterns of Government Employees in Japan: Further Evidence on Consumer Response to Predicted Income Changes,” Hitotsubashi University COE International Conference on Consumption. March, 2007.

John Piggott and Satoshi Shimizutani “Developments in Long-Term Care Insurance in Japan,” ESRI conference on International Collaboration Project. March, 2007.

(3) Book Chapters

Oshio, Takashi, Satoshi Shimizutani and Akiko Sato Oishi “Does Social Security Induce Withdrawal of the Old from the Labor Force and Create Jobs for the Young? The Case of Japan,” in Jonathan Gruber and David Wise eds. *Social Security Programs and Retirement around the World: The Relationship to Youth Employment* (NBER International Social Security Project: Phase V), forthcoming.

Oshio, Takashi and Satoshi Shimizutani “Social Security and Well-being of the Elderly in Japan,” in Jonathan Gruber and David Wise eds. *Social Security Programs and Retirement around the World: The Well-Being of the Elderly* (NBER International Social Security Project: Phase IV), forthcoming.

2.4 Ogura Team on Healthcare and Long-term Care

Scope and Objectives

We will focus on the following three fundamental problems that have been left either unexplored or relatively sparsely explored;

The first is the economic incidences of contributions by employers for social security health care programs. While most economists regard them as part of wages and salaries, the government has consistently maintained that they are actually borne by the firms. This problem is becoming all the more important as the employees’ healthcare programs are transferring more and more fund to help pay the health care costs of the elderly.

The second is the relationship between the health care (costs) and long term care (costs) in Japan. There, an elderly consumes more than four times of what a younger person consumes. This ratio is very high in cross-country comparison, and may be coming from non-optimal mix of health care and long-term care services. In our project, we will try to find out how to improve the efficiency of the care-mix, particularly by providing better long-term care services.

The third is exploring better risk adjustment mechanisms across Japanese social security healthcare programs, given their heterogeneity in the health risks of insured individuals (age, sex and prevalence of chronic diseases, etc).

Major Findings

In Japan, numerous policies and regulations introduced in the last few years to control health care costs have produced significant regional disparities in the quality and quantity of health care services and the access to them. Using the publicly assessed land prices of the city of Yokohama, Sugawara (2008, PIE/CIS DP-354) has shown for the first time that these regional variations in health care services are reflected in the land prices. For almost half a century, the social security health care services had been a symbol of the equality in well-being of the nation, but, now its shortages are contributing to widening economic disparities through many channels.

Since year 2000, the Japanese government has been trying to encourage family long-term care by the social security long-term care program, and control expensive institutional care and social hospitalization for the elderly. Using municipal panel data during the period of 2001 to 2004, Kadoda and Ogura (2009) on “Analysis of Long-term Care and Health Care Costs Across Municipalities in Japan” have shown that the long-term insurance benefits have contributed to reduce the health care costs of the elderly; more precisely, almost one-half of the increase in long-term care benefits is reflected in the decrease in the health-care costs of the elderly.

Due to deteriorating financial conditions of long-term care insurance programs, in FY 2006, the government reduced the long-term insurance benefits substantially. With the natural increase in the average need for care of the elderly cared at home, this cut has added to the burden of family care-givers considerably, and the shortage of institutional care is rapidly reaching a crisis stage in many parts of Japan. Particularly around large cities, Nakazawa and Kawase (2009, PIE/CIS DP-412)) have shown that the old “old”, particularly those living alone, are migrating to less populated areas to have better opportunities for institutional cares.

It is reasonable to assume that the smaller the burden of care-giving, the longer a family can continue providing home-care for an elderly. While long-term care insurance benefits are expected to reduce the family burden, Suzuki and others (2008, in *Singapore Economic Review*) have shown, using ZBI (Zarit Burden Interview) as a measure of the burden of family care-givers, that (1) “problem behaviors” of

the elderly that have not been explicitly considered to measure the need for care is a substantial source of the burden, (2) it is still possible to adjust benefit-mix and reduce the average burden while maintaining a constant total costs.

In view of the recent popularity of multi-dimensional burden index, Ogura and others (2007, PIE/CIS DP-320) have used Given's Caregiver Reaction Assessment, and found that Self-Esteem Subscale is the most important factor of the caregiver's burden and that the effects of familial relationship are almost completely absorbed in this subscale. This shows that in encouraging family care, benefits that takes account of the existing family relationship between the elderly and the care-giver are potentially effective.

An economic value of life is usually estimated from the relationship between the risks to life inherent to each profession and the wage or salary level of the profession. It is also known as the "value of statistical life", and has been used frequently in policy analyses dealing with costly measures to save lives or prolong life. While there is a substantial body of literature in the U.S. and Europe dealing with the topic, there has been almost no study on this subject in Japan, until Miyazato (2008, PIE/CIS DP-356) estimated it using the micro data of Employment Status Survey. In particular, he has found that (1) there is a positive relationship between the risk of life and the wages of the job among those employed by the firms with more than 30 but less than 99 employees, and that (2) the statistical value of life is between 220 million yen and 260 million yen. This value is close to the lower bound of the preceding studies in the U.S. that had put it between 3 million dollars and 7 million dollars.

The decline in Japanese fertility rate has generally been attributed mostly to changes in women's choices. As a result, most of the public policies that have been put into places have also targeted women to reduce their child-raising costs for women, such as exempting social insurance fees during child-raising period or offering sufficient public child daycare services, but, so far, they seem to have been ineffective. Little attention has been paid to economic well-being of younger men. Using the municipal panel data compiled from census, Ogura and Kadota (2008) on "Effects of Public Policies and Labor Market on the Fertility of Japanese Women; Analyses of Municipal Data" have concluded that in the decline in fertility between year 2000 and year 2005, the increased unemployment rate of younger male workers has been the most significant factor. In order to increase the fertility rate, therefore, it is not sufficient to just reduce the child-raising costs, but also it is necessary to offer better employment opportunities for younger male workers.

Together with Professor Bernard van den Berg of VU University in Netherland, on January 14 and 15, 2009, we have organized an international conference in Tokyo on the "Policies and Regulations of Health and Long-Term Care Costs of the Elderly", to discuss the subtle institutional boundaries between the two services. We have invited more than 10 experts from Europe, Asia and North America, including Guillem Lopez (Pompeu Fabra University), Jose-Luis Fernandez (LSE), Amiram GAFNI (McMaster University).

In March 2009, we conducted a follow-up survey of Family Care-Givers.

Future Schedule

During FY 2009, we will try to publish the selected papers of the international conference held in January 2009. In FY 2010, we will try to publish the research outputs of the project in a book form.

2.5 Suzumura-Hara Team on Social Choice Theory and Welfare Economics

Purpose of Research

First, we study the concept of intergenerational equity from the ethical viewpoint. Second, we develop social choice theory in the context of intertemporal resource allocation. Third, we apply the method of welfare economics to study the dilemma between equity and efficiency from the viewpoint of intertemporal resource allocation. Finally, we put together the insights obtained from these studies to give policy recommendations on the resolution of the intergenerational conflict.

Progress made so far

First, a voluminous research monograph, *Foundations of Welfare Economics* authored by Prof. K. Suzumura is forthcoming. This is a collection of Suzumura's theoretical works on welfare economics and social choice. It provides a comprehensive account on the basic structure of normative economics in Japanese, and consists of the following seven parts: 1) rational choice and revealed preference; 2) rationality, democracy, and informational efficiency of social choice; 3) dilemma between equity and efficiency; 4) dilemma between rights and efficiency; 5) consequentialism and non-consequentialism; 6) competition and economic welfare; and 7) the past, present, and future of welfare economics. Second, a collective volume edited by Roemer, J. and Suzumura, K., *Intergenerational Equity and Sustainability*, was published in 2007. It is a collection of papers based on the IEA Roundtable Meeting on intergenerational equity and sustainability. It presented the state of the art in the field of study and, at the same time, served as the starting point of the subsequent research. Third, we showed that the theoretical foundation of the criteria for policy actions having significant consequences on future generations is not yet fully sound.

Plan of Future Research

We shall proceed as has been originally planned. We elaborate on the results we have obtained so far and try to generalize them. As before, we shall also keep submitting our works to academic journals. In addition, Prof. Suzumura will further publish another research monograph, *Consistency, Choice and Rationality*, co-authored by W. Bossert from the Harvard University Press.