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THE NEWLY-EMERGING PATTERN OF FAMILIAL TRANSFERS IN AGING JAPAN

Introduction

In this paper, we examine to what extent Japan's rapid population aging has been influencing the pattern of familial transfers over the last two decades, by utilizing the new findings which we have recently produced from an international collaborative project based on the methodology called "National Transfer Accounts (NTA)". A fuller explanation of the NTA's basic concept, the crucial computational assumptions employed, and the definitions of other key variables are available on the NTA website (http://www.ntaccounts.org).

The structure of this paper is as follows. In the next section, we review some key features of Japan's demographic dynamics during the postwar period to facilitate our discussion. In the ensuing two sections, we discuss (i) Japan's first and second demographic dividends induced by age compositional shifts and their relation with Japan's past and future economic growth, and (ii) the rapidly changing pattern of familial transfers between various age groups in Japanese society over the past two decades. In the final section, some policy implications of our findings are briefly considered.

Japan's Rapid Demographic Shifts

After the close of World War II, following a short-lived baby boom period (1947-1949), Japan's fertility declined at a phenomenal rate (Hodge and Ogawa, 1991; Ogawa and Retherford, 1993; Retherford and Ogawa, 2006). Between 1947 and 1957, the total fertility rate (TFR) halved from 4.54 to 2.04 children per woman, as shown in Figure 1. This substantial reduction was one of the first of its kind to occur in the non-Western world, and the greatest in magnitude among all the industrialized countries. It was followed by only minor fluctuations around the replacement level until the first oil crisis occurred in 1973. Thereafter, Japan's TFR started to fall again, and by the mid-1990s, it declined below 1.5 children per woman. In 2005, it further plummeted to 1.26, lowest in postwar time, before a slight rebound to 1.37 in 2008. If fertility were to remain constant at the present level, each successive generation would decline approximately at a rate of 35 percent per generation.

In parallel to these marked changes in TFR, the birth cohort size varied considerably over time, as plotted in Figure 1. During the baby boom period there were, on average, approximately 2.7 million births per year, but by 1957, the number of births decreased to 1.6 million. In the early 1970s, however, despite the lowered fertility rate, as an "echo" effect of the baby boom cohorts,

this number increased to more than 2 million. The people born at that time are often called "second-generation baby boomers". Since then, births have again trended downward, marking slightly less than 1.1 million in 2008, which is 60 percent less than the total annual number of births recorded during the baby boom period.

In addition to fertility transition, Japan's mortality transition in the postwar period has been spectacular. During 1947-1965, for instance, Japan's life expectancy at birth rose from 50.1 to 67.7 years for men and from 54.0 to 72.9 years for women. When Japan joined the OECD in 1964 its life expectancy for both men and women was the lowest among the OECD member countries (Mason and Ogawa, 2001), but became one of the highest by the mid-1970s. Furthermore, in 2008, male life expectancy at birth reached 79.3 years to become the fourth highest in the world, following Iceland (79.6 years), Switzerland (79.4 years), and Hong Kong (79.4 years), while female life expectancy rose to 86.0 years, the highest in the world, followed by Hong Kong (85.5 years) and France (84.3 years). It should be also noted that the infant mortality rate fell with unprecedented rapidity from 60.1 per 1000 live births in 1950 to 2.6 in 2007. Moreover, between 1950-1952 and 2008, life expectancy at age 65 grew to a substantial extent, from 11.4 to 18.6 years for men, and from 13.4 to 23.6 years for women, which implies a marked increase in the retirement period and the joint survival to older ages for both husbands and wives. Primarily because of such long-term improvements of mortality, the number of centenarians has been increasing at an annual rate of 13 percent over the past four decades, which makes them the fastest growing segment of the entire Japanese population.

As a consequence of the long-term transformations in both fertility and mortality, the age structure of the Japanese population has been shifting to a marked extent. The proportion of those aged 65 and over increased from 4.9 percent in 1950 to 20.2 percent in 2005, making Japan's population the oldest national population in the world during 2005. (In 2008, the corresponding figure was 22.1 percent.) The proportion of the oldest-old persons (aged 75 and over) in the total population was only 1.3 percent in 1950, but exceeded more than 10.4 percent in 2008.

In contrast to elderly persons, the number of those aged below 15 has been declining for 28 consecutive years, and Japan now has fewer children than at any time since 1908. Furthermore, the overall size of Japan's population began declining from the end of 2005. More importantly, these demographic trends of low fertility and population decline are expected to persist over the period 2005-2025.

Japan's Slower Economic Growth and Aging Labor Force
By the end of World War II, the Japanese economy had been utterly shattered and in shambles. Japan's per capita GNP for 1950 was only US$153, which was lower than that for Mexico (US$181) or the Philippines (US$172). By the end of the 1950s, however, Japan's real per capita income had

recovered to prewar levels.

During the 1960s, however, Japan's real GDP grew at a phenomenal rate of about 11 percent per annum. The stunning economic growth performance, thanks to which this decade is often referred to as the "Golden 60s" in Japan, was facilitated by such factors as the use of abundant labor (or equivalent to the first demographic dividend, to be discussed later), the borrowing of advanced technology from developed countries, and the favorable international trade market (Ogawa, Jones, and Williamson, 1993). In 1973, however, the oil crisis occurred, triggering a series of changes for restructuring the Japanese economy. As a consequence, Japan's economic growth performance became significantly less impressive than that for the 1960s.

In the mid-1980s, the Japanese economy entered the bubble economy phase, but this investment boom abruptly ended in the first half of 1990, causing a number of leading banks and other financial institutions to go into bankruptcy. It was a tragedy that the Japanese government implemented inappropriate macroeconomic policies to rectify the unfavorable economic conditions at the time. As a result, government debts accumulated at an unprecedented rate, reaching US$8.5 trillion in 2009 - an amount approximately 1.5 times as large as the country's GDP for that year. Japan's current debt relative to GDP is by far the worst among the industrialized nations. Because of such delayed government policy responses, some economists call the 1990s "Japan's lost decade" (Yoshikawa, 2001). Since the beginning of that decade, Japan's international competitiveness has deteriorated at a fast pace. While the Japanese economy ranked first in the early 1990s in terms of international competitiveness, in 2009 it was ranked 17th out of 57 countries (IMD, 2009).

In spite of these major changes in the economy, Japan's mandatory retirement policies still remain an extreme case among practices of industrialized nations. It is important to observe that the proportion of firms having mandatory retirement rules increased gradually from 69 percent in 1968 to 91 percent in 1991, and has been oscillating between 90 and 95 percent since the early 1990s. The Japanese government is currently attempting to encourage firms to increase the mandatory retirement age to 65. The Law Concerning Stabilization of Employment of Older Persons, passed in 2004, requires firms to increase the age of mandatory retirement to 65; however, no penalties were specified for noncompliance and to date few companies have complied (Clark et al., 2009).

A distinct feature of Japan's labor market is a high labor force participation rate among the elderly aged 65 and over (Ogawa, Lee, and Matsukura, 2005). In 2008, the participation rate for elderly Japanese men was close to 30 percent. In sharp contrast, the corresponding figure for a few developed countries (France, Germany, and Austria) in Europe is well below 10 percent and slightly over 20 percent for the United States. A similar inter-country observation is applicable to Japanese elderly women and their counterparts in Europe and the United States.

Another feature of Japan's labor market is related to the age-specific labor force participation rates of Japanese women which still show an M-shaped pattern, despite the fact that participation among middle-aged women has been rising in recent years, primarily due to their higher education, shortening of the reproductive span, and a more modern lifestyle (Ogawa and Ermisch, 1996; Mason and Ogawa, 2001; Retherford and Ogawa, 2006). It should be stressed that slightly more than half of married women working as paid employees are part-time workers, and that this proportion has been growing at a rate faster than that of full-time workers since the early 1990s.

An increasing proportion of Japanese youths aged 15 to 34 are choosing alternative working lifestyles. Two terms frequently used to describe young persons who remain outside the formal employment are freeters and NEETs. Persons classified by the government as NEETs are completely outside the labor force while freeters are youths that are engaged in temporary or part-time employment. The increasing proportion of young people who choose not to seek permanent full-time employment after graduation or who decide to quit their first job is causing considerable concern among policy makers in Japan. Between 1982 and 2002, the proportion of youths aged 15 to 34 who are classified by the government as freeters rose from 1.9 to 7.4 percent. In contrast, the proportion of young Japanese who are regarded as NEETs remained virtually unchanged at 1.6 percent of the population aged 15 to 34. In 2002, this meant that there were 2.5 million freeters and 0.5 million NEETs among younger Japanese. Thus, 9.0 percent of the Japanese aged 15 to 34, or over 3.0 million individuals, were outside of the regular, full-time employment system.

Multigenerational Co residence and Intergenerational Transfers

Although Japan's current demographic situation is in many ways similar to that of other developed, industrialized countries, there are some crucial differences that relate to family organization (Hodge and Ogawa, 1991; Ogawa and Retherford, 1993, 1997). For instance, multigenerational households are still fairly common in Japan with the proportion of the elderly at ages 65 and over living in three-generation households in Japan standing at 21 percent, according to the 2005 round of the International Survey of Lifestyles and Attitudes of the Elderly (Cabinet Office, various years), although it should be noted that this proportion has been steadily decreasing in the past two decades.

In parallel with these changes in multigenerational living arrangements over time, the magnitude of the intergenerational financial support from adult children to their elderly parents has also declined. Income sources of elderly persons aged 65 and over have changed considerably. The proportion receiving financial support from children decreased substantially from 35 percent in 1981 to 11 percent in 2005. In contrast, the proportion of those receiving public pension benefits among elderly Japanese respondents aged 65 and over increased from 74 to 95 percent during the same time period, as presented in Figure 2.

Moreover, value shifts among Japanese women of reproductive age with regard to old-age support from their children have been dramatic. The value changes are well captured in the time-series data of various nation-wide surveys. The proportion of mothers aged below 50 who expect to depend on their children for old-age security declined from 65 percent in 1950 to 9 percent in 2007. This time-series result suggests that Japanese children's utility as a source of old-age security for their parents had almost disappeared by the beginning of the 21st century.

It should be noted that Japan established universal pension and medical care schemes in 1961, at a time when its economic growth began to accelerate and its family organization still maintained traditional values. Since then, Japan's social security system has grown remarkably, and has been revised periodically by taking into account the country's macroeconomic growth performance and changing social and familial needs. Between 1961 and 2006, social security benefits increased from 4.9 to 23.9 percent of national income (National Institute of Population and Social Security Research, 2008). Moreover, as shown in Figure 3, the proportion of the social security expenditure allotted to the pension schemes increased from 22.7 percent in 1964 to 53.1 percent in 2006, while the corresponding value for the medical schemes declined from 54.4 to 31.5 percent over the period in question. Owing to population aging, as well as the maturity of the old-age pension schemes, the relative share of pension benefits paid out in national income has been on an upward trend in recent years.

Moreover, to cope with an escalating increase in the number of elderly persons who are bedridden or suffering from senile dementia at home, the Japanese government implemented the Long-term Care Insurance (LTCI) scheme in 2000, which is the largest of its kind in the contemporary world. The LTCI scheme was expected to alleviate the care-giving burden placed on family members, many of whom are middle-aged women (Ogawa and Retherford, 1997).

Age Structural Shifts and the Two Demographic Dividends

In Japan, postwar demographic trends have been closely intertwined with changes in the economic growth performance (Ogawa, Kondo, and Matsukura, 2005; Ogawa 2005; Ogawa and Matsukura, 2007). As has been discussed extensively elsewhere (Mason, 2001, 2007; Mason and Lee, 2006), one of the key linkages between demographic transformations and economic growth is the role of demographic dividends in the process of economic development.

Figure 4 shows estimates of age-specific profiles of per capita consumption, private and public sectors combined, and per capita production (labor income) in five selected years, namely, 1984, 1989, 1994, 1999, and 2004. These profiles have been estimated by drawing upon private-sector information derived from the five rounds of the National Survey of Family Income and Expenditure (NSFIE) from 1984 to 2004 that were carried out by the Statistics Bureau of Japan, as well as public-sector information for the corresponding five years, gleaned from various government

published data sources. It should be noted that both age-specific profiles have been adjusted by using data from the National Income Product Account. The estimated results are expressed in terms of 2000 constant prices.

There are a few points worth noting in this graphical exposition. First, the age at which an average individual shifts from a net consumer to a net producer gradually went up from 23 years old in 1984 and 24 years old in 1989, to 25 years old during 1994-1999, and 26 years old in 2004. Moreover, at the other end of the lifecycle, the age transition from a net producer to a net consumer was postponed slowly from 58 years old in 1984 to 60 years old in 2004. The persistency of the crossing age at the later stage of lifecycle is attributable to the existence of the mandatory retirement age at 60 in contemporary Japan, as has been discussed earlier.

Second, the estimated age-specific profiles of per capita production over the period of 1994-2004 are fairly similar. This seems to reflect the influence of "Japan's lost decade". In addition, the upward shift in the profiles from 1984 to 1994 is largely attributable to the growth of labor income during the "bubble economy" phase.

Third, the age-profiles of per capita consumption rose almost continuously over time, particularly at both young and older ages. It is worth observing that the amount of per capita consumption rose distinctively among those aged 65 and over in 2004. This could be accounted for by the implementation of the Long-term Care Insurance (LTCI) scheme which started from the year 2000, and in-home care for the frail elderly, which then became formalized as a part of the market economy. As a result, Japan's per capita consumption profiles look increasingly similar to those for the United States and Sweden among the NTA member countries.

The first demographic dividend arises when a country's fertility begins to fall, because changes in population age structure lead to an increase in the working-age population relative to non-working-age population. To facilitate calculating the effect of such age structural changes on overall economic growth performance in Japan over the period 1984-2004, we have averaged the five sets of per capita consumption and production age-specific profiles observed over the 20-year period. By applying the computed age-specific results as statistical weights to adjust the entire population over the period 1945-2025, we have calculated the effective number of producers, the effective number of consumers, and the economic support ratio, i.e., the effective number of producers divided by the effective number of consumers. The change in the economic support ratio represents the change in output per effective consumer due solely to changes in age structure over the period 1945-2025, as indicated in Figure 5.

As can be inspected from this graph, from 1948 to 1983, the support ratio grew continuously, thus generating the first demographic dividend. The plotted result in Figure 5 also indicates that the

tempo of the growth of the support ratio accelerated during the Golden 60s. This substantiates the validity of the view that the unprecedented fertility reduction, subsequent to the 1947-1949 baby boom, played a crucial role in boosting the remarkable growth in per capita income during this high economic growth period.

As has been the case with other developed countries, Japan's first demographic dividend was transitory in nature, and lasted only for a few decades. After reaching its peak value in 1983, the support ratio leveled off for slightly more than 10 years. Since 1996, the economic support ratio has been on a downward trend, and the first demographic dividend has turned decidedly negative. This change is a direct consequence of population aging.

Beside the first demographic dividend, age structural shifts lead to the second demographic dividend which arises in response to the prospect of population aging. For instance, in countries that rely on capital accumulation to meet the retirement needs of the elderly, population aging provides a powerful incentive to accumulate wealth. When life expectancy is increasing, the accumulation of wealth is stimulated, which, in turn, leads to a permanent increase in income. It is important to note, however, that in countries that rely on transfers, both public and familial, to meet the retirement needs of the elderly, the second demographic dividend may not emerge. While the first demographic dividend is purely accounting-oriented, the second demographic dividend consists of both compositional and behavioral effects (Mason, 2007; Ogawa and Matsukura, 2007). In other words, the second demographic dividend is affected not only by the number of the elderly persons relative to younger persons, but also by the extent to which consumers and policy makers are forward-looking and respond effectively to the demographic changes that are anticipated in the years ahead.

Compared with the computational work pertaining to the first demographic dividend, measuring the amount of the second demographic dividend is far more complicated. Also, since the computational procedure has been described in detail elsewhere (Mason, 2007), in this paper we simply discuss the computed results. The estimates of the second demographic dividend over the period 1975-2035 are shown in Figure 6. As can be clearly inspected from this graph, Japan's second demographic dividend remained at a considerably high level in the first half of the period under review, particularly over the period 1975-1995. In the second half of the time period in question, the growth of the second demographic dividend declines to a marked extent, but never plunges below zero. In fact, after reaching a pronounced trough in the 2010s, Japan's future second demographic dividend is expected to show a substantial upsurge in the 2020s and 2030s, boosting saving rates and capital intensification of the economy. More importantly, these fluctuations in the second demographic dividend are substantially attributable to the rapid age compositional shifts in the early part of the 21st century, primarily because the second generation of baby boomers enters the age group of 50 years old and over, when they are expected to commence building up financial

assets for their retirement life.

The Changing Pattern of Intergenerational Transfers in the Japanese Population as a Whole

In the foregoing sections, we have discussed in detail how closely demographic and socioeconomic transformations in postwar Japan have interacted with each other. It is easy to conceive that these demographic and socioeconomic changes have been jointly affecting the pattern and mode of intergenerational transfers over time. To gain further insights into this, we use the NTA approach.

The NTA system provides a comprehensive framework for estimating consumption, production, and resource reallocations by age (Lee, Lee, and Mason, 2008; Mason et al., 2009). It should be noted, however, that no gender differentiation is incorporated in the NTA system[17].

NTA measures intergenerational flows for a certain period of time (usually a calendar or fiscal year), and as explained in detail elsewhere (Ogawa et al., 2009), the following expression holds in the NTA framework:

$$\underbrace{C(x) - Y^l(x)}_{Lifecycle\ deficit} = \underbrace{\underbrace{\tau^+(x) - \tau^-(x)}_{Net\ transfers} + \underbrace{Y^A(x) - S(x)}_{Asset-based\ reallocations}}_{Age\ reallocations}$$

where Y^l = labor income, Y^A = asset income, τ^+ = transfers received, C = consumption, S = saving, and τ^- = transfers given. It should be noted that this flow identity holds for each age x as well as the whole economy. The age reallocations can be further disaggregated into public-sector and private-sector age reallocations. That is,

$$C(x) - Y^l(x) = \left[\tau_g^+(x) - \tau_g^-(x) \right] + \left[\tau_f^+(x) - \tau_f^-(x) \right] + \left[Y^{Ag}(x) - S_g(x) \right] + \left[Y^{Af}(x) - S_f(x) \right]$$

where subscripts g and f , refer to "public" and "private" age reallocations, respectively.

Before proceeding to our discussion of computational results, however, caution should be exercised with regard to the following two points. First, both 'familial transfers' and 'private transfers' are used interchangeably in this paper; both of them refer to transfers coming from other family members of the same or different household. Second, although net private transfers are comprised of bequests and inter vivos transfers, the computation of the bequest component has not been completed at the time of writing this paper. For this reason, the bequests are excluded from the computational results reported in this paper. It is also important to note that the estimated values for the totals are adjusted on the basis of the National Income and Product Accounts (NIPA) values, which insures consistency with NIPA.

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17 A fuller explanation of the NTA's basic concept, the crucial computational assumptions utilized, and the definitions of other key variables are available on the NTA website (*http://www.ntaccounts.org*).

Figure 7 compares the changing pattern of three components of reallocation of the lifecycle deficit for the entire population in Japan during 1984-2004. The three components include net reallocations through assets, net public transfers, and net private transfers, measured in terms of 2000 constant prices on an annual basis. Panels A, B and C illustrate the annual reallocation of the lifecycle deficit for the whole population of Japan observed in 1984, 1994 and 2004, respectively.

A brief comparison of the three panels reveals the following two points of interest. First, the composition of net transfers to the elderly population changed dramatically over the 20-year period. As can be easily seen by comparing the three panels, the amount of net public transfers to the elderly population increased significantly, from 11.8 trillion yen in 1984 to 44.5 trillion yen in 2004. Similarly, the amount of net asset-based reallocations grew remarkably over time, from 6.1 trillion yen in 1984 to 46.1 trillion yen in 2004. In contrast, the relative importance of net familial transfers from the young to the elderly declined to an appreciable extent over the same time period. These results seem to indicate that the Japanese elderly have been increasingly dependent upon public transfers (predominantly old-age pensions and medical care services) and asset-based reallocations in supporting their retirement life.

Second and more importantly, as marked by two circles in Figure 7 (one in Panel B and the other in Panel C), the amount of net familial transfers to the relatively young elderly persons (roughly in their 60s and early 70s) was negative in both 1994 and 2004, implying that the amount of financial assistance the relatively young elderly persons provided to their adult children and/or grandchildren exceeded monetary assistance from the latter to the former. It is also worth noting that the amount of such negative net familial transfers from the relatively young elderly to other age groups rose during the period of "Japan's lost decade". These results suggest that despite the fact that multigenerational coresidence has been eroding over the past few decades, the Japanese elderly still play a vital role in providing financial support for their offspring when the latter encounter economic difficulties. Although older persons in Japan are often considered liabilities for the country, they are actually playing a key role as a safety net. For this reason, they should be considered latent assets in contemporary Japanese society.

Concluding Remarks

By drawing heavily upon the NTA approach, this paper has reviewed selected evidence supporting the impact of fertility decline and age compositional shifts of the Japan's population upon various sectors of its society. In addition, this paper has demonstrated that although Japanese family organization has been changing very rapidly over the past few decades, the Japanese elderly persons still play a significant role in supporting their offspring when the latter encounter economic hardships.

This paper has also shown the important role of the second demographic dividend in boosting

Japan's future economic growth in the 2020s and 2030s. Although this is subject to the policies the government adopts in the future, according to our calculations, the size of the second demographic dividend to be generated in Japan by the second-generation baby boomers is projected to be quite substantial in the first half of the 21ˢᵗ century.

Acknowledgements

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