AGING IN JAPAN 2003

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Foreword

In the 1980's, when the speed of aging rapidly increased in Japan, the world stopped and paid attention. The Population Division of United Nations requested Japan Aging Research Center established in 1985 cooperate with conferences for experts in Japan to discuss "Population Aging". Their main themes were "Economic and Social Implications of Population Aging" in 1986, "Aging and Urbanization" in 1988 and "Ageing and Family" in 1990. The United Nations published books including all the papers that had been presented.

JARC published the first "Aging in Japan" in 1990 because of the increasing concerns of aging issues. This information was compiled to inform foreign researchers who participated in international conferences, and provided participants in the International Congress of Gerontology in Yokohama in 1991. Since then we have published a book every two years, and this book is the seventh edition.

Population aging in Japan has been progressing faster than expected and the rate of the elderly has reached a high at 18.5% in 2001. Japan in the 21st century has the highest proportion of the elderly in the world, which no country has ever experienced before. Further more in a few years the total population of Japan will begin decreasing. Japan will have many challenges to overcome, one of which is how to cover its increasing social security expenses.

Due to the progress of population aging in not only in Japan but also all over the world, social change and policies regarding aging are becoming hot topics worldwide, especially in East Asia where the speed of aging is more rapid than Japan. This book was compiled and helps understanding of the aging society in Japan from broad perspectives to meet the demands.

We, Japan Aging Research Center, would like to express our sincere gratitude to the writers of this book for their active research and their great work and generous cooperation.

Our special thanks also to the Nippon Foundation, whose support has enabled us to publish this book.

January 2003

Fumio TAKAGI
Chairman,
Japan Aging Research Center (JARC)

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PART I

Chapter 1

Demographic Aspects of Population Ageing in Japan

Shigemi KONO
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Introduction

The term "population ageing" has become a household word for average citizens in Japan. Population ageing is viewed almost unanimously here as a process causing shortages of young labour, sluggish economic growth and higher tax burdens to support social security for the elderly. Population ageing has been considered one of the most crucial demographic and social problems facing contemporary Japan. Actually, the awareness of the seriousness of population ageing came rather prematurely in the 1970s and early 1980s when Japan's ageing was not in full swing and the elderly population comprised less than 10% of the total population. Most of discussions and arguments dominating those decades were quite pessimistic. However, adverse effects were not immediately apparent and people tired of its discussion of the issue. The advent of the bubble economy let the general public forget the reality of population ageing.

But, in the very recent years after the bubble economy was bust, the people have come to realize that the population ageing is now in full swing. There is a resurgence of keen public interest in its enormous impact upon economic, social, psychological and familial spheres of the Japanese life. Slow growth or non-growth in Japan's economy has shattered people's previously held illusion that a bigger pie of economy allocated to each individual earner could easily afford to shoulder an increasing burden of the outcome of population ageing. When the society enters the fin de siecle, there is a growing sense of urgent necessity among the Japanese people to reassess the reality of the trend and to formulate a more innovative and balanced strategy for the forthcoming 21st century.

The first section attempts to describe the general trend of population ageing

in Japan and elucidate its several salient features such as rapidity in the speed of population ageing in reference to various indicators of population ageing. Then, the section will go on discussing the factors causing the population ageing and show that fertility is the one which has played the most important role in getting population ageing. In very recent years, however, fertility has fallen to the unprecedentedly low level, hence, to the general reader's interest, a few paragraphs will be devoted to dealing with determinants of the currently very low level of fertility.

The second section is related to the question of the transformation of the family in the face of population ageing. It is extremely interesting to observe how much demographic changes bring about changes in the size and structure of the family and household.

Finally, towards the end of the second section, the paper would discuss what would be good about at the imminent arrival of an aged society.
The section would like to evoke some new ideas which might interest the general reader.

1. Demography and Population Ageing in Japan

A. Change in Age Profile

In discussing the general trend in population ageing, it is useful to compare various age profiles, or what has conventionally been called "population pyramid", in different years which are indicative of demographic transition at different stages that Japan has undergone. "Demographic transition" is here taken to mean a process of demographic transformation from high birth and death rate to low birth and death rate along with the course of modernization and economic and social development.

Figure 1 and **2** show age profiles of the population of Japan in 1950 and 2000. **Figure 3** and **4** show age profiles for the years 2025 and 2050. The age profiles for 1950 and 1995 represent the actual ones and the year 2000 was the one when the last census was taken. But the other two are projected ones based on the latest population projections prepared by the National Institute of Population and Social Security Research (2002).

These four age profiles depict dramatic changes occurred or occurring according to different demographic regimes over a long span of time covering 100 years, and the general reader will get from these graphs some ideas about population ageing in Japan that has been going on along with the demographic

transition.

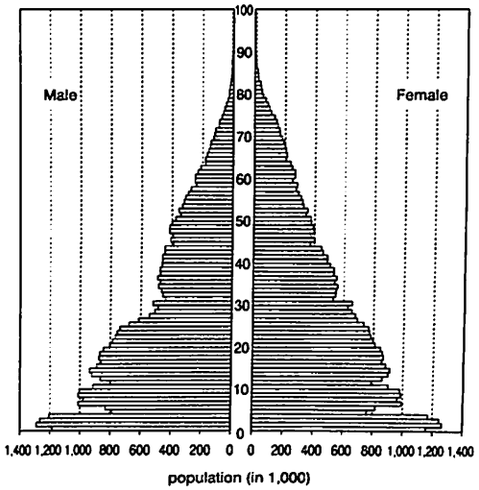
The first one for 1950 in **Figure 1** looks really like a "pyramid". Although the shape is of ruggedness with minor dents and bumps, particularly troughs at ages 4 and 5, the general contour is unmistakably bottom-heavy, triangle-shaped and is somewhat typical of present-day developing countries.

On the other hand, **Figure 2** shows the profile for the year 1995 dramatically divergent from the above-mentioned profile for 1950. It looks actually a quite complex shape resembling a Japanese war helmet (kabuto) and clearly tracing the vestige of World War II. Yet, there are one or two clear traits which are characterized by its shrinking lower (younger) sector of the population and by a very large body of middle and early-elderly age groups. This population pyramid may be said to be the one starting to experience a considerable degree of population ageing.

The age profile for the year 2025 shows a vicissitude of age structure which is top-heavy and characterized by two salient bulges, one in the middle and the other in the old ages. Here, population ageing is coming to its climax.
The last age profile for the year 2050 represents a more classic pen-shaped figure with a narrower base, though it still has an accordion-like vestige of echo effects of past baby booms and baby busts. The last one might draw a contour line pretty close to that of a stable population which has been generated by many year's interactions of constant low fertility and constant low mortality with the originally rugged population. The reader may be quite impressed with that picture in which the accordion-shaped population contour remains quite tenaciously for so many years, nearly one century long. Anyhow, here population ageing will start getting settled down as a result of population dynamics operated for many years.

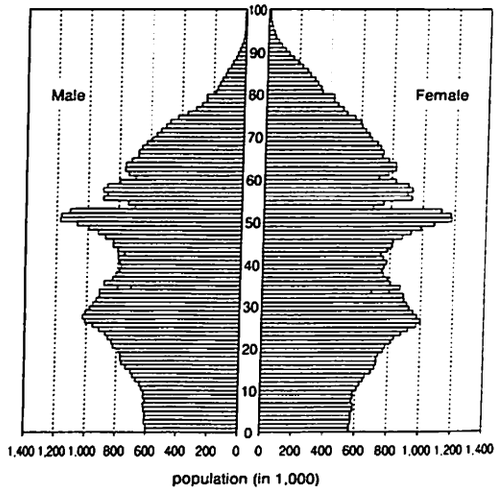
Population ageing can be measured by various indices. The most popular one deals with the proportion of aged population which is aged 65 and over. If this proportion increases, it is called population ageing. If the proportion stays too small, however, say five percent or less, we do not usually call the population "aged" or "ageing". According to the United Nations' report published in 1956, the population is arbitrarily defined as ''aged'' when the percentage of old people aged 65 and over exceeds seven percent (United Nations, 1956). In view of the present levels of the population ageing in the developed countries, however, the figure of seven percent seems too small. In the present author' s view, the threshold value of 10 percent seems more appropriate. As another index, a use is made of age dependency ratio for the elderly, that is the ratio of the elderly population over the working-age population of 15-64 or 20-64 years.

Figure 1. Age Profile of the Population of Japan: 1950



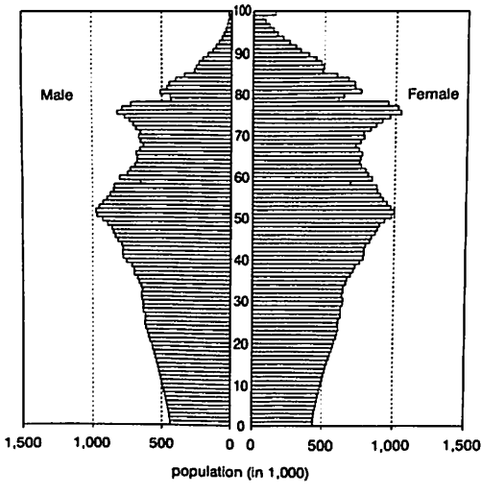
Source: Statistics Bureau, Office of the Prime Minister, *1950 Population Census of Japan*.

Figure 2. Age Profile of the Population of Japan: 2000



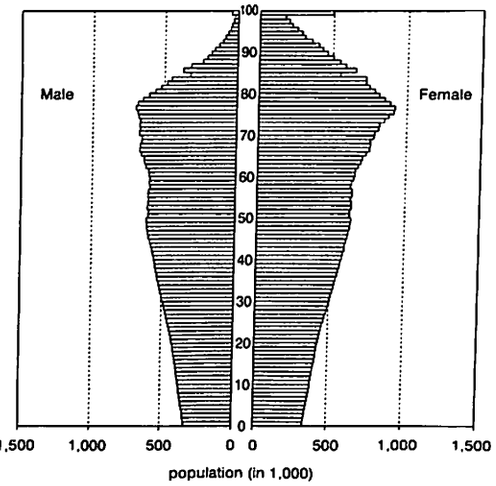
Source: Statistics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *2000 Population Census of Japan*.

Figure 3. Age Profile of the Population of Japan: 2025



Source: National Institute of Population and Social Security Research, Ministry of Health, Labour and Welfare, *Population Projection for Japan: 2001-2050*, 2002.

Figure 4. Age Profile of the Population of Japan: 2050



Source: See Figure 3.

The third often-used indicator is the elderly-children ratio, that is the ratio of the elderly over the children. **Tables 1** and **2** show the trends in the age structure of population in Japan, one for the past and the other for future. By any measure, Japan is experiencing an increasingly pronounced and rapid process of population ageing.

Let us discuss and explain a little bit more of the trends in these indicators.

B. Proportion of the Aged

As already mentioned, the age composition of Japan has undergone a very sharp transformation, from a broad-based, youth-heavy population to a more urn-shaped, top-heavy ageing population, in a relatively short period of time. **Table 1** shows the change in the age composition in terms of various indicators for the period from 1868 to 2000; **Table 2** shows the projected transformation for the periods from 2000 to 2100 based on the population projections prepared recently in Japan in 2002 (National Institute of Population and Social Security Research, 2002).

Columns (2) to (4) in these tables show percentages of population for the well-known three major age categories-under 15, 15-64 and 65 + (See also **Figure 5**). Columns (5) to (7) show age-dependency ratios-total dependency (See also **Figure 6**), child-dependency and old-age dependency. The last column indicates a relatively new concept, that is, the ratio of the elderly to children.

If the degree of ageing is expressed by the percentage of the total population which is 65 years and over, the Japanese age structure at present is hardly very "aged", since the percentage is approximately 18, not particularly higher than some of European countries such as Italy and Sweden where the corresponding proportions approximate 18 percent. However, according to the medium variant of the above-mentioned population projections prepared by the National Institute of Population and Social Security Research in 2002, the future pace of ageing in Japan will be rapid and, by the year 2025, Japan's population aged 65 and over will be 28.7 percent. Since the recent United Nations projections as assessed in 2000 do not reveal any country with equivalently high ageing indicators in 2025, Japan would probably be the country which is the most aged in the world in the first quarter of the twenty-first century. In this first quarter the mean age will continue to rise and will pass the mark of 48 years.

Again, according to the medium variant projections of the National Institute of Population and Social Security Research, the proportion of the aged will

Table 1. Trends in Population Structure: 1868-2000

(percent)

Year	Population composition by major groups			Age dependency ratio			Elderly children ratio
	0-14	15-64	65+	Total	Children	Old-age	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1868	30.36	63.88	5.76	56.5	47.5	9.0	19.0
1898	32.50	61.70	5.80	62.1	52.7	9.4	17.9
1920	36.48	58.26	5.26	71.6	62.6	9.0	14.4
1925	36.70	58.24	5.06	71.7	63.0	8.7	13.8
1930	36.59	58.66	4.75	70.5	62.4	8.1	13.0
1935	36.89	58.46	4.66	71.1	63.1	8.0	12.6
1940	36.08	59.19	4.73	69.0	61.0	8.0	13.1
1947	35.30	59.90	4.79	66.9	58.9	8.0	13.6
1950	35.41	59.64	4.94	67.7	59.4	8.3	13.9
1955	33.44	61.24	5.29	63.3	54.6	8.7	15.9
1960	30.15	64.12	5.72	55.9	47.0	8.9	19.0
1965	25.73	67.98	6.29	47.1	37.9	9.2	24.4
1970	24.03	68.90	7.06	45.1	34.9	10.3	29.4
1975	24.32	67.72	7.92	47.6	35.9	11.7	32.6
1980	23.50	67.35	9.10	48.4	34.9	13.5	38.7
1984	22.04	68.01	9.94	47.0	32.4	14.6	45.1
1985	21.51	68.16	10.30	46.7	31.6	15.1	47.9
1986	20.90	68.52	10.58	45.9	30.5	15.4	50.6
1987	20.24	68.86	10.90	45.2	29.4	15.8	53.8
1988	19.53	69.24	11.23	44.4	28.2	16.2	57.5
1989	18.82	69.57	11.61	43.7	27.1	16.7	61.7
1990	18.24	69.69	12.08	43.5	26.2	17.3	66.2
1991	17.66	69.78	12.56	43.3	25.3	18.0	71.1
1992	17.17	69.78	13.05	43.3	24.6	18.7	76.0
1993	16.70	69.75	13.55	43.4	23.9	19.4	81.1
1994	16.33	69.61	14.06	43.7	23.5	20.2	86.1
1995	15.94	69.42	14.54	43.9	23.0	20.9	91.2
1996	15.64	69.25	15.11	44.4	22.6	21.8	96.6
1997	15.35	68.99	15.66	44.9	22.2	22.7	102.0
1998	15.07	68.72	16.21	45.5	21.9	23.6	107.6
1999	14.79	68.48	16.72	46.0	21.6	24.4	113.0
2000	14.58	68.05	17.37	46.9	21.4	25.5	119.1

Source: National Institute of Population and Social Security Research, Ministry of Health, Labour and Welfare, *Latest Demographic Statistics, 2001/2002*, Tokyo, 2002; Statistics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *the 2000 Population Census*, Tokyo, 2002.

Table 2. Future Trends in Population Structure, 2000-2100: Medium Variant

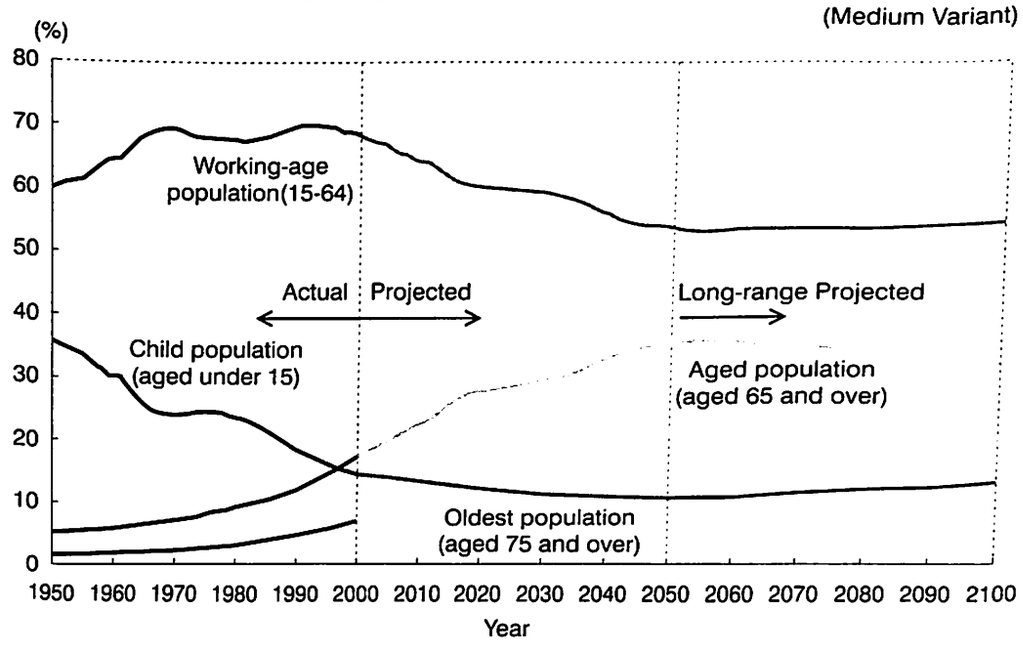
(percent)

Year	Population composition by major groups			Age dependency ratio			Elderly-children ratio
	0-14	15-64	65+	Total	Children	Old-age	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2000	14.6	68.0	17.4	46.9	21.4	25.5	119.1
2005	13.9	66.2	19.9	51.0	21.0	30.0	143.2
2010	13.4	64.1	22.5	56.1	20.9	35.2	168.3
2015	12.8	61.2	26.0	63.4	21.0	42.4	202.3
2020	12.2	60.0	27.9	66.7	20.3	46.4	228.9
2025	11.6	59.7	28.7	67.5	19.5	48.0	246.5
2030	11.3	59.2	29.6	69.0	19.0	50.0	262.8
2035	11.1	58.0	30.9	72.4	19.1	53.3	279.7
2040	11.0	55.8	33.2	79.3	19.7	59.6	302.3
2045	10.9	54.4	34.7	83.8	20.1	63.7	317.7
2050	10.8	53.6	35.7	86.7	20.1	66.6	330.8
2055	10.7	53.4	36.0	87.4	20.0	67.4	336.9
2060	10.7	53.5	35.8	87.0	20.1	66.9	333.7
2065	11.0	53.6	35.5	86.7	20.5	66.2	323.7
2070	11.3	53.5	35.2	86.9	21.1	65.8	311.8
2075	11.6	53.5	34.9	86.8	21.7	65.1	300.2
2080	11.9	53.6	34.5	86.6	22.2	64.4	290.8
2085	12.1	53.8	34.1	86.1	22.5	63.5	281.9
2090	12.4	54.0	33.7	85.3	22.9	62.3	271.7
2095	12.7	54.2	33.1	84.6	23.5	61.1	260.1
2100	13.1	54.3	32.5	84.0	24.2	59.9	248.0

Source: National Institute of Population and Social Security Research, Ministry of Health, Labour and Welfare, *Population Projections of Japan: 2001-2100*, Tokyo, 2002.

reach 35.7 percent, an astonishing figure, around the middle of the 21st century. If we look into the low variant projections which assume a farther decline in fertility and an eventual stabilization at 1.10 in terms of total fertility rate in the future, the proportion of the aged may rise even to the level 39.0 percent, that is to say, almost two-fifths of the total population would become the aged. Of course, there are some analytic projections for China on the assumption that their one-child policy would be maintained in the next century. According to such projections by Banister, the proportion of the aged in China currently being only 6 percent would become 41 percent of the total population, the percentage incomparably and even incomprehensively large (Banister, 1990). The future prospects of population ageing for Japan might be similar to those hypothetical projections for China.

Figure 5. Trends in Major Age Compositions



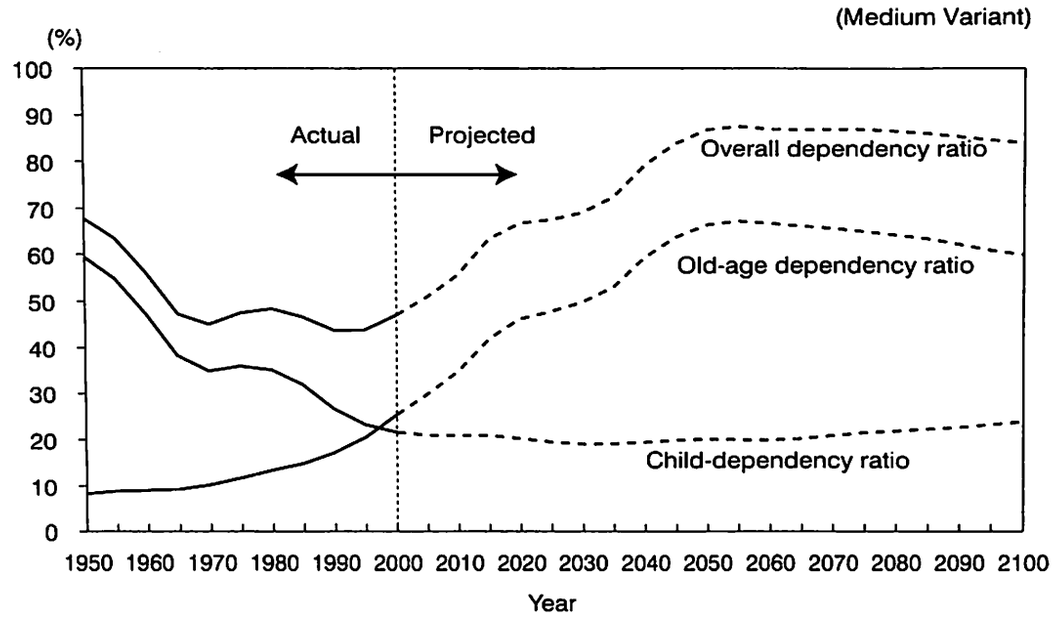
Source: National Institute of Population and Social Security Research, Ministry of Health, Labour and Welfare, *Population Projections of Japan: 2001-2100*, Tokyo, 2002.

C. Old-age Dependency Ratio

Age-dependency ratio are the sum of two dependent population groups aged 0-14 and aged 65 years and over divided by the working age population, multiplied by 100. Working age population denotes the population aged 15-64 who have the likelihood of being in the labour force under normal circumstances. In the present discussion of population ageing, the old-age dependency ratio is particularly relevant inasmuch as this indicator roughly quantifies the demographic weight of burden that the current working age population has to bear in order to support social security and medical expenses for the elderly. Notice that according to the pay-as-you-go system of social security, the incumbent labour force is the one who supports social and medical cost for the aged. The old-age dependency ratio may mean how many old persons have to be supported by 100 persons in working age.

According to Column (7) of **Table 1**, the trend in the proportion of the aged to the working-age population is shown from 1868 to 2000 (See also

Figure 6. Trends in Age Dependency



Source: National Institute of Population and Social Security Research, Ministry of Health, Labour and Welfare, *Population Projections of Japan: 2001-2100*, Tokyo, 2002.

Note: The definitions of various dependency ratios are as follows:

$$\text{Dependency ratio} = \frac{\text{(Child pop.) + (Aged pop.)}}{\text{Working age pop.}}$$

$$\text{Child-dependency ratio} = \frac{\text{Child pop.}}{\text{Working age pop.}}$$

$$\text{Old-age dependency ratio} = \frac{\text{Aged pop.}}{\text{Working age pop.}}$$

Figure 6). Until about 1965, the ratio was relatively small, at about 8 to 9. This means that there are 11 persons or more in working age per one old person. The burden that incumbent working population has to shoulder was relatively light in those years. After 1965, however, the ratio exceeded the level of 10 and has rapidly been increasing. By 2000, the ratio reached 25.5, that is to say, slightly less than four persons in working age per one old person. Certainly, the burden of support becomes heavier. Column (7) of **Table 2** shows the projected old-age dependency ratio for years 2000 to 2100. The figures shown here clearly indicate that the proportion of the elderly to the working-age population will increase very rapidly and to a quite substantial magnitude; In the year 2002 it

would become 27.5 percent, that is to say, only less than four persons in working age have to bear one elderly person. By the year 2050, the ratio culminates to the level of 66.6 percent and this means that only one and half person in working age have to shoulder one elderly person. Remember that until 1965, 11 or more persons in working age could be compared to one person in the elderly category. Now the ratio increases more than seven times. An increase in old-age dependency ratio probably most dramatizes the imminently occurring impact of population ageing.

D. Elderly/Children Ratio

As mentioned above, one interesting indicator for showing the change in age-structure is the elderly/children ratio, which is the number of the elderly (population aged 65 and over) divided by the number of children(population under 15), multiplied by 100. In 1930-1950 the ratio was as low as 13, that is to say, there were relatively few elderly persons in proportion to children. However, the elderly/children ratio has been increasing, and by 1986 it reached approximately 50 per 100 children. In 1997, it has already reached the mark level of 100 (see also **Figure 5**). In 2000 it has come to the level of 119. According to the projections prepared recently by the National Institute of Population and Social Security Research in 2002, the ratio will increase further. Astonishing as it may seem, by the year 2050 it will soar to 331, that is to say, the population of the elderly will be more than three times as much as that of children.

There are only a few countries whose elderly/children ratio is more than 100 at the present time. Italy, Germany and Spain are among those countries in 2000. Around 1986, when the elderly/children ratio was only 50, the Japanese started a kind of over-reacting to the rapidity of population ageing, as if their population has already turned grey. Hence, it is dificult to imagine how people would react to the situation where the population ageing is really in full swing. Japan is now entering an entirely new phase of demographic evolution, in which the elderly will outnumber children.

E. Rapidity of Population Ageing

As already mentioned, in Japan the term "population ageing" is not shibboleth but a household word, and there have been so much debates and speculations which have been going on. Why so? Some reasons may be attributable to the high educational standard in which Japanese people might exhibit their concerted interest in social changes, but it seems largely attributable to substantial reasons. That is the rapidity and swiftness of population ageing in Japan.

According to **Tables 1** and **2** as well as in **Figures 5** and **6**, the trends have already been clear. Before 1985 or so, though the issues of population ageing had already been debated hotly, the actual proceeding of population ageing was rather slow and the percentage of the population 65 years and over is hardly beyond 10 percent. However, after 1985, the momentum has been gathering and according to the population projections shown in **Table 2** and **Figure 5**, the population ageing is expected to proceed at an unprecedented speed and by the year 2025 the percentage of the elderly is projected to be more than 29 percent.

Table 3 shows international comparison of the speed of population ageing among seven industrialized countries with respect to the year attained or expected to attain the 7, 10 and 14 percent level in terms of the proportion of the elderly. Particularly, the last column indicates number of years required to shift from 7 to 14 percent. As can be noted in this column, the rapidity of population ageing in Japan is very impressive. The number of years expected to spend for moving from 7 to 14 percent would take only 24 years in Japan and is distinctively shorter than any other selected developed countries. When the speed of ageing is rapid, its social and economic impacts are much greater than otherwise in the situation where the change takes place rather showly. Hence, people and society's response to those demographic changes must be more difficult in Japan, requiring swift adjustment to those changes and restructuring its institutional setup and infrastructure.

Table 3. Speed of Population Ageing in Selected Developed Countries

Country	Years attaining the specified percentage of the aged among the total population			
	7%	10%	14%	Number of years required to shift from 7% to 14% in terms of proportion aged
Japan	1970	1985	1994	24
France	1864	1943	1979	115
Germany	1932	1942	1972	40
Sweden	1887	1948	1972	85
Switzerland	1931	1960	1982	51
United Kingdom	1929	1946	1976	47
U.S.A.	1942	1972	2014	72

Source: Before 1940: United Nations, *The Aging of Population and its Economic and Social Implications*. Population Studies, No.26, New York, 1956.
After 1940: United Nations, *World Popultion Prospects*: *The 2000 Revision*, Volume Ⅱ : Sex and Age, New York, 2001

Table 4. Trends in Births, Crude Birth Rate and Reproduction Rates: 1925-1995 (To be continued)

Year	Number of births (1,000)	Crude birth rate (‰)	Total fertility rate	Net reproduction rate
1925	2,086	34.9	5.11	1.56
1930	2,085	32.4	4.71	1.52
1937	2,181	30.9	4.36	1.49
1940	2,116	29.4	4.11	1.44
1947	2,679	34.3	4.54	1.72
1948	2,682	33.5	4.40	1.76
1949	2,697	33.0	4.32	1.75
1950	2,338	28.1	3.65	1.51
1951	2,138	25.3	3.26	1.39
1952	2,005	23.4	2.98	1.29
1953	1,868	21.5	2.69	1.18
1954	1,770	20.0	2.48	1.09
1955	1,731	19.4	2.37	1.06
1956	1,665	18.4	2.22	0.99
1957	1,567	17.2	2.04	0.92
1958	1,653	18.0	2.11	0.96
1959	1,626	17.5	2.04	0.94
1960	1,606	17.2	2.00	0.92
1961	1,589	16.9	1.96	0.91
1962	1,619	17.0	1.98	0.92
1963	1,660	17.3	2.00	0.94
1964	1,717	17.7	2.05	0.96
1965	1,824	18.6	2.14	1.01
1970	1,934	18.8	2.13	1.00
1971	2,001	19.2	2.16	1.02
1972	2,039	19.3	2.14	1.01
1973	2,092	19.4	2.14	1.01
1974	2,030	18.6	2.05	0.97
1975	1,901	17.1	1.91	0.91
1976	1,833	16.3	1.85	0.88
1977	1,755	15.5	1.80	0.86
1978	1,709	14.9	1.79	0.86
1979	1,643	14.2	1.77	0.84
1980	1,577	13.6	1.75	0.84
1981	1,529	13.0	1.74	0.83
1982	1,515	12.8	1.77	0.85
1983	1,509	12.7	1.80	0.86
1984	1,490	12.5	1.81	0.87

Table 4. Trends in Births, Crude Birth Rate and Reproduction Rates: 1925-1995 (To be continued)

Year	Number of births (1,000)	Crude birth rate (‰)	Total fertility rate	Net reproduction rate
1985	1,432	11.9	1.76	0.85
1986	1,383	11.4	1.72	0.83
1987	1,347	11.1	1.69	0.81
1988	1,314	10.8	1.66	0.80
1989	1,247	10.2	1.57	0.76
1990	1,228	10.0	1.54	0.74
1991	1,223	9.9	1.54	0.74
1992	1,209	9.8	1.50	0.72
1993	1,185	9.8	1.46	0.70
1994	1,238	10.0	1.50	0.72
1995	1,187	9.6	1.42	0.69
1996	1,207	9.7	1.43	0.69
1997	1,192	9.5	1.39	0.67
1998	1,203	9.6	1.38	0.67
1999	1,178	9.4	1.34	0.65
2000	1,191	9.5	1.36	0.65
2001	1,171	9.3	1.33	0.64

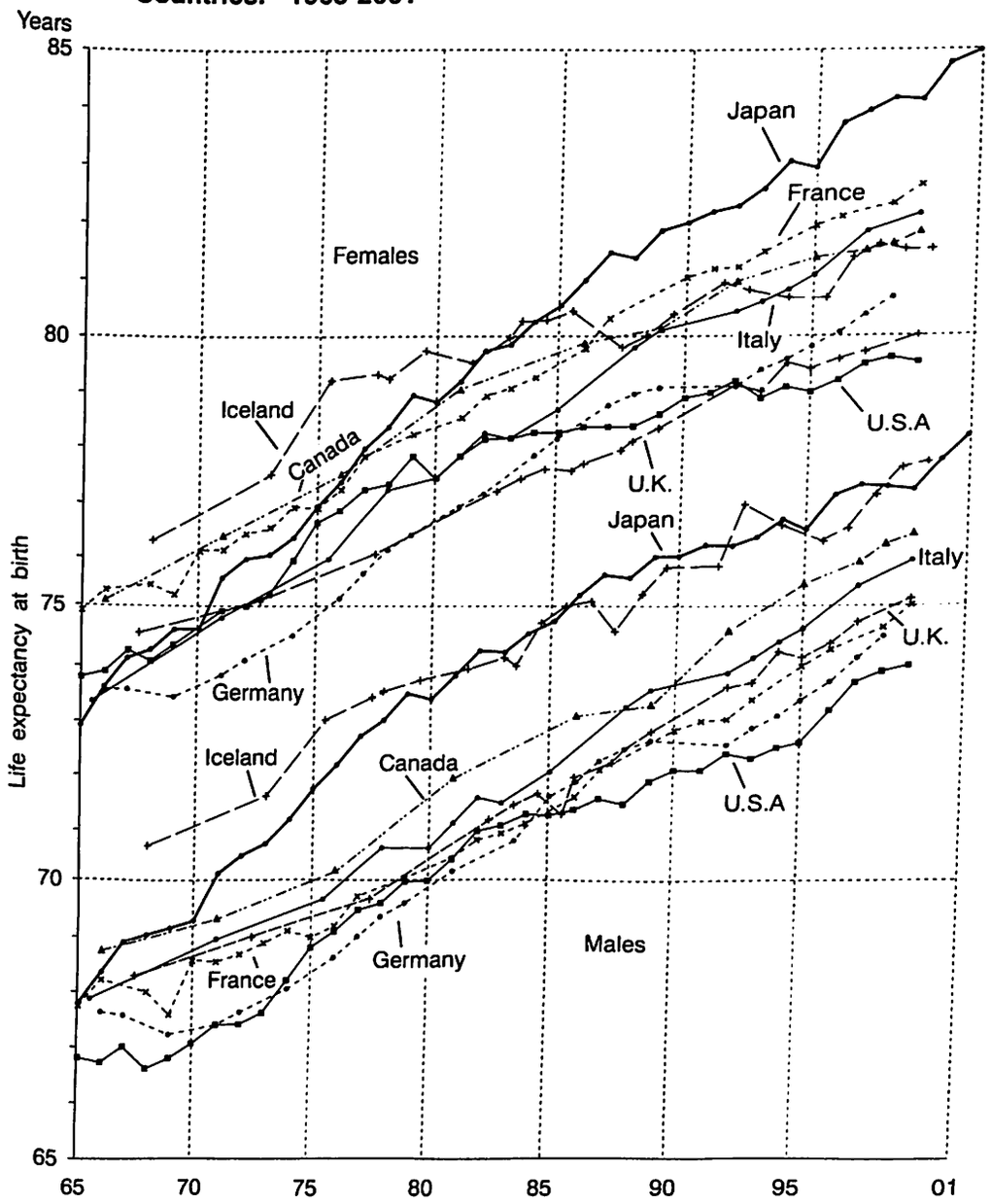
Source: Ministry of Health, Labour and Welfare, *Heisei 13-nen Jinko Dotai Tokei (Vital Statistics 2001, Japan)*, Vol. 1, 2002

Why is the speed of population ageing so rapid in Japan? This point will be discussed in detail in the next section, but this is partly because the speed of fertility decline in the postwar years was so rapid in Japan. **Table 4** shows the trends of fertility in Japan. It is remarkable that crude birth rate which was 34.3 per 1000 population in 1947 had been halved to 17.2 in 1957, thereafter fertility never coming back to the level higher than 20 per 1000. In the recent years, it has been even below 10 per thousand. The almost unprecedented rapidity of birth rate decline and the continuity of very low fertility level are considered the principal causes for presenting Japan as a country of the most rapidly ageing population in the world.

F. Causes of Population Ageing in Japan

What have then been the causes for such a rapid population ageing to take place in the future in Japan? Many people even in the journalism have made their off-the-cuff statement that recent prolongation of life expectancy is the cause for it. Indeed, as represented by **Figure 7**, the recent Japanese life expec-

Figure 7. Trends in Life Expectancy at Birth in Selected Developed Countries: 1965-2001



Source: United Nations, *Demographic Yearbooks*, New York; Japan, Ministry of Health, Labour and Welfare, *The 2001 Abridged Life Tables*, Tokyo, 2002.

Note: The values for Germany before 1990 were for the former Federal Republic of Germany (West Germany).

tancies for both males and females have already surpassed those of European countries such as Iceland and France which had been regarded among the highest life expectancy countries in the world. Although the above conventional view of cause of population ageing is true for Japan in the very recent years, but the fact of the matter is more complicated and the lengthening of life expectancy or mortality decline alone could not be the sole or principal factor explaining for such a substantial and rapid population ageing.

Calculations were made to decompose the difference between the percentages of the population aged 65 and over for Japan in two different years. The methodology of decomposition is Kitagawa's (1955). Some unique features of the present calculation of decomposition are that:

(a) The age data used are by single years; hence, efforts are made to take into account changes in the age pyramid caused by the past annual fluctuations of births, deaths and overseas migration. The analysis by periods of five years may blur ups and downs of fertility and mortality for a country like Japan, thus rendering the conclusions crude and approximate;

(b) Various time spans are examined in order to analyze every possible combination of time periods;

(c) The rates obtained from forward and backward standardization are averaged so that the residual interaction term can be eliminated.

Table 5 shows the results of decomposition for various time periods 5-year, 10-year, 20year, 30year and 35-year.

In the analysis of five-year periods, apart from the effect of the initial age distribution, the effect of fertility was larger than the effect of mortality in the periods 1950-1955 and 1965-1970. The effect of the initial age distribution (Col. 7) is the effect of the previous age distribution, or the cohort effect. It is obvious that, where the baseline age distribution does not have a smooth profile and is characterized by bulges and troughs, such irregularities often determine a good portion of the proportion of the elderly. To be sure, however, that effect of population distribution may itself be attributable to previous histories of fertility and mortality.

However, in the later years under analysis, nearing the year 1985, the effect of mortality becomes larger than that of fertility, again apart from the effect of the age distribution of the initial population. It is argued that, in the earlier half of the 35-year period between 1950 and 1985, the effect of fertility was definitely larger. In contrast to the common implications of the theory of stable population, however, population ageing (in terms of an increase in the proportion of the elderly 65 and over) has been promoted by a decline in overall mortality

Table 5. Changes in the Proportion of the Population in Japan Aged 65 and Over, 1950-1985, for Different Time Periods.

Period	Population aged 65+ at beginning of time period[a]	Population aged 65+ at end of time period[a]	Absolute change	Effect of fertility	Effect of mortality	Effect of the initial age distribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)
5-year comparison						
1950-1955...	4.94	5.35	0.41	0.07	0.01	0.32
1955-1960...	5.32	5.69	0.37	0.01	0.01	0.35
1960-1965...	5.73	6.28	0.56	-0.04	0.07	0.53
1965-1970...	6.29	7.01	0.72	-0.12	0.02	0.83
1970-1975...	7.06	7.87	0.81	-0.01	0.04	0.78
1975-1980...	7.92	9.08	1.16	-0.02	0.08	1.09
1980-1985...	9.10	10.25	1.15	-0.05	0.09	1.11
10-year comparison						
1950-1960...	4.94	5.70	0.76	0.32	0.05	0.39
1955-1965...	5.32	6.24	0.93	0.06	0.11	0.76
1960-1970...	5.73	7.03	1.30	-0.06	0.28	1.09
1965-1975...	6.29	7.86	1.57	-0.26	0.28	1.54
1970-1980...	7.06	8.99	1.93	0.11	0.37	1.45
1975-1985...	7.92	10.22	2.30	0.01	0.42	1.88
20-year comparison						
1950-1970...	4.94	6.96	2.03	0.91	0.40	0.70
1955-1975...	5.32	7.82	2.51	0.17	0.75	1.59
1960-1980...	5.73	9.04	3.32	-0.05	1.24	2.13
1965-1985...	6.29	10.19	3.90	-0.36	1.40	2.87
30-year comparison						
1950-1980...	4.94	9.01	4.07	1.74	1.32	1.00
1955-1985...	5.32	10.18	4.86	0.52	2.04	2.30
35-year comparison						
1950-1985.....	4.94	10.19	5.25	2.38	1.93	0.94

[a] Percentage

NOTE: In Column 3, the value of the percentage of the aged population at the end of the comparison period is not necessarily the same as that of the actual population, although the percentage of the aged at the beginning of the period is always the same as that of the actual population. The difference is due to many types of errors: estimated survival ratios may not perfectly represent the real process of survivorship, even though life tables used were based on the actual vital statistics data; age-specific fertility rates used may not reflect the actual situation; there may be a negligible volume of international migration which was not considered in the estimates; and there may be errors in census-tabulated figures for both the beginnings and the ends of the periods and, likewise, there may be errors in vital statistics data on fertility and mortality.

and consequently by the prolongation of life expectancy, even in the middle of demographic revolution. According to the conventional interpretation of the theory of stable population, fertility is the predominant force causing population ageing, while mortality decline generally has little effect or, at best, promotes population rejuvenation.

If a longer period is used to decompose the change in the percentage of the population aged 65 and over, the effect of fertility is always larger than that of mortality: see, for example, the 35-year time period between 1950 and 1985 in **Table 5**, where the effect of fertility was even larger than the effect of the initial age distribution.

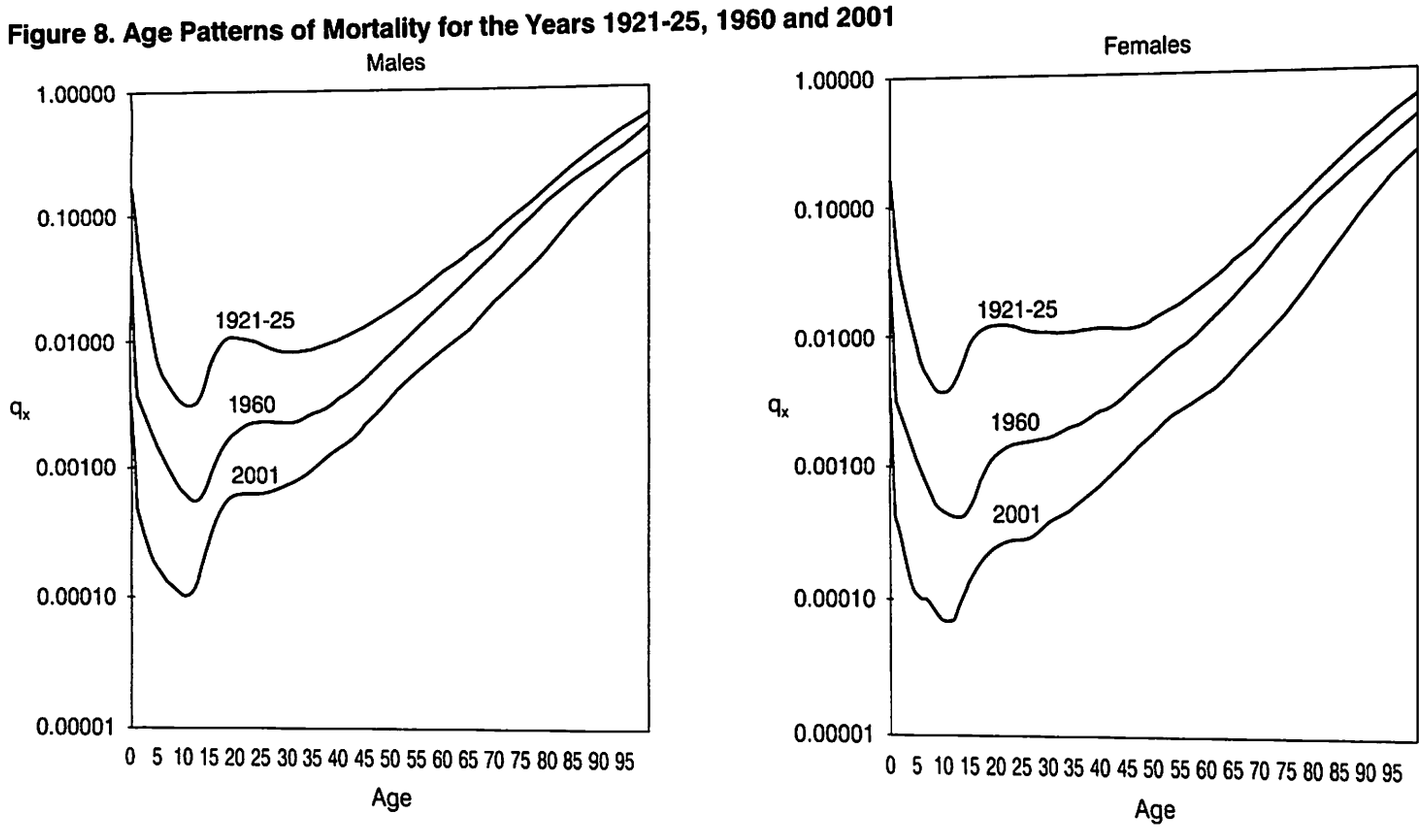
Perhaps, in this moment, it is useful to refer to a chart showing changes in age-specific mortality for males and females separately. **Figure 8** indicates age-specific patterns of mortality for 1921-1925, 1960 and 2001, separately, over several decades. Notice that this chart is based on the semilogarithmic graph. From this chart, some salient features may be pointed out.

(1) The decline in infant and child mortality from 1921-25 to 2001 is very significant.

(2) What may be called "tuberculosis lump" appeared in 1921-25 at ages between 15 and 25 have virtually disappeared among females in 2001.
The recurrence of a lump or bump around age 20 among males in 2001 should be considered to be caused by external cause of death, notably attributable to motor-bike accidents.

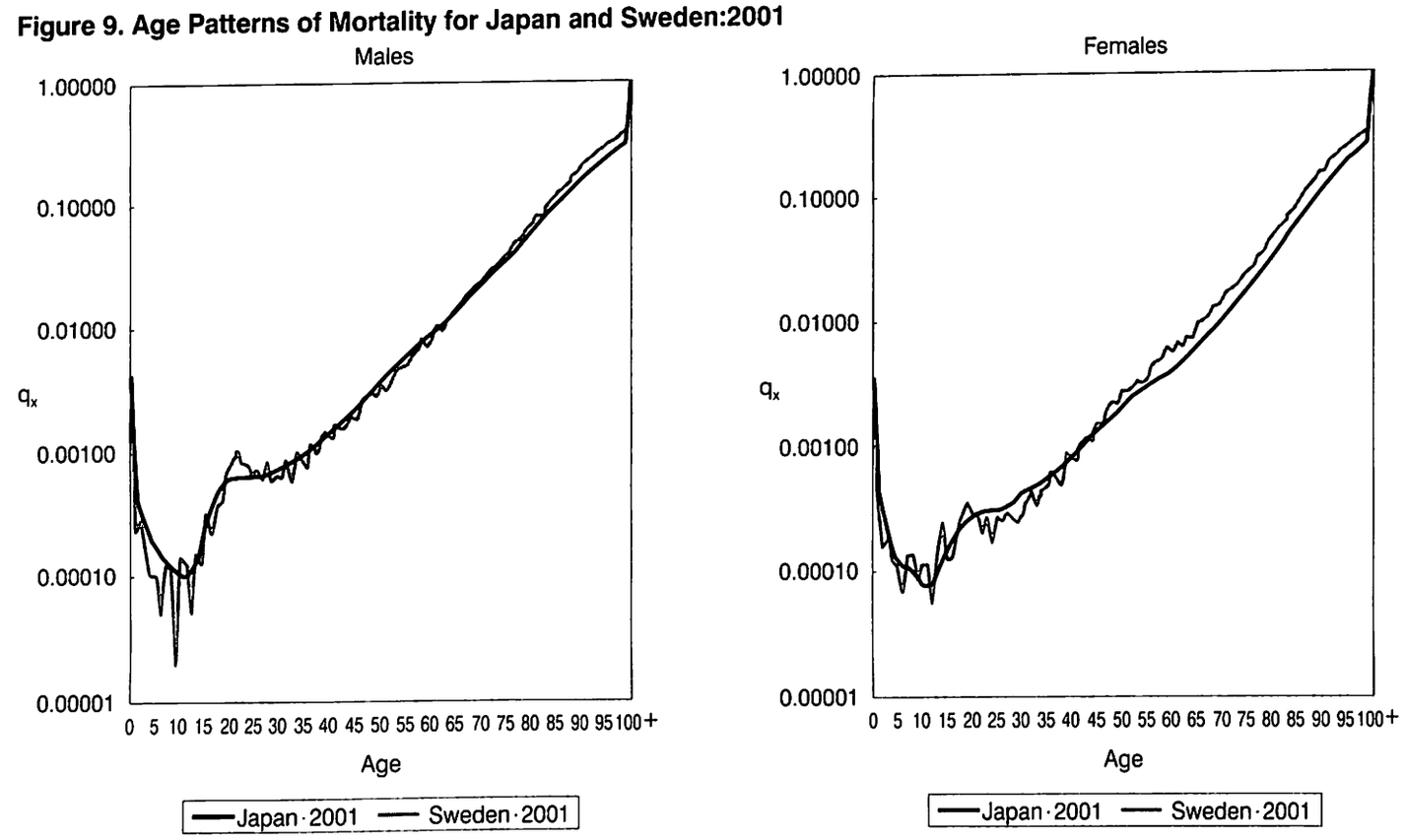
(3) On the other hand, however, the mortality improvements are not particularly phenomenal at advanced ages, though the nature of semilogarithmic graph might disguise some appreciable changes.
These charts may suggest that increases in life expectancy occurred in the postwar years were largely attributable to the rapid declines in infant and child mortality. This pattern of trends is also observed widely in present-day developing countries since the mortality can be more easily reduced in the young age groups rather than in the elderly. Mortality in childhood is caused mainly by infectious and parasitic diseases which can be more easily controlled by the anti-biotics and modern medical technology. On the other hand, however, mortality in the old ages is not easily controlled even by modern medical technology since diseases characteristic of old-ages are of attritional and degenerative nature of human organs. Hence, if other things being equal, the remarkable reductions in mortality in the infancy and childhood have an immediate effect of expanding the bottom part of the population pyramid, thus youthening or rejuvenating population, rather than ageing population.

Figure 8. Age Patterns of Mortality for the Years 1921-25, 1960 and 2001



Source: Japan Ministry of Health, Labour and Welfare, *The 19th Life Tables*, 2001.
Japan Ministry of Health, Labour and Welfare, *Abridge Life Table for 2001*, 2002.

Figure 9. Age Patterns of Mortality for Japan and Sweden:2001



Source: For Japan: Japan Ministry of Health, Labour and Welfare, *Abridged Life Tables for 2001*,Tokyo,2002.
For Sweden: Sweden Central Bureau of Statistics, *Abridged Life Tables for 2001*, Stocknolm, 2002.

Figure 9 shows age patterns of mortality for Japan and Sweden for the year 2001. In the older ages the mortality rates for Japanese are definitely lower than those for the Swedish. But in the younger ages the rates for Swedes are in some ages lower than for Japanese, though the Swedish case reveals some irregularities in young age groups because of their small number of observed deaths. This means that there may still be some room in near future for further mortality declines in the younger age groups among the Japanese and likewise there may still be some room to expand their life expectancies.

Table 6 indicates for males and females a percentage contribution of improvement in mortality by age group to an increase in life expectancy in Japan for three periods, namely 1891/98-1947, 1947-70 and 1970-2000. In the essentially prewar period 1891/98-1947, much contribution was made by the mortality declines in the young ages under 15 years, particularly in infant age 0. The decline in mortality among the early children under 5 years contributed to 68.3 percent of the rise in life expectancy for males and 60.1 percent for females. Next, in the postwar period 1947-1970, the center of gravity shifted to the middle-aged group and the declines in age groups 15-39 and 40-64 altogether account for 45.0 percent for males and 43.6 percent for females in lengthening life expectancy. Finally in the most recent period 1970-2000, the increase in life expectancy is largely attributable to the reductions in the middle-aged group of 40-64 years and the elderly age group of 65 years and over, altogether accounting for 73.7 percent for males and 83.6 percent for females. The elderly group 65+ alone explains 47.7 percent of the life expectancy increase for males and 63.5 percent for females. Thus, in the recent years the increase in the life expectancy means the reductions in mortality among the middle-aged and elderly age groups and the reductions in mortality among the middle-aged and elderly age groups mean an accelerated tendency toward more population ageing, in parallel to the ongoing fertility declines.

Table 7 (a and b) denotes a similar decompositional table in which the amount of contribution to an increase in life expectancy can be estimated by each cause of death group for Japan. From **Table 7**, it is evident that in the early period of the postwar era, say in 1955-70, the declines in mortality from infectious and parasitic diseases were the most important causes of death, thus having played a role at least temporarily toward reducing population ageing. But in the more recent period, the declines in mortality from a noninfectious or degenerative type of diseases have become much more important in contributing to a lengthening of life expectancy. Hence, the lengthening of life expectancy itself lately joins in contributing to accelerate the population ageig in Japan which is

Table 6. Changes in Life Expectancy and Percentage Contribution by Age Group, for Males and Females in Japan: 1891-98 to 2000

Time-period	Life expectancy (years)			% Contribution of mortality reduction in each age group(%)					
	Beginning of Period	End of period	Difference	0	1-4	5-14	15-39	40-64	65+
					Male				
1891/98-1947	35.29	50.08	14.79	51.2	17.1	10.8	8.8	9.4	2.7
1947-1970	50.08	69.31	19.23	22.9	19.6	5.6	27.5	17.5	6.8
1970-2000	69.31	77.72	8.41	9.9	2.8	2.7	10.9	26.0	47.7
					Female				
1891/98-1947	36.86	53.96	17.10	46.4	13.7	10.8	16.9	8.7	3.5
1947-1970	53.96	74.66	20.70	20.9	19.7	5.8	26.9	16.7	9.9
1970-2000	74.66	84.60	9.94	6.7	1.9	1.6	6.2	20.1	63.5

Source: National Institute of Population and Social Security Research. 2002 *Latest Demographic Statistics* (in Japanese), Tokyo, P.84

Table 7-a. Quinquennial Changes in Life Expectancy and Percentage of Contribution Attributable to Change in Mortality from Each of 17 Causes of Death: Males

Life expectancy and cause of death	Period of observation						
	1955-60	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90
a. Life expectancy at the beginning of period	63.597	65.318	67.735	69.310	71.726	73.349	74.782
b. Life expectancy at the end of period	65.318	67.735	69.310	71.726	73.349	74.782	75.921
c. Difference between a and b	1.722	2.417	1.575	2.416	1.622	1.433	1.139
All causes	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tuberculosis	28.9	13.3	13.5	6.8	6.7	3.9	2.6
Malignant neoplasm	-7.6	-1.0	0.6	2.5	-5.4	2.3	-0.3
Diabetes	-0.5	-0.8	-1.5	0.1	1.7	0.8	1.2
Heart disease	-3.5	2.2	-1.4	5.2	-5.9	7.8	12.6
Hypertensive disease	-3.7	-0.4	3.7	1.8	5.8	4.5	5.3
Cerebrovascular disease	-10.3	-0.5	19.5	28.0	39.9	50.9	41.5
Pneumonia and bronchitis	2.5	18.1	11.5	4.8	6.5	-2.5	-7.7
Ulcer of stomach and duodenum	6.7	2.7	3.5	2.3	3.2	2.7	4.4
Gastro-enteritis	14.3	7.5	6.6	2.6	2.5	1.7	-1.3
Chronic liver disease and cirrhosis	-1.1	-0.3	-3.4	-1.0	1.2	3.9	5.2
Nephritis, nephrotic syndrome and nephrosis	5.3	2.9	3.7	3.0	-0.7	-0.9	0.3
Sinility without indication of mental disease	11.4	4.6	9.0	5.8	3.0	5.6	9.7
Accidents and poisoning	-9.3	4.3	3.2	19.7	15.0	5.9	4.8
Suicide	9.7	7.4	1.2	-3.7	-0.2	-2.1	11.8
Other causes of death	57.3	30.1	30.4	22.1	26.6	15.5	9.9

Source: Calculated by Shigesato Takahashi, Institute of Population and Social Security Research, Ministry of Health and Welfare on the basis of various official mortality and demographic statistics, including Ministry of Health and Welfare, complete life tables, abridged life tables, vital statistics and the Statistics Bureau, Management and Coordination Agency, population census statistics reports and population estimates.

Table 7-b. Quinquennial Changes in Life Expectancy and Percentage of Contribution Attributable to Change in Mortality from Each of 17 Causes of Death: Females

Life expectancy and cause of death	Period of observation						
	1955-60	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90
a. Life expectancy at the beginning of period	67.748	70.194	72.921	74.656	76.889	78.765	80.482
b. Life expectancy at the end of period	70.194	72.921	74.656	76.889	78.765	80.482	81.904
c. Difference between a and b	2.447	2.727	1.735	2.233	1.875	1.717	1.422
All causes	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tuberculosis	21.7	10.8	8.8	4.5	3.4	1.4	1.0
Malignant neoplasm	-2.1	1.7	4.3	5.6	4.1	11.6	3.3
Diabetes	-0.6	-0.8	-1.5	0.3	1.9	1.1	1.6
Heart disease	-0.8	4.0	1.2	6.9	2.0	6.1	11.2
Hypertensive disease	-2.9	-0.7	2.9	1.7	6.4	5.1	7.7
Cerebrovascular disease	-2.3	4.4	18.2	25.1	33.4	42.9	41.6
Pneumonia and bronchitis	4.2	17.7	11.1	5.4	8.0	-0.6	-3.0
Ulcer of stomach and duodenum	2.1	1.5	1.2	1.0	1.2	0.9	2.8
Gastro-enteritis	12.6	9.4	6.9	3.4	3.6	2.1	0.7
Chronic liver disease and cirrhosis	0.4	0.7	-0.5	0.9	0.8	0.8	1.1
Nephritis, nephrotic syndrome and nephrosis	6.0	4.0	3.8	3.0	-0.9	-0.4	-0.1
Sinitity without indication of mental disease	13.3	7.0	15.4	13.0	5.7	10.3	19.2
Accidents and poisoning	-0.4	1.8	0.9	6.8	4.1	2.8	-0.1
Suicide	1.6	6.4	-0.4	-0.8	2.9	2.2	2.2
Other causes of death	47.2	31.8	27.6	23.3	23.5	13.8	11.7

Source: Calculated by Shigesato Takahashi, Institute of Population and Social Security Research, Ministry of Health and Welfare on the basis of various official mortality and demographic statistics, including Ministry of Health and Welfare, complete life tables, abridged life tables, vital statistics and the Statistics Bureau, Management and Coordination Agency, population census statistics reports and population estimates.

principally caused by fertility decline.

G. Fertility Decline and Its Determinants in Japan

It was already mentioned that fertility has declined to an unprecedentedly low level in recent years, much lower than the net replacement level. Since the fertility decline has been the most important determinant factor in causing the population ageing of Japan and since in recent years the issue of fertility decline has evoked great interest and concern among the government workers, industrialists as well as intellectuals, a few words must be devoted here to explain why the current Japanese fertility has precipitated to so low a level and how far the trend would continue in the near future.

On the basis of the vital statistics collected by the Ministry of Health, Labour and Welfare, the total fertility rate in Japan has been lower than the replacement level since 1974 (See **Table 4**). The recent movement is, however, unprecedented and beyond our previous experience and projections. In 1990, it went down to 1.53. In 1994 it went up slightly to 1.50, but in 2001 it was reduced to 1.33, the lowest ever recorded in Japan. Alarmed by this fertility plunge, many different groups of people, industrialists, parliamentarians or high ranking government officials expressed their concern and worries that the continuation of such a low rate would give enormous adverse impacts on the Japanese economy and society. According to one series of calculations tentatively prepared by National Institute of Population and Social Security Research, if the current low total fertility were to continue and the same life expectancies as observed in 2000 were to be kept constant for future years, the population of Japan would almost get extinct in 1,000 years' time. Such a calculation is of course a kind of science fiction, but it has struck out some demographic implications. And even before such a tragic state of affairs would have ever come true, it has been argued strongly that Japan will inevitably face the exceedingly advanced population ageing or a very large percentage of the elderly which may amount to one-fourth or even to one-third of the total population in Japan. If such an extraordinary population ageing has ever come to the seashore of Japan, it has been argued that Japan would collapse under the heavy dependence burden of the elderly, whereas the segment of population in working-age, say 15 to 64 which currently comprises hefty 70 percent of the total population, would ineluctably be reduced in proportion and in absolute number, and hence it could no longer afford supporting a heavy burden of old-age dependency in the fields of public pension, medical services, nursery and care of the elderly

people.

In Japan the feminist movement has not been influential; labor force participation by married women, while increasing, has been lower than in the United States and Western European countries; the oral contraceptive has been banned for medical reasons; and the divorce rate is lower than in the West and is rising more slowly. Why, in spite of conditions such as these that presumably would tend to favor higher fertility, has the Japanese total fertility rate recently been between 1.3 and 1.4, well below replacement level?

Actually, there are good reasons for the current low fertility in Japan. It is in a large part a response to that country's resource-scarce environment. Today, the Japanese population, at some 126 million, numbers about half that of the United States in an area smaller than the state of California. Japan produces practically no oil and little iron ore, and it imports much agricultural produce from such countries as the United States, Canada, and Australia. A scarcity of resources relative to population has figured in Japanese history since the 1860s, when massive efforts to industrialize began.

Distinguishing Japan and the surrounding East Asian region from other parts of Asia is the pervasive and deeply rooted doctrine of Confucianism. The role of Confucianism in Japan is probably comparable to that of Protestantism in Europe at the dawn of industrialization, as depicted by Max Weber. Confucianism emphasizes the ethical value of hard work, asceticism, frugality, and regularity in the daily conduct of life.

What happens when the scarcity of resources and the ethic of hard work collide? The answer is fierce competition within the society. This has led to the emergence of a quasi-meritocracy with an overemphasis on educational attainment. This in turn has contributed to declining fertility. After World War II, Japanese fertility fell sharply. Between 1960 and 1974 the rate was relatively stable at a level slightly higher than replacement, but after 1974 it declined to its current unprecedentedly low level. (It is noteworthy that 1973 was the year of the "oil shock": the Arab oil embargo reinforced the psychological resource-scarcity syndrome in Japan.)

In a resource-scarce but advanced society, fierce competition permeates every corner of life. Rigorous entrance examinations for ranking universities and for large and prestigious corporations become common. Resource scarcity narrows the chances for a better quality of life. Demographic responses to such an environment are to delay marriage and reduce family size.

An attempt will be made to elaborate briefly on three features of modern Japan that are relevant to the current fertility picture: the postponement of mar-

riage in response to scarce resources and narrow life chances; tough entrance examinations for admission to high schools and universities; and the emergence of a mass-consumption culture.

1) Postponement of Marriage

Age at first marriage in Japan has become one of the highest, if not the highest, in the world. According to 2001 vital statistics, the mean age at first marriage was 29.0 years for males and 27.2 years for females. For females this represents a rise from a mean age of 23.0 years in 1950 and 25.2 years in 1980. Although the divorce rate in Japan is not among the highest in the world, the very high age at first marriage effectively shortens the reproductive span of married couples. According to the 2000 census, the proportion of the population aged 20-24 who were currently married was only 11.3 percent for females and 6.8 percent for males. Even in the age group 25-29, the most reproductive age group, only 43.5 percent of females and 29.6 percent of males were currently married.

Since fecundability starts declining after age 30 and by age 35 is reduced to three-fourths of the full-capacity of fecundability level attained at ages 20-27, late entry into married life, in a setting inimical to premarital births, acts as a biological depressant to fertility. It keeps some Japanese couples from achieving their desired or expected fertility (Institute of Population Problems, 1993). According to the national fertility surveys in 1977, 1982, 1987, 1992 and 1997, Japanese couples expected to have 2.2 children on average the number being remarkably stable; in those years, however, observed yearly fertility was below replacement (Institute of Population Problems, 1988 and 1993; National Institute of Population and Social Security Research 1998).

Late marriage in Japan is due to the interplay of economic and social factors. Housing is extremely costly, and young men are not expected to marry until they are capable of maintaining new households without financial assistance from their parents. In addition, marriage in Japan is a very costly event: wedding ceremonies are elaborate and expensive; before the start of marriage the groom must make financial arrangements to set up a new home, and the bride must bring a dowry in kind if not in cash. Normally, a bride is expected to bring to the new home all the necessary furnishings-including major household appliances and furniture.

In recent years, it was said that particularly young women came to disenchanted with marriage life or with expected image of marriage life that they

paint. Partly because many women now work in contemporary Japan, the economic necessity to get married has been weakened, hence many females do not have to rely their life upon their husbands. Secondly the imbalanced sex ratio exists in young ages, say 18 to 35, particularly in urban areas, where men are more abundant in the unmarried population. Woman may enjoy her demographic advantages only waiting for a most eligible bachelor who has qualifications of three-high's, that is, taller, better-educated and more income than herself. It has been argued that this hypergamy trends let women postpone their marriages and even increase the percentages of unmarried women in their 30s and early 40s. Thirdly, it was also pointed out that the mechanisms of match-making leading to marriage (miai kekkon) have become weakened for various reasons: urbanization and accompanying increase in anonymity, lack of community tie, young people's individualistic attitude. Although the traditional system of miai kekkon or match-making marriage is ebbing, there is no alternative system replacing this century-old system.

2) Competitive Entrance Examinations

Another important factor conducive to low fertility in Japan is the exceedingly rigorous competition for admission to ranking schools such as the University of Tokyo. It is an ordeal not only for the applicants but also for their families. The advantages of success are great, the costs of failure severe. One lucky enough to gain acceptance to a prestigious school wears badge of honor for the rest of his life. A graduate of a ranking university is usually promoted faster than others and benefits professionally from membership in a network of alumni who hold key positions in government and business. Sometimes, prestigious corporations send notices of job openings only to ranking universities. Actually such universities do provide the highest quality education and training to their students. Those achieving exceptional marks in the highest ranked civil service examinations are usually graduates of law schools of top universities.

Japanese society is not a land of continuing opportunity for people who seek a good career or success in life. Once a young man or woman fails to pass an employment examination to enter government of a prestigious corporation as a career officer, he or she is not given another chance. In the government service, only career officers who enter their positions with topnotch test scores are permitted to become directors.

The ordeal of educational competition begins when young children start preparing for examinations in primary school and even in kindergarten. In order

to get into a good university, one has to enter a good senior high school, and to get into a good senior high school, one has to enter a good junior high school, and so on. In Tokyo at 10:00 p.m. on Friday, suburban trains are filled with primary school pupils aged around 10 who are just returning from well-known juku (after-school cram sessions) located in the central district. Some of them are already asleep, but the strong ones are rehearsing what they have just been taught. To foreigners it is an eerie scene.

In a national sample survey conducted by the Office of the Prime Minister in 1985, about 80 percent of the approximately 10,000 respondents aged 20 years and over felt that the social hierarchy and professional mobility pivot around employees' academic careers, particularly the stature of the universities from which they graduated (Office of the Prime Minister, 1985). A graduate of an outstanding school like the University of Tokyo can not only get a good job in government or in a respectable large corporation, but can also reach a high step on the hierarchical ladder.

This characterization of the academic career-centered system of promotion and upward mobility in Japan still requires statistical substantiation, but an important point is that it is entirely consistent with public perception. Hence, it is natural for anyone with above-average intelligence and some career ambition to try to get a ticket for the super-express in his life course. Thus, severe and ruthless examinations become the style of life in Japan. Under such circumstances, children become financially and psychologically expensive. Once modern methods of family planning and abortion have become available to every household, no one wants a large family. In Japan the ideal number of children (the number the average couple would like to have if circumstances permitted) is three, but the expected family size is two. In the most recent national fertility survey conducted by the National Institute of Population and Social Security Research in 1997, one question asked why the couple did not attempt to have their ideal family size. The four most frequent answers from couples with wife aged 20-34 were as follows; (1) the cost of education is too high; (2) raising children requires a lot of money; (3) raising children imposes heavy physical and psychological burdens on the parents; (4) the presence of children is in conflict with women's employment (National Institute of Population and Social Security Research, 1998). The answers did not identify burdens from the strain of preparing for school entrance examinations since the questionnaire was not structured to ask such a question, but the implication would be clear.

3) Advent of the Mass Consumption Society: Reinforcing the Fertility Decline

A major characteristic of Japan is its homogeneity in race, religion, language, and even social class. Once every few years leading newspapers in Japan, such as Asahi Newspapers, repeat a public opinion poll asking "to which social class according to the grouping of 'upper', 'middle', or 'lower' do you think you belong?" Each time, more than 80 percent of interviewees respond that they belong to the 'middle' class.

It is well known that income differentials among Japanese workers are the smallest among the industrial market economies. Superimposed on Japan's small territory and its homogeneity in language, social class, taste, and life styles has been the Western-based mass consumption culture, involving universal television ownership and an enormous volume of advertisement of consumer goods and services in every household. Thus, every other home in the neighborhood and every other colleague at the office serves as the reference group of the ''middle class''. Japanese couples are confronted by innumerable "musts" that they need to buy to maintain their middle-class status and prestige. Already the two-child norm has become a household word in Japan. Under the circumstances, having more than two children has fallen totally out of fashion and having more than two adolescents at home strenuously preparing for examinations for admission to high schools and universities seems out of the question. In short, the low birth rate is a natural consequence of the social and economic conditions just described.

4) Increasing Dilemma between Women's Work and Bearing and Rearing Children: Women's Revenge

The recent precipitation in the fertility of Japan has sent a wave of shock through many groups of Japanese people, whether professional or laymen. Some critics have even come to interpret this phenomenon of unprecedented fertility decline as a revenge of women against the present male-oriented and male-dominated society and institution, the long fortressed and nurtured male chauvinistic system of society. The women's revenge might even be called as an anti-Machismo movement in East Asia. This is clearly related to the general trend among the Japanese women towards gainful employment outside of home and may be in a line with what Kingsley Davis, a well-known social demographer, once called the greatest silent revolution in the twentieth century. Al-

though women's labour force participation may be lower than many European countries and the United States and Canada, the rate has been increasing and furthermore women's school enrollment in colleges and universities is a record high.

As already mentioned, some industrialists and parliamentarians as well as high-ranking officials of the Government have come to worry about the current exceedingly low level of fertility and have been urging the Government to do something in order to thwart this current of low fertility. These groups of people have come to be seriously concerned that if the current low fertility would prevail in the future, the Japanese industries could not secure a full recruitment of young labour force fresh out of school and the Japanese economy would lose its vitality which has been a part and parcel of the strength in the thrust of Japanese economy. Furthermore, these people argue that the imminent population decline must shake up the very foundation of Japan's current prosperous economy and threaten the future economic growth. The increasing population ageing would create an acute shortage of young and docile segment of manpower and would entail in the decline in productivity and slump in saving rate. These people seriously consider that inasmuch as Japan lacks natural resources the only abundant are human resources with a high quality of education and hard-work ethics and such have been the panacea for Japan's miraculous economic achievement in the past. Without abundant manpower resources with a high level of education and aspiration, Japan must in the long run lose its advantageous position in the world economy.

On the other hand, however, some groups of women, notably those female intellectuals related to Japan's feminist movement have been arguing otherwise that it is a woman who bears and rears children and industrialists, parliamentarians and government officials cannot enforce pronatalist population policies and programmes upon the families without a full consent by women. The current unprecedented decline of fertility simply means the disenchantment of women with the current state and mode of family, marriage and reproduction which are male-dominant and often patriarchal. They argue that women are not a childbearing machine and they are flatly opposed to the government officials and industrialists' views which they regard as rather short-sighted and unbalanced.

As already mentioned, in Japan and East Asia, Confucianism provides the people in this region with major moral and ethical code governing the daily conduct of people. But, if there are any gaps in this outstanding moral system and philosophy, it is that sufficient attention has never been paid to women. In Confucianism's doctrine, there is no status of women in the family. In the Confucian regime, women have long been considered a kind of childbearing machine and domestic servant for men. Now in the 1990s women are making quiet and non-militant protest against men and against the long-cherished East Asian version of Machismo. It is assumed that some of the consequences out of such women's revenge would be the postponement of marriage, non-marriage and non-bearing of children on the part of women, hence decline of fertility. Such a situation will continue until the day when men come to make a peace treaty with women, until the day when women's status has been elevated so as to become equal and equitable with men's, and until the day when women's work aspiration has been harmonized with their childbearing and rearing activities with full cooperation of men and with institutional support by the Government.

2. Population Ageing and Changes in the Family and Household

A. General Framework

The family or household is a single unit for many social and economic activities, including income maintenance, economic dependency, savings, fertility, migration, social welfare and social adjustment, etc. Very broadly speaking, the family or household has two different aspects in relation to the process of population ageing. First, the family itself undergoes its transformation by demographic changes through the ageing process. Secondly, the family as a small group serves as buffer to its members to lessen the social and economic impact of population ageing superimposed upon it as if from outside before reaching individual members. The present chapter deals mainly with the former aspect, but consideration is also given to the latter.

Population ageing has very important bearings on the changes in the number and structure of the family and household. Let us first discuss how much population ageing is attributed to determine the size of the family and household. Then, an attempt is made to look into the course of transformation in which dynamics in population ageing affect the structure of the family and household. Here the term ''structure" mainly means the composition of the household by family type and patterns of co-living of the elderly with their offsprings.

B. Change in the Size of Household

The recent demographic changes in Japan have been rapid and have made quite considerable effects upon the family size and structure. Obvious changes occur in the average size of household and family in Japan. **Table 8** represents trends in average household size for Japan.

It is apparent that the household size has shrunk down considerably in the long run during 65 years' time span, but some may wonder why the process of shrinkage in the household size has been so slow in comparison with the fertility decline occurred roughly at the same time. For example, total fertility rate had substantially been reduced from 3.65 in 1950 to 2.00 in 1960. On the other hand, however, the average size of household diminished from 5.02 to 4.52 only by 0.50 in term of persons per household between the same years. By the same token, for the Republic of Korea, while total fertility rate was reduced from 4.47 to 3.33 between 1970 and 1975, the average household size shrunk from 5.2 to 5.1 only by 0.1 person per household. It seems that there always exists

Table 8. Trend in the AVerage Household Size for Japan: 1920-2000

Census year	Average size (persons)
1920	4.99
1925	4.98
1930	5.07
1935	5.13
1940	5.10
1947	4.92
1950	5.02
1955	4.97
1960	4.52
1965	4.08
1970	3.73
1975	3.48
1980	3.25
1985	3.17
1990	3.01
1995	2.85
2000	2.70

Source: Statistics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *Population Censuses*.

Note: Definitional changes have been introduced to the concept of "household" since the 1970 census.

some kind of demographic lags, so that the process of reduction in household size does not necessarily follow the trend in decline in fertility in an immediate sequence. Part of explanation may be sought in the mortality reduction taking place at the same time, the mortality reduction which facilitates enlarging the household size in a completely opposite direction to the effect of fertility decline under the circumstances where fertility does not drop. The substantial reduction in child mortality occurring in the early cycle of demographic transition precisely means an increase in fertility in Japan. Between 1920 and 1935, the size of household increased appreciably and this phenomenon is principally attributable to a reflection of mortality improvement. In Singapore, by the same token, between 1957 and 1970, the household size increased sizably from 4.8 to 5.4 and this enlargement may at least partly be explained by mortality reduction.

Nevertheless, when demographic evolution proceeds, effects of fertility decline have been captured sooner or later in the household size and structure when the mortality decline has lost its momentum and the rise of life expectancy has hit the plateau. The diminution of household size has started out and then it precipitates. The average size of households for Japan was 2.84 in 1995 and will soon become 2.5 by 2020 according to the projections (National Institute of Population and Social Security Research, 1998).

According to a multiple regression analysis performed by the United Nations Population Division some years age (United Nations, 1969), the shrinkage of household size was mainly attributable to the reduction of fertility. This relationship may still be holding at present. However, the increasingly significant process of nuclearization or nucleation of the family due to mortality reduction, general rise in level of living, urbanization, industrialization, etc., would have also been fairly important for contributing to determine the average household size. This is again not a very recent one, but according to a decomposition study for Japan attributing to various factors the difference between average household sizes in different years, the effect of fertility decline explains 70 percent of the contraction in the average household size from 1955 to 1965; 20 percent were attributed to internal migration and the remaining 10 percent attributed to the nuclear fission, which in turn presumably originated from economic and social factors, notably from the rise in per capita income, urbanization, enhancement in education, and the emergence of individualism, etc. (Kono, 1969).

Table 9. Trends in Household Structure, by Family Type, Japan

(percent)

Year	The number of total private households (thousands)	One-person households	Nuclear family households				Other related households	Non-relative households
			Total	Husband and wife only	Husband, wife and children	One parent and children		
1960	22,231	16.1	53.0	7.3	38.2	7.5	30.5	0.3
1970	30,297	20.3	56.7	9.8	41.2	5.7	22.7	0.3
1975	33,596	19.5	59.5	11.6	42.5	5.4	20.8	0.2
1980	35,824	19.8	60.3	12.5	42.1	5.7	19.7	0.2
1985	37,980	20.8	60.0	13.7	40.0	6.3	19.0	0.2
1990	40,670	23.1	59.5	15.5	37.3	6.8	17.2	0.2
1995	43,900	25.6	58.7	17.4	34.2	7.1	15.4	0.3
2000	46,782	27.6	58.4	18.9	31.9	7.7	13.6	0.4

Source: Statistics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *Population Censuses*

C. Change in the Family Structure

When the size of household diminishes, so does the structure of the family change. For example, a recent article by Weinstein and others, (Weinstein *et al*, 1990) also signifies some trend of family nucleation and decline in the stem or joint type of families in Taiwan.

The overall picture is, however, not simple. As shown in **Table 9**, according to the census statistics on households by type, the proportion of nuclear family households has been relatively stable since 1975 without a sigh of significant increase, though the type of "other related households" which practically means that of three-generation families shows a very clear trend in decline. It can be argued that this trend of non-increase in proportion of nuclear families is partly due to the rapid fertility decline which in turn causes the decreased supply of married sons eligible for nuclear families, that is non-eldest sons, if the propensity for living with the married eldest son does not substantially decrease (Yi, 1986; Hiroshima, 1988). But anyway, it can imply the tenacity of the stem-family orientation in Japan like any country in East Asian Region. Even though there are strong currents flowing towards modernization and concomitantly industrialization and urbanization, the traditional cultural influences imbued with Confucianism and kin-orientation are so strong a force as to foster the way of life supporting an perpetuating the three-generation family mode. In the case of Japan, however, in reference to **Table 9**, substantial increase is noted for one-person households. If these one-person households are added to the nuclear-families, then what may be called "nuclear-family like" households demonstrate a clear trend of increase.

D. Three-generational Co-residentiality among the Elderly

Table 10 indicates the trends in structure of households by family type having at least one elderly person aged 65 and over. This table reveals a quite notable result since three-generation households show the largest share in percentage distribution though the proportion has long been declining. In this table, the trends are clear: (1) an increase in nuclear-family like households, including regular nuclear-family households and one-person households and (2) a gradual but fairly appreciable decline in the proportion of three-generation households.

Table 11 indicates the patterns of living arrangement among household members aged 60 and over in Japan in 2000. This table presents unique data on living arrangement of the population aged 60 and over classified by five-year

Table 10. Trends in the Percentage Distribution of Households by Family Type Having at Least One Elderly Person Aged 65 and Over, Japan. 1975-2001

(percent)

Year	Total households (thousands)	One-person households	Nuclear family households				Three-generation family households	Other types of households
			Total	Husband and wife only	Husband-wife and unmarried children	One parent and unmarried children		
1975	7,118	8.6	22.7	13.1	6.7	2.9	54.4	14.4
1980	8,495	10.7	26.7	16.2	6.7	2.8	50.1	12.5
1985	9,400	12.0	29.8	19.1	6.4	4.3	45.9	12.2
1989	10,774	14.8	32.6	20.9	6.8	4.9	40.7	11.9
1990	10,816	14.9	33.2	21.4		11.8	39.5	12.4
1991	11,613	15.6	34.1	22.1		12.0	38.5	11.7
1992	11,884	15.7	34.9	22.8		12.1	36.6	12.8
1993	12,187	16.3	35.9	23.3		12.6	35.9	11.8
1994	12,853	16.4	36.4	24.0		12.4	34.9	12.2
1995	12,695	17.3	37.1	24.2		12.9	33.3	12.2
1996	13,593	17.4	38.6	25.0		13.6	31.8	12.2
1997	14,051	17.6	39.8	26.1		13.7	30.2	12.4
1998	14,822	18.4	40.4	26.7		13.7	29.7	11.6
1999	14,887	18.2	42.9	27.7		15.2	27.3	11.6
2000	15,647	19.7	41.6	27.1		14.5	26.5	12.3
2001	16,367	19.4	43.5	27.8		15.7	25.5	11.6

Source: Department of Statistical Information, Ministry of Health, Labour and Welfare, *Kokumin Seikatsu Kiso Chosa no Gaikyo (Comprehensive Survey of Living Condition of the People on Health and Welfare)*, 2000,Tokyo, 2001.

Note: Before 1985, it was called Kosei Gyosei Kiso Chosa (Social Survey for Health and Welfare Administration).

Table 11. Percentage Distribution of the Household Members Aged 60 and Over by Five-Year Age Groups and Status of Co-living or Being Separated: Japan, 2000

(percent)

Age group	Total household members (thousands)	One-person households	Households of married couples, no co-living relatives	Co-living with their children			Households co-living with other relatives	Households co-living with non-relatives
				Total	Co-living with married children	Co-living with unmarried children		
60+	29,869	12.7	34.5	48.3	24.4	23.9	4.4	0.2
60-64	8,042	8.7	38.3	46.2	10.9	35.3	6.6	0.2
65-69	7,361	11.8	41.5	41.6	17.3	24.3	5.0	0.2
70-74	6,044	14.1	38.5	44.2	26.1	18.1	3.1	0.2
75-79	4,090	17.0	28.6	51.9	35.0	16.9	2.4	0.2
80+	4,332	15.4	15.3	66.2	49.1	17.1	2.8	0.3
70+	14,465	15.3	28.8	52.9	35.5	17.4	2.8	0.2

Source: Department of Statistical Information, Ministry of Health, Labour and Welfare, *Kokumin Seikatsu Kiso Chosa (Comprehensive Survey of Living Condition of the People on Health and Welfare)*, 2000, Tokyo, 2002.

age group as to whether living alone, co-living with their spouses, co-living with their married children, etc. This type of data are not available by the census, but only by the sample survey by the Ministry of Health, Labour and Welfare. This table clearly shows the continuity and tenacity in the traditional mode of living arrangement in Japan. Even though the three-generation family households has steadily been declining in proportion, still 48 percent of the aged 60 years and over co-live with their children and 24 percent co-live with their married children. Furthermore, when they get older they tend to co-reside more numerously with their children, particularly with the married. For age group 80 years and over, two-thirds co-lived with their children.

Again, the elderly co-residentiality with their children is still substantial in Japan even in late years. Nevertheless, its recent decline has been somewhat noticeable. For example, according to the 1995 survey, the percentage of elderly persons aged 60 years and over co-living with their children was 52.8%, but according to the 2000 survey, it has appreciably been reduced to 48.3%, the second consecutive time the figure having fallen below the 50% mark. On the other hand, however, it is very interesting to note that from 1995 to 2000, the percentage of the elderly aged 60 years and over co-living with unmarried children has slightly increased from 22.9 to 23.9%. For the age group 60-64 particularly, the figure has increased from 32.6 to 35.3%, not a negligible increase. This might be interpreted in such a way that their sons and daughters in marriageable ages are not getting married and establishing their own separate households elsewhere as much as they used to be and that some ofthem still stay with their elderly parents.

According to the 1985 Family Life Course Survey conducted by the Institute of Population Problems (Family Life Course Survey, 1986), 52.5 percent of the total respondents numbering 7,708 expressed the view that if one could live in a three-generation household, he would feel happier. Then, 38.4 percent of them believed that the three-generational co-living should be a more natural and human way of living arrangement whereas only 25.2 percent of them believed that the nuclear family should be a more natural and human way of living arrangement (Institute of Population Problems, 1986). According to the recent attitudinal survey by Cabinet Office, 43.5 percent of the elderly aged 60 and over felt happier if they could live together with their children and grandchildren (Cabinet Office, 2001).

However, the model of three-generational family as living arrangement particularly for the elderly may not be a perfect solution and the many problems arising from such a mode of living are already well documented. The conflict

between mother and daughter-in-law is a classical one, and differences between generations are enormous in respect to taste of food, bio-rhythm, wake-up and sleeping time, susceptibility to different temperature, and more generally, way of thinking and behaving. Elderly suicide rates were reported higher among the three-generational settings rather than otherwise (Ueno, 1981). Yet, when the elderly get older and more frail or one of the elderly couple dies, then in many cases the remaining elderly person tends to give up living by himself or herself and bring their relatives in their home or join the relative's household.

In the Western as well as in the Eastern societies, many studies have pointed to the significant role that families play in caring for the elderly. Even though the society and the Government can prepare expenditure budgets to pay to the elderly a decent amount of social security installment and medical expenses, the role of the family in making a linkage between the Government and the elderly would never be lessened. While only a minority of the elderly routinely require help from others at any one time, where help is needed much of it is provided by family members, either inside or outside the household. Suppose that an old person gets physically and mentally weak and bedridden, the public assistance and institutional help together with the Government's financial aid may not be sufficient to support and maintain their decent life. In many cases the person providing support will be the spouse. However, as the support and care that required gradually become more extensive with increasing age, the more likely it is to be provided by other relatives, principally daughters or daughters-in-law. Such relatives play a role in sustaining the elderly and helping those who require assistance in preparing food, shopping, doing the laundry and toileting.

Allan (1985) stresses in the advent of the aged society the family care increases in its cost, not only monetarily but also non-monetarily. First, the real costs of providing care can be very high. With increasing frailty, when survival chances increase in the elderly, health and medical services increase. The consequence is that the support they require fits less easily with all other activities family members normally expect to engage in. Gradually, the tending they need becomes far more demanding and time-consuming which is the equivalent of a full-time job. It becomes hard work especially for those who are themselves no longer young. Often the sons and daughters in their sixties take care of their parent in their eighties.

In this connection, it should be borne in mind that while caring for the elderly can make demands on all family members, the brunt of the burden is undoubtedly borne by women (Allan, 1985), often by daughters-in-law in Japan. In conclusion, the Japanese model above-mentioned did perhaps nicely work

out when mortality was high in the middle and old ages and there were few survivors of the elderly in the stem family households. In that situation, if they survived, they were hale and strong and particularly very useful with knowledge and skills they had accumulated. But when the life expectancy has increased dramatically and there are many survivors, some of whom are infirm and bedridden, it is not sure at all how long the three-generational family household as an optional mode of living arrangement for the elderly can last and can support such onus. But, on the other hand, it is also not sure whether the present model of the West letting the elderly make their own living in the spirit of independence and self-reliance to the latest possible limit can still work nicely in the prospect of further prolongation of life expectancy in the advanced ages and increases in the age segments that is what may be called "ageing within the aged".

Summary and Discussion

The imminent arrival of aged society is recognized as inevitable in Japan, inasmuch as it is an accumulated result of long past demographic trends. Even a drastic increase in fertility which may often be of involuntary nature cannot evade a collision course of population with a forthcoming ageing society, characterized by old-age dependency and the state in which there are more elderly people than children. Certainly, the term "population ageing" has become a household word to an average citizen in Japan. Population ageing has been considered one of the most crucial demographic and social issues facing contemporary Japan.

Contrary to the generally held notion that the prolongation of life expectancy brings about the process of population ageing, the established demographic theory teaches us that lowering fertility is the most important locomotive to reach population ageing. Usually, according to the experiences of recent demographic transition in both the developed and developing countries, increases in life expectancy have been brought up by sharp drops of mortality in infancy and childhood, rather than by mortality reductions in the middle and old-aged groups. Hence, assuming no fertility changes, an increase in life expectancy usually brings about population rejuvenation or population youthening. It is the fertility decline that changes the age profile of population. Fertility decline actually slices off the hefty population piece at the bottom of population pyramid, thus increasing proportion of the aged in the total population at the upper layers of the age profile. In recent years, however, the trend has changed slightly

in such a way that mortality changes are more remarkable in the middle and elderly groups of population than in the childhood, hence mortality decline in general means to work out more directly in increasing the sheer percentage of the middle and elderly level of populations.

Many arguments have been made to the forthcoming exceedingly advanced population ageing in Japan where total fertility rate has not easily been on rise, and the population size in the future may become its incipient decline. The projected figures of future population structure do not give anybody a very rosy prospect of the future population trajectory in which the old-age dependency ratio would very definitely increase, elderly/children ratio would also increase very rapidly, while the working-age population who are the incumbent to support the social costs of the aged would definitely shrink in absolute number as well as in proportion. In view of this, one cannot help but think that the humankind is between Scylla and Charybdis in the whirlpooling strait of population, the former character symbolizing the over population and heavy youth-dependency due to high fertility and latter character indicating the ageing of population due to fertility decline and heavy old-age dependency.

What are we going to do in this context? What we must recognize is that the ageing society is a kind of inevitable state of affairs derived from the process of demographic transition, the process of transformation of high birth rate and high death rate to low birth rate and low death rate. What we should do then is to prepare and formulate appropriate programmes in keeping abreast of and in being harmony with the imminent arrival of a super-scaled ageing society. But, at the same time, we must reckon some good aspects of ageing society where the probabilities of surviving among the aged are very large, hence the investment on human resources would get the maximum returns. There are many substantial benefits to be accrued from the population ageing. It is envisaged that decrease would be seen not only in juvenile delinquency but also in general crime, violence, rape, vandalism, etc. It is also envisioned that automobile and motor-bike accidents would considerably be reduced and consequently the streets would regain tranquility and automobile insurance premium would appreciably be reduced. But let us discuss more fundamental issues relating to the demography and sociology of the nation.

There is, however, one aspect of social gains which population ageing brings to the society and its people - that is, a remarkable improvement of survivorship. Phenomenal increases in the life expectancies for males and females enable them to reach the adulthood (say, age 22 years) in the probability of 99 out of 100 births born at the same time and to complete their working life at age

65 years in the probability of 88 percent under the lowest mortality experience as seen in Japan. In the case of Japan, say, in 1935, only three-fourths of the babies born could reach adulthood and only 30 percent could attain the terminal age of working life (65 years). In Japan, the total cost of upbringing a new born baby to college graduation is now estimated approximately at US$300,000 according to the current Japanese price index and university fees until he gets a gainful job after graduation from the university. Suppose that approximately 1.2 million babies are born annually in Japan. If they have to go through the same mortality schedule as in 1935, approximately 300,000 persons would never reach age 22. Then, Japan as a whole would have lost US$90 billion since human investment of $300,000 per person could not produce any returns. There is one thing, however, one has to consider additionally-that many people die not just one day before reaching age 22; many die during the first year of life after birth long before reaching the age of college graduation, so that the nation actually does not waste $300,000 entirely for each premature death. Suppose the nation wastes only one tenth of $300,000 per young man on the average. Even on this assumption the nation would have saved, under the low mortality level as is being experienced now, about US$9 billion each year for each single-year cohort, which is not small money at all.

If that vein of calculation is extended to assess the number of person years gained throughout working ages and if their net contributions to the society are made possible by an increase in life expectancy (remember that nowadays 88 out of 100 births survive to age 65 while only 30 had a chance of surviving in 1935), then such gains in human resources otherwise foregone by premature death would be tremendous. The gains thus accrued from the increase in life expectancy may compensate at least for a good portion of the increase in the Government's spending for bolstering the social security and medical care cost for the elderly.

At the same time, another cheer for the aged society is an expectation of abolishing century-old seniority system prevailing in Japan where the ascribed status such as sex, age, cohort, year of entrance, etc. rather than the merit of achievement and performance, determines status, reward and remuneration in social stratification.

By and large, the seniority system in social stratification has a raison d'etre in a traditional broad-based population pyramid which is an outcome of high fertility and high mortality; as age increases, the next older population dwindles quickly. In such a broad-based, pyramid-shaped population, the old-age persons were of relative rarity and the chances were that only strong and wise ones

survived. In a relatively slow-moving society without frequent technological innovation, skills and know-hows in productive work were cumulative and the knowledge and wisdom of old men who were scarce in number were very useful and instrumental for work, life and group solidarity. To be sure, along with the process of ageing, this bottom-wide, triangle-shaped population pyramid is transformed into a more rectangular-shaped age silhouette created by a decline in fertility and a decline in mortality in the middle-age and the elderly. In such a population, the old-aged persons are no longer rare and uncommon but plentiful and ubiquitous.

In the increasingly ageing society, the century-old social seniority system together with the patriarchal family or extended family system prevalent in Japan and elsewhere may be expected to crumble someday from the very demographic reasons along with the process of modernization, industrialization and urbanization, though it may still take a long time to take place.

It has been pointed out that many older people wish to continue working because they are still vigorous, want more money, want to establish self-reliance; and they need a sense of being wanted and a sense of being creative. But their wish to continue on working is seldom realized or seldom honoured; in fact, older people are shunned away from the productive work inasmuch as there is a stronghold of seniority system and value system in a traditional society in which ascription rather than achievement has been the criterion of selection, criterion of reward and punishment. This criterion is now under demographic pressure to change and it is a good thing.

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Chapter 2

Overview of Future Trends in Population of Japan

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Introduction

According to the new future population projections prepared in 2002 by the National Institute of Population and Social Security Research, it is predicted that the aging population in Japan will reach a much faster and higher level than the 1997 projection. The difference between the 1997 and 2002 projection is that the 2002 is based on the feeble assumption on the future trends of the fertility rate.

Especially, the declining of fertility rate keeping below the population replacement level appears to significantly affect the level of aging population in the future, and leads to the diminishing future population. The discussion below is based on the premise of the new population projections, and summarizes the recent trends of the fertility rate. From the result of the new population projections, the traits regarding Japan's aging population will be outlined.

The Trend of Fertility: Past and Future

Total fertility rate in Japan has continuously declined yearly since 1973. Although from 1982 to 1984 the rate had increased momentarily, after that it began to decline (see **Figure 1**). The year 1989 was the lowest rate of 1.57 recorded in the history of Japan's vital statistics and it was lower than the year of HINOEUMA (year 1966). Thereafter, the rate had continued to decline with minimal changes, which eventually reached 1.36 by 2000.

The direct cause for Japan's declining fertility rate is due to the delaying

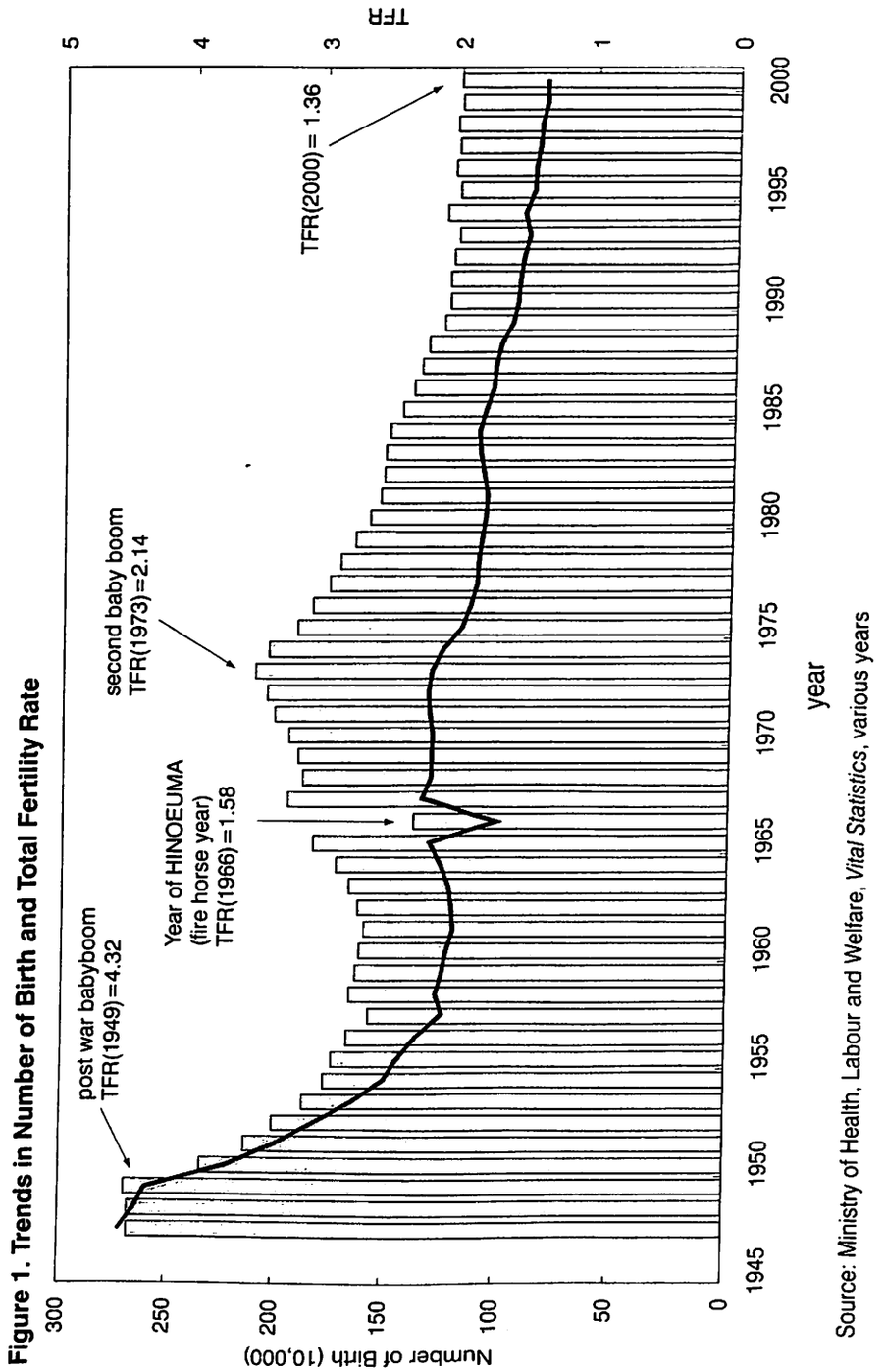


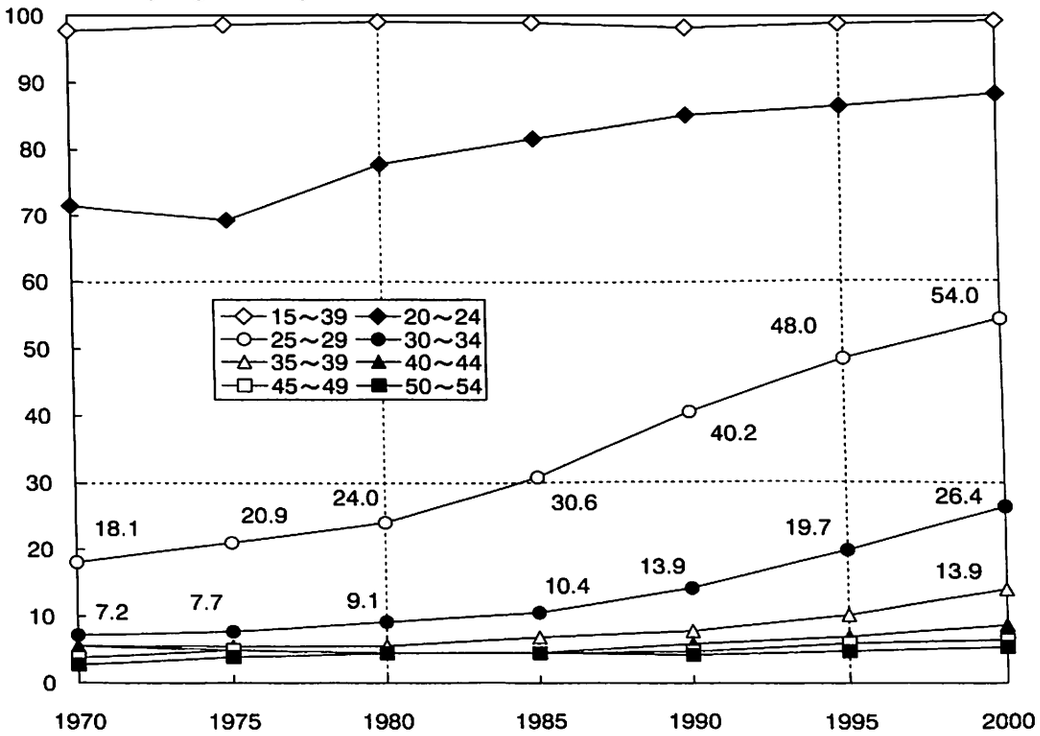
Figure 1. Trends in Number of Birth and Total Fertility Rate

Source: Ministry of Health, Labour and Welfare, *Vital Statistics*, various years

marriage age among the young generation. Also, due to the reduced prevalence of marriage the proportion of the age group among the child-bearing females has significantly declined. Examining the females in their late 20s, 80.3% were married in 1970, but by the year 2000 this percentage was reduced to 43.5%.

The decline of the proportion of married population was due to increased proportion of never-married population. But, since the proportion of never-married at that same time had increased from 18.3% in 1970 to 54.0% in 2000, it can be concluded that the rapid increase of proportion of never-married had caused the above mentioned decrease of the proportion of married (see **Figure 2** regarding the changes of the proportion of never-married as well as other age groups). Besides, the increased proportion of never-married has certain correlation to the change in the timing of marriage. That is, the females' average first marriage age had greatly increased from the age 24.2 in 1970 to the age 27.0 in

Figure 2. Trends in Proportion of Never Married Population by Age Group for Female



Source: Statistics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *Population Census*, various years

2000. It can be concluded that the increased proportion of never-married among the age 20s means significant numbers of delayed marriage.

Either the increased proportion of never-married or the decreased proportion of married had serious impact over the fertility rate at that same time. In fact, the degree of the impact can be examined.

Table 1 shows the changes in total fertility rate by age groups beginning the year 1970. The table shows the analysis of how the changes due to proportion of married and marital fertility rate had impact on the age groups. It shows that after the year 1970 and each term thereafter, the total fertility rate had declined. The reason is that the declined proportion of marriage had always exceeded the change of the marital fertility rate. In fact, the marital fertility rate after the 1980 influenced the elevation of the total fertility rate. That is, the declined total fertility rate at this term of years was not due to diminished numbers of child birth. It is clearly understandable then that the young people among the 20s had not married.

From the analysis of cohort fertility rate based on National Fertility Survey, a new phase of the fertility declining was clarified. The number of children to whom the married couple gave birth was stable from 1930s birth cohorts to 1950s birth cohorts. However, a rapid change has taken place in married fe-

Table 1. Decomposition of the Changes in Total Fertility Rate: 1970-2000

Year	1970	~	1980	~	1990	~	2000
Total Fertility Rate	2.13	→	1.75	→	1.54	→	1.36
change		-0.39		-0.20		-0.19	
	Change due to Proportion Married						
Total		-0.24		-0.36		-0.24	
15 ~ 19		-0.01		-0.01		0.01	
20 ~ 24		-0.14		-0.13		-0.05	
25 ~ 29		-0.09		-0.20		-0.14	
30 ~ 34		-0.01		-0.03		-0.06	
35 and Over		0.00		0.00		0.00	
	Change due to Marital Fertility						
Total		-0.14		0.16		0.05	
15 ~ 19		0.01		0.00		-0.01	
20 ~ 24		0.01		-0.02		0.01	
25 ~ 29		-0.05		-0.01		-0.06	
30 ~ 34		-0.07		0.14		0.05	
35 and Over		-0.04		0.05		0.05	

Note: calculation based on five year age groups

males who were born after 1960's.

On the basis of the premise of the recent change in fertility rate, by analyzing the trends on marriage by each generation and on fertility among the married, it is possible to make the projection of the future total fertility rate. In the projection released in January 2002 by the National Institute of Population and Social Research, the total fertility rate based on medium variant assumption will decline from 1.36 at the beginning of the year 2000 to 1.31 at the year 2007. Thereafter, a gradual upward change is predicted, and in 2035 the rate will be 1.39. Thereafter, the rate will be almost constant.

Population projection based on high variant assumption indicates that the total fertility rate will turn upward beginning 2001, and when it reaches 1.63 by the year 2035, it will maintain its level. The population projection based on low variant assumption shows that the current year's declining trend will continue until the year 2050. The results of the future population projection will be examined.

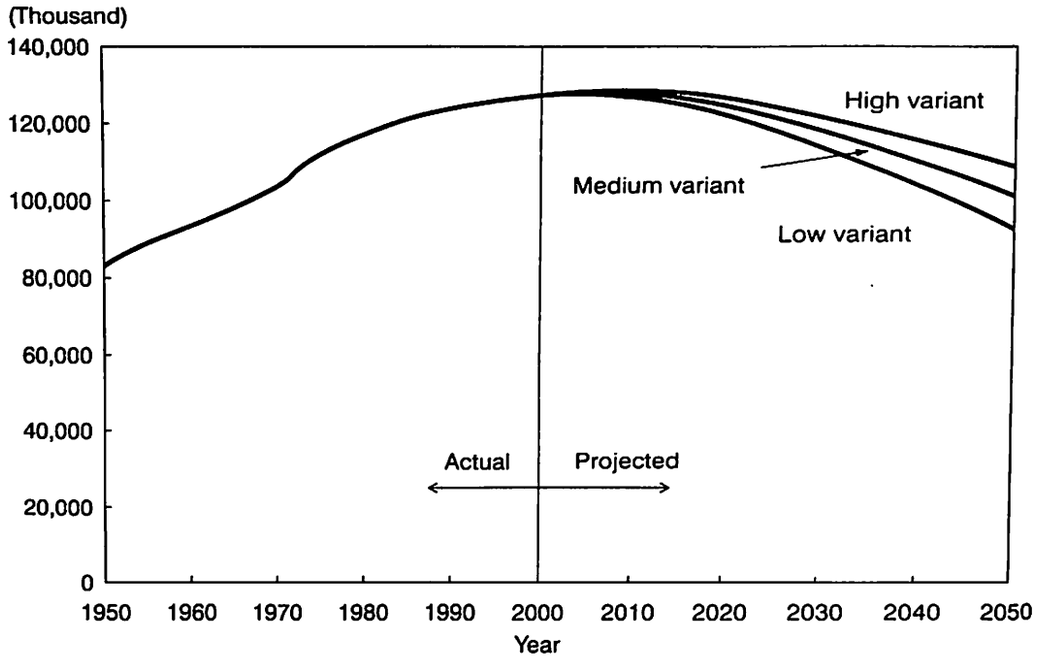
The Arrival of an Era of the Declining Population

According to the 2000 population census, the total population of Japan, which also is the base year for this population projection, was 126.93 million. Based on the results of the medium variant projection, the total population is expected to gradually increase slowly in subsequent years, reaching its peak in 2006 at a total of 127.74 million, thereafter enter a longstanding depopulation process. The population is expected to recover to the current figure by 2013, then drop to about 100.6 million in 2050 (see **Figure 3**).

Based on the results of high variant projections, the total population is expected to reach its peak in 2009 at 128.15 million, a little later than the medium variant projection. A downward turn is expected subsequently, reaching 108.25 million in 2050. Based on the results of low variant projections, the total population is expected to reach its peak of 127.48 million in 2004, thereafter subsequently decrease to 92.03 million in 2050.

These projections show that Japan will soon enter into the era of population decline, bringing the trend of population increase to an end. The fact that the fertility rates has been far below the level required to maintain the constant population (population replacement level, which required the approximately 2.08 in total fertility rate.) since the mid-70s, together with the low-fertility rate trend continuing for a quarter-century, make the diminishing population which started at the beginning of this century almost inevitable.

Figure 3. Actual and Projected Population of Japan, 1950-2050

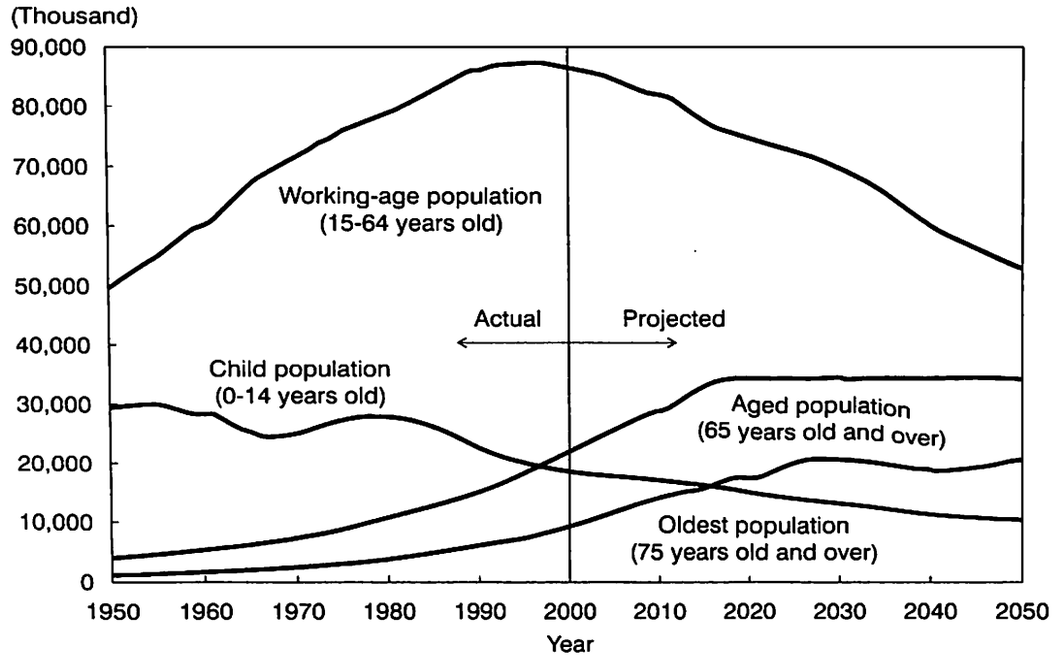


Society with Fewer Children: Trend of Juvenile Population (0 to 14)

The number of births figure has declined from 2.09 million in 1973 to 1.19 million in 2000. Consequently, the population of this age group has decreased from 27 million in the beginning of the 1980s to 18.51 million in the population census of 2000. According to the medium variant projections, the children's juvenile population will diminish to the 17 million in 2003 (see **Figure 4**). The decline will continue together with the low fertility trend, and the population of this age group is expected to fall below 16 million in 2016, thereafter enter the slow, longstanding depopulation process. Eventually, in the last year of projection (2050), the population is expected to be 10.84 million.

According to the juvenile children's population trend based on the difference of the future fertility assumptions in terms of high and low variant projections, this age group is expected to be on the decline even in the high variant projections (due to the longstanding low fertility rate) and will reach 14 million in 2050. According to the low variant projections, a rapid decline in population in this age group due to the very low fertility rate is expected. The projection is

Figure 4. Trends in the Number of the Major Age Composition, 1950-2050: Medium Variant

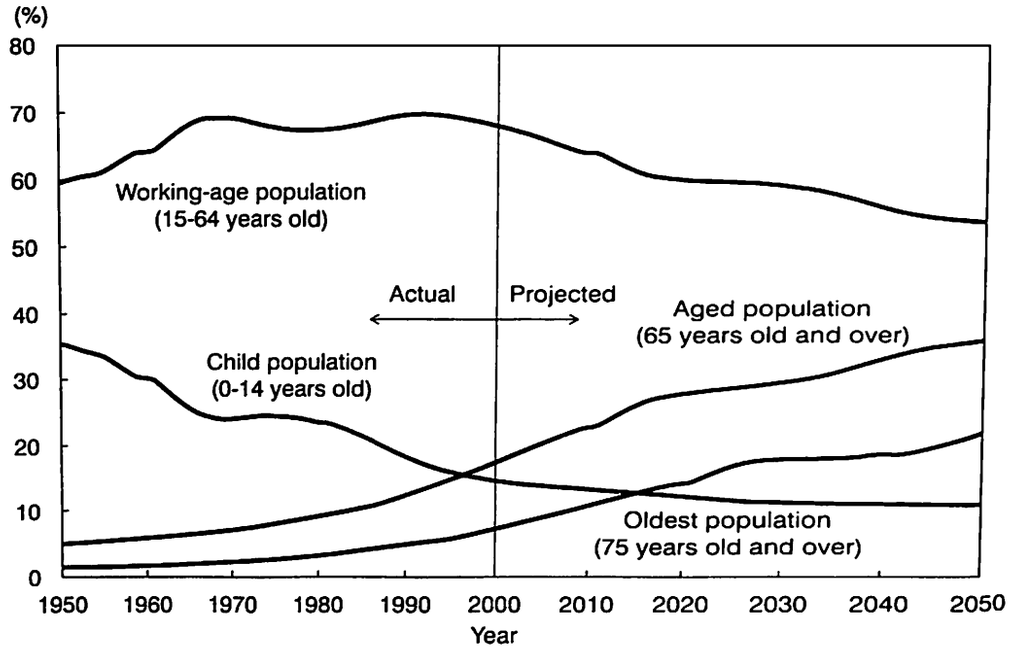


that the population will diminish from the current size of 18 million to below 15 million in 2014, and eventually down to 7.5 million by the middle of this century.

The percent distribution of this age group, according to the medium variant projections, is expected to shrink from the current 14.6% level (2000) to the 14% mark in 2005, and eventually down to 12.0% in 2021. The downward trend continues to 11.0% in 2036, and by 2050, the percentage is expected to be around 10.8% (see **Figure 5**).

The high variant projections show that the decline in the percentage distribution of the juvenile population is rather slowly, it is falling below the 14% range in 2007, thereafter down to 12.9% in 2050. The decline in the percentage distribution of the juvenile population is rapid in the low variant projections, breaking the 14% mark in 2004, falling below 10% in 2024, and eventually down to 8.1% in 2050.

Figure 5. Trends in the Percentage of the Major Age Composition of the Total Population, 1950-2050: Medium variant



Aging of Workers: Trend of Working-age Population (15 to 64)

The population of the working-age has consistently increased during the post-war years, and reached its peak in the 1995 census at 87.17 million. It subsequently entered a decreasing phase, and according to the census figures compiled in 2000, the population has diminished to 86.38 million.

According to the medium variant projections, the population of this age group reached its peak in 1995, subsequently made an about-turn to enter a declining phase, and is expected to fall below 70 million in 2030, and eventually drop to 53.89 million in 2050 (see **Figure 4**).

According to the working-age population trend based on the differences of on the assumptions of future fertility assumptions in terms of high and low variant projections, the depopulation of this age group is rather slow due to the high fertility rate, and the population is expected to fall below 70 million in 2033. The depopulation continues down to 58.38 million in 2050. The working-age population based on the low variant projections is expected to fall below 70 million in 2028, below 50 million in 2049, and eventually drop to 48.68 million

in 2050.

The population of the working-age, according to the medium variant projection, started falling in 2000 at 68.1%, and is expected to reduce to 60.0% in 2020. The decline continues on slowly to 10 points lower than the current standard in 2035 at 58.0%, 54.9% in 2043, and eventually to 53.6% in 2050.

The annual trend of the high variant projection shows similar results, except that the decline trend is slightly slower. The percentage distribution of this age group in 2050 is only 0.3 points higher than the medium variant projection (53.9%) (see **Figure 5**).

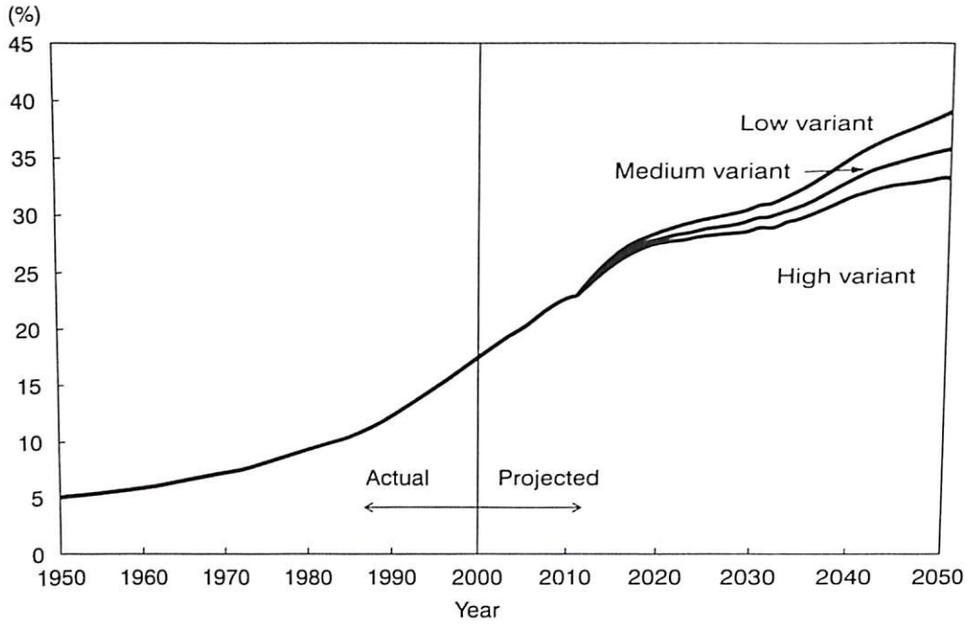
The percentage distribution of this age group for the low variant projection shows a slower reduction as compared with the medium variant projection that is, the percentage reaches 60.0% in 2030. However, the subsequent decline is fast-paced, reaching 52.9% in 2050. This seemingly contradictory trend results from the percentage distribution of the working-age reproducing age group being the relative index.

Arrival of the Advanced Aging Society: Trend of Senior Aged Population (over 65)

The results of the medium variant projection show that, contrary to the decline in the populations of the juvenile and working-age, the senior aged population will continue its fast-paced increase, growing from the current size of about 22 million to 30 million in 2013, and eventually up to 34.17 million in 2018 (see **Figure 4**). That is, this age group will grow rapidly until the baby-boom generation (born between 1947 and 1949) is in the over-65 age bracket. Subsequently, with the generation that reduced the post-war growth entering the senior aged group, the speed of increase slows down; the population will peak in 2043 when the second baby-boom generation enters the senior aged group, then takes a downward turn to about 35.86 million in 2050. The high and low variant projections show the same result as the medium variant projections, since the assumptions of the future survival rate and international migration are the same.

The percentage of the senior aged population will grow from the current 17.4% (2000) to the 25% range in 2014, meaning that this age group will comprise one-quarter of the population of Japan. It will reach 27.0% in 2017. The senior aged generation will undergo a trend after 2018 until around 2034 when it reaches the 34 million range, continues to increase after 2018 impacted by the low fertility rate, and eventually reaches the 30 plus-percent range in 2033. The

Figure 6. Trends in the Percentage of the Aged Population, 1950-2050



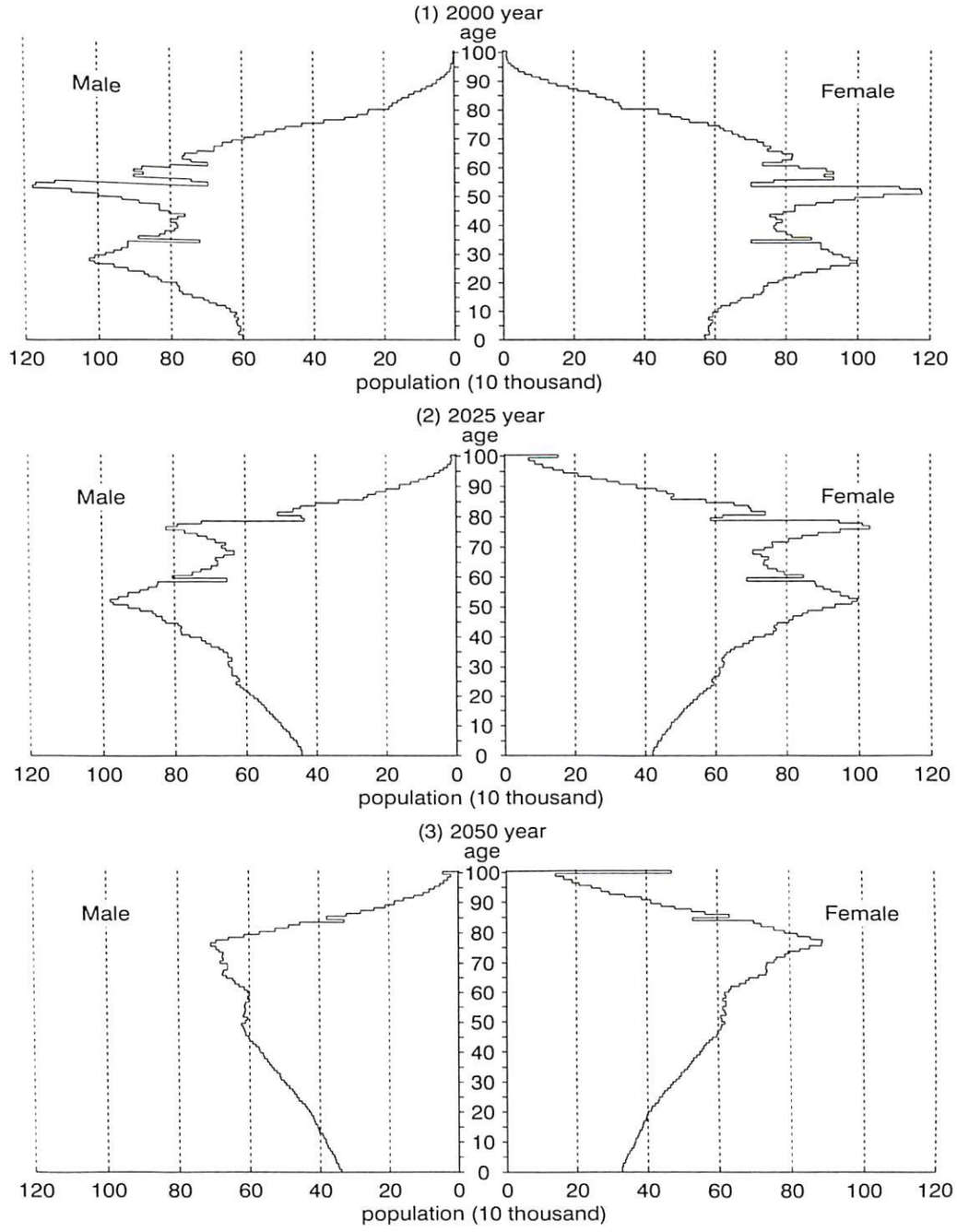
increase persists, reaching 35.7% in 2050; that is, 1 in 2.8 persons will be over 65 (see **Figure 5**).

The variance in the aging trend due to the difference in the assumptions future fertility assumptions, as compared with the results of the high and low variant projections, shows only a minor variance until around 2018. A difference of 1.5 points is seen between the low variant projection in 2025 (29.5%) and the high variant projection during the same period (28.0%) (see **Figure 6**). This difference shows the impact that the future fertility rate has on aging. The difference in the aging level standard grows wider as the years go by, and in 2050 the high variant is 33.1%, whereas the low variant is 39.0%, the difference being 5.9 points. Hence, the longstanding low fertility rate in society has a relative effect on the high aging population level.

Changes in the Population Pyramid

The population pyramid in Japan, in general, continues to age. The pyramid appears uneven at the older age bracket, because of the fast-paced fluctuation in the past fertility rates that is, the rapid increase in the number of birthrate from

Figure 7. Population Pyramid: Medium Variant



1947 to 1949 (first baby-boom) and the sharp decline in the number of birthrate from 1950 to 1957 (baby bust) (see **Figure 1**).

The population pyramid in 2000 consists of the first baby-boomer generation at the beginning of the 50s, and the second baby-boomer generation at the end of the 20s. In the 2025 pyramid, the first baby-boomers will be at the end of the 70s, and the second baby-boomers at the beginning of the 50s. It can therefore be concluded that the aging of society toward 2025 is centered around on the first baby-boomer generation. On the other hand, the rise in the aging standard around 2025 is the result of interaction of the aging of the second baby-boomer generation and the downsizing of the population per generation. (see **Figure 7)**

Hence the population pyramid in Japan has transformed from the pre-war shape of Mt. Fuji to mountain-shaped, (like Mount Fuji) in the pre-war period, to the recent shape of a temple bell bell-curve, and finally to an urn-shape in the future.

Trend of the Population Dependency Population Ratio

The dependent population dependency ratio is used as an index to express the level of support of the working-age group, through comparison of the relative size of the juvenile children's and senior aged populations versus the population of the reproducing age working-age group. The senior old-age dependent dependency population ratio (calculated by dividing the senior aged population by the population of the working-age group) based on the medium variant projection increases from the current 26% (that is, 3.9 working-age population supporting 1 senior population) to the 50% range in 2030 (that is, 2 working-age population supporting 1 senior population), then eventually up to 67% in 2050 (that is, 1.5 working-age population supporting 1 senior population) . In contrast, the juvenile dependency population ratio (calculated by dividing the juvenile population by the population of the working-age group) is expected to undergo a trend from the current 21% (that is, 4.7 working-age population supporting 1 juvenile population) to a level of 19 to 21% in the future.

Despite the assumption that the low fertility rate reduces the juvenile population, the dependent juvenile population dependency ratio is not expected to decrease considerably, because the parent generation, the working-age group, itself shrinks in size.

The juvenile dependency population ratio and the senior population dependency ratio added together is called the dependent population overall dependency ratio, and this ratio is used to see the degree of support on the entire working-age population; the overall dependency ratio entire dependent population ratio increases along with the trend of the dependent senior population ratio. The overall dependency ratio dependent population ratio is expected to increase to 67% in 2022 from the current 47% under the declining trend of the working-age population, thereafter reach 87% in 2050.

Standing for Aged Society

The new future population projection was prepared based on the two major revisions made to the assumptions by the National Institute of Population and Social Security Research. The first is a new awareness regarding the future direction of the fertility rate, namely a deep understanding of the trend toward lower fertility among married couples. Analysis of the result of the basic survey on fertility carried out in 1997 revealed an unexpected development with regard to married couples and childbirth.

The survey clearly showed that among those born in the 1960s, the average number of children that married women actually had at the age of 35 was less than the average number they had been expected to have at that age according to the conventional projection method. This meant that the average number of children born to married couples had dropped not just because of the trend toward marrying later but also because couples were having fewer children. The 2002 projections used revised forecasts of future fertility rates based on these sorts of statistical findings.

The second revision concerns the future course of the survival and mortality rates. When we look at the advances in life expectancy in recent years, what is most striking is the falling mortality rate among those aged 65 and older. This means that we will see an even more pronounced shift toward an aging society. These revisions have not greatly affected the outlook for the size of total population in the years and decades to come. But they have produced a significant change in the outlook for the composition of the population by age, since the forecast calls for fewer young people and more elderly people than previously expected. In 2050, the final year covered by the projections, the percentage of the total population aged 65 or older, which was forecast to be 32% in the previous set of projections, is now forecast to be more than 35%.

To achieve the balance of an economic society and a population aged society under a structural change in such a rapid population, the overall social policy corresponding to not only declining of fertility but also the aging of popula-

tion is needed.

Chapter 3

Health Expectancy in Japan

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Introduction

In 2000, "Healthy Japan 21" program (officially called the National Health Promotion in the 21st Century) was established with the aim of extending the length of healthy life for the Japanese population. The initiative is a Japanese version of the programs "Healthy People 2000" and "Healthy People 2010" implemented in the United States. To achieve the goal of extending the length of healthy life, the then Ministry of Health (now Ministry of Health, Labour and Welfare) set targets for 2010 on many health-related indices, such as reducing the average daily salt intake from 13.5g to less than 10g, increasing the average daily potassium intake from 2.5g to more than 3.5g, and reducing the proportion of males with hyperlipemia from 10.5% to 5.2%.

Population health has recently become a very important issue in Japan due to the country's rapidly aging population. With the number of elderly on the rise, medical expenditures are expected to increase over time, even if the health status of the elderly does not change. The increasing number of elderly also induces a possible increase in the need for long-term care in the future. Furthermore, reduced mortality rates for the elderly indicate that more elderly will receive pensions for longer periods of time, which put further demands on government expenditures.

Individuals are also becoming more interested in "quality of life" (avoiding health conditions in later life) rather than just "quantity of life" (length of life expectancy). Elderly people want to live healthy, active, and independent lives as long as possible. Longevity without good health does not seem to be good enough for individuals, nor for the country as a whole. In order to monitor population health, the concept of health expectancy is very useful and is becoming a popular index of population health around the world. In this section, studies

on health expectancy using data on the Japanese population are introduced.

Concept of Health Expectancy and Methods of Calculation

Health expectancy is a general term for the portion of life expectancy divided into healthy years and unhealthy years (Mathers, Robine, and Wilkins, 1994). Depending on the measures used to indicate health, healthy years can be called "healthy life expectancy," "disability-free life expectancy," or "active life expectancy," etc. The concept of health expectancy was introduced in the 1960s (Sanders, 1964) and developed in the 1970s (Sullivan, 1966, 1971a, 1971b). Health expectancy offers easily comprehensible indicators of both the level of and change in physical, mental, and possibly social well-being within a population. Because these measures incorporate indicators of both mortality and morbidity, they seem highly appropriate as measures to summarize the effects of changing health status and mortality schedules in populations where mortality decline is dominated by declining death rates due to chronic diseases among the older population.

There are many ways of computing health expectancy. The most commonly used method is a prevalence-based life table method known as the Sullivan method. The method was developed by Sullivan for his seminal work in 1971 (1971a). This method requires only prevalence rates that indicate health of a population and a life table, preferably for the same year. Two other methods used in Japan to compute health expectancy also utilize standard demographic techniques, i.e. life table method. One method is the double-decrement life table method and the other is the increment-decrement life table method (often called multistate life table method). Because both methods require longitudinal data to compute health expectancy, studies based on these methods are very limited in Japan.

Studies of Health Expectancy in Japan

Research on health expectancy in Japan began at a relatively early stage, even in comparison to Western countries. Soon after Sullivan published his first paper with actual estimates of health expectancy in 1971, the Council of National Living published what is probably the first calculation of health expectancy for Japan in 1974. Although it is not clear how "average healthy life expectancy" was calculated, weights for different health states were employed. The length of life with health problems is taken as a proportion of perfect

Table 1. Average Healthy Life Expectancy at Birth and Age 65 in Japan: 1966 and 1970

Age	Year	Life Expectancy	Years with Average Function Loss	Average Healthy Life Expectancy	Percent of Average Healthy Life Expectancy
0	1966	70.88	2.80	68.08	96.0
	1970	71.93	3.15	68.78	95.6
65	1966	13.81	1.18	12.63	91.5
	1970	13.97	1.35	12.62	90.3

Sources: The Council of National Living, 1974, Social Indicators of Japan, Table 2, p. 104.

health. For example, the length of life in a hospital is regarded as one-sixth of perfect health and one-half of a period of work suspended without hospitalization. However, there are no firm reasons to regard that a year of hospitalized life is the same as two months of perfect health. This is probably the reason the authors cautioned interpretation of their results noting that "individual figures do not go beyond the level of referential data, which, however, suggest the general tendency." The results are shown in **Table 1**. Functional loss includes injury and disease, mental disorder, mental retardation, and physical handicap. While life expectancy both at birth and age 65 increased between 1966 and 1970, if it were expressed as a percent of the average healthy life expectancy to life expectancy it actually decreased slightly at both ages. This indicates that overall health status in Japan decreased slightly or, at most, did not change between 1966 and 1970 even though length of life increased.

After the 1974 study by the Council of National Living, there was no study on health expectancy in Japan for many years. In 1982, Koizumi published a methodological paper proposing inclusion of multiple states of health in computing health expectancy. Although the paper did not present any actual numbers, this study was well cited and appreciated by researchers of health expectancy. Only in the late 1980s did research on health expectancy in Japan seem to gain general recognition as a topic of study. As mentioned above, the studies on health expectancy conducted in Japan used three methods of calculating health expectancy: the Sullivan method, the double-decrement life table method, and the population-based multistate life table method. Studies are introduced below in the order of each method mentioned.

Sullivan Method

Nanjo and Shigematsu (1987) calculated bed disability-free life expectancy

(bed-DFLE) using data from the National Health Surveys conducted in 1975 through 1985. Health status is measured as the number of days in bed due to health reasons; the same as in the original Sullivan study in 1971. For both sexes at birth and age 65, life expectancy and bed-DFLE increased consistently from 1975 to 1985. While life expectancy at birth for males increased from 71.7 to 74.8 years over the same time period, bed-DFLE increased from 69.3 to 72.6 years. Numbers for females are from 76.9 to 80.5 years and from 74.0 to 77.7 years, respectively. Changes in both life expectancy and bed-DFLE resulted in an increase in the proportion of bed-DFLE to life expectancy although the changes are minimal at birth (0.4 percentage points for both sexes) and very small at age 65 (1.4 percentage points for males and 1.5 percentage points for females).

Gunji and Hayashi (1991) conducted a similar study covering almost an identical time period as the above study by Nanjo and Shigematsu. However, their measure of population health was the proportion of people without disease. They computed disease-free life expectancy by gender in Japan for the period 1974 to 1985 using data from National Health Surveys. Disease-free life expectancy decreased from 62.7 years in 1974 to 62.0 years in 1985 for males and from 65.8 to 64.1 years for females over the same period. As the result, the proportion of disease-free life expectancy to life expectancy decreased from 88.1% in 1974 to 82.9% in 1985 for males and from 86.2% to 79.6% for females. When using the prevalence of disease as an indicator of population health, the health status of Japan's population as a whole appeared to have worsened during the period. However, if the measure of health was the number of bed days then the health status of the population had not changed much, or perhaps improved very slightly over the same period.

Bed disability-free life expectancy was also computed for 1990 by Inoue, Shigematsu, and Nanjo in 1997. The definition of bed-DFLE in their study is comparable with the 1987 Nanjo and Shigematsu study. Accompanied by increases in life expectancy at birth for males from 74.8 years in 1985 to 75.9 years in 1990, bed-DFLE increased from 72.6 years to 74.2 years, and the proportion of bed-DFLE to life expectancy increased from 97.0% to 97.8% (**Table 2**). Figures indicate improvement in health conditions for males at age 65. For females, however, the health status measured by the proportion of bed-DFLE to life expectancy both at birth and age 65 slightly worsened from 96.6% and 90.5% in 1985 to 96.1% and 86.2% in 1990, respectively.

The National Health Surveys were conducted annually until 1985, but from 1986 the survey was merged with other government surveys and newly entitled

Table 2. Bed Disability-free Life Expectancy by Sex: 1985 and 1990

Age	Life Expectancy		Bed Disability-free Life Expectancy		Percent of Bed Disability-free Life Expectancy	
	1990	1985	1990	1985	1990	1985
Males						
0	75.9	74.8	74.2	72.6	97.8	97.0
65	16.2	15.5	14.8	14.1	91.6	90.9
Females						
0	81.9	80.5	78.7	80.5	96.1	96.6
65	20.0	18.9	17.2	17.1	86.2	90.5

Sources: 1985: Zenji Nanjo and Takao Shigematsu, 1987, "Kenkou seimeihyo sakusei ni tsuite" (Calculation of health expectancy), Paper presented at a regional meeting of Population Association of Japan, Fukuoka, Japan.
1990: Toshitaka Inoue, Takao Shigematsu and Zenji Nanjo. 1997. "Nihon no 1990nen kenkou seimeihyo--sekai saichoju no shitsu no kenkou" (Health life tables in Japan, 1990, men: A quality of the longest life expectancy in the world), *Minzoku Eisei*, 63(4): 231, Table 2.

Comprehensive Survey of Living Conditions of the People on Health and Welfare. Detailed health-related questions were asked only every three years since 1986. Questions on "activities of daily living" (ADLs) were added from the 1992 survey.

Kamimura (1996) calculated health expectancy using ADL as a measure of health. He used six ADL items included in the Comprehensive Survey of Living Conditions of the People on Health and Welfare conducted in 1992. Those who do not receive any assistance from others on any of the six ADLs (washing face and brushing teeth, dressing, eating, toileting, bathing, and walking) are defined as active or independent. A limitation with this study is that data on mortality, morbidity, and health are from a different time period.

A study by Hashimoto (1998) employed a similar measure of health, that is, dependence defined as needing assistance to perform daily activities. He computed independent life expectancy at age 65 by sex for Japan and by prefecture based on the estimated age-specific prevalence rate of dependence. Independence is defined as not needing assistance with daily activities and is computed by subtracting the prevalence rate of dependence from 1. In order to estimate the prevalence of dependence, he divided those aged 65 and over into four categories depending on place of living: community dwelling, hospital, and two kinds of institutions for elderly. The reason for this is the availability of data. For population living in community dwellings Hashimoto employed the six

ADL items of washing face and brushing teeth, dressing, eating, toileting, bathing, and walking from the Comprehensive Survey of Living Conditions of the People on Health and Welfare conducted in 1995. A serious drawback of this study is the use of published data which are not tabulated by age, leading to assumptions regarding the distribution of those classified as dependent by age. In addition, because life tables by prefectures for 1995 were not available at the time of his study, he estimated life table functions based on the available information. Discrepancies between some of the estimated figures and official figures published later were quite large. Therefore, the interpretation of the results should be made with caution.

Selected results are shown for Japan's 47 prefectures in **Table 3**. In 1995, life expectancy at age 65 was 16.5 years for males and 20.9 years for females. Independent life expectancy was 14.9 years (90.6% of life expectancy) for males and 18.3 years (87.3% of life expectancy) for females. Okinawa prefecture has the longest life expectancy and independent life expectancy for both sexes. However, in terms of ranking of the proportion of independent life expectancy to life expectancy, Okinawa is 40th for males and last for females. This is partly because life expectancy of Okinawa was over estimated. In contrast, while Osaka prefecture has one of the lowest lengths of life expectancy for males and females, the ranking of independent life expectancy is relatively high--26th for males and 22nd for females. Yamanashi prefecture seems to have a very balanced life expectancy and independent life expectancy.

Ogawa, Retherford, and Saito (2001) computed active life expectancy at

Table 3. Independent Life Expectancy at Age 65 by Sex for Japan and by Prefecture: 1995

	Life Expectancy				Independent Life Expectancy		Proportion of Independent Life Expectancy	
	Males		Females		Males	Females	Males	Females
Prefecture	Years	Order	Years	Order	Years	Years	Order	Order
Japan	16.48		20.94		14.93	18.29		
Okinawa	18.22	1	24.82	1	16.26	20.44	40	47
Aomori	15.80	47	20.86	43	14.05	17.62	43	43
Osaka	15.87	46	20.41	47	14.34	17.79	26	22
Yamanashi	16.94	11	24.78	10	15.69	19.57	1	2
Chiba	16.77	18	21.30	28	15.51	19.15	2	1
Tokyo	16.78	17	21.33	24	15.35	18.74	5	15

Source: Shuji Hashimoto. 1998. "Hoken iryo fukushi ni kansuru chiiki shihyou no sougouteki kaihatsu to ouyou ni kansuru kenkyu." Research Report.

age 65 based on ADLs and Instrumental Activities of Daily Living (IADLs) using the first round of the Nihon University Japanese Longitudinal Study of Aging (NUJLSOA) conducted in 1999. The unhealthy state was defined as having at least one ADL/IADL problem. Males had 13.6 years of active life expectancy at age 65, which is 80% of life expectancy, 17.0 years in 1999. Females had 14.9 years of active life expectancy at age 65, which is 1.3 years longer than one for their male counterpart. However, the proportion of active life expectancy to life expectancy, as observed in many studies on health expectancy, was much lower (68%) than that of males.

Most of the studies introduced here focus on physical health. Suthers, Jagger, Saito, and Crimmins (2001) conducted one of the very few studies on mental health using the concept of health expectancy. They applied the Sullivan method to compute life expectancy with and without depression at age 70 in three countries, namely, Japan, United Kingdom, and the United States. Japanese data came from the above mentioned NUJLSOA. A revised 12-item version of the original 20-item CES-D was used to identify elderly with depression. The CES-D is a scale developed by the Center for Epidemiological Studies to screen for depressive symptoms in community sample populations (Radloff 1977). As shown in **Table 4**, elderly Japanese are expected to spend the least time with depression at age 70 though there are differences in the measure used in each country. Japanese men are expected to spend only about 0.4 years, on the average, in the state of depression at age 70 while women are expected to spend 0.8 years.

Table 4. Cross-national comparisons of health expectancy calculations with depression at age 70 by gender

	Total Life Expectancy	Expected Number of Years with Depression	Proportion of Life with Depression
MALES			
Japan	13.48	0.39	2.65%
United States of America	12.22	0.67	5.49%
United Kingdom	11.95	1.04	8.71%
FEMALES			
Japan	17.67	0.81	4.21%
United States of America	15.26	1.25	8.22%
United Kingdom	14.98	2.33	15.54%

Source: Suthers et. al. 2001.

A study by Saito (2001) examines changes in the health of the Japanese population aged 40 years and over during the 1990's. Changes in health are assessed by several measures of health expectancy estimated using the Sullivan method and data obtained from the Comprehensive Survey of Living Conditions of the People on Health and Welfare conducted in 1992, 1995, and 1998. Institutionalization rates (use of nursing homes) are also estimated using national surveys of the institutionalized population for the same years in order to treat them properly in calculating the health expectancies. One of these health expectancies is active life expectancy. Those who were hospitalized or answered as having assistance to perform at least one ADL activity among 5 ADL's (including bathing, dressing, eating, toileting and walking) available in the surveys are classified as inactive, while those who were able to perform the ADLs without assistance were classified as active. Results indicate that life expectancy and active life expectancy increased from 1992 to 1998 for both sexes at all ages 40 years and above. For instance, life expectancy at age 40 increased from 37.7 years in 1992 to 38.7 years for males in 1998. Over the same period, active life expectancy increased from 35.7 years to 36.8 years. The corresponding figures for females are 43.3 years to 45.0 years and 40.4 years to 41.8 years. However, the proportion of active life expectancy to total life expectancy marginally decreased for females but increased slightly for males. This suggests a mixed picture for changes in health by gender in the 1990's. Based on estimated active life expectancy, males' health improved slightly but there was no change, at most, in females' health. Another type of health expectancy, healthy life expectancy based on self-rated health, indicates that there is no clear trend in health status from 1992 to 1998 for both sexes. However, if we compare only the results of 1992 and 1998, the proportion of healthy life expectancy to life expectancy decreased for both sexes at age 40 and above.

Double Decrement Life Table Method

Kai et al. (1991) computed active life expectancy using modified ADL measures for Saku City in Nagano prefecture. A longitudinal survey conducted there in 1988 and 1989 was used to estimate active life expectancy. Health states were defined as active if six ADL items were performed independently and inactive if they were not performed independently. The six ADL items were bathing, dressing, toileting, standing, eating and continence. Because of limitations in their methods active life expectancy is computed only for those who were active at the first wave of the survey and do not take into account

people returning to an active state from an inactive state between the two surveys. Their study is very similar to the original study of active life expectancy conducted by Katz et al. in 1983.

Honma, Naruse, and Kagamimori (1998) also computed active life expectancy. Their calculation is for the regional population and employed a follow-up survey of 36 months from September 1992 to August 1995.

Sauvaget et al. (1997) computed dementia-free life expectancy for those aged 65 and over living in Sendai City, Miyagi prefecture, using the double decrement life table method. The Sendai Longitudinal Study of Aging conducted in 1988 and 1991 was used for their study. It is less problematic to use the double decrement life table method to compute dementia-free life expectancy compared to active life expectancy (as used by Kai et al.) because the possibility of demented people returning to a normal mental state is slight. Therefore, the estimated life expectancies and dementia-free life expectancies are only for those who are not demented at the time of the first interview in 1988. Dementia-free life expectancy at age 65 for 1988-1991 in Sendai City was 15.8 years for males and 17.8 year for females while estimated life expectancy for males was 17.7 years and for females was 22.6 years. Females could expect to live, on the average, two years longer without dementia, but at the same time they were expected to live almost 3 years longer with the state of dementia. At age 90, females are expected to live half of their remaining life of 5.7 years in the dementia state. Sauvaget and colleagues indicate that the Japanese elderly, especially female Japanese, on average spend more years in the demented state than the elderly living in other developed countries.

Multistate Life Table Method

Tsuji et al. (1995) computed active life expectancy, using the population-based multistate life table method, for those aged 65 and over living in Sendai City. They used the same data as Sauvaget and colleagues described above. The definition of dependent, or inactive, is a state of needing assistance to perform at least one of the following ADLs: bathing, dressing, toileting and eating. Their estimated life expectancy was similar to that computed for Sendai City in 1990 for both males and females. Males have 16.1 remaining years of life at age 65, on the average, of those 14.7 years or 91.3% of remaining years are expected to be active. Females are expected to live longer total years (20.4 years) and active life (17.7 years), but the proportion of active life to life expectancy is 4.5 percentage points smaller than that of males.

Liu et al. (1995) also employed the population-based multistate life table method to compute health expectancy for the Japanese elderly age 60 and over. Their data are from the first and second waves of a nationally representative longitudinal study conducted in 1987 and 1990 by the Tokyo Metropolitan Institute of Gerontology and the University of Michigan. Their measures of health are bathing oneself, climbing two or three flights of stairs, and walking about 200-300 meters or a few blocks. Those who have any degree of difficulty in performing at least one of the three activities were classified as "functionally disabled." Their estimated life expectancy (23.04 years) for both sexes is slightly higher than one for the Japanese population (22.23 years) in 1989. Active life expectancy was 18.7 years at age 60, 7.2 years at age 75, and 1.4 years at age 90. At age 75 and 90, the percent of active life expectancy computed is 64.2% and 31.3% respectively.

Discussion

There have been many studies on health expectancy for the Japanese population and its subpopulations. However, there has been no recent study which could indicate long-term trends in population health. The most recent study by Saito (2001) examines changes between 1992 and 1998, however this represents a relatively short span of time from which to draw conclusions about future trends. The studies conducted by Nanjo and Shigematsu in 1987 and Gunji and Hayashi in 1991 show relatively long-term trends in one aspect of population health, but these studies only examine data through 1985. The reason there is a paucity of studies on long-term trends can be explained partly by a lack of data to study the trends in population health. National Health Surveys in Japan were discontinued in 1985; although a new survey began in 1986. Repeated cross sectional surveys are very important as a tool to monitor trends in population health and to supplement longitudinal surveys.

Longitudinal studies are a another issue important to conduct research on health expectancy in Japan. As can be seen in the previous section, there are only a few studies on health expectancy using methods other than the Sullivan method in Japan. Recent methodological developments in computing health expectancy require multiple rounds of longitudinal survey.

There are only two nationally representative longitudinal surveys on aging in Japan. The first is a nationally representative longitudinal survey of elderly Japanese age 60 and over. This survey was conducted by the Tokyo Metropolitan Institute of Gerontology every 3 years starting in 1987. The first 2 waves of

the survey are available through ICPSR. The second nationally representative longitudinal survey in Japan of those aged 65 and over was conducted by the Nihon University Center for Information Networking. The Nihon University Study started in November, 1999 with 4,997 sample and those age 75 and above over sampled by a factor of 2. The 1st wave of the data will be available to the public very soon. The 2nd wave of the longitudinal survey was conducted in 2001 and study on health expectancy using 2 waves of data is now underway. The 3rd wave of the survey is schedule to be in the field in November, 2003.

Cross-national studies are also needed to study how the characteristics of population health in one country compare to another. A group of researchers studying health expectancy, known collectively as the asREVES network (www.reves.net) is harmonizing measures of population health for this purpose. There are two sub-chapters of REVES, Euro-REVES and Asia-REVES, to facilitate collaboration between researchers in each region. The study by Suthers et al. is one of these cross-national studies. We now know that the level of depression for the elderly Japanese is very low compared to what is found in other developed countries. At the same time, Sauvaget et al. suggest that the elderly Japanese spend more time with dementia compared with other developed countries. This may be because of a higher incidence of celebrovascular diseases, and a higher life expectancy.

At the end of this section, I would like to introduce another indicator of population health. This indicator is part of a family of health expectancy measures but is very different from those introduced above in that it applies a weight for different health states, such as the measure used by the Council of National Living. In the World Health Report 2000, WHO published health expectancy as a composite measure of population health first time. The measure is called DALE, an acronym for Disability-Adjusted Life Expectancy. Usage of the term DALE is somewhat confusing because the term was already used previously for a measure of population health based on multistate life table method by Barengdregt et al. (1998). In contrast, WHO's DALE applies the Sullivan method. Using this measure, Japan was ranked first in both life expectancy and DALE, 71.9 for males and 77.2 for females in 1999. While Japan was ranked 1st in the length of DALE, if one examines the proportion of DALE to life expectancy, the proportion for Japan is not the largest. The U.K. has a higher proportion; 93.3 vs 92.7.

Here I would like to raise the question of whether the length of healthy years is better or the proportion of healthy years to life expectancy is better measure for a population health? Of course, an effort should be made to length-

Table 5 Life Expectancy and Health Expectancy at Birth and at Age 60 by Gender for Selected Countries

World Health Report 2000
estimates for 1999

	Rank in 1999	Males				Females			
		at birth			at 60	at birth			at 60
		Life Expectancy	DALE	LE/DALE	DALE	Life Expectancy	DALE	LE/DALE	DALE
Chile	32	73.4	66.0	89.9	14.3	79.9	71.3	89.2	17.8
Japan	1	77.6	71.9	92.7	17.5	84.3	77.2	91.6	21.6
Netherlands	13	75.0	69.6	92.8	15.4	81.1	74.4	91.7	19.7
Singapore	30	75.1	67.4	89.7	14.4	80.8	71.2	88.1	16.8
U.K.	14	74.7	69.7	93.3	15.7	79.7	73.7	92.5	18.6
U.S.A.	24	73.8	67.5	91.5	15.0	79.7	72.6	91.1	18.4

World Health Report 2001
estimates for 2000

	Males				Females			
	at birth			at 60	at birth			at 60
	Life Expectancy	HALE	LE/HALE	HALE	Life Expectancy	HALE	LE/HALE	HALE
Chile	72.5	63.5	87.6	13.1	79.5	67.4	84.8	15.7
Japan	77.5	71.2	91.9	17.6	84.7	76.3	90.1	21.4
Netherlands	75.4	68.2	90.5	15.2	81.0	71.2	87.9	17.8
Singapore	75.4	66.8	88.6	14.5	80.2	68.9	85.9	16.2
U.K.	74.8	68.3	91.3	15.3	79.9	71.4	89.4	17.4
U.S.A.	73.9	65.7	88.9	15.0	79.5	68.8	86.5	16.8

World Health Report 2002
estimates for 2001

	Males				Females			
	at birth			at 60	at birth			at 60
	Life Expectancy	HALE	LE/HALE	HALE	Life Expectancy	HALE	LE/HALE	HALE
Chile	73.2	64.4	88.0	13.3	79.5	67.8	85.3	15.5
Japan	77.9	71.4	91.7	17.1	84.7	75.8	89.5	20.7
Netherlands	75.8	68.7	90.6	15.0	80.7	71.1	88.1	17.3
Singapore	76.5	67.9	88.8	14.5	81.1	69.5	85.7	15.8
U.K.	75.1	68.4	91.1	15.0	79.9	70.9	88.7	16.9
U.S.A.	74.3	66.4	89.4	14.9	79.5	68.8	86.5	16.6

Source: World Health Organization, *World Health Report 2000, 2001, 2002.*

en the period of healthy years and increase in the proportion of healthy years to life expectancy. One thing is certain; increased longevity without quality of life is an empty prize, as Nakajima (1997), the former director general of WHO, has said.

In subsequent years, WHO published another health expectancy called HALE, or Health-Adjusted Life Expectancy, in their World Health Reports. The WHO has noted that the HALE published in 2002 was not comparable to the HALE published in 2001 because of a change in the method of calculation. A few countries, including Japan, the U.K., and the USA, did not endorse the HALE figures as their countries' official statistics. The health expectancies for selected countries are shown in **Table 5**. Interestingly, no matter which measure is used to measure population health, the Japanese population seems to be in very good health.

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PART II

Chapter 4

Aging of Sub-national Populations in Japan

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1. Aging of Regional Populations

Japan can be divided into various types of sub-national areas. Among them, major sub-national areas are *Chiho* or regions. Intermediate ones are *To*,*Do*, *Fu* and *Ken*, or prefectures, while minor ones are *Shi*, *Ku*, *Machi*, and *Mura*, or municipalities. The latter two sub-national areas are designated legally as local autonomous bodies. On the other hand, a region is delineated usually in various ways grouping several adjacent prefectures. In this chapter, nine regions shown in **Table 3** are used.

From **Tables 1** and **2**, elderly dominance in non-metropolitan regions can be observed. Among nine regions, the largest one in terms of spatial size is *Hokkaido*, the smallest one is *Shikoku*, while in terms of population size *Kanto*, where *Tokyo*, on national capital is located, is largest, while *Shikoku* is smallest. According to the 2000 population census results, which are used as basic statistical data in this chapter, *Kanto* has 40,434,000 inhabitants, while *Shikoku* has

Table 1. Poupulation, Annual Growth Rate and Distribution by Regions, 2000

	Population as of 2000 (1000 persons)		Annual Growth Rate 1995 to 2000		Population Distribution as of 2000	
	Total	65 & over	Total	65 & over	Total	65 & over
JAPAN	126926	22005	0.21	3.80	100.0	100.0
Hokkaido	5683	1032	-0.03	4.07	4.5	4.7
Tohoku	9818	1997	-0.03	3.43	7.7	9.1
Kanto	40434	6014	0.46	4.62	31.9	27.3
Hokuriku-Tosan	8710	1797	0.04	2.84	6.9	8.2
Tokai	14776	2420	0.31	3.97	11.6	11.0
Kinki	20856	3396	0.22	4.13	16.4	15.4
Chugoku	7732	1589	-0.11	2.91	6.1	7.2
Shikoku	4154	907	-0.14	2.77	3.3	4.1
Kyushu-Okinawa	14764	2855	0.09	3.22	11.6	13.0

Source: Statistics Bureau, Government of Japan, *2000 Population Census of Japan*

the population of 4,154,000. Compared with distribution of total population, that of elderly population aged 65 and over does not show not so much concentration to metropolitan regions. Annual growth rate between 1995 and 2000 for each region shows distinctly higher in population at ages of 65 and over than in total population (**Table 1**).

Using the percentage of the total population in the elderly ages of 65 and over as a measure of level of aging, metropolitan region *Kanto* showing 14.9 %, is lowest, while *Shikoku* recording 21.8% is highest. Also, *Hokuriku-Tosan* and *Chugoku* present the percentage of more than 20 %. Following to *Kanto* region, metropolitan regions of *Kinki* and *Tokai* show lower percent in elderly (**Table 2**). New Elderly Dependency Index which is computed as percentage in the population aged 20 year old to 64 years old of the population aged 65 and over, recorded 27.9 against 25.5 of ordinary elderly dependency index which is computed as percentage in the population aged 15 year old to 64 years old of the population aged 65 and over for national average as of 2000. Among nine regions, new elderly dependency index presented the highest of 37.6 for *Shikoku*, while it showed the lowest of 25.8 for *Kinki* (**Table 3**). Also, observing **Table 3**, the percentage of general households in the households with elderly aged 65 years and over as of 2000 showed 32.2 for the national average, the highest 39.3 for *Shikoku*, and the lowest 22.7 for *Kanto*. Further, the households in which the elderly single or elderly couple only resided showed 14.3 % of the total general households for national average as of 2000, while those for *Shikoku* was the highest 19.5 %, against the lowest of 12.0 % for *Kanto*. Following after *Shikoku*, *Chugoku* and *Kyushu* indicated higher ratios in extent of aging. Roughly speaking, therefore, it can be concluded that southwestern Japan pres-

Table 2. Indices of Aging by Regions, 1990 and 2000

	Percent in Elderly		Aged Dependency		Elderly/Child Ratio	
	1990	2000	1990	2000	1990	2000
JAPAN	12.0	17.3	17.3	25.5	66.2	119.1
Hokkaido	12.0	18.2	17.2	26.9	65.3	130.2
Tohoku	13.2	19.5	21.0	31.5	72.7	135.0
Kanto	9.9	14.9	13.7	20.9	57.6	108.5
Hokuriku-Tosan	15.2	20.6	22.8	32.1	82.6	138.2
Tokai	12.8	18.0	16.2	24.0	60.7	107.3
Kinki	11.2	16.3	15.8	23.6	62.7	111.9
Chugoku	15.0	20.6	22.5	31.8	81.6	139.6
Shikoku	15.7	21.8	23.9	34.2	87.0	152.0
Kyushu-Okinawa	13.9	19.3	21.1	29.9	70.0	122.5

Source: Statistics Bureau, Government of Japan, *2000 Population Census of Japan*

Table 3. Indices of Aging by Regions and Prefectures, 2000

		Percent in Elderly	Elderly Dependency	Elderly-child Ratio	New "Elderly Dependency"	Hhs with Elderly	Percnt in Elderly Households		
							Total	Couples only	Single only
	JAPAN	17.3	25.5	119.1	27.9	32.2	14.3	7.8	6.5
1	Hokkaido	18.2	26.9	130.2	29.6	30.5	17.3	9.9	7.4
	TOHOKU	20.3	31.5	135.0	34.9	40.8	13.1	7.5	5.7
2	Aomori	19.5	29.8	128.7	32.8	39.0	14.1	7.5	6.6
3	Iwate	21.5	33.8	143.1	37.3	42.4	13.9	7.9	6.0
4	Miyagi	17.3	25.5	115.7	28.4	33.0	11.0	6.4	4.5
5	Akita	23.5	37.5	171.5	41.2	47.8	15.9	9.1	6.7
6	Yamagata	23.0	37.0	153.4	40.8	49.8	12.8	7.5	5.3
7	Fukushima	20.3	31.9	126.6	35.3	41.7	13.2	7.6	5.6
	KANTO	14.9	20.9	108.5	22.7	26.8	12.1	6.6	5.5
8	Ibaraki	16.6	24.4	108.1	26.9	34.0	10.7	6.4	4.3
9	Tochigi	17.2	25.5	112.3	28.0	35.0	11.0	6.3	4.7
10	Gumma	18.1	27.3	119.6	29.9	35.6	13.4	7.9	5.5
11	Saitama	12.8	17.7	86.8	19.4	25.1	9.8	5.9	3.9
12	Chiba	14.1	19.8	99.3	21.6	26.7	10.9	6.4	4.5
13	Tokyo	15.8	22.0	134.5	23.7	25.4	13.9	6.7	7.2
14	Kanagawa	13.8	19.1	98.8	20.7	24.7	11.8	6.8	5.0
	HOKURIKU — TOSAN	20.6	32.1	138.2	35.1	41.5	14.0	8.3	5.7
15	Niigata	21.3	33.3	143.9	36.6	43.8	13.1	7.8	5.3
16	Toyama	20.8	31.9	148.1	34.7	43.5	13.5	7.9	5.6
17	Ishikawa	18.6	28.1	125.1	30.9	36.3	13.4	7.6	5.8
18	Fukui	20.4	32.0	130.2	35.1	43.4	13.4	7.7	5.7
19	Yamanashi	19.5	30.1	126.2	33.2	38.1	14.8	8.6	6.2
20	Nagano	21.4	33.8	142.1	36.9	41.7	15.4	9.4	6.0
	TOKAI	16.4	24.0	107.3	26.3	32.4	12.3	7.2	5.1
21	Gifu	18.2	27.3	118.7	30.0	38.5	12.9	7.8	5.1
22	Shizuoka	17.7	26.3	117.0	28.7	35.3	11.7	6.9	4.8
23	Aichi	14.5	20.8	94.3	22.7	28.1	11.6	6.7	4.9
24	Mie	18.9	28.7	124.0	31.5	37.5	15.8	9.2	6.6
	KINKI	16.3	23.6	111.9	25.8	30.5	15.2	7.9	7.3
25	Shiga	16.1	23.8	97.9	26.3	33.7	11.1	6.7	4.5
26	Kyoto	17.4	25.4	127.4	27.9	31.4	15.6	8.1	7.5
27	Osaka	14.9	21.1	105.2	23.0	27.2	14.7	7.3	7.4
28	Hyogo	16.9	24.9	113.2	27.3	32.2	16.0	8.5	7.4
29	Nara	16.6	24.2	112.0	26.7	33.8	14.2	8.3	5.9
30	Wakayama	21.2	33.1	141.9	36.3	41.1	20.2	10.6	9.5
	CHUGOKU	20.6	31.8	139.6	35.0	37.6	17.9	9.9	8.0
31	Tottori	22.0	35.2	144.2	38.9	44.7	15.8	8.4	7.3
32	Shimane	24.8	41.1	168.8	45.4	48.1	18.7	10.5	8.2
33	Okayama	20.2	31.1	135.1	34.4	37.7	17.0	9.7	7.3
34	Hiroshima	18.5	27.7	124.2	30.4	32.9	17.1	9.4	7.7
35	Yamaguchi	22.2	34.9	159.1	38.3	39.3	21.0	11.4	9.7
	SHIKOKU	21.8	34.2	152.0	37.6	39.3	19.5	10.5	9.0
36	Tokushima	21.9	34.4	154.1	37.9	41.0	17.7	9.6	8.1
37	Kagawa	20.9	32.5	144.5	35.5	38.9	17.5	10.0	7.6
38	Ehime	21.4	33.6	145.9	36.9	38.1	20.1	11.0	9.1
39	Kochi	23.6	37.7	171.6	41.5	40.2	22.1	11.0	11.2
	KYUSHU-OKINAWA	19.3	29.9	122.5	32.8	35.4	17.7	9.2	8.5
40	Fukuoka	17.4	25.6	117.2	28.4	31.1	15.4	7.9	7.5
41	Saga	20.4	32.4	124.4	36.1	42.8	15.3	8.3	7.0
42	Nagasaki	20.8	33.0	130.0	36.6	39.1	19.0	9.8	9.2
43	Kumamoto	21.3	33.7	137.2	34.1	40.2	17.5	9.5	8.0
44	Oita	21.8	34.3	148.2	37.9	39.4	19.7	10.8	8.9
45	Miyazaki	20.7	32.7	129.0	36.3	36.9	20.2	11.1	9.1
46	Kagoshima	22.6	36.6	143.6	40.9	38.0	25.1	12.7	12.4
47	Okinawa	13.8	21.2	69.1	23.9	27.9	11.6	5.4	6.2

Source: See the table 2 Note: Refer to the Map of Japan, p.103.

ents higher extent of aging than northeastern Japan.

2. Aging of Prefectural Populations

Population aging is much more serious in remote sub-national areas, or local areas, than for the whole nation. According to the 2000 national population census returns, the prefecture of *Shimane*, locating in the western part of *Honshu* island, showed the highest (24.8%) in the percentage of the total population in the elderly ages of 65 and over, of which national average was 17.3%, among 47 prefectures. Also, the prefecture of *Kochi*, in the southern part of *Shikoku*, indicated the second highest (23.6 %). Also, *Akita*, the prefecture located at *Tohoku* region, or the northern part of *Honshu* island, as well as the prefecture of *Kagoshima* situating in southern part of *Kyushu* region indicated slightly less than 20 percent, although the most remote island prefecture of *Okinawa* presented second lowest percentage (13.8 %) together with *Kanagawa*, a part of *Tokyo* metropolitan area. On the other hand, prefectures constituting a part of a metropolitan area presented a rather low percentage in the population at the elderly ages. *Saitama*, presenting the lowest of 12.8 %, *Kanagawa*, and *Chiba*, or *Aichi*, those which prefectures constituted the metropolitan area, showed less than 15 %, whereas *Osaka*, other metropolitan prefecture in *Kinki* region showed 14.9 % (**Table 3**). Number of prefectures indicating more than 20 % in elderly increased from 5 in 1995 to 21 in 2000.

Observing **Figure 1**, it can be recognized that population aging expanded widely within the nation between 1990 and 2000. According to the Figure, the prefectures showed higher percent in elderly than the national average of 17.3% as of 2000 in 1990 were only two, *Shimane* and *Kochi*, while those in 2000 amounted to 36 prefectures. **Figure 2**, depicting time serial change in the coefficients of variation for the percentage of the total population in the elderly ages, explains that such discrepancy was largest in 1970 and thereafter it has decreased. Therefore, it is known that population aging has expanded spatially in recent years.

Differences in the degree of population aging between 47 prefectures, are observed in other indices. Aged dependency ratio, or the ratio of the population at the ages of 65 and over against 100 persons at the ages of 15 to 64, as of 1995 recorded the highest for *Shimane* (41.1) among 47 prefectures. Following after *Shimane*, the remote rural prefectures of *Kochi*, *Akita*, *Kagoshima*, *Yamagata*, and *Tottori* showed higher than 35. On the other hand, the metropolitan prefectures of *Saitama*, *Kanagawa*, *Chiba*, *Tokyo*, *Aichi*, *Osaka* and *Nara*, and the

Figure 1. Prefectures Presenting 17 Percent and Over of Total Population in the Elderly

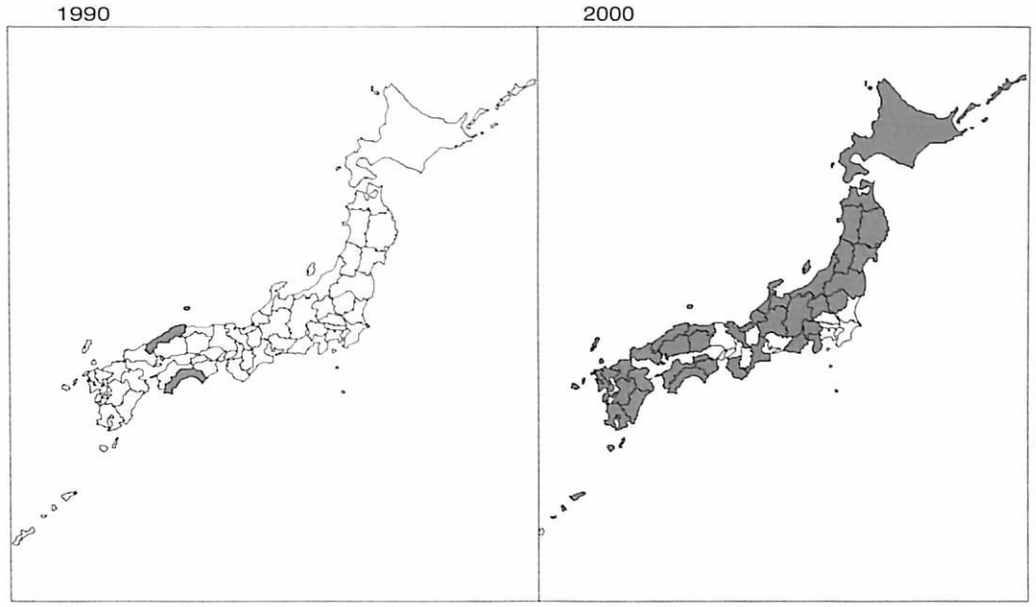
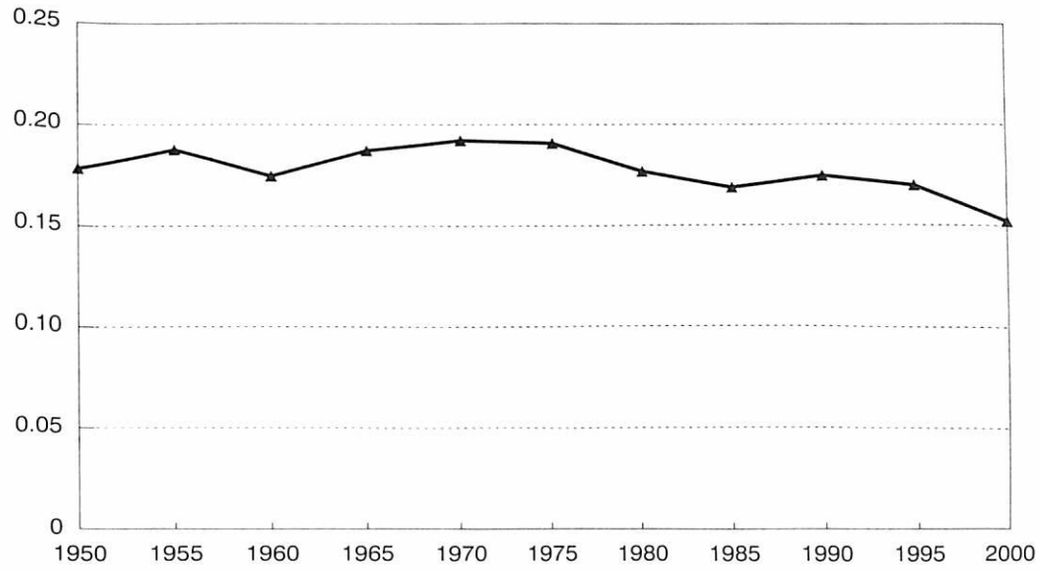


Figure 2. Time-Serial Change in Coefficient of Variation of Percents in Elderly by Prefectures



most remote island prefecture *Okinawa*, indicated lower than 20.0. Also, other metropolitan prefectures such as *Ibaraki*, *Tochigi*, *Gumma*, *Gifu*, *Mie*, *Shiga*, *Kyoto*, and *Hyogo* showed lower than 25, although the national average was 25.5. Therefore, much clearer pattern of discrepancy in the degree of population aging between metropolitan or urban prefectures and non-metropolitan or rural prefectures was observed in the aged dependency ratio than in the percentage of total population in the elderly ages as of 2000 (**Table 3**).

Also, somewhat different aspects of pattern of discrepancy in the degree of population aging between 47 prefectures can be observed using the elderly-child ratio, or the ratio of the elderly population aged 65 and over against 100 children aged less than 15. The ratio for the whole country exceeded 100 in 1997. In 2000 when the ratio showed 119.1 for the nation, 41 prefectures, including *Tokyo*, among 47 prefectures, recorded higher than 100 in the elderly-child ratio. As no prefecture indicated 100 or higher in the ratio in 1990, the degree of population aging was intensified drastically and in wider spatial range during this five year period. Among 41 prefectures with higher than 100 in the ratio as of 2000, *Kochi* prefecture showed the highest (171.6). Following after *Kochi*, the prefectures of *Shimane*, *Akita*, *Yamaguchi*, *Yamagata*, *Tokushima*, *Toyama*, *Nagano* and *Kagawa* recorded higher percent.. Above all, it should be noted that *Tokyo* metropolitan prefecture presented 134.5 in the ratio (**Table 3**).

A sharp contrast in the age structures of population between metropolitan or urban prefectures and non-metropolitan or rural prefectures, observed in the population pyramids as of 2000 for *Saitama*, on a metoropolitan prefecture, with the lowest percentage for the elderly among prefectures and for *Shimane*, a non-metoropolitan prefecture, with the highest percentage for the elderly among prefectures, may depict in detail the difference in the degree of population aging (**Figures 3-1** and **3-2**).

3. Aging of Municipal Populations

Differences in the degree of population aging between *shi*, *machi* and *mura*, or municipalities delineated within a prefecture, are much more distinguishable than those in prefectures (**Table 4**). Among 3,229 municipalities as of 2000, 943 municipalities, accounting for 70.8 % of the total, indicated larger than 20.0 %, 245 municipalities accounting for 10.5 % showed larger than 30.0 %. Above all, *Towa-cho*, *Yamaguchi* prefecture presented the highest percentage of total population in the ages of 65 and over (50.6 %) in 2000 (**Table 5**). Excluding for *Towa-cho*, 77 municipalities recorded larger than 40.0 % in the

Figure 3-1. Population Pyramid of Shimane-ken, 2000

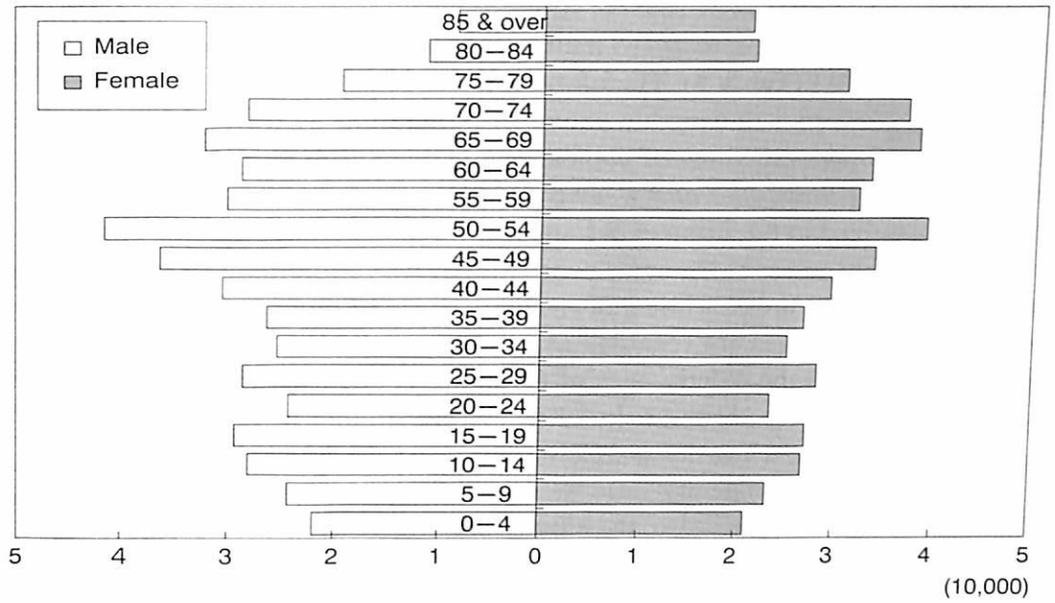
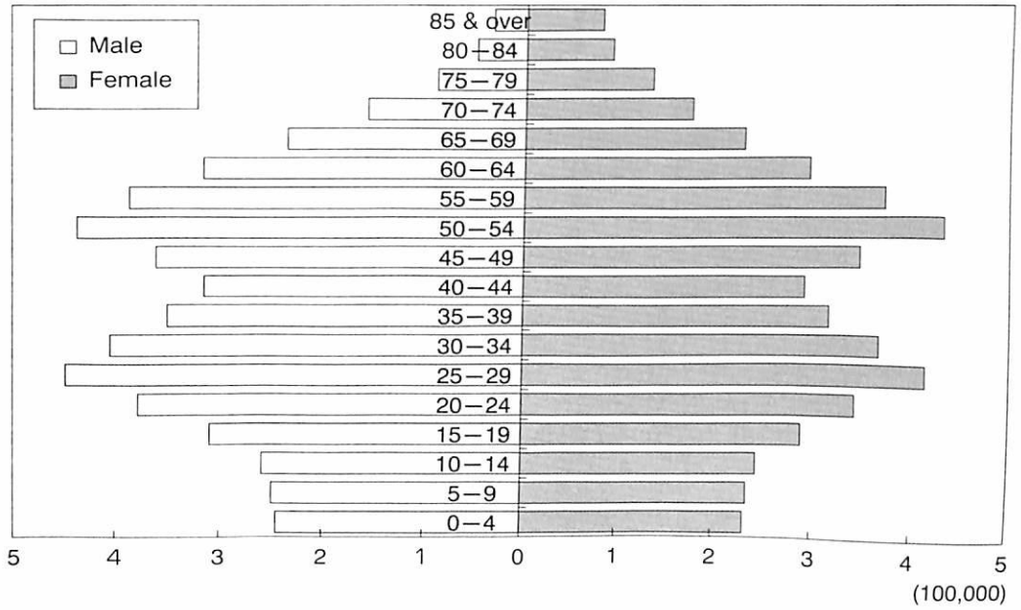


Figure 3-2. Population Pyramid of Saitama-ken, 2000



percentage (**Table 4**). On the other hand, 15 municipalities, or only 0.5 % of the total, indicated smaller than 10.0 %. Among those municipalities, *Urayasu-shi, Chiba* prefecture adjacent to *Tokyo* metropolitan prefecture showed the smallest percentage (7.7 %) (**Table 5**). Therefore, it is obvious that most of the municipalities experienced a remarkable extent of population aging in 2000. Distinct contrast in the age structures of populations between the eldest and the lowest municipalities (*Towa-cho and Urayasu-shi*) in the percentage in the elderly can be recognized in the **Figures 4-1** and **4-2**.

In Japan *shi* areas, or the areas consisting of *shi* municipalities are regarded nominally as urban areas, while *gun* areas, or those of *machi* (or *cho*) and *mura* (or *son*) municipalities are regarded as rural areas. In 1995, the percentage of total population in the elderly ages of 65 and over recorded 19.0% for *gun* areas against 13.7% for *shi* areas. In 2000, the percentage in the elderly showed 16.1% for *shi* areas, while it was 21.8% for *gun* areas.

The elderly dependency ratio as of 1995 presented 29.6 for *gun* areas against 19.3 for *shi* areas. Also, the elderly-child ratio in the corresponding year showed 112.8 for *gun* areas against 87.2 for *shi* areas. In 2000, it recorded 23.3 for *shi* areas, and 34.5 for *gun* areas, while the elderly-child ratio presented

Table 4. Number of Municipalities (Shi, Machi, and Mura) by Percent of Total Population in the Elderly at Ages of 65 and Over, 1995-2025, Japan

	1995	2000	2005	2010	2015	2020	2025	2030
Total	3229	3229	3229	3229	3229	3229	3229	3229
Under 10%	119	15	4	2	0	2	4	6
10-19%	1372	928	690	343	129	85	76	74
20-29%	1491	1654	1555	1658	1360	1012	856	784
30-39%	238	555	818	1007	1358	1477	1411	1369
40-49%	9	76	149	196	331	562	722	784
50-59%	0	1	13	22	46	77	134	174
60% & over	0	0	0	1	5	14	26	38
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 10%	3.7	0.5	0.1	0.1	0.0	0.1	0.1	0.2
10-19%	42.5	28.7	21.4	10.6	4.0	2.6	2.4	2.3
20-29%	46.2	51.2	48.2	51.3	42.1	31.3	26.5	24.3
30-39%	7.4	17.2	25.3	31.2	42.1	45.7	43.7	42.4
40-49%	0.3	2.4	4.6	6.1	10.3	17.4	22.4	24.3
50-59%	0.0	0.0	0.4	0.7	1.4	2.4	4.1	5.4
60% and over	0.0	0.0	0.0	0.0	0.2	0.4	0.8	1.2

Sources: Statistical Information Institute for Consulting and Analysis, *Projections of Future Populations by Shi, Ku, Machi and Mura, 2001*

Table 5. Highest 10 and Lowest 10 in the Percent of Total Population in the Elderly aged 65 and over, 2000

Rank	Municipality	Population	Percent
	(Highest 10)		
1	Towa-cho, Yamaguchi	5,255	50.6
2	Kiwa-cho, Mie	1,742	49.7
3	Yutaka-machi, Hiroshima	2,956	48.8
4	Sekizen-mura, Ehime	865	48.7
5	Sakauchi-mura, Gifu	663	48.6
6	Toyohama-cho, Hiroshima	2,175	48.5
7	Ashikawa-mura, Yamanashi	590	48.3
8	Hasumi-mura, Shimane	2,078	48.3
9	Hayakawa-cho, Yamanashi	1,740	47.2
10	Yanadani-mura, Ehime	1,348	46.4
	(Lowest 10)		
1	Urayasu-shi, Chiba	132,984	7.7
2	Ogasawara-mura, Tokyo	2,824	8.1
3	Nagakute-cho, Aichi	43,306	8.5
4	Miyoshi-cho, Aichi	47,684	8.9
5	Fujioka-cho, Aichi	18,005	9.2
6	Tomiya-machi, Miyagi	35,909	9.2
7	Tsurugashima-shi, Saitama	67,638	9.3
8	Misato-shi, Saitama	131,047	9.5
9	Toda-shi, Saitama	108,039	9.5
10	Nishihara-cho, Okinawa	32,777	9.7

Source: Statistics Bureau, Government of Japan, *2000 Population Census of Japan*

111.8 for *shi* areas and 145.0 for *gun* areas.

In 1995, DIDs, or Densely Inhabited Districts delineated substantially as urban areas for statistical purpose, indicated 12.5 % of total population in the elderly ages, whereas non-DIDs, or the areas not included in DIDs, did 18.3 % in 1995. According to the 2000 population census results, the percentage of total population in the elderly recorded 15.3 %, against 21.3 % of non-DID. Also, in 1995, the elderly dependency ratio in the corresponding year presented 17.4 for DIDs and 28.1 for non-DIDs. In 2000, it showed 21.7 for DID and 334 for non-DID. On the other hand, the elderly-child ratio as of 1995 showed 81.0 for DIDs and 108.6 for non-DIDs. In 2000, it was 106.8 for DID and 141.1 for non-DID. Those findings described above, therefore, implies obviously that the degree of population aging is much more significant in rural areas than in urban areas.

According to **Table 6** presenting the indices of population aging for 13

Figure 4-1. Population Pyramid of Towa-cho, 2000

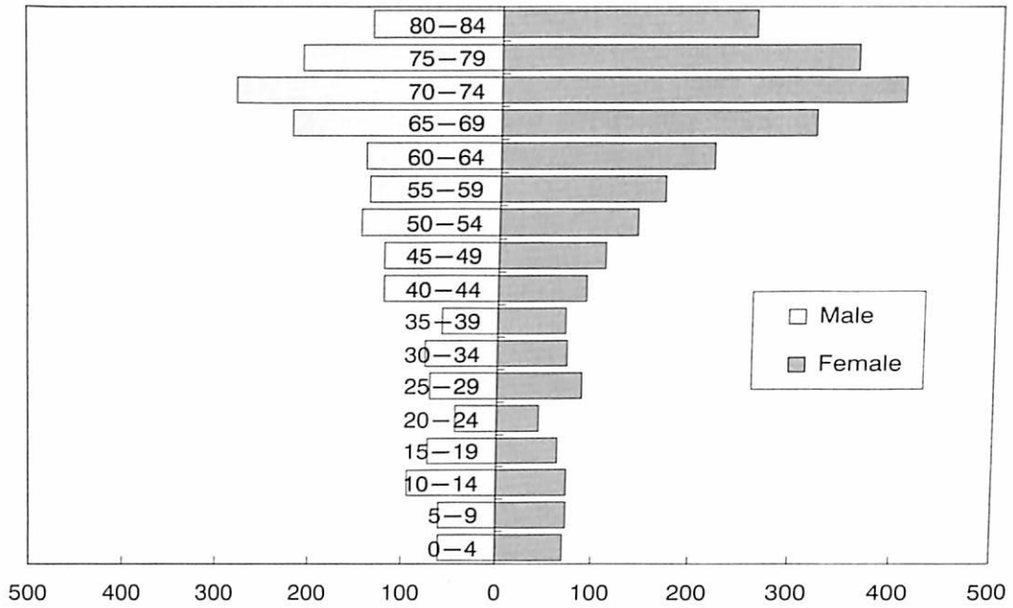
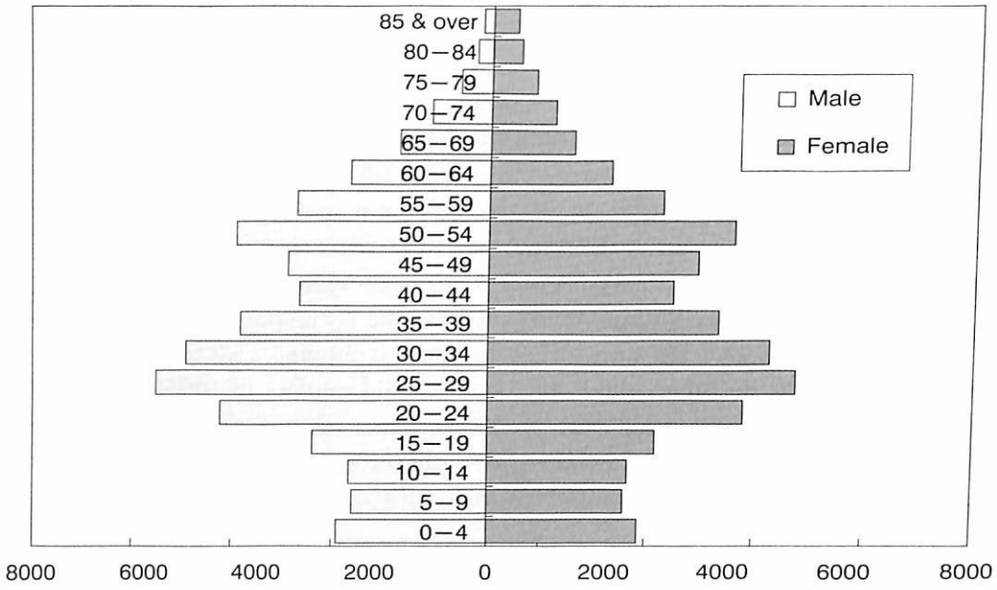


Figure 4-2. Population Pyramid of Urayasu-shi, 2000



large cities, the percentage of total population in the elderly ages of 65 and over as of 2000 was the highest (19.2 %) for *Kitakyushu* while it was the lowest (12.4 %) for *Kawasaki*. Among 13 cities, only *Kitakyushu* showed higher percentage than the national average. The aged dependency ratio recorded more than 20 for *Kitakyushu* and *Kyoto*. However, the elderly-child ratio exceeded 100 for four cities of *Tokyo*, *Kyoto*, *Osaka* and *Kitakyushu*. Above all, it should be noted that it indicated 148 for *Tokyo*.

The fact that a little higher extent of population aging is recognized in the large cities having one million or more inhabitants than in the cities with the population of less than one million suggests another aspect of population aging in the large cities, which may be somehow different from the aspect in the smaller cities. One of the concrete implications for the suggestion described above, may be given. Observing the indices of population aging for each ward of metropolis such as *Tokyo*, *Osaka* and *Nagoya*, etc, it can be found that the degree of population aging is higher in the central part than in its outer neighboring zones within a metropolitan area. In 2000, for example, the wards constituting the City Center of *Tokyo* such as *Chiyoda* (20.9%), *Chuo* (18.2%) or *Taito* (21.1%) showed the considerably high percentage in the elderly, while the wards forming the outer industrial and housing suburb of *Tokyo* such as *Edogawawa* (12.8%) and *Adachi* (15.3%) indicated very low percentage in the elderly.

Table 6. Indices of Aging for 13 Large Cities, 2000

Cities	Total Pop. (1000)	Percent in Elderly	Dependency Ratio	Elderly-Child Ratio
Tokyo	8,135	16.4	38.2	148.4
Yokohama	3,427	13.9	38.6	100.5
Osaka	2,599	17.1	42.4	135.7
Nagoya	2,172	15.6	42.6	111.7
Sapporo	1,822	14.4	39.7	105.8
Kobe	1,493	16.9	44.4	122.1
Kyoto	1,468	17.2	43.2	136.1
Fukuoka	1,341	13.3	38.1	93.0
Kawasaki	1,250	12.4	35.2	90.6
Hiroshima	1,126	14.2	42.1	92.6
Kitakyushu	1,011	19.2	49.5	138.6
Sendai	1,008	13.2	38.5	90.6
Chiba	887	12.6	36.4	90.5

Source: Statistics Bureau, Government of Japan, *2000 Population Census of Japan*

4. Elderly Households by Prefectures

Population aging affects its household structure. As already mentioned, in keeping pace with extension of population aging, the household structure has changed as well as the number of the households with elderly has increased. In addition, differences in degree of population aging between prefectures have brought different aspects of household structure between prefectures.

According to the 2000 population census results, the percentage of total households in the elderly households, or the households with the elderly of 65 and over increased from 29.1 % as of 1995 to 33.2% for the nation. Among 47 prefectures *Yamagata* indicated the highest (49.8%). Including *Yamagata*, 16 prefectures such as *Shimane*, *Akita*, *Tottori*, *Niigata*, *Toyama*, and *Fukui*, those which are located along the coast of Japan Sea presented larger than 40 %. On the other hand, *Kanagawa* prefecture showed the smallest (24.7 %). The prefectures constituting metropolitan areas such as *Saitama*, *Chiba*, *Tokyo*, *Aichi*, *Osaka*, and the remotest prefecture, *Okinawa* presented less than 20 %(**Table 3**).

Observing the percentage of total general households in the households of elderly couple, consisted of the male aged 65 and over and female aged 60 and over, and of elderly single aged 65 and over, *Kagoshima* presented the largest (25.1 %), while *Saitama* showed the smallest (9.8%).in 2000. The national average was 14.3%. Following after *Kagoshima*, the remote rural prefectures located in southwestern part of Japan such as *Kochi*, *Yamaguchi*, *Miyazaki*, and *Wakayama*, etc. including *Kagoshima*, indicated larger proportion of more than 20 %. On the other hand, those prefectures situating at *Kanto* region in northeastern Japan recorded smaller proportion (**Table 3**).

5. Migration and Population Aging

Population aging in Japan has been brought due to low fertility and low mortality, as explained in the previous chapter. Analyzing the relationship between the degree of aging, or the percentage of total population in the elderly, and the degree of fertility, or total fertility rate, and that between the degree of aging and the degree of mortality, or female life expectancy at birth, among 47 prefectures being based on the data as of 1990, it was found that both of the relationships were not significant because the correlation coefficient was 0.46 for the former while it was -0.22 for the latter. On the contrary, it was recognized that correlation between the degree of aging and the degree of migration, or net

migration rate for 1985-1990, was higher (0.64) than those for the correlations of aging with fertility and mortality. Therefore, it can be explained that the differences of population aging among sub-national areas such as prefectures and municipalities are caused mostly by migration.

Also, as seen in **Figures 5** and **6** showing age-specific migration rates for *Saitama*, the youngest prefecture, and for *Yamagata* , the elder prefecture in the degree of population aging, among 47 prefectures, the rates of not only inmigration but also outmigration by ages are depicted in the similar pattern showing the highest at the young adult ages of 20-24 or 25-29 and lower with increasing or decreasing age except for the elderly or the child ages, which present higher than for the former or the later ages. For *Saitama*, the inmigration rates are slightly higher than the outmigration rates by almost each ages, except for the elderly where the inmigration rates are consoderably higher than the outmigration rates and the inmigration rates show rising trend with increase in age. And for *Yamagata* where the outmigration rate at the ages of 20-24 presents extremely high, the inmigration rates are almost same as the outmigration rates by almost each ages, except for 15-24. On the other hand, for *Tokyo*, the inmigration rates are distinctly higher than the outmigration rates at the earlier ages before 25 year old, but at the ages after 25 years old, the outmigration rates are higher than the inmigration rates, and it can be observed that not only the inmi-

Figure 5. Interprefectural Migration Rates by Ages, 1995-2000, Saitama

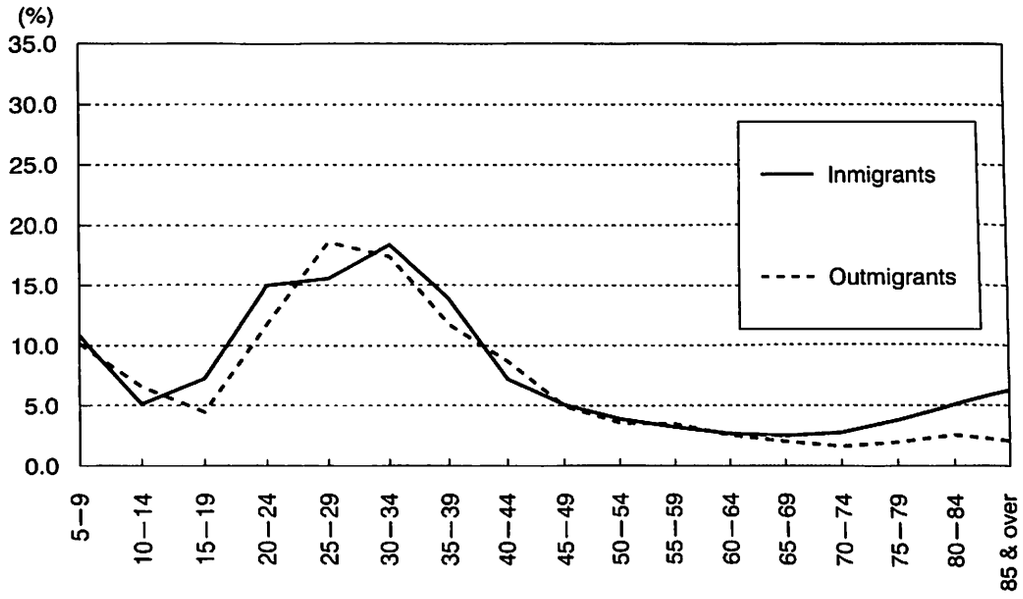
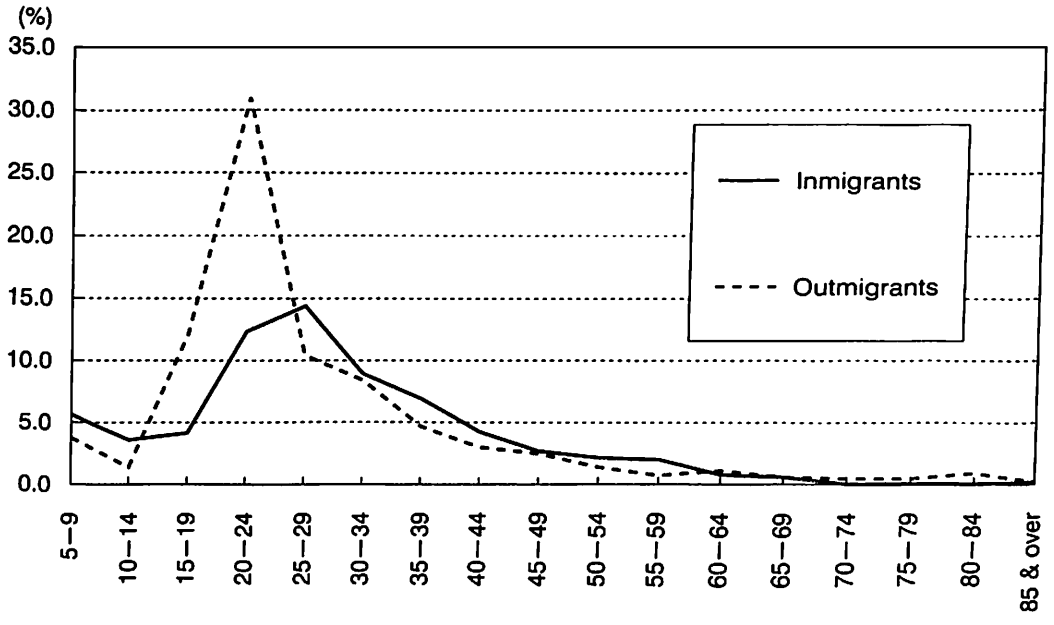


Figure 6. Interprefectural Migration Rates by Ages, 1995-2000, Yamagata



gration rates but also the outmigration rates increase with increase of age.

Those findings described above imply that the inmigration is larger than the outmigration in the prefecture with younger age structure, while the outmigration is larger than the inmigration with the prefecture with older age structure. In particular, the differences between both migartions are very large at the young adult ages. From those implications mentioned above, it can be explained that the serious ageing phenomena in remote rural areas such as *Shimane*, *Kochi*, *Kagoshima*, and *Akita*, etc. or in the central part of a large city or a metropolitan area such as *Tokyo*, *Osaka* or *Nagoya* were brought by heavy exodus of young adult population to urban or metropolitan prefectures or to the adjacent suburban areas. Also, **Figure 7** suggests that elderly population migrate to suburban area such as *Saitama*, *Chiba* and *Kanagawa* from *Tokyo* for 1995 to 2000..

In addition, other aspects of migration with relation to population aging should not be neglected. Observing precisely **Figure 8**, it can be known that the rates of both inmigration and outmigration declines sharply after the young adult ages but they tend to increase sharply after the ages of 70-74 or around. Such tendency has been recognized throughout the nation since 1980 (Otomo, 1992). Particularly, it is distinguishable for a large city or for a metropolitan area such as *Tokyo*, *Osaka* or *Nagoya*. Such relatively high mobility of the el-

Figure 7. Prefectural Migration Rates by Ages for 1995-2000, Tokyo

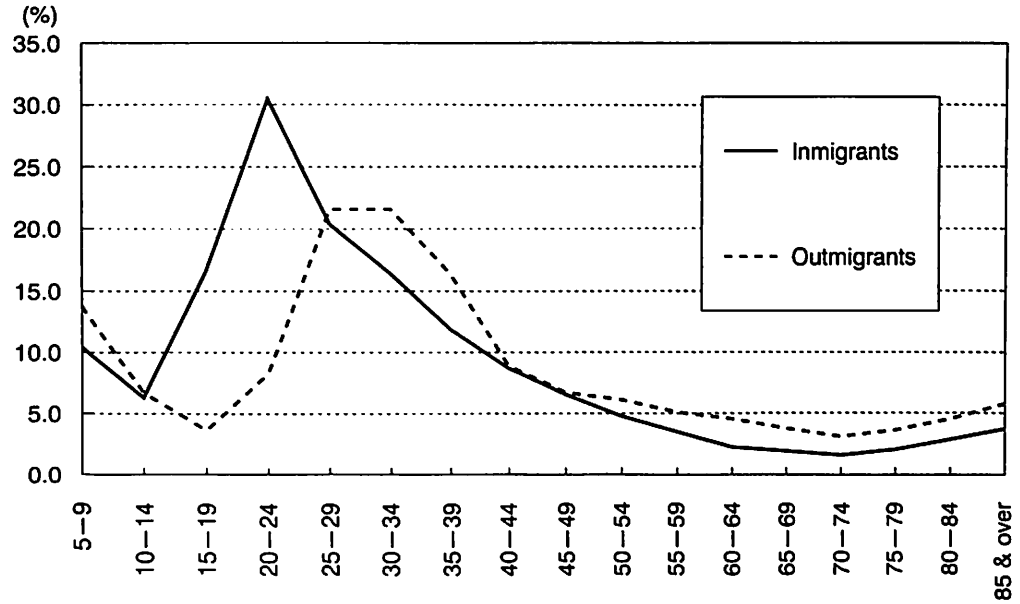
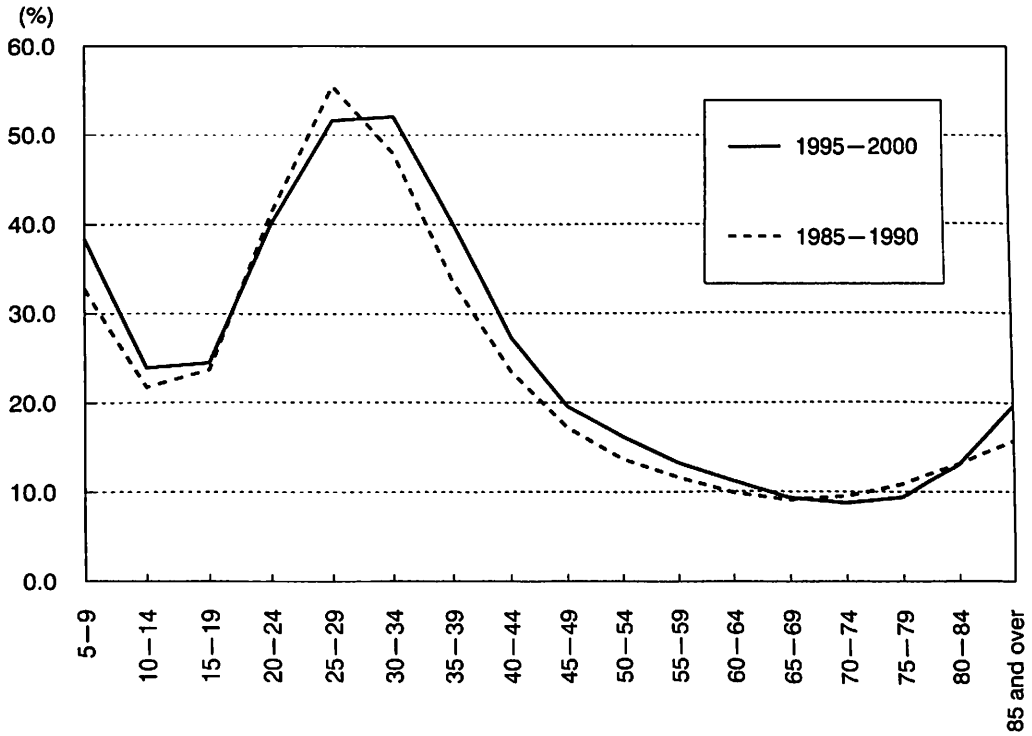


Figure 8. Overall Migration Rates by Ages for Japan



derly people may be explained mainly by the reasons of reunion of the elderly from a remote rural area invited to reside together with his or her family or of being taken care in a nursery home or a hospital, from the findings derived from the returns of the surveys taken by JARC (1991, 1992, 1993, 1994, 1995, 1996 and 1997).

On the contrary, population migration causes further aging within the nation. **Figure 9** depicting the percentages of total population in the elderly at the different zones drawn by circles dissected at every 500 m from city center of *Utsunomiya* City, suggests that aging in the city center caused by exodus of younger people from the center. On the other hand, **Figure 10** presents that the degree of aging is proportional to height of land. This was derived from the study on population distribution and land-forms undertaken by Statistical Information Institute for Consulting and Analysis (*Sinfonica*) Basing upon the study, land decline and direction of sunshine cause unfavorable residential pattern of the elderly, so that the percentage in the elderly becomes higher in the area of unfavorable living condition as the consequence of migration of younger population (Otomo, *et.al*, 2001).

Figure 9. Percent in Elderly by Distance from City Center, Utsunomiya City, 1995,

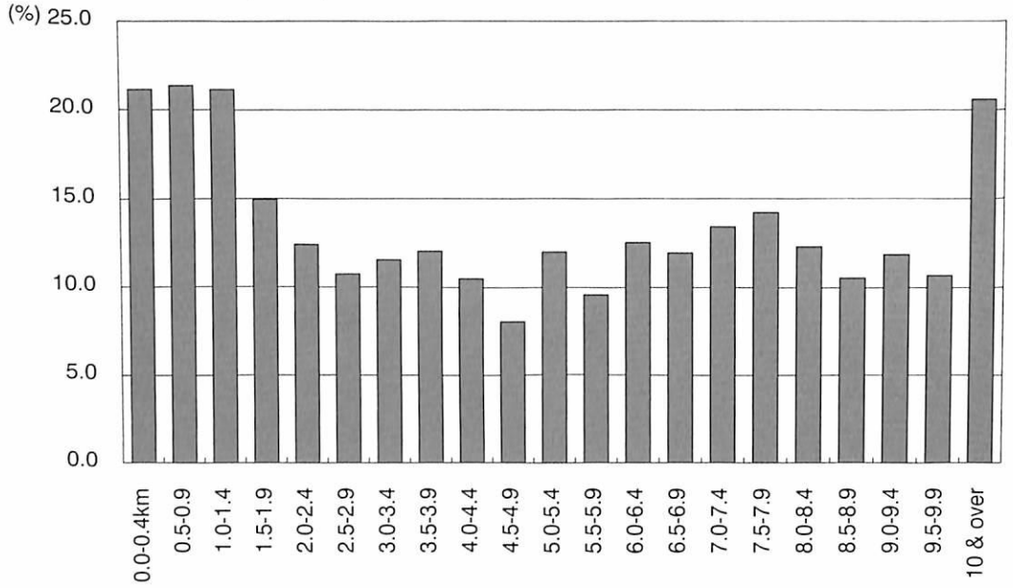
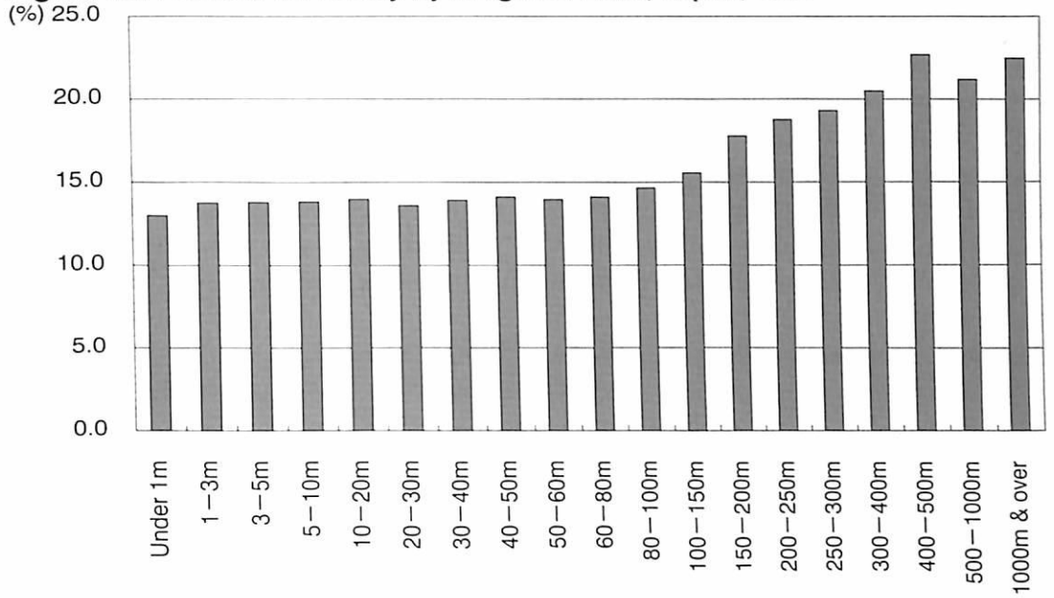


Figure 10. Percent in Elderly by Height of Land, Japan, 1995



6. Future Trends of Aging of Sub-national Populations in Japan

The projections of future populations by prefectures basing on the results of the 2000 population census were made in 2001 separately by National Institute for Population and Social Security, and by *Sinfonica*. According to the latter projection, the percentage of total population in the elderly ages of 65 and over will exceed 20.0 % for all of 47 prefectures in 2015 when it will present 25.2 % for the nation, under the assumption that the age-specific rates of fertility, mortality and net-migration for the period of 1995 to 2000 will not be unchanged for the future.

According to *Sinfonica*'s projection, all of 47 prefectures will exceed 20.0% as *Okinawa* will present 23.3 % in the proportion in 2020. In 2025 when the nation will show 27.4 % in the elderly proportion, 20 prefectures, among those which *Akita* will record the highest (34.7%), will present 30.0 % or larger. Under the assumption described above, the discrepancy in the degree of population aging, in terms of the proportion of the population at the ages of 65 and over, between 47 prefectures, will continue to decrease, because the coefficients of variation for the proportion will decrease in future every five year after 2000 (**Table 7**).

The projections of future populations by each municipalities (*shi*, *ku*, *machi* and *mura*) made by *Sinfonica* (2001), under the assumption that the age-specific rates of fertility, mortality and net-migration for the period of 1995 to 2000 will not be unchanged for the future, provides with the knowledge that 89 % of the all municipalities of *shi*, *machi* and *mura* in 2010 and 97 % of those in 2020 will present 20.0 % or larger in the percentage of total population in the elderly aged 65 and over. Furthermore, according to this projections, more than a half of the all municipalities will record 30.0 % or larger in the proportion of the elderly in 2020. Although there were no municipalities having the percentage in the elderly of 50.0 % or larger, more than 200 municipalities will show 50.0 % or larger in the proportion of the elderly in 2030 (**Table 4**).

Basing upon the population projections described above, all of the 13 large cities except for *Sendai* will present higher than 20 % in the proportion in the elderly in 2015, when *Kitakyushu*, *Tokyo*, *Kyoto* and *Osaka* will exceed the national level of aging (25 %). Thus, in some of large cities population aging will be further serious for the future (*Sinfonica* 2001).

Table 7. Future Trends of Percent of Total Population in Elderly Aged 65 and Over, by Prefectures (%)

Prefecture	2000	2005	2010	2015	2020	2025	2030
Hokkaido	18.2	21.1	23.9	27.8	30.6	31.8	32.9
Aomori	19.5	22.0	24.0	27.1	29.6	30.8	31.6
Iwate	21.5	23.9	25.4	27.8	29.6	30.4	30.6
Miyagi	17.3	19.4	21.2	23.9	26.0	27.0	27.5
Akita	23.5	26.2	27.8	30.8	33.3	34.7	35.3
Yamagata	23.0	24.9	26.0	28.2	30.2	31.3	31.8
Fukushima	20.3	22.1	23.4	25.8	28.1	29.5	30.2
Ibaraki	16.6	19.0	21.7	25.3	27.8	28.9	29.5
Tochigi	17.2	19.1	21.2	24.6	27.0	28.2	28.9
Gumma	18.2	20.2	22.5	25.5	26.3	24.2	19.7
Saitama	12.8	16.2	20.1	24.1	26.1	26.6	27.3
Chiba	14.1	17.4	21.2	25.2	26.9	26.7	25.6
Tokyo	15.9	18.5	21.1	23.6	24.3	24.5	25.4
Kanagawa	13.8	16.7	19.9	23.1	24.3	24.5	25.3
Niigata	21.3	23.4	25.1	28.0	30.0	30.8	31.2
Toyama	20.8	22.8	25.2	28.9	30.3	30.5	30.6
Ishikawa	18.7	20.5	22.9	26.6	28.1	28.6	28.9
Fukui	20.5	22.2	23.9	26.6	28.1	28.8	29.2
Yamanashi	19.5	21.3	23.1	25.6	27.3	28.1	29.0
Nagano	21.5	23.1	24.8	27.1	28.1	28.5	28.9
Gifu	18.2	20.6	23.1	26.4	27.9	28.4	28.9
Shizuoka	17.7	20.3	23.0	26.4	28.3	29.2	30.0
Aichi	14.5	17.2	20.1	23.2	24.3	24.4	25.0
Mie	18.9	21.1	23.4	26.3	27.7	28.2	28.8
Shiga	16.1	17.6	19.4	22.0	23.2	23.4	23.6
Kyoto	17.5	20.0	22.9	26.4	27.5	27.4	27.4
Osaka	15.0	18.2	21.7	25.1	26.1	25.8	26.2
Hyogo	16.9	19.4	22.0	24.9	25.9	25.9	26.0
Nara	16.6	19.4	22.6	26.4	28.2	28.8	29.4
Wakayama	21.2	23.4	25.8	28.8	30.2	30.6	31.0
Tottori	22.0	23.6	24.9	27.5	29.4	30.3	30.5
Shimane	24.8	26.4	27.4	29.9	31.2	31.5	31.3
Okayama	20.2	22.1	24.4	27.5	28.7	29.1	29.0
Hiroshima	18.5	20.6	23.3	26.7	28.3	28.8	29.0
Yamaguchi	22.2	24.6	27.0	30.6	32.4	32.9	32.8
Tokushima	21.9	23.8	25.2	28.2	30.1	30.9	31.0
Kagawa	21.0	22.8	24.6	28.1	29.7	30.3	30.4
Ehime	21.4	23.5	25.5	28.8	30.7	31.5	32.0
Kochi	23.6	25.4	27.2	30.4	31.9	32.4	32.4
Fukuoka	17.4	19.5	21.5	24.6	26.4	26.9	27.0
Saga	20.4	22.2	23.4	25.9	28.2	29.3	29.6
Nagasaki	20.8	23.1	24.6	27.6	30.2	31.7	32.3
Kumamoto	21.3	23.3	24.6	27.2	29.4	30.5	31.1
Oita	21.8	24.0	25.9	29.1	31.3	32.4	32.7
Miyazaki	20.7	23.0	24.7	27.8	30.4	32.0	32.7
Kagoshima	22.6	24.2	24.9	26.9	29.1	30.5	31.0
Okinawa	13.9	16.1	17.2	19.2	21.9	23.8	25.0

Sources: National Institute of Population and Social Security, *Projections of Future Populations by Prefectures, 2001*

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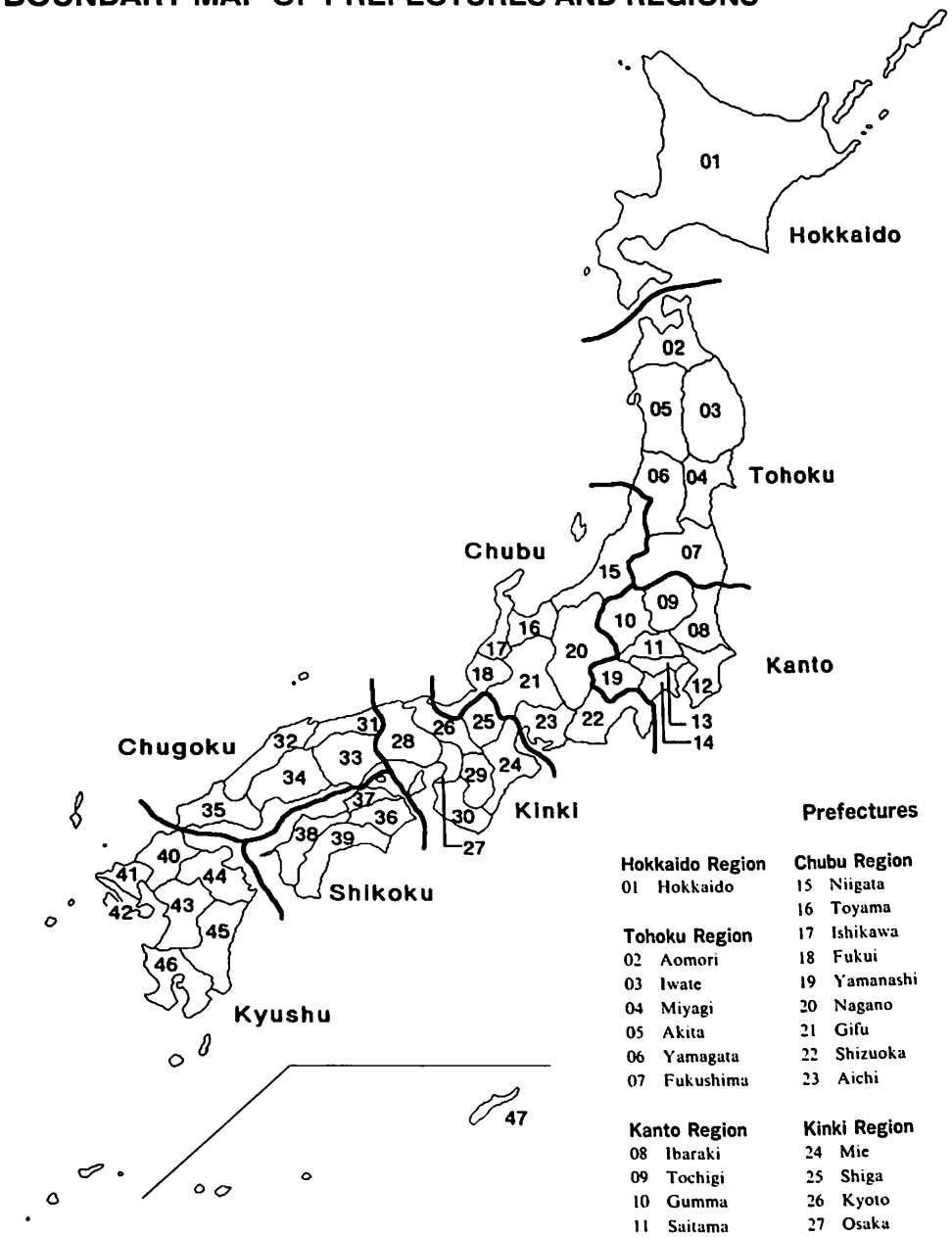
BOUNDARY MAP OF PREFECTURES AND REGIONS



Prefectures

Hokkaido Region
01 Hokkaido

Tohoku Region
02 Aomori
03 Iwate
04 Miyagi
05 Akita
06 Yamagata
07 Fukushima

Kanto Region
08 Ibaraki
09 Tochigi
10 Gumma
11 Saitama
12 Chiba
13 Tokyo
14 Kanagawa

Chubu Region
15 Niigata
16 Toyama
17 Ishikawa
18 Fukui
19 Yamanashi
20 Nagano
21 Gifu
22 Shizuoka
23 Aichi

Kinki Region
24 Mie
25 Shiga
26 Kyoto
27 Osaka
28 Hyogo
29 Nara
30 Wakayama

Chugoku Region
31 Tottori
32 Shimane
33 Okayama
34 Hiroshima
35 Yamaguchi

Shikoku Region
36 Tokushima
37 Kagawa
38 Ehime
39 Kochi

Kyushu Region
40 Fukuoka
41 Saga
42 Nagasaki
43 Kumamoto
44 Oita
45 Miyazaki
46 Kagoshima
47 Okinawa

Note: The figure on the map presents Prefectural Code.
As for the name of prefecture, refer to Table 3

PART III

Chapter 5

Living Arrangements of the Elderly in Japan

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Introduction

In the 20th century, human beings have faced population aging in the process of modernization. It can be said that the population aging is a kind of population modernization which has been brought about by both declining fertility and prolonged longevity. Although at present population aging has been accelerating in the developed countries, some Asian countries like Korea, Singapore and China, where fertility has declined in the recent years, will also confronted with population aging in the near future.

Population aging itself is a demographic phenomenon on the age composition of a population. However, it gives a powerful influence to change social structure. For example, change of the life styles, living conditions, family structure and value system of people are closely related with the process of population aging.

Among those changes, the family structure will show a drastic change in accordance with population phenomena. So far as the change of family is concerned, it will be observed primarily in the aspect of family structure, like the family types, the living arrangements, and secondly in the aspect of norms on or attitudes toward family formation, intergenerational relations and supports for the family members.

It is common knowledge that the aging of Japan's population started to accelerate at the beginning of the 1970s, and the proportion of the population aged 65 and over in the total population (aging rate) reached 17.3% in 2000(**Table 1**). As of Respect-for-Senior-Citizens Day (September 15) in 2002, the 65-plus population was estimated by the Ministry of Public Management, Home Affairs, Posts and Telecommunications to be 23.62 million, accounting for as much as 18.5% of the total population. Among this group, the "old-old" population, those aged 75 and over, has increased to reach 10.03 million, accounting

Table 1 Growth of Population

Year	Population (1000)	Composition of population(%)			Average annual rate of increase (%)	Population density (per km²)
		0-14years	15-64	65 and over		
1920	55,963	36.5	58.3	5.3	1.30	147
1930	64,450	36.6	58.7	4.8	1.42	169
1940	73,075	36.1	59.2	4.7	1.26	191
1950	84,115	35.4	59.6	4.9	—	226
1955	90,077	33.4	61.2	5.3	1.38	242
1960	94,302	30.2	64.1	5.7	0.92	253
1965	99,209	25.7	68.0	6.3	1.02	267
1970	104,665	24.0	68.9	7.1	1.08	281
1975	111,940	24.3	67.7	7.9	1.35	300
1980	117,060	23.5	67.3	9.1	0.90	314
1985	121,049	21.5	68.2	10.3	0.67	325
1990	123,611	18.2	69.5	12.0	0.42	332
1995	125,570	15.9	69.4	14.5	0.31	337
1998	126,486	15.1	68.7	16.2	0.24	339
1999	126,686	14.8	68.5	16.7	0.16	340
2000	126,926	14.6	67.9	17.3	0.19	340
2001	127,291	14.4	67.7	18.0	0.29	341

Source: Satisitics Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications, *Population Census of Japan*, various years and *Population Estimates*, various years.

Table 2. The Elderly Population in Japan (as of September 15, 2002)

		Total population	The elderly population(65plus)				
			65 plus	70 plus	75 plus	80 plus	85 plus
Population	Both sex	12,747	2,362	1,624	1,003	536	251
	Male	6,227	995	646	363	170	72
(10 thousand)	Female	6,520	1,367	978	640	366	179
Proportion	Both sex	100.0	18.5	12.7	7.9	4.2	2.0
in total	Male	100.0	16.0	10.4	5.8	2.7	1.2
population	Female	100.0	21.0	15.0	9.8	5.6	2.7
(%)							
Sex ratio Male/Female		95.5	72.8	66.1	56.7	46.4	40.2

Source: same as Table 1

for 42.5% of the 65-plus population(**Table 2**).

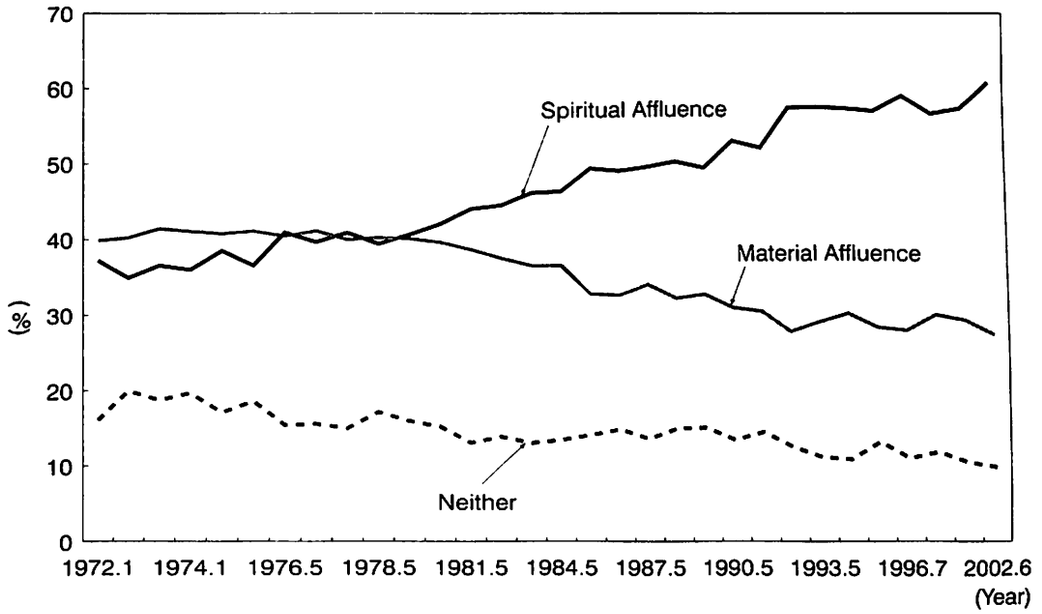
Since 1970, when the population aged 65-plus was 7.39 million (7.1% of the total population), the elderly population has grown 3.2 times (average annual increase rate: 3.7%) over the 32 years until 2002. During this period, the population aged 75-plus showed a sharp increase of 4.5 times (average annual increase rate: 4.8%) from 2.24 million to 10.03 million.

1. Diversifying Living of the Elderly

Such drastic demographic changes since the 1970s, together with the shift of the Japanese economy to an era of low growth after the oil crisis in 1973, have brought about great changes to Japanese people's ways of living, particularly to the living arrangements of the elderly. A new consciousness of life that provides a basis for people's lifestyle began to burgeon during this period. It could be considered to be the emergence of an aging culture. Furthermore, the whole of such new changes in the specific circumstances of the era may be referred to as the "Aging Revolution." The term "Longevity Revolution," which has recently been used by American gerontologists, must have been proposed in the same context.

The changes in Japanese people's consciousness of life since the 1970s are shown in **Figure 1** (Cabinet Office, "The Opinion Survey on the National Life,"

Figure 1 Spiritual Affluence or Material Affluence



Source: Cabinet Office, *The Opinion Survey on National Life*, 2002

2002). According to the survey of adults aged 20 and over, the proportion of people attaching importance to "spiritual affluence" was lower than those laying emphasis on "material affluence" until around 1970, but the ratio of people attaching more value to "spiritual affluence" has continued to increase since the beginning of the 1980s. This trend is commonly observed for all generations excluding the young generation in their 20s. The increase in people seeking "spiritual affluence" was only observed after the "material affluence" was fulfilled as a result of the post-war high economic growth, and shows that people are now able to freely choose their own ways of living independently.

The point to note is that, even if the lifestyles revealed therein have basically been formed as a result of the specific circumstances of the present aged society, the way of living of each elderly person is the result of his/her independent choice. The Japanese aged society is gradually fulfilling the conditions for making that possible, and the elderly have begun to have an independent mind to decide their own ways of living.

2. The Structural Changes of Family

Generally speaking, population aging will change family structure directly or indirectly. It is well-known that the declining fertility, which is one of major components of population aging, has decreased the family size and the proportions of three-generation households in Japan. At the same time, it has brought about increase in proportions of one-person households and married couple-only households. On the other hand, along with the population aging the social security system has been developed covering pensions and public assistance for older persons. As a result of it, the living arrangements of older persons have been so changed that the proportion of the elderly co-living with their child decreased.

First of all, the changes in families will be reviewed based on household statistics. According to the "Comprehension Survey of Living Conditions of the People on Health and Welfare" conducted by the Ministry of Health, Labor and Welfare, the total number of households in Japan was 45.66 million in 2001, which can be broken down into one-person households 24.1%, married couple-only households 20.6%, married couple households with unmarried children 32.6%, single-parent households with unmarried children 5.7%, three-generation households 10.6%, and other households 6.4%. The proportion of nuclear families has not changed since the 1970s, but the distinctive feature is that one-person households are increasing on one hand and three-generation households

are decreasing on the other.

Table 3 shows the trends in the percentage distribution of households by family type containing at least one elderly person aged 65 and over for the year from 1975 to 2001. The total number of households containing elderly person aged 65 and over was 7,118 thousand in 1975, and 16,367 thousand in 2001. These data indicate that the number of households has increased more than double during the period of 26 years from 1975 to 2001, and the average growth rate per annum was 3.3%, whereas the total number of households of Japan has increased at a rate of 1.3% per annum for the same period.

In particular, a marked increase can be observed in the numbers of one-person households, which mean older persons aged 65 and over living alone. It has increased in the number from 611 thousand in 1975 to 3,179 thousand in 2001, growing at a rate of 6.7% per annum. Regarding the one-person households, female older persons are predominant, being 2,451 thousand (77. 1%) out of the total number 3,179 thousand in 2001.

In accordance with the increase of one-person households, the households

Table 3 Trends in the Distribution of Households by Family Type Containing at Least One Elderly Person Aged Over, Japan, 1975-2001

Year	Total households	One-person households	Husband and wife only	Parents and unmarried children	Three-generation family households	Other types of households
	Number (thousands)					
1975	7,118	611	931	683	3,871	1,023
1980	8,495	910	1,379	891	4,254	1,062
1985	9,400	1,131	1,795	1,012	4,313	1,150
1990	10,816	1,613	2,314	1,275	4,270	1,345
1995	12,695	2,199	3,075	1,636	4,232	1,553
2000	15,647	3,079	4,234	2,268	4,141	1,924
2001	16,367	3,179	4,545	2,563	4,179	1,902
	Percentage (%)					
1975	100.0	8.6	13.1	9.6	54.4	14.4
1980	100.0	10.7	16.2	10.5	50.1	12.5
1985	100.0	12.0	19.1	10.8	45.9	12.2
1990	100.0	14.9	21.4	11.8	39.5	12.4
1995	100.0	17.3	24.2	12.9	33.3	12.2
2000	100.0	19.7	27.1	14.5	26.5	12.3
2001	100.0	19.4	27.8	15.7	25.5	11.6

Source: Statistics and Information Department, Ministry of Health, Labour and Welfare, *Comprehensive Survey of Living Condition of the People on health and Welfare*, 2001

of older couple-only have also shown a rapid growth in number. It increased from 931 thousand couples in 1975 to 4,545 thousand in 2001 at a rate of 6.3% per annum for the period. While both one-person households and couple-only households have been rapidly increased, the percentage of the three-generation households has been considerably reduced.

The Cabinet Office, Japanese Government, has so far conducted a series of surveys for the elderly for the sake of international comparison in 1981, 86, 90, 95 and 2001.**Table 4** shows changes of the percentage distribution of the elderly aged 60 and over for four countries, Japan, Korea, Thailand and U.S.A. Although Japan and Korea have been experiencing the structural change of family, they still have a conspicuously high percentage of the three-generation

Table 4 Percentage Distribution of Older Persons Aged 60 and Over by Family Type for Countries, 1981-2001

Country / Year	Total samples (person)	One-person households	Married couple only	Married couple with unmarried children	Three-generation family households	Other types of households
Japan						
1981	1,221	5.7	25.1	15.2	36.9	17.0
1986	1,134	6.7	27.2	12.4	37.3	16.3
1990	1,004	5.6	33.8	14.1	31.9	14.6
1995	1,183	8.0	31.0	14.0	29.1	17.8
2001	1,158	9.6	33.5	13.1	22.0	21.3
Korea						
1981	1,427	—	—	—	—	—
1986	—	—	—	—	—	—
1990	1,000	11.3	23.7	13.2	38.1	13.7
1995	1,004	13.7	29.3	11.5	35.5	10.1
2001	1,005	13.9	31.5	12.8	26.3	15.4
Thailand						
1981	1,000	4.7	6.2	13.8	38.9	36.4
1986	1,001	4.6	5.4	11.5	48.5	30.1
1990	—	—	—	—	—	—
1995	1,030	4.7	7.1	15.6	42.6	30.0
2001	—	—	—	—	—	—
U. S. A.						
1981	1,000	41.3	40.0	8.3	1.6	8.8
1986	1,007	39.6	40.4	9.8	0.5	9.6
1990	1,002	35.1	40.8	9.5	1.3	13.3
1995	998	40.0	35.2	9.3	1.8	13.7
2001	1,002	40.1	35.7	5.4	1.8	15.8

Source: Cabinet Office, *The International Study on Living and Consciousness of Senior Citizens*, 2001

households in contrast with U.S.A.

3. Change of Living Arrangements

Along with population aging, the living arrangements of the elderly have been remarkably changed in Japan. As seen in **Table 5**, the percentages of the elderly who have been co-living with their child were at about 60% level during 1980s. It has continuously declined to the level of 49.1% in 2000. On the other hand, the percentage of those who are not living with their child has increased. However, this does not necessarily mean that the isolated elderly have increased in Japan, because it has recently been a popular lifestyle in Japan that the elderly are forming a separate household from their children, but living within the same house or compound, and otherwise living in an adjacent area.

In recent years, the living arrangements of the elderly in Japan have come to include new types of arrangements that cannot be sufficiently identified by a household-based survey. Such new types of arrangements include two-generation families living in the same house (quasi-coresidence), living on the same premises, or living in a nearby area (within 30 minutes' reach). These new living arrangements are distinctive in that parents and children form separate households and maintain the family relationship by living close-by. These living arrangements are recently increasing in large cities and their suburbs.

Table 6 indicates these new living arrangements nationwide by age of the elderly based on the "Comprehensive Survey of Living Condition of the People on Health and Welfare" for 2001. Of the elderly aged 60 and over living separately from their children, 5.4% are living by way of quasi-coresidence,

Table 5 Trends in Percentage Distiribution of the Elderly Aged 65 and Over by Status of Living Arrangements, Japan, 1980-2000 (%)

Year	Total (thousands)	Living alone	Couple only	Co-living with children	Others
1980	10,729	8.5	19.6	69.0	3.0
1985	12,111	9.3	23.0	64.6	3.0
1990	14,453	11.2	25.7	59.7	3.5
1995	17,449	12.6	29.4	54.3	3.7
1996	18,741	12.6	30.6	53.1	3.7
1997	19,587	12.7	31.6	52.2	3.6
1998	20,620	13.2	32.3	50.3	4.2
1999	20,811	13.0	33.7	49.3	4.0
2000	21,827	14.1	33.1	49.1	3.7

Source : Same as Table 3

Table 6 Living Arrangements of the Elderly Aged 60 and Over by Age Group, 2001

Age	Total	Co-living with children	Living apart from children				No child
			Within the same house (quasi-coresidence)	Within the same compound	In an adjacent area	Within the same municipalty	Others	
			Number (Thousand)					
Total	31,152	14,935	11,255	546	2,384	2,930	4,751	2,221
60-64	8,079	3,762	2,832	94	622	729	1,286	595
65-69	7,684	3,247	3,089	138	638	819	1,350	628
70-74	6,301	2,730	2,533	134	515	646	1,088	492
75-79	4,437	2,231	1,584	86	335	405	620	298
80+	4,650	2,966	1,217	94	274	331	407	207
65+	23,073	11,173	8,432	452	1,762	2,200	3,465	1,625
			Proportion (%)					
total	100.0	47.9	36.1(100.0)	(4.8)	(21.2)	(26.0)	(42.2)	7.1
60-64	100.0	46.6	35.1(100.0)	(3.3)	(22.0)	(25.8)	(45.4)	7.4
65-69	100.0	42.3	40.2(100.0)	(4.5)	(20.7)	(26.5)	(43.7)	8.2
70-74	100.0	43.3	40.2(100.0)	(5.3)	(20.3)	(25.5)	(43.0)	7.8
75-79	100.0	50.3	35.7(100.0)	(5.4)	(21.2)	(25.6)	(39.2)	6.7
80+	100.0	63.8	26.2(100.0)	(7.7)	(22.5)	(27.2)	(33.4)	4.4
65+	100.0	48.4	36.5(100.0)	(5.4)	(20.9)	(26.1)	(41.1)	7.0

Source:Ministry of Health, Labour, and Welfare, *Comprehensive Survey of Living Condition of the People on Health and Welfare*, 2001

6.5% are living on the same premises, 20.9% are living in a nearby area, and 26.1% are living in the same municipality("Comprehensive Survey of Living Condition of the People on Health and Welfare" for 2001). This means that almost 60% of the elderly living separately from their children have their home close to their children's domicile.

According to many opinion surveys, it is clarified that the elderly's attitudes toward co-residence have been changed. It seems that those older persons who agree to the opinion that people should be separated from their married child have gradually increased.

In this place, the elderly's attitudes toward the intergenerational relationships in the family will be focused on by using the data derived from the abovementioned International Surveys conducted by the Cabinet Office.

How do the elderly think about the relationships with their children and grand-children? If we look at **Table 7**, any of three Asian countries shows the highest percentage for the intension of co-residence (" it is best for the whole family to live together"). And it is noteworthing that in the case of Japan and Korea, the percentages for the same item have been considerably declining.

Table 8 shows the elderly' s views on the economic security in old age. The percentages of those who regard the social security as most important are comparatively high in Japan and U.S.A. Those who selected the item " one should save while working and not have to rely on one' s family or public support" are showing high percentages in every countries except Thailand. This means that most of the elderly in those countries have an attitude of self-help.

4. Working and Income

The labor force participation rates of the elderly in Japan are known to be high worldwide. Looking at the chronological trend, however, this proportion for the 65-plus population has been gradually declining since the beginning of the 1990s. The proportion has decreased from 36.5% in 1990 to 34.1% in 2000 for men and from 16.2% to 14.4% for women (*Annual Report on the Labor Force Survey,* 2001).

The decline has been largely caused by the continued slump of the Japanese economy and the rise in the unemployment rate after the collapse of the bubble economy. At the same time, however, it is also assumed to be because relatively less people wish to work nowadays, since more elderly people have come to enjoy comfortable economic life due to the improvement of pensions and other social security systems in Japan in recent years. In 2000, the unemployment

Table 7 Views on the Relationship between Older Persons and the Younger Members of Their Immediate Family (The Elderly Aged 60 and Over)

(%)

Country / Year	It is best for the whole family to live together.	It is best for the younger and older members of the family to meet from time to time for meals and a chat.	It is best for the younger and older members of the family to meet occasionally for a chat.	It is best for the younger and older members of the family to have no contact at all.
Japan				
1981	59.4	30.1	7.1	1.1
1986	58.0	33.7	5.8	1.5
1990	53.6	37.8	6.0	0.9
1995	54.2	38.0	5.6	0.8
2001	43.5	41.8	6.6	0.9
Korea				
1981	83.3	5.7	4.2	6.0
1986	—	—	—	—
1990	61.4	33.9	3.2	1.0
1995	54.6	38.9	5.4	0.9
2001	38.4	46.2	10.4	1.0
Thailand				
1981	58.6	15.1	16.8	2.7
1986	65.9	9.5	21.8	1.2
1990	—	—	—	—
1995	61.1	28.8	9.0	1.1
2001	—	—	—	—
U. S. A.				
1981	6.5	65.5	25.0	0.4
1986	2.7	65.0	30.5	0.3
1990	3.4	72.7	21.1	0.4
1995	4.0	72.6	20.3	0.6
2001	8.7	66.2	20.8	0.5

Source : Same as Table 4

rates for people aged 55 to 64 were 6.8% for men and 3.6% for women (the respective rates were 4.9% and 4.5% for the whole population aged 15 and over).

Looking at the working status of the elderly in 2000 for three age groups: age 55 to 59; age 60 to 64; and age 65 to 69, the proportion of working people, the employees in particular, decreases considerably after age 60 and again after age 65, both in the case of men and women. When the labor force participation rates were calculated for age 55 to 59, age 60 to 64, age 65 to 69, and age 70-plus based on the data in the *Annual Report on the Labor Force Survey* for

Table 8 Views on the Income in Old Age (The Elderly Aged 60 and Over)

(%)

Country / Year	One should save while working and not have to rely on one's family or public support.	One should be able to rely on one's family.	One should be able to rely on the Social Security.
Japan			
1981	55.0	18.8	21.8
1986	52.4	15.0	30.2
1990	44.0	16.0	37.5
1995	46.6	12.8	37.7
2001	42.6	7.9	46.3
Korea			
1981	40.3	49.4	8.2
1986	—	—	—
1990	43.2	38.2	17.6
1995	41.9	28.2	29.2
2001	46.3	19.5	32.7
Thailand			
1981	24.7	61.4	10.6
1986	27.0	68.1	3.2
1990	—	—	—
1995	41.2	41.9	16.1
2001	—	—	—
U. S. A.			
1981	60.7	0.6	29.1
1986	65.2	0.7	25.3
1990	59.1	0.6	26.5
1995	62.1	0.8	25.7
2001	50.8	4.9	37.8

Source : Same as Table 4

2000, the respective percentages were 94.2%, 72.6%, 51.1%, and 24.3% for men and 58.7%, 39.5%, 25.4%, and 9.8% for women.

Next, the income of the elderly will be examined. First of all, the results of the International Study on Living and Consciousness of Senior Citizens conducted by the Cabinet Office concerning sources of income are shown in **Table 9**, which indicates that the sources of income for the elderly (aged 60-plus) differ considerably by country. While the main sources of income in Japan are public pensions and work, those in Republic of Korea are financial assistance from children and work. In the United States, Germany, and Sweden, the main sources of income are public pensions, private pensions, and with-

Table 9 Major Source of Income

Country	Year	Earnings from a job	Public pension	Private pension	Money withdrawn from savings	Income from investments	Support from children	Relief or public assistance/ supplementary benefits	Others
Japan	1981	41.0	64.6	8.4	11.4	15.6	29.8	1.7	4.8
	1986	34.3	77.0	5.4	16.6	14.5	21.8	1.4	4.0
	1990	34.1	81.2	7.8	22.7	13.9	18.9	1.4	3.2
	1995	35.0	84.0	7.5	21.4	11.4	15.4	0.7	3.8
	2001	33.4	84.9	11.1	22.1	8.2	12.0	1.0	3.2
Korea	1981	21.8	1.7	0.0	3.5	5.5	78.2	2.0	3.6
	1986	—	—	—	—	—	—	—	—
	1990	37.4	3.4	0.5	6.0	8.4	73.6	3.2	2.2
	1995	32.4	4.3	0.5	11.0	10.2	70.8	5.0	0.5
	2001	34.2	9.5	1.2	21.7	10.1	59.4	6.1	2.5
U.S.A.	1981	27.3	82.1	27.1	22.0	45.1	2.4	3.3	8.2
	1986	24.0	84.7	29.7	24.0	49.4	2.2	3.2	5.0
	1990	21.6	84.5	33.4	24.0	43.1	2.6	3.0	8.0
	1995	25.6	83.0	33.0	23.7	34.3	3.0	1.9	7.0
	2001	25.5	85.4	39.0	25.6	32.6	2.7	1.9	6.6
Germany	1990	7.1	82.6	26.2	14.4	10.9	3.6	1.3	6.3
	1995	6.5	84.4	23.9	20.7	11.8	2.9	1.1	4.2
	2001	9.7	83.5	22.7	36.2	15.2	3.8	3.6	5.0
Sweden	2001	14.9	85.5	14.8	26.1	4.8	0.4	38.5	3.7

Source: Same as Table 4

drawal from savings.

According to the "Comprehensive Survey of Living Conditions of the People on Health and Welfare" conducted by the Ministry of Health, Labour and Welfare, the average income of elderly households for 1999 was 3.193 million yen, and the average amount of income per household member was 2.034 million yen. The total amount of income has not increased dramatically in 1990s , even showing a decrease in 1998 and 1999. According to the recently released *Preliminary Report of the Survey*, the proportion of income for each type of income in 2000 was: public pensions 65.7%, accounting for the highest share; followed by labor income 20.5%; property income 7.8%; money sent by family members, private pensions, and other income 4.3%; and social security benefits other than pensions 1.7%. Public pensions take up an overwhelming share, but only 59.5% of all households rely solely on them for income.

Lastly, the income of single-person elderly households will be indicated. As stated by the *Annual Report on the Income and Expenditure Survey for One-Person Households* (2001) of the Statistics Bureau, the average monthly income of non-working households aged 60-plus (accounting for 32.4% of the total single-person households and 81.2% of the total single-person households aged 60-plus; mean age: 72.4) was 131,282 yen (1.575 million yen per year) of which 91.4% was social security benefits, such as pensions, and 8.6% was other types of income. In the case of 2001, this income was 27,306 yen short of the total amount of expenditure on a monthly basis.

5. Learning and Social Participation

According to the "Survey on Time Use and Leisure Activities" conducted by the Statistics Bureau, elderly people are coming to spend more time on leisure activities in recent years. Learning activities for the elderly have come to be provided as part of social education and life-long education, and they enjoy the active participation of the retired elderly.

At the same time, social participation in which the elderly conduct activities other than work for the community or for groups are receiving positive evaluation as activities for old age. One of the factors for the recent popularity of social participation by the elderly is an increase in spry, active elderly people who are relatively wealthy. People feel the utmost happiness and the joy of living when they realize that they are making themselves useful for others through social activities. Thus, the increase in the elderly who find pleasure in social participation has developed a new lifestyle among the elderly today; a lifestyle

based on the awareness of "living to help others."

At present, many elderly people engage in some kind of social participation. The scope of activities is wide-ranging from community activities, circle/group activities, learning activities, volunteer activities, to sports. According to the results of the survey by the Cabinet Office conducted in 1988, 1993, and 1998, almost two-thirds of the total elderly population participated in circle or group activities. The one-third of the elderly who did not participate in such activities mentioned "conditions at home (e.g., sick family member, housekeeping chores, and job)" and the "lack of confidence in their health and physical strength (their age)" as the main reasons for not participating.

Next, the focus is placed on what the elderly think of, or their attitude toward, learning activities. According to the "Attitude Survey of Middle-Aged/Senior People Concerning the Problem of Aging" conducted by the Cabinet Office in 1998, 61.4% of the elderly aged 60-plus answered that they were interested in some kind of learning activity. The proportion of those who were interested was high at 82.1% for the concurrently surveyed middle-aged respondents of 40 to 59 years old.

6. Living Environment

This section takes a look at the living environment of the elderly, which can be divided into physical environment and information environment. The physical environment can be further divided into residential environment and the local environment outside the home, such as the town and roads.

The International Study on Living and Consciousness of Senior Citizens conducted by the Cabinet Office on the elderly aged 60-plus in 2001 shows that the proportions of respondents who felt "satisfied" with their local environment were; Japan 78.6%, Republic of Korea 79.7%, the United States 93.7%, Germany 95.7%, and Sweden 98.6%. The proportions of those who were "somewhat dissatisfied" and "very dissatisfied," combined, were respectively 21.4% and 20.1% for Japan and Republic of Korea, which were higher than the rates for western countries. The same tendency is observed in the evaluation of housing.

Next, **Table 10** indicates the reasons for going out mentioned by the elderly (aged 60-plus) in the "The Survey of Housing and Activities of the Elderly" conducted by the Cabinet Office in 2001. According to the data, the main reasons for going out were: shopping at a nearby supermarket or store (62.2%); going to a hospital (40.9%); taking a walk (34.8%); hobby/leisure/social activities

Table 10 Reasons Why the Elderly Go Out, by Area of Residence, Sex and Age : 2001 (%)

	Total respondents (person)	Hospital and clinics	Facilities for the elderly (day service center, elderly welfare center)	Local shopping and grocery shopping in neighborhood	Shopping at the department stores	Visiting friends, aquaintances and relatives	Going for walks	Hobbies, amusement and social ctivities	Work	Going to banks and public office (ex. City halls)	Others	Total number of responses
Total	2,226	40.9	3.3	62.2	14.2	23.8	34.8	29.4	23.6	17.8	3.2	253.6
Area of residence												
Large-size city	383	37.3	2.6	64.2	17.5	23.8	39.7	32.6	20.9	23.2	1.3	263.2
Middle-size city	760	42.5	3	65.9	15.9	23.3	36.2	33.8	21.7	21.1	3	266.8
Small-size city	453	37.1	2.4	60.7	15.9	24.5	33.1	26	26.5	16.1	4.2	247
Town and village	630	43.8	4.8	57.6	8.9	23.8	31.4	24.4	25.4	11.7	4	236.5
Sex												
Male	1,017	35.3	2.3	46	11	20.3	39.4	31.8	35.9	15.4	3.8	241.5
Female	1,209	45.6	4.2	75.8	16.9	26.7	30.9	27.4	13.2	19.8	2.7	263.8
Age												
60-64	535	23.2	2.2	66.2	17.8	26.9	31.8	32.5	39.8	22.2	3.2	266.2
65-69	670	35.4	2.5	64.3	16	25.7	35.8	31.8	26.4	18.5	3.7	260.4
70-74	523	48	1.3	64.6	13.4	22.9	36.9	30	17	17	2.1	253.3
75-79	322	59.6	5.9	57.1	11.5	19.3	36	25.8	10.2	13.4	4	243.2
80-84	124	62.1	8.9	46	4.8	17.7	32.3	17.7	8.1	12.1	2.4	213.7
85+	52	55.8	15.4	40.4	1.9	17.3	30.8	9.6	5.8	11.5	5.8	198.1
Health conditions												
Very good	683	18.4	2.5	62.1	19	25.8	34.1	36.7	34.1	21.8	3.2	258.1
Good	464	38.8	3.9	67.7	14.9	28.4	36.4	31.7	23.9	19.8	3.2	269
O.K.	593	41	3.2	63.6	13.2	23.3	35.4	30.2	22.3	17.4	3.2	252.8
Poor	401	72.3	4.2	58.1	8.5	18.7	35.2	17.7	11.5	11.2	3	240.9
Very poor	83	84.3	3.6	43.4	6	8.4	26.5	7.2	3.6	8.4	4.8	200

Source : Cabinet Office, *The Survey of Housing and Activities of the Elderly (February 2001)*

(29.4%); visiting friends and relatives (23.8%); and work (23.6%). A detailed analysis reveals that the reasons for going out differ depending on residence area, sex, age, and health conditions. Those who hardly went out accounted for only 8.3%, which means that most elderly people went out. The most popular means of transportation was by foot, accounting for 60.4%, followed by driving a car themselves 33.5%, by bicycle 26.5%, by bus 21.7%, and by riding in a car that is driven by a family member 21.1%.

On the other hand, accidents of the elderly at home are increasing in recent years, and most of such accidents are attributed to the way in which the house has been built. Although barrier-free designs and handrails have come to be adopted more frequently, such facilities are yet to be diffused sufficiently.

Lastly, a reference will be made to the informational environment of the elderly. According to the "Attitude Survey of the Elderly Concerning Daily Life" conducted by the Cabinet Office in 1999, the most prominent source from which the elderly (aged 60-plus) gained information for their daily life was TV 79.6%, followed by newspaper 57.3%, friends and neighbors 38.2%, family members 34.1%, and radio 12.9%. When the source of information was inquired with regard to only the information intended for the elderly, most respondents again mentioned TV 48.9%, followed by information magazines issued by administrative authorities and residents' associations 46.8%. This indicates that the administration is playing a considerable role as a source of necessary information for the elderly.

7. Life Satisfaction

Although life satisfaction is a subjective element, it is an important indicator for evaluating the level of people's well-being and the quality of their life. As it is a subjective indicator, it has the disadvantage of raising the relative level of satisfaction if the respondent sets his/her level of desire low. However, the result will be fairly reliable if a statistical survey is conducted on a large number of samples.

In the past, the satisfaction level of the Japanese elderly was known to be high. However, with the aging of the Japanese society, the proportion of people claiming their dissatisfaction has gradually increased. Based on the International Study on Living and Consciousness of Senior Citizens conducted by the Cabinet Office, the level of life satisfaction of the Japanese elderly in 2001 was 85.2%, which was higher than the 62.2% in Republic of Korea, but considerably lower than the rates in the United States (94.9%), Germany (92.4%), and

Sweden (98.5%). On the other hand, the level of dissatisfaction, combining those who answered "somewhat dissatisfied" and "dissatisfied," slightly showed an increase in Japan from 12.5% in 1996 to 14.8% in 2001. A rise in the level of dissatisfaction of the elderly was also observed in another survey ("The Attitude Survey of the Elderly Concerning Daily Life") conducted by the Cabinet Office in 1994 and 1999. The survey indicates that the level of satisfaction of the elderly is generally lower in large cities, and lower for those who are in the first half of their 60s, who constitute single-person households, who are not in good health condition, who live in rented housing, or who are financially hard-pressed.

"The Attitude Survey of the Elderly Concerning Daily Life" (1999) inquired the elderly of "the aspects to which they gave particular consideration in their daily life." As a result, many respondents stated that they gave particular consideration to health care, diet, relationships with their neighbors/friends, relationships with their family/relatives, going for a walk, and educational/learning/hobby/sport activities. These coincide with the aspects often indicated by gerontologists as the basic conditions for spending happy daily life. Thus, many Japanese elderly people are making individual efforts to raise the level of satisfaction in their life. The quality of life in the advanced stage of one's life would be largely affected by such subjective efforts of the individual.

At the same time, however, it is indispensable for the society, such as the national and local administrations, to establish adequate systems. What kinds of demands do the Japanese elderly have for such systems? The survey results of the Cabinet Office indicate some of the demands. High demands are observed for: "security of income to be able to spend one's post-retirement life with a sense of assurance" (48.6%); "establishment of a system where nursing care services can be used as required" (42.6%); "construction of houses in which the elderly can live even when they become physically disabled" (27.2%); "promotion of town-planning that cares about the elderly, including offer of transportation means and public transport that consider the outing of and use by the elderly," (23.9%); and "offer of consultation services which the elderly can casually use to consult about various problems" (22.5%).

In order to raise the level of life satisfaction in the aged society, it is inevitable for both sides to make sufficient efforts: elderly individuals must endeavor to improve their own life and the society must create adequate systems. This is the essential way in which a high-quality life can be realized for the elderly.

PART IV

Chapter 6

Population Aging and Its Impact on the Socioeconomic System in Japan

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Introduction

Our global population is aging, and aging at an unprecedented rate. Japan's population aging is a salient example of such worldwide trends (Ogawa, 2002). Among all the industrialized nations, Japan was the first to experience a fertility decline in the postwar period, and it recorded the greatest decline in national fertility among these countries.

In contrast to the United States and European countries, the postwar baby boom in Japan was exceptionally short, lasting only three years, from 1947 to 1949 (Hodge and Ogawa, 1991; Ogawa and Retherford, 1993; Retherford, Ogawa, and Matsukura, 2001). After this short postwar baby boom, fertility declined sharply in Japan. During the 1947-1957 period, the total fertility rate (TFR) fell by more than half, from 4.54 to 2.04 children per woman. There were only minor fluctuations around the replacement level until the first oil crisis in 1973. Thereafter, the TFR started to fall again and reached 1.33 in 2001. In addition, age-specific mortality rates declined during the last 50 years. Over the period 1947 to 1965, life expectancy at birth rose from 50.1 to 67.7 years for men and from 54.0 to 72.9 years for women. In 2001, life expectancy was 78.1 years for men and 84.9 years for women; both of these levels are currently the highest in the world.

As a result of these demographic changes, the age distribution of the Japanese population has been changing markedly, with a relative increase in the numbers of the elderly and a relative decrease in the numbers of the young. These age structural shifts have been generating a wide range of disruptions at

both societal and familial levels in Japan over the past few decades.

In many respects, the aging of the Japanese population, the evolution of its social security system, and the transformation of the family are typical of what occurs in any population that experiences economic and social development and consequent demographic transition from high to low birth and death rates. The aging that occurs as a consequence of demographic transition is reflected in a rising old-age dependency ratio of the elderly to the working-age population, which is a major contributor to the pressures to shift some of the burden of caring for the elderly from families to government, businesses, unions, and other institutions, as well as to the elderly themselves through personal savings for old age (Ogawa and Retherford, 1997).

In recent Japan, however, the forces driving the growth of the social security system have been so strong that the costs of the system have been escalating. These rising costs reflect not only increases in benefits at the individual level but also increases in the proportion of the population who receive benefits, extension of benefits to groups not previously covered, and maturation of the social security system. Another contributing factor is the growth of expensive medical technology and the increasing sophistication and cost of delivering health services.

The escalation of social security costs ultimately has resulted in government efforts to suppress these public costs. Nevertheless, these efforts tend to be rather modest, because the system serves the needs of the young as well as the old, and is generally popular. Moreover, the growing political influence of the elderly, derived from increases in their relative number and in their educational levels and political sophistication, tends to thwart efforts to alleviate benefits.

In this chapter, we discuss, using the numerical results recently produced from a long-term simulation model, Japan's future trajectories of population, macroeconomic, and social security variables over the period 2000-2025. In the next section, the nature of the simulation model is described. In the subsequent two sections, projected demographic, macroeconomic, and social security paths are presented. In the final section, several policy options are briefly considered.

1. A New Long-term Simulation Model and Its Features

As part of a United Nations project, the Nihon University Population Research Institute (NUPRI, hereafter) formulated a macroeconomic-demographic-social security model for Japan in 1981. Since then, the NUPRI model has been

periodically modified and updated. In this chapter, we draw upon NUPRI's newest version which was completed in October 2002. As has been the case with the previous versions, the 2002 version of the NUPRI model consists of the following three submodels: the population submodel, the economic submodel, and the social security submodel. As displayed in **Figure 1**, these three submodels are interdependent; the population submodel is first determined by a set of economic and social security variables with a one-year lag, and the variables in both economic and social security submodels are simultaneously determined, using the computed demographic variables.

The NUPRI model is primarily a demand-driven type of a Keynesian nature. It should be noted, however, that the potential capacity of the supply side is also computed for each year of the simulation period, so that the calculated effective demand does not exceed the calculated supply capacity. It should also be added that most of the behavioral equations in the economic submodel have been estimated on the basis of time-series data over the period 1967-1997, and a number of initial value adjustments have been made for simulation purposes.

It is important to note that both fertility and mortality are endogenously determined within the macroeconomic-demographic-social security model. Although NUPRI's earlier models were based upon the new home economics approach (Butz and Ward, 1979; Ogawa and Mason, 1986) to capture the variation of Japanese fertility, the validity of this approach in contemporary Japan had become increasingly questionable due to a shift in the mechanism of fertility change. One of the recent fertility analyses based upon the techniques of formal demography shows that the impact of delayed timing of marriage on the TFR over the period 1995-2000 was most pronounced throughout the second half of the 20th century in Japan. In view of this finding, we have formulated a new TFR equation in which the change in the age-specific proportion single among women over time is a key explanatory variable, as depicted in **Figure 2**. It should be also noted that the proportion single is computed from the equation for earning differentials between men and women, and the latter is calculated from the change in sexual differentials in university enrollment. To sum up, in NUPRI's newest version, the TFR is expressed as a function of women's rising opportunity costs of marriage.

It should be borne in mind that the following two assumptions have been imposed in the process of projecting Japan's future TFR. First, taking into consideration the trend of a diminishing gap of university enrollment between men and women over the last few decades, it has been assumed that the sexual gap in university enrollment will disappear over time. Another assumption

Figure 1. Interrelationship among three submodels

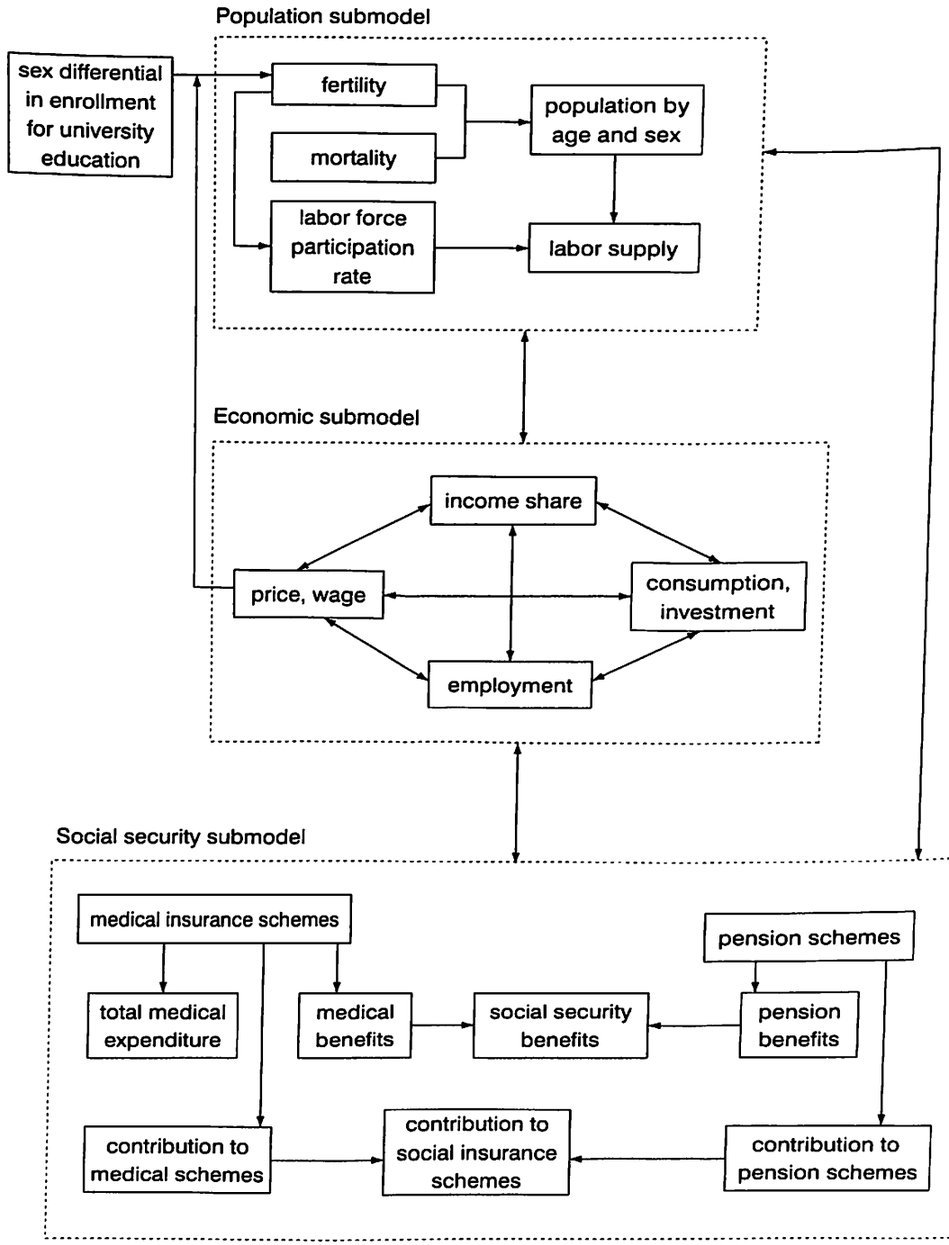
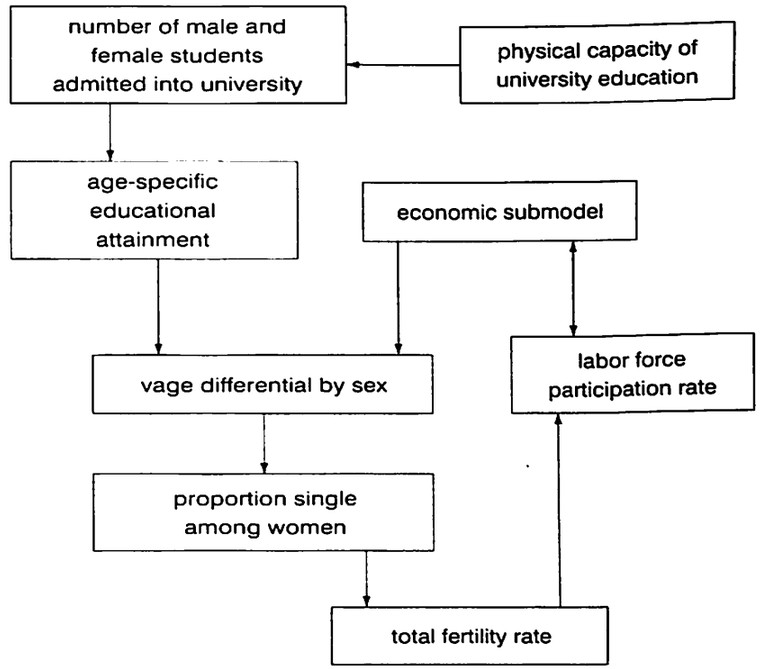


Figure 2. Framework for estimating fertility



used has been related to the upper ceiling value with respect to the proportion single among women. Because our preliminary analysis of marriage dynamics in postwar Japan has revealed that women aged 25-29 have been playing a key role of determining the nuptiality pattern over the past few decades, an attempt has been made to identify the upper ceiling value for the proportion single among women of this age group, and the adopted equation is a logistic regression with the upper boundary of 65 per cent.

As regards mortality change, the Lee-Carter method has been incorporated in the newest version of the NUPRI model. As described elsewhere (Lee and Carter, 1992), three parameters need to be estimated in the Lee-Carter method, using the singular value decomposition. The first two parameters (a and b) have been estimated on the basis of time-series data over the period 1950-2000. However, the remaining parameter (k) has been estimated as a function of the per capita medical expenditure measured in terms of 1985 constant prices, although the conventional Lee-Carter method assumes a function of the time trend. Owing to the limited availability of data pertaining to the per capita

medical expenditure, the sample period employed for the estimation of this parameter was 30 years, namely, from 1970 to 2000.

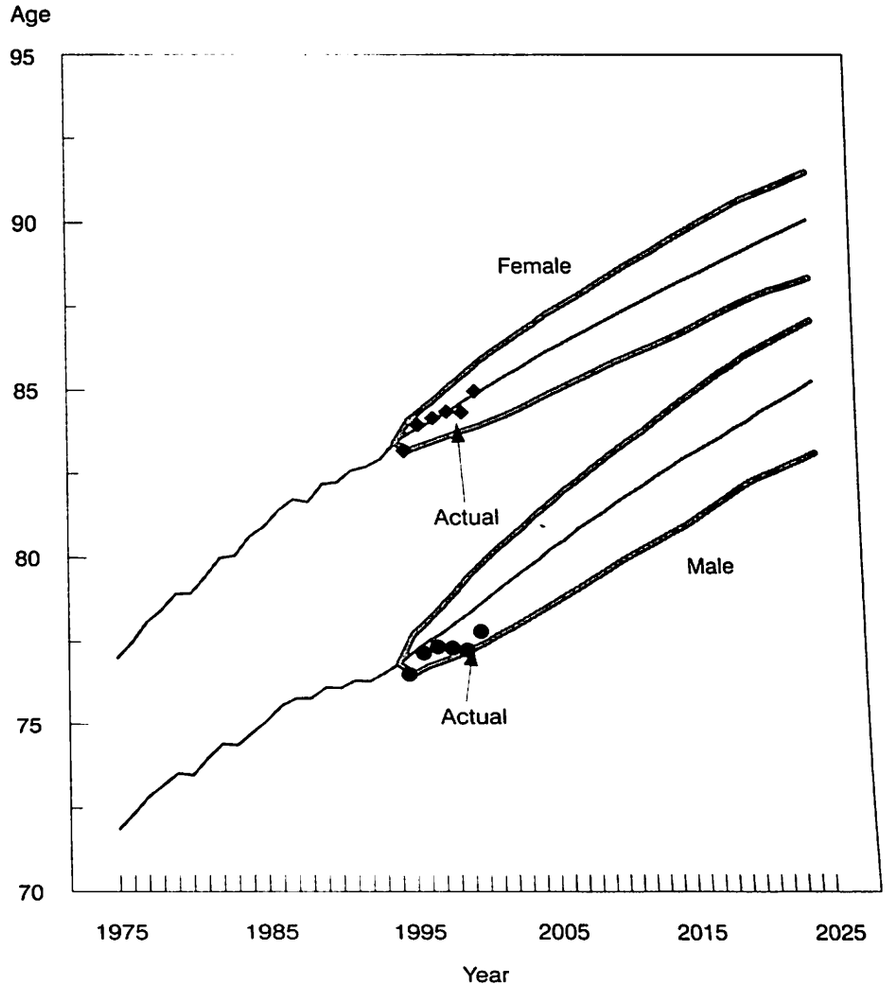
It is also worth remarking that we have computed, using the Lee-Carter method, the 90 per cent confidence interval of the projected mortality trajectory to quantitatively show its possible range of variations. **Figure 3** presents how well the 90 per cent confidence interval of the Lee-Carter method keeps a track of actual mortality changes in recent Japan. In this exercise, the parameters have been estimated over the period 1950-1995, and these estimated parameters have been utilized to forecast the mortality change during the period 1995-2000. As can be clearly seen by inspecting these forecast results, one may safely conclude that the traceability of the Lee-Carter method in contemporary Japan is extremely satisfactory.

In so far as the social security submodel is concerned, strenuous efforts have been made with a view to modeling the government's recent policy changes with regard to both public pension schemes and medical care plans. In the case of the public pension schemes, a number of revisions were made in 1999, and these modifications have been incorporated in NUPRI's newest version of the long-term model.

The government medical insurance schemes, which are another vital component of the social security system, have been modeled in great detail. To measure the effect of future changes in both the size and the structure of the Japanese population upon the costs of these government medical schemes, the following methodology has been adopted. For each of the three major medical insurance schemes, the age-specific total medical cost is computed as the product of the four matrices shown as below:

The product of the first two matrices corresponds to the age-sex-specific number of those enrolled in the particular health insurance scheme. By multiplying this product by the third matrix, one can obtain the age-specific total number of medical cases (or patients) treated under the specific health insurance scheme. It should be noted, however, that due to data limitations, the multiplication has been done only on an age-specific basis rather than on an age-sex-specific basis. Then, the age-specific total medical care cost can be calculated by multiplying the age-specific total number of medical cases by the age-specific medical care cost per case. The total medical care expenditure for each health scheme can be obtained by adding the age-specific total medical care cost for all age groups. The parameters for the first matrix are derived from the population submodel, while those for the other three matrices have been calculated from sampled data.

Figure 3. Actual values and values predicted by the Lee-Carter model



(Population by age and sex) × (Age-sex-specific probability of being enrolled in the scheme) × (Age-specific medical care cost per case)

× (Age-specific incidence of receiving medical treatment) = (Age-specific total medical care cost)

One of the advantages of this computational method is that, because the four matrices on the left-hand side of the formula are all age-specific, the population growth effect as well as the age structure effect on medical care expenditure is directly captured. Another advantage of this method is that it enables us to accurately identify some of the sources of a rise in medical expenditure. Note that except for the matrix for the population by age and sex, the parameters for the remaining three matrices on the left-hand side of the above formula have been derived from data for 1997. By multiplying these three matrices by the population actually observed in earlier years, one can project backward to ascertain the hypothetical age-specific total medical care cost for each of these years. Because a close examination of past data reveals that the parameters for the second and third matrices have been relatively stable, the difference between the hypothetical age-specific total medical care cost and the observed age-specific total medical care cost is attributable to (i) the price effect and (ii) the residual effect. Information on the time-series changes in the price for medical care services is available, so that the magnitude of the residual effect for each age group can be easily estimated. Roughly speaking, the computed residuals can be regarded as the cost-push effect due to the changing pattern of illness and medical technological advancement. In the NUPRI model, the age-specific residual effect for each health insurance scheme has been incorporated as a function of real GDP per capita. Each of these equations has been estimated, employing annual data from the mid-1970s to 2000. To project these effects on total medical care expenditure over the simulation period, the levels of both real GDP per capita and nominal GDP are provided from the economic submodel.

2. Japan's Aging Process during 2000-2025

Based upon a population projection produced from the most recent version of the NUPRI model, we analize Japan's future pattern of population aging over the period 2000-2025. **Table 1** presents projected results. Japan's total population, which was 126.5 million in 2000, is projected to increase to 127.5 million by 2005. After reaching this peak, the nation's population is expected to decrease continuously to a level of 120.1 million by 2025.

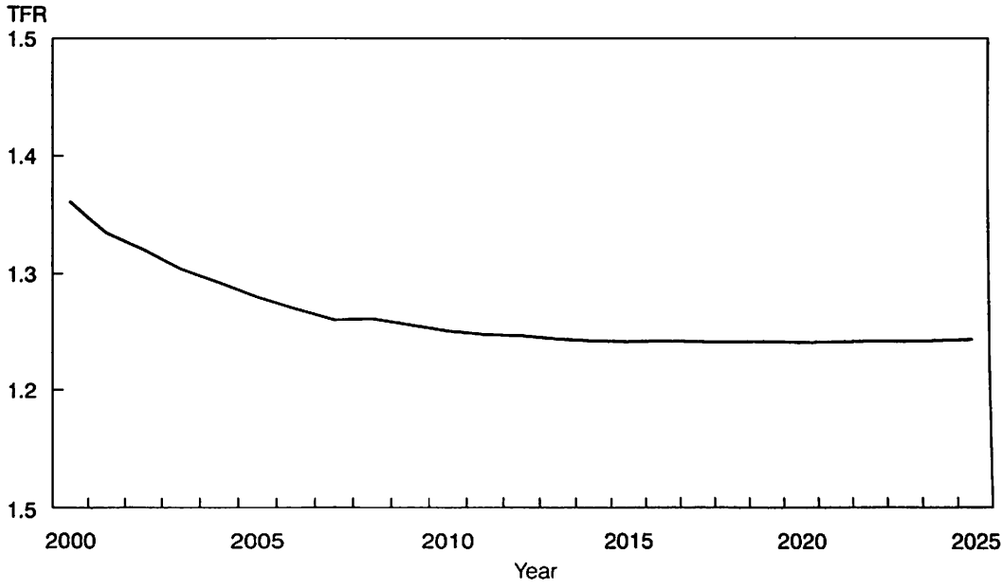
This projected result for the total population is derived from changes in the two vital rates of fertility and mortality. With regard to the fertility rate, the TFR is projected to decline from 1.36 in 2000 to 1.24 in 2017, as presented in **Figure 4**. After 2017, however, it is expected to remain virtually unchanged

Table 1. Projected demographic changes for Japan, 2000-2025

Year	Total population (million)	0-14 years old (per cent)	15-64 years old (per cent)	65+ years old (per cent)	75+ / 65+ (per cent)	Total dependency ratio	Index of aging	Familial support ratio*
2000	126.9	14.6	68.1	17.4	40.9	46.9	119.1	0.91
2005	127.4	13.8	66.2	20.0	45.1	51.0	145.3	0.77
2010	127.0	13.0	64.0	23.0	48.3	56.3	176.2	0.65
2015	125.6	12.1	61.0	26.9	48.6	63.8	223.1	0.59
2020	123.2	11.0	59.5	29.5	52.1	68.0	267.7	0.57
2025	120.1	10.2	58.8	31.0	59.6	70.1	305.2	0.56

*Women aged 40-59/population aged 65-84.

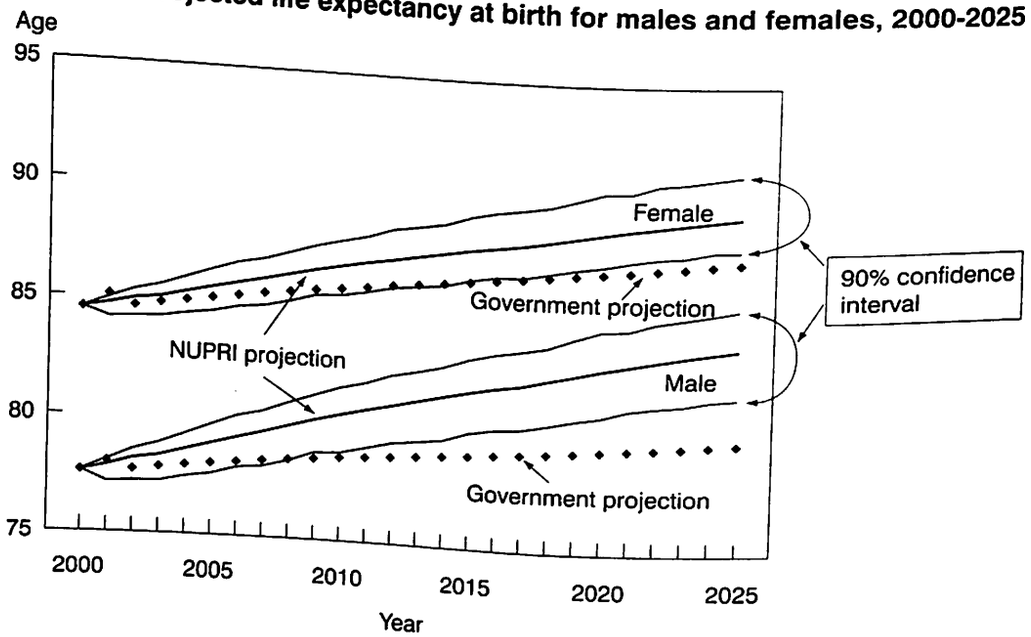
Figure 4. Projected change in the total fertility rate, 2000-2025



during the rest of the projection period.

The life expectancy at birth for males is anticipated to rise from 77.64 years in 2000 to 83.85 years in 2025. In the case of females, the corresponding expected change is an increase from 84.62 years in 2000 to 89.44 years in 2025. **Figure 5** shows these projected results, coupled with the 90 per cent confidence interval for each sex. These mortality future trajectories suggest that the life cycle pattern of the Japanese population is likely to shift to a pronounced extent over the next quarter century. Furthermore, it should be stressed that the mag-

Figure 5. Projected life expectancy at birth for males and females, 2000-2025

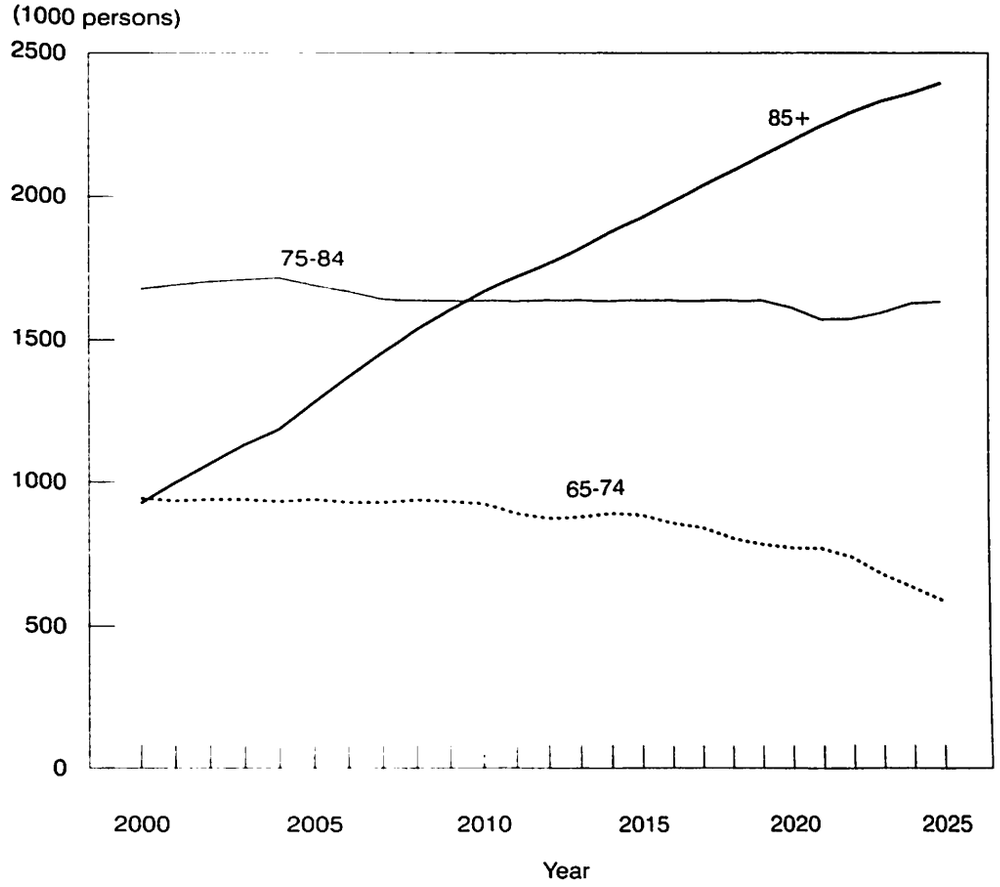


nitude of uncertainties involved in these projected mortality scenarios is considerable, as indicated by the 90 per cent range of forecasting errors. For males, the computed range is from 81.76 to 85.55 years, and for females, from 88.04 to 91.21 years. These uncertainties involved in the simulated results for Japan's future mortality changes point to the need for each individual to make an appropriate contingency plan for the final few years of his/her life.

Though not shown in **Table 1**, the total number of those aged 65 and over grows monotonically from 22.0 million in 2000 to 37.3 million in 2025. Moreover, due to sexual mortality differentials at higher ages, the predominance of women among the aged population is expected to become increasingly pronounced over time. **Figure 6** depicts the projected "surplus" of women at ages 65 and over, and attention should be drawn to the computed result that the number of very old women aged 85 and over will increase at an astonishing pace over the next 25 years. This fast feminization of the very old population suggests that in a virtually universal marriage society such as Japan, the number of widows will grow rapidly in the next few decades. Because of declining family support by adult children (Ogawa and Retherford, 1997; Ogawa, 2002), the increase in elderly widows is very likely to lead to a considerable rise in the demand for institutional care in the years ahead.

Several important points emerge with regard to the age compositional

Figure 6. Projected "surplus" of women aged 65 and over, 2000-2025



changes displayed in **Table 1**. First of all, in 2000, the proportion of the population at ages 0-14 is 14.6 per cent, and the proportion of those aged 65 and over is 17.4 per cent. Throughout the projected period, the former is on the downward trend, but the latter increases continuously. In 2013, the ratio of the elderly aged 65 and over to the young at ages 0-14 is projected to exceed a value of 2, as indicated by the index of aging.

Second, though not shown in **Table 1**, the Japanese population is likely to become the oldest human population in 2003, surpassing the Italian population. As indicated in **Table 2**, Japan's population will be by far the world's oldest by 2025. More importantly, the Japanese population will reach the world's highest level of aging at an unprecedented rate, as displayed in **Table 3**. Japan's aged population reached the 10 per cent level in 1984 and was the latest among all

Table 2. International comparison of the projected proportion of those aged 65 and over for selected industrialized nations in 2025

Country	Percentage
Japan	31.0
Italy	25.7
Greece	24.3
Sweden	25.4
Finland	25.2
Spain	23.6
Germany	24.6
Netherlands	21.9
Switzerland	27.1
Belgium	23.7
France	22.2
Denmark	22.5
Austria	24.3
Norway	21.8
United Kingdom	21.9
Canada	20.7
U.S.A.	18.5

Sources: United Nations, *World Population Prospects*: *The 2000 Revision*, New York, 2001. Data for Japan are based on the NUPRI population projection.

the industrialized nations listed in **Table 3**. Despite this delayed onset, Japan is the first country in which the aged comprise more than 20 per cent of the total population among all the countries appearing in this table. The length of time required to increase from 10 to 20 per cent of the Japanese population is only 21 years. Compared with such European countries as Sweden and Norway, Japan will age at a tempo approximately three times as fast.

Third, the aging of the aged population itself deserves special attention. As shown in **Table 1**, the proportion of those aged 75 and over in the population aged 65 and over grows rapidly over the entire projected period. It is projected to rise from 40.9 per cent in 2000 to 59.6 per cent in 2025. A close examination of this projected result and country-specific data produced from the recent population projection prepared by the United Nations (2001) reveals that Japan's level for 2025 is likely to be by far the highest in the world, followed by Sweden (51.9 per cent). Obviously, this marked age compositional shift of the Japanese population will generate a substantial effect on the pattern and level of demand for medical care services, as will be discussed in the next section.

Fourth, though omitted from **Table 1**, it is worth noting at this point of our

Table 3. International comparison of the speed of population aging

Country	Year in which the aged population reaches		Time required to increase from 10 to 20% (years)
	10%	20%	
Japan	1984	2005	21
Canada	1984	2024	40
Italy	1966	2007	41
Greece	1968	2019	41
Finland	1973	2015	42
Spain	1975	2017	42
Australia	1985	2030	45
Netherlands	1969	2019	50
U.S.A.	1972	2028	56
Switzerland	1959	2019	60
Germany	1952	2012	60
Denmark	1957	2018	61
Sweden	1947	2012	65
Norway	1954	2022	68

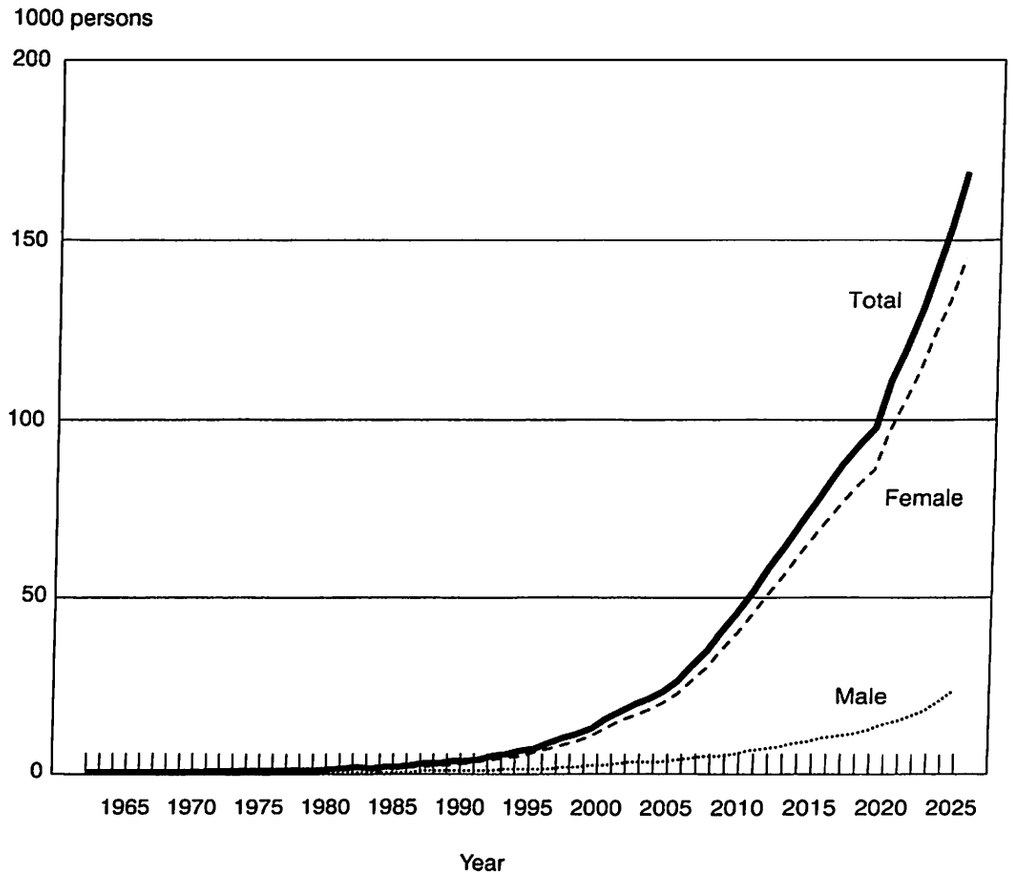
Sources: United Nations, *World Population Prospects: The 2000 Revision*, New York, 2001. Data for Japan are based on the NUPRI population projection.

discussion that the number of those aged 100 and over is projected to increase at an annual rate of 11.1 per cent during 2000-2025, which implies that this age group is the fastest growing segment of the population. In 1963, the number of centenarians was only 153, but it is expected to grow to more than 168,000 in 2025, as indicated in **Figure 7**.

Fifth, it should be noted that although the total dependency ratio was relatively low until the end of the 20th century, the index is expected to increase continuously, thus reaching its peak value of 70.1 in 2025, as presented in **Table 1**. Japan's value for 2025 will be the highest among all the industrialized nations at that time. In view of these projected results, appropriate policies should be urgently formulated to cope with the negative effects of the anticipated acceleration in population aging.

It is interesting to note that the peak of total dependency over the projected period is highly comparable to Japan's highest level (71.6) recorded in 1920. It has been observed in a few existing studies (Wander, 1978) that the average per capita total expenditure (private and public) is roughly equal between young and old dependents. If this observation holds true for Japan, one may say that because Japan had already experienced greater total dependency in the prewar period, the rising total dependency burden to be placed upon the productive

Figure7. Number of centenarians, 1963-2025



population in 21st-century Japan will be within a manageable range. It should be stressed, however, that over the next three decades, Japan's tempo of the increase in total dependency is the fastest among all the industrialized nations, thus suggesting that Japan, compared with other developed nations, is likely to face more formidable adjustment problems in reallocating resources among various age groups.

Sixth, the familial support ratio, which relates the population at ages 40-59 to those aged 65-84, is expected to decline substantially over the next 25 years, as displayed in **Table 1**. The value of this index was 1.30 in 1990, and is projected to be 0.65 in 2010, thus indicating that it will decline by 50 per cent in 20 years' time. These results indicate that the demographic potential of familial support by adult children for the elderly diminishes rapidly, starting from 2007

Table 4. International comparison of the projected familial support ratio in 2005

Country	Women aged 40-59 / Those aged 65-84
Japan	0.78
Greece	0.78
Italy	0.81
Bulgaria	0.93
Germany	0.84
Sweden	0.89
Portugal	0.90
France	0.97
United Kingdom	0.99
Switzerland	0.98
U.S.A.	1.34

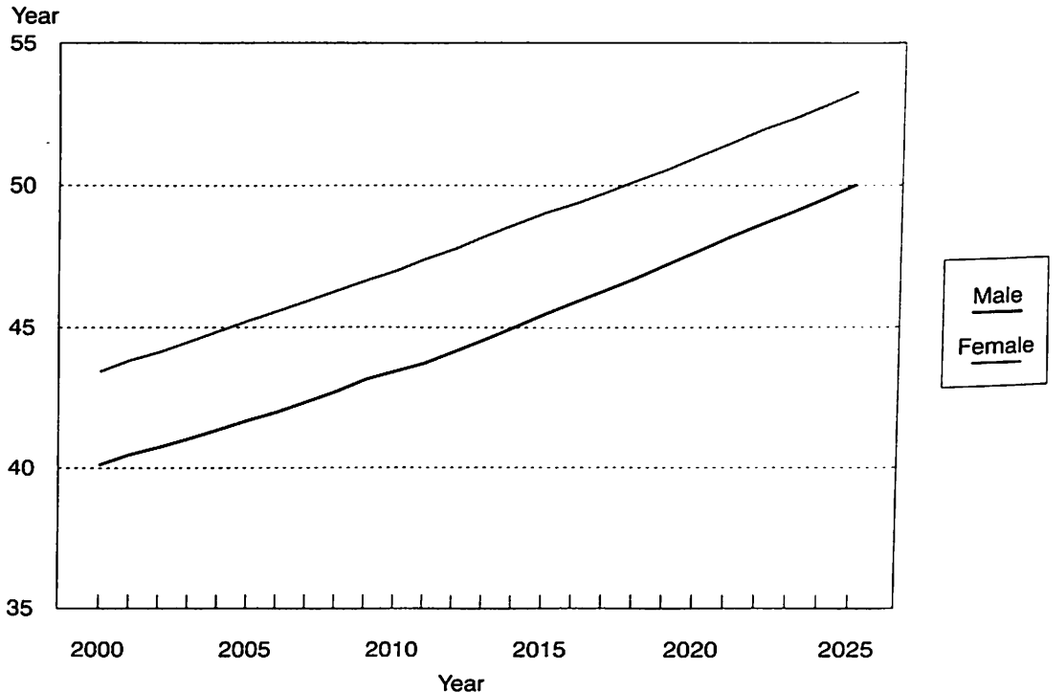
Sources: United Nations, *World Population Prospects: The 2000 Revision*, New York, 2001. Data for Japan are based on the NUPRI population projection.

when a large age cohort glut of baby boomers disappears from the age group 40-59. The declining trend of the familial support ratio points to the high likelihood that the traditional extended family system will be continuously weakened over time. Although the government started in 2000 the Long-term Care Insurance Scheme (LTCI) to alleviate the family's burden in taking care of older parents at home, the number of households without any caregivers is expected to rise so that the effectiveness of this new scheme is likely to be increasingly limited over time.

In **Table 4**, these projected results are compared with those of the United Nations population projection undertaken in 2000. In 2005, Japan's familial support ratio will be the lowest in the entire world, followed by Greece and Italy. More importantly, these projected results are highly reliable because the numbers going into the denominator and the numerator have already been born.

Seventh, the median age of the population is forecast to rise dramatically in the years to come. In the case of both sexes combined, it increases from 41.5 to 51.1 years old during 2000-2025. This implies that more than half of the Japanese population will be above age 50, thus suggesting that the incidence of late marriages and remarriages among the elderly might grow substantially over time. As for men, the corresponding shift is from 39.8 to 50.0 years old, while it is from 43.1 to 53.3 years old for women, as presented in **Figure 8**.

Figure 8. Projected change in the median age of male and female populations, 2000-2025



3. A Macroeconomic Scenario: Limits to the Support System for the Aged

The NUPRI model has also yielded a projection of a host of macroeconomic and social security-related variables over the period 2000-2025. Among these variables, we have selected, as shown in **Table 5**, several key variables with a view to discussing some of the major impacts of population aging upon the socioeconomic system in Japan.

Although real GDP is projected to increase by 1.34 times over the 25-year period, its annual growth rate slows down over time from 1.9 per cent during 2000-2010 to 0.9 per cent in the 2010s, and to 0.2 per cent from 2020 to 2025. In addition, nominal GDP is projected to grow at a declining pace over time. The average annual growth of nominal GDP is 2.9 per cent over the period 2000-2010, 1.6 per cent in the 2010s, and 0.5 per cent during the period 2020-2025. These projected results indicate that the annual rate of inflation declines slowly over time, thus suggesting that it will be increasingly difficult for

Table 5. Projected changes in selected economic and social security-related variables, Japan, 2000-2025

Year	Real GDP* (trillion yen)	Labor supply (million)	Gross national savings rate** (per cent)	Male contribution rate for EPS (per cent)	Total medical expenditure (billion yen)	Social security contributions + taxes / national income (per cent)
2000	488.9	67.7	14.4	17.35	30.4	38.0
2005	537.5	67.7	13.3	19.85	36.2	39.3
2010	591.7	66.3	11.5	23.21	43.3	40.9
2015	629.7	63.5	9.9	27.91	49.7	43.4
2020	649.4	61.7	8.1	29.43	54.8	45.0
2025	655.6	59.9	6.2	30.97	57.9	45.7

* 1985 constant prices

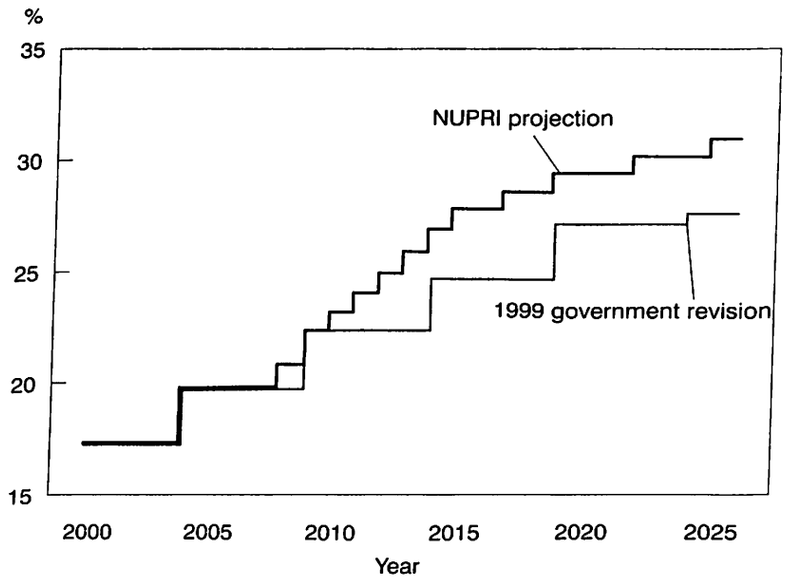
** Defined as 100* (personal savings + corporate savings + government savings) / national income

both business and government sectors to reduce their accumulated debts.

The male contribution rate for the leading pension scheme (Employees' Pension Scheme, EPS) is projected to grow from 17.35 per cent in 2000 to 27.91 per cent in 2015, and 30.97 per cent in 2025. These projected contribution rates are considerably higher than those calculated by the government on the occasion of the 1999 major pension revision, as displayed in **Figure 9**. The government's calculations revised in 1999 show that the corresponding rates will rise from 17.2 per cent in 2002 to 27.7 per cent in 2025. These substantial differences in the male contribution rates between NUPRI's estimate and the government's calculation are attributable primarily to the marked difference in the pattern of mortality improvements between NURPI's population projection and the government's population projection.

The total medical expenditure measured in nominal terms is expected to rise almost 1.9 times over the 25-year period. This increase in medical care costs is attributable to both the aging of the population and further medical technological progress. The share of Japan's national income required for medical expenditure rises gradually from 7.42 per cent in 2000 to 8.7 per cent in 2025. At this juncture, it is interesting to compare these projected figures with the levels being experienced in some of the other industrialized nations. The

Figure 9. Projected contribution rate to the Employees' Pension Scheme



share of national income allocated to medical expenditure, which is adjusted for intercountry differences in coverage, was 11.6 percent for France in 1998, 11.7 per cent for Germany in 1997, and 11.8 per cent for the United States in 1998 (Health and Welfare Statistics Association, 2001). When compared with these statistics, the projected results for Japan over the next 25 years indicate that it is unlikely to reach such levels.

To cope with these rising social security costs, the contributions to the social security system are likely to be raised substantially. How much will Japanese taxpayers be required to contribute to the social security system over the next 25 years? In 1996, the government of Japan set a ceiling for the tax burden arising from financing the social security programs. According to the government plan, the national financial burden defined as [(social security contributions + taxes) / national income] should be kept below 45 per cent in the years to come. As presented in **Table 5**, although it appears to meet this target until 2020, it is projected to exceed this upper boundary during the period 2020-2025, reaching 45.7 per cent in 2025.

Apart from the demand-side factors, the supply side is also expected to change considerably over time. It should be noted that the computed effective demand is considerably below the potential supply capacity up to 2010, and the former exceeds the latter over the remaining projected period. This implies that the supply side factors play an important role of determining Japan's GDP, particularly in the latter half of the projection period.

One of the principal factors on the supply side is the supply of labor. The total supply of labor reached its peak value of 67.9 million in 1998, and is projected to continue decreasing throughout the projected period. It is the first time in modern Japanese history that the supply of labor is on a long-term declining trend. This negative growth of the labor supply is induced by such factors as (i) a marked decrease in the number of new entrants due to sustained low fertility and to a further rise in educational enrollment at the tertiary level, and (ii) a continuous fall in the labor force participation rate of the elderly through an increase in the per capita pension benefit as well as reduced employment opportunities in the primary industries where many elderly workers are engaged. Although the labor force participation rate for middle-aged women is projected to rise considerably over the next 25 years, this positive effect is not large enough to offset the numerous negative effects on labor force growth.

The other important factor on the supply side is savings. One of the primary sources of the decline of real GDP growth performance in the second half of the projection period lies in a substantial fall in the saving rate. As presented

in **Table 5**, the gross national saving rate is projected to decrease substantially over time, declining to 6.2 per cent by 2025. The expected rise in social security contributions as well as in household consumption resulting from population aging is mainly responsible for the fall in the saving rate; increased social security contributions lead to a rise in the wage bill, which will, in turn, reduce corporate savings; and the growth of retirees relative to workers depresses household savings, as is theoretically consistent with the framework of life cycle savings (Mason, Ogawa, and Fukui, 2001; Mason and Ogawa, 2001). It should also be noted that Horioka (1988) examined 30 different factors on the basis of data gathered from various OECD countries including Japan, and identified the following three significant factors accounting for Japan's high household saving rate: (i) the low proportion of the aged population, (ii) the bonus system, and (iii) the rapid rate of economic growth. The NUPRI model shows that both the first and third factors are likely to adversely affect Japan's household savings as its population aging process advances.

It is worth noting, however, that the above result for the saving rate may differ considerably if the following three considerations are incorporated in the model. First, Ando (1985) has suggested the possibility that further improvements of life expectancy may motivate Japanese workers to save more. Second, the extent to which the government's recent policy shift from export-oriented growth to domestic consumption-fueled growth is implemented may lead to a lower saving rate. Third, although the low interest rate policy has been implemented by the monetary authorities in postwar Japan, it is likely to rise in the future as Japan's financial liquidity diminishes in the process of population aging. Then, the higher interest rates in the domestic financial market will not only prevent a flight of capital abroad but also induce a return or inflow of capital from outside. Despite the declining savings rate, therefore, this shift of capital may lead to an increased capital-labor ratio, thus facilitating favorable growth performance. These three considerations, however, are not incorporated in the NUPRI model.

The foregoing discussions indicate that Japan's future economic prospect is extremely gloomy, namely, a further slow-down of economic growth and a rapid rise in the costs of the social security system. In view of these future trends, further downward adjustments need to be made with respect to the social security benefits paid out. In the process of downward adjustments, however, the intergenerational inequity issue is likely to arise in the public arena. To mitigate such intergenerational conflicts, long-term planning is essential, and revisions should be made well before the process of population aging accelerates.

It is crucial for the Japanese to decide whether or not the current government plan for the social security system is acceptable. Are Japanese taxpayers willing to choose the high welfare/high cost scenario? Or, do they prefer the low welfare/low cost scenario?

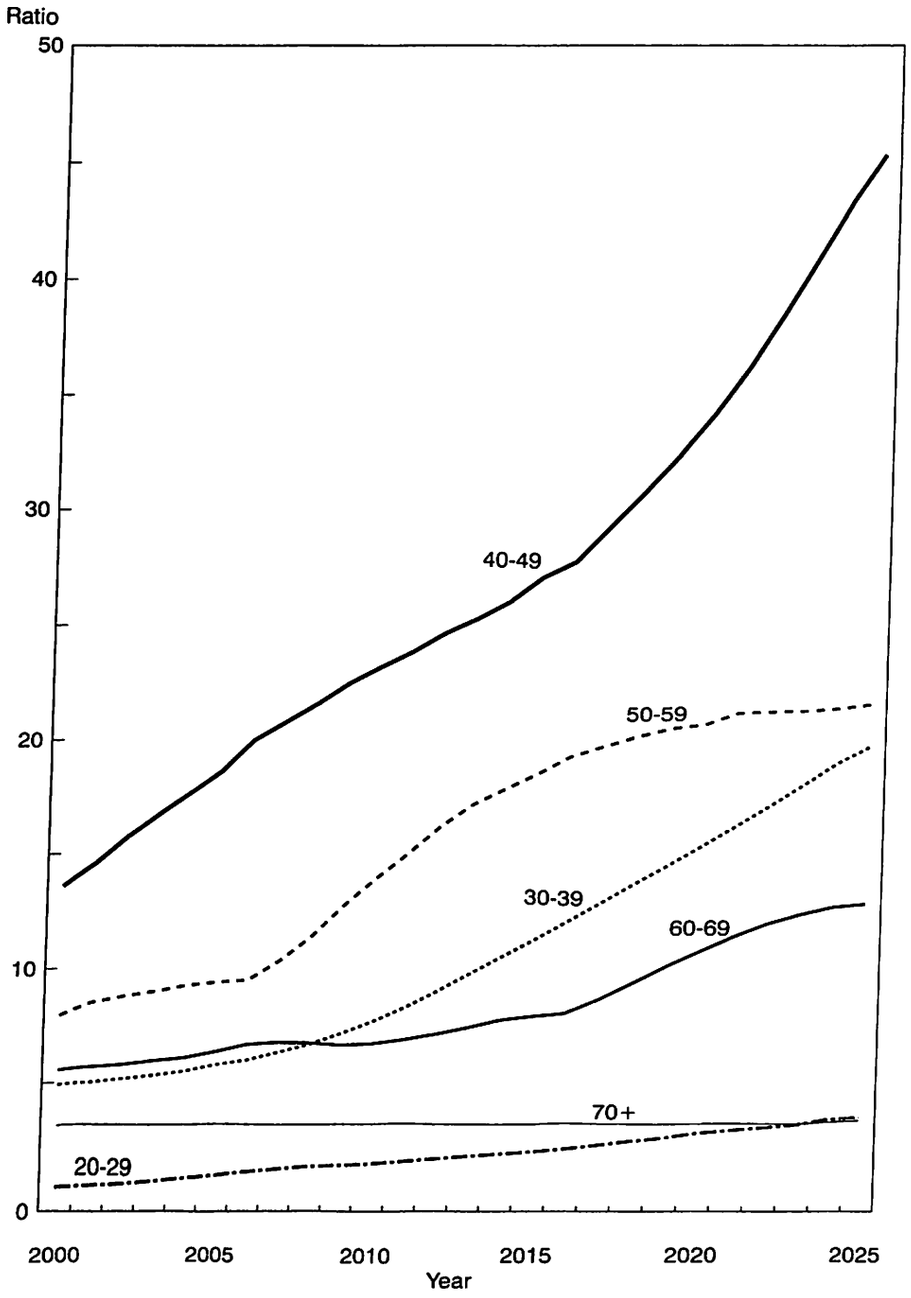
The choice between these alternative scenarios will clearly affect the extent to which families provide care to their elderly parents at home. As the aging process advances, elderly patients who need intensive nursing are expected to increase at an alarming rate. In the NUPRI model, the number of those aged 65 and over who are bedridden or suffer from senile dementia has been estimated for the next 25 years, by assuming that the age-sex-specific pattern of the incidence of being each type of patient remains unchanged throughout the projected period. The number of bedridden patients, either at home or at medical institutions, will grow by 2.2 times, i.e., from 1.25 million in 2000 to 2.70 million in 2025. The total number of senile dementia cases will increase by 2.4 times from 1.64 to 3.99 million during the corresponding period.

This difference in the magnitude of growth between the two types of elderly patients is explained by the following two factors. First, at higher ages such as 75 years and over, the incidence of having senile dementia is much higher than that of being bedridden. Second, as discussed in the earlier section, the aging of the aged will become increasingly pronounced over the next few decades.

A substantial proportion of these elderly patients has been and will be looked after at home by their adult children, particularly non-working middle-aged women. With this family support pattern borne in mind, we have projected the ratio of elderly patients at home to women at various ages outside the labor force. To facilitate this computation, it has been assumed that the current age-sex distribution of female caregivers at home will remain constant in the future. Moreover, the number of non-working women at varying ages has been calculated by multiplying the age-specific female population by (1 - FLFPR), where FLFPR stands for the female labor force participation rate for the corresponding age group; both of these population and economic variables have been derived from the economic submodel of the NUPRI model. The ratios have been computed for the following six age groups: 20-29, 30-39, 40-49, 50-59, 60-69, and 70 and over.

The estimated results are shown in **Figure 10**. As can be seen by inspecting the graphical exposition, the ratios of the aged population at home suffering from senile dementia or being bedridden to women outside the labor force grow over time for all age groups. It can also be noted that although the differences

Figure 10. Projected change in the ratio of the aged population suffering from senile dementia or being bedridden to non-working women at various ages, 2000-2025



in the ratios among these age groups are very small in the early years, they expand markedly over time. Furthermore, non-working women in their 40s consistently show the highest ratio throughout the projection period. Approximately one out of every seven women aged 40-49 assumes responsibility for taking care of one infirm elderly person at home in 2000, but almost 50 per cent of the non-working women of this age group is likely to provide in-home care to elderly patients in 2025. These differences over time in the pattern of increase in the computed ratios among the six age groups are attributable to changes in their labor force participation rates as well as in their cohort size.

The above computational results point to a dramatic rise in the burden placed upon middle-aged Japanese women providing in-home nursing for the infirm elderly. These results are likely to change drastically, depending upon the future availability of both (i) public support services through social security programs such as the Long-term Care Insurance Scheme (LTCI), and (ii) long-term care institutions. The degree to which care for elderly patients is internalized through Japan's traditional familial support network is also contingent upon the magnitude of the future demand for female labor, and upon the commitment of future cohorts of women to care for their elderly kin with serious infirmity or illness at home. In view of the financial constraints on the part of the government, the recent trend for female paid employment (Ogawa and Clark, 1995; Ogawa and Ermisch, 1996; Ermisch and Ogawa, 1994) and the rapid filial normative shift (Ogawa and Retherford, 1993; Retherford, Ogawa, and Sakamoto, 1999), the financial and manpower outlook for providing care for Japanese infirm elderly is rather negative.

In the newest version of the NUPRI model, we have also estimated the proportion of the elderly who are healthy, and the proportion of those not healthy. Among those unhealthy, the proportion of the elderly who need assistance from other persons in performing certain ADLs (activities of daily living) and IADLs (instrumental activities of daily living) has been computed. The data source of this numerical experiment is the Nihon University Japan Longitudinal Study of Ageing (NUJLSOA), conducted in 1999. The total number of the respondents was 4,997 persons aged 65 and over, with the response rate of approximately 75 per cent.

This nation-wide survey collected information on the elderly's physical ability called "Nagi measures." These measures include the following physical activities: (1) walk 200 to 300 meters (2 to 3 blocks), (2) climb 10 steps of stairs without resting, (3) stand straight for 2 hours, (4) continue to sit for 2 hours straight, (5) stoop or bend your knees, (6) raise your hands above your head,

(7) extend arms out in front of you as if to shake hands, (8) grasp with your fingers or move your fingers easily, and (9) lift an object weighing approximately 10 kg. If an elderly person cannot perform any one of these physical activities without someone else's assistance, he/she is considered to have difficulty in working.

In addition, the following ADL and IADL information that has been collected in the 1999 survey is used to measure the degree of assistance required to do the following activities : (1) taking a bath/shower, (2) dressing, (3) eating, (4) standing up from a bed or chair; sitting down on a chair, (5) going to the bathroom and taking care of necessary functions (using the toilet), (6) leaving the home to purchase necessary items or medication, and (7) taking the bus or the train. For each of these ADLs or IADLs, the respondent was asked whether or not he/she could perform it without difficulties. If the respondent cannot perform any one of these activities, he/she is considered to be "unhealthy." Moreover, in the case of unhealthy elderly persons, we have further classified into the following two categories: (i) "unhealthy but assistance unnecessary," and (ii) "unhealthy and assistance necessary."

Based upon these pieces of information, we have estimated a change in the health status and the level of assistance required for daily activities among the elderly during the period 2000-2025. The computed results are shown in **Table 6**. The number of the elderly aged 65 and over who find it difficult to work is projected to increase by 1.46 times over the next 25 years. In absolute terms, the number of elderly persons having difficulties in taking the bus or train is expected to show the largest increase over the 25-year period, followed by that for those having difficulties in going shopping. In relative terms, as displayed in **Table 6**, the number of those who need assistance for eating is anticipated to grow at the fastest pace among the seven activities listed in the table, followed by toileting as the second fastest growing activity. These results imply that assistance required by the elderly will shift over time from activities outside home to activities related to human basic needs such as eating and toileting. Thus, the nature of assistance to be provided by home helpers to the elderly under the Long-term Care Insurance Scheme is prone to change over time.

4. Redefinition of the Age Category of Elderly Persons: A Policy Option for Japan

When a population ages, its age distribution changes. In a country like Ja-

Table 6. Estimated number of elderly persons aged 65 and over who need assistance from other persons, 2000 and 2025

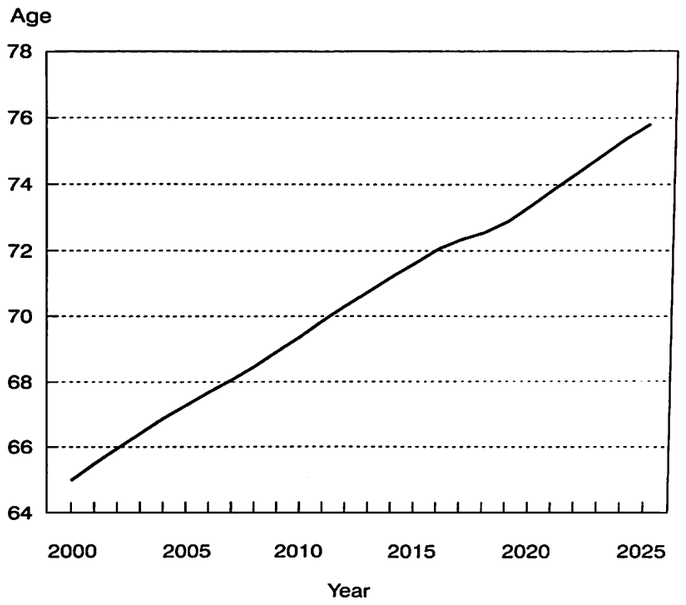
(Unit: 10,000 persons)

	Year		
	2000	2025	Annual growth rate (%)
Difficulty in working	1170.3	1713.7	1.54
Assistance needed for			
taking a bath/shower	124.4	325.5	3.92
dressing	93.2	242.2	3.89
eating	43.4	121.3	4.20
standing up from a bed or chair	67.9	171.3	3.77
going to the bathroom and taking care of necessary functions	65.0	175.8	4.06
leaving the home to purchase necessary items or medication	185.4	437.5	3.49
taking the bus or the train	218.4	519.6	2.38

pan which is basically an age-graded society, the age structural shifts are prone to generate a wide range of disruptions at both societal and familial levels in this country. To alleviate the seriousness of these adjustment problems, Japan has several policy options, as discussed elsewhere (Ogawa, 2000). For instance, Japan could change age-based institutional factors such as the mandatory retirement age and the pensionable age. From a demographic point of view, Japan could introduce policies to raise their fertility levels or import foreign workers. Examining the feasibility of each policy falls outside the scope of this chapter.

Besides these policy options, Japan should explore the possibility of redefining the age of elderly persons. Up to this point, our discussions have been based on the definition that the age category of the elderly population is 65 years old and over. This fixed definition of age of the elderly leads to many serious adjustment problems in the labor market (Clark and Ogawa, 1992a and 1992b) and in the operation of the social security system. To solve these problems, therefore, one can propose that a new concept of the age category of elderly persons be introduced. In the case of Japan, if the definition of the aged is gradually shifted from 65 years old and over in 2000 to 75.75 years old and over in 2025, as depicted in **Figure 11**, the proportion of the elderly will remain at 17 percent for the next 25 years. Undoubtedly, this change in the definition of the aged would call for massive social engineering under strong government leadership in cooperation with the business sector.

Figure 11. Redefinition of the age of elderly persons, 2000-2025



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Chapter 7

Health, Aging and the Economy : The Japanese Experiences

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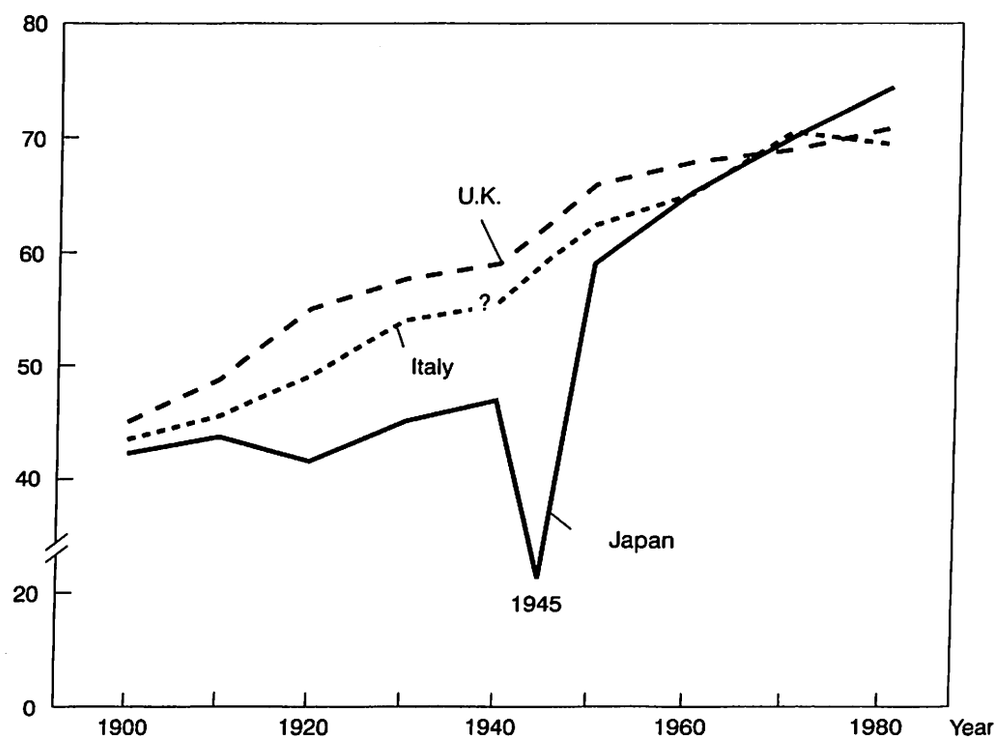
The performance of the macroeconomy is commonly measured by such indicator as Gross Domestic Product (GDP). Economics takes it for granted that an increase in GDP entails advancement of human welfare. Unfortunately, this does not necessarily hold true. A flu epidemic, for example, would raise GDP by way of an increase in medical expenditures, but nobody would take it as an advancement of human welfare! Plainly, GDP has a limitation as a measure of human welfare.

A reasonable candidate for a measure of human welfare in the society as a whole is the average life expectancy. It cannot replace GDP as an indicator of *economic* welfare, but can certainly supplement it. That the average life expectancy is not simply determined by the progress of medical science and technology but depends crucially on economic factors can be seen by looking at the simple fact that it widely differs across countries. Generally speaking, the life expectancy tends to be long in rich countries, and *vice versa*. However, the average income is not the sole economic factor to determine the life expectancy. For example, the average life expectancy would depend not only on the average income but also on the variance or standard deviation of incomes in the economy. The U.S. enjoys the highest levels of both medical science and income in the world, and yet its infant mortality rate (0.79%, 1994) is almost twice as high as that of Japan (0.42%). A possible explanation would be that the variance or inequality of incomes in the U.S. is greater than that in Japan since infrant mortality rate is known to depend crucially on family income.

Demographers Johansson and Mosk in their interesting article "Exposure, Resistance and Life Expectancy: Disease and Death during the Economic Development of Japan, 1900-1960." *Population Studies*. 41: 207-235. 1987, provide an interesting historical case study to show that the average life expectancy depends on sufficient provision of public infrastructures. **Figure 1** shows that

the life expectancy in Japan was almost the same as that of the U.K. in 1900. Britain at the time was the wealthiest country in the world whereas Japan was still in the early stage of economic development. High income is, of course, a positive factor for life expectancy. However, perhaps to our little surprise, urbanization was a *negative* factor in those days. For a lack of sufficient hygienic infrastructures, city was a "dangerous" place to live in compared with rural areas as long as health was concerned. Thus, the life expectancy in Britain with high income and urbanization turned out to be almost the same as that in Japan with low income and urbanization. The figure shows that the life expectancy of the U.K. was monotonously improved throughout the 20th century. In contrast, the life expectancy of Japan was quite stagnant in the first half of the 20th century, namely before the WW II. Johansson and Mosk argue that the reason is that the government of Japan failed to allocate enough public money for the purpose of advancing the health.

Figure 1. The Average Life Expectancy of Japan, U.K. and Italy



Source: Johansson, S. and C. Mosk, "Exposure, Resistance and Life Expectancy : Disease and Death during the Economic Development of Japan, 1900-1960" *Population Studies*. 1987.

In prewar Japan, not only the average life expectancy was stagnant, but also the life expectancy of females was shorter than that of males. Some attribute this bizarre phenomenon to discrimination against females in the prewar Japanese society. GDP rose in the prewar Japan as steadily as in the postwar period. However, as we briefly discussed it above, in terms of health and life expectancy, Japan was a stagnant society in the first half of the 20th century.

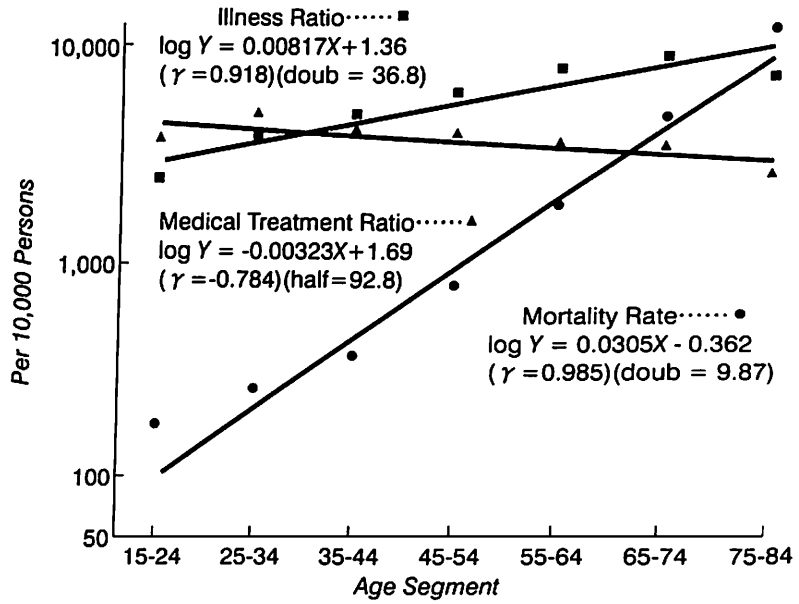
In contrast to the prewar period, the situation was much improved in the postwar period. **Figure 1** shows that life expectancy in Japan steadily rose after the War. Japan, in fact, enjoys the longest life expectancy in the world today: 85 for females, and 79 for males in 2001.

Here, I would like to point it out that the public medical insurance has played an important role. It is possible to establish a system in which medical services are treated in the same way as normal consumer goods such as apples and automobiles, whereby individuals all pay for their own health care. Medical insurance has been developed because individuals cannot accurately predict when they will fall ill and require medical services, and because hospitalization, surgical operations and other medical fees can be very expensive. Of course, medical insurance can be left up to the private sector. Under a pure market mechanism medical system, (1) the price of the medical services provided by hospitals and other medical institutions are all determined by the market, and (2) there is no public medical insurance (the only medical insurance that exists is voluntary private-sector insurance).

Virtually none of the industrialized nations have pure market mechanism based medical systems with no public medical insurance whatsoever. The first objective of public medical insurance systems is to ensure that every member of society can enjoy an equivalent quantity and quality of medical services when they become ill. The best way for us to understand how such systems function in practice here is to review the Japanese experience.

The origins of the present Japanese medical insurance system lie in the Health Insurance Law passed in 1922 to provide coverage to factory workers. This system was gradually expanded during the 1950s following the confusion in the aftermath of the Second World War. The Health Insurance Law was revised into the National Health Insurance Law in 1957, and a universal system was finally established in 1961 by extending coverage to all residents including

Figure 2. Illness Ratio, Medical Treatment Ratio and Mortality Rate by Age Segment (1955)



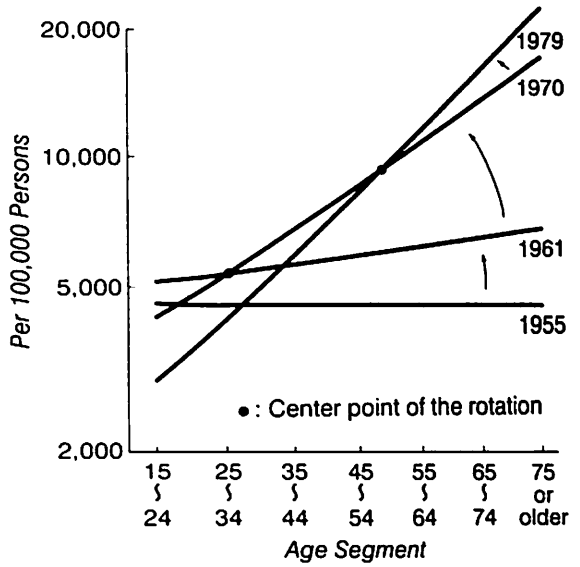
Source: Negishi, T. and M. Naito. "The Medical System in the 21st Century based on the Current Conditions and Background" in H. Uzawa (ed.). *Economic Analysis of Medical Care (in Japnaese)*, Tokyo: Nihon Hyoronsha, 1987.

farmers and other self-employed workers.

Figure 2 presents the illness ratio, the medical treatment ratio, and the mortality rate by age in 1955, just before universal coverage was introduced. As one would expect, the illness ratio and the mortality rate increase with age. It shows that the medical treatment ratio which is the percentage of the population that receives medical treatment, peaks for individuals 25-34 years old, and then gradually declines with age. These statistics appear strikingly odd.

Once universal coverage was introduced from 1961, however, the medical treatment ratio showed a 'normal' pattern, increasing in proportion to age; As depicted in **Figure 3**, the treatment ratio curve moved counter-clockwise within just a few short years after universal coverage was provided. Given the present overemphasis on national medical treatment ratio of the elderly as being too high, many Japanese have come to view the ease with which the elderly can access medical services as somehow problematic. Yet we should not forget the social problems that afflicted the nation before the medical insurance system was upgraded. **Figure 2** shows that prior to 1961 many elderly Japanese refrained from seeking medical services because they could not afford them. It

Figure 3. Medical Treatment Ratio by Age Segment (1955-1979)



Source: Negishi, T. and M. Naito, "The Medical System in the 21th Century based on the Current Conditions and Background" in H. Uzawa (ed.), *Economic Analysis of Medical Care (in Japanese)*, Tokyo: Nihon Hyoronsha, 1987.

seems that improving the medical insurance system has made a major contribution to significantly extending the average life expectancy of the Japanese population since the Second World War.

I surmise that the public medical insurance program has significantly contributed to prolonging the average life expectancy, but also reduced the variances of life expectancy among people who are born in the same year. There are no good tangible statistics which show such variances. One proxy is the infant mortality rate. The ministry of welfare has compiled the infant mortality rate by prefecture. As of the year 1950, the infant mortality rate in Aomori prefecture where the average income was low, was almost twice as high as that in Tokyo. Such variance in the mortality rate across prefectures is absent today. The establishment of the public medical insurance program certainly contributed to this improvement. At the same time, the postwar economic growth also made a significant contribution because it not only raised the average income in the economy as a whole, but also reduced the inequality of income across regions in Japan.

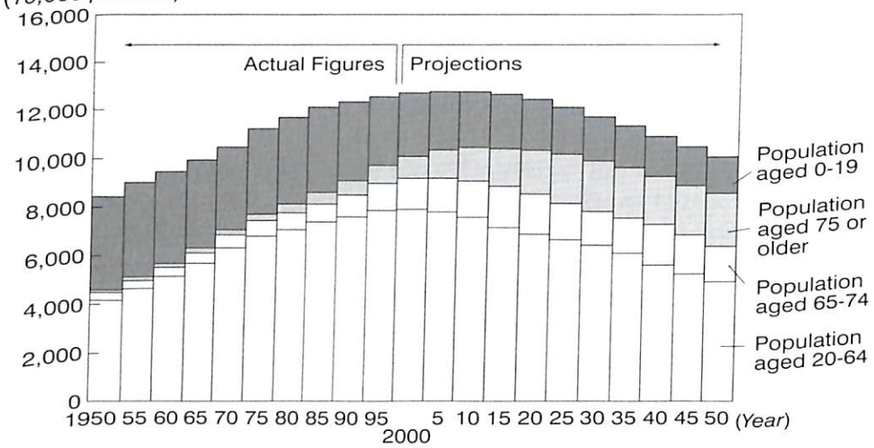
Advancement of health and life expectancy is indeed a great achievement in post-war Japan; WHO ranks Japan as the world number one in terms of over-

all health indicator. It is then a bit of irony that long life expectancy creats a serious challenge to the society, namely aging (**Figure 4**). In fact, the reality that Japan will rapidly be transformed into an aged society during the 21st century is drawing a great attention to the economy's potential growth rate. Economic growth certainly affects every facet of our life. For example, the aging of society (that is, the increase in the number of citizens 65 and older coupled with the decrease in the active labor population) may pose great difficulties for the national pension system, with its "pay-as-you-go" system structure. Nevertheless, the extent to which the aging of society will actually challenge Japan's pension policy depends upon future economic growth rates, and above all on future technological innovations.

Still, the fact remains that Japan will face very rapid aging in future (**Figure 5**). And many are pessimistic about Japan's growth potential. Here we must come back to the basics of economic growth. The most orthodox approach of estimating potential growth rates is growth accounting, which was originally conceived of by macroeconomist and Nobel laureate Robert Solow. Growth accounting uses a macroeconomic production function that express the

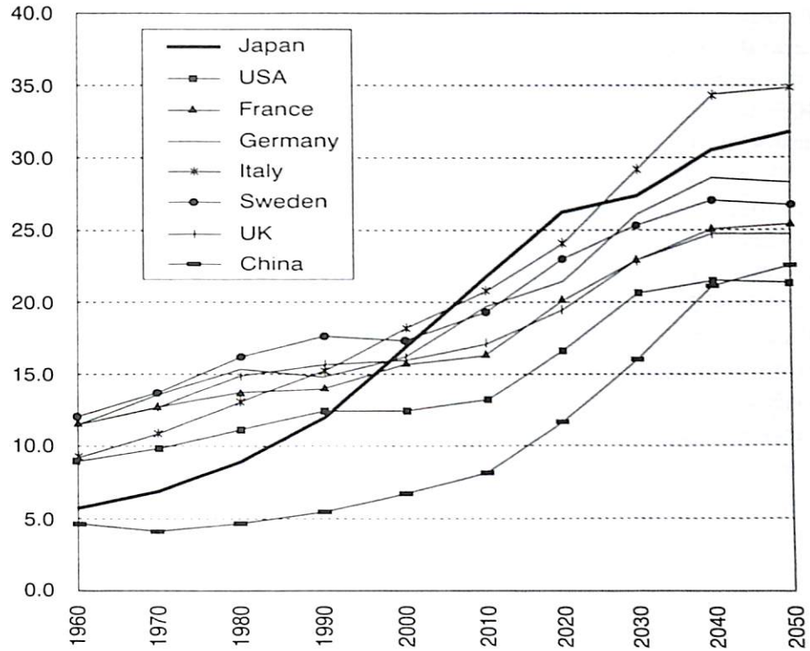
Figure 4. Working Age Population by Age Segment (1950-2050)

(10,000 persons)



Notes: 1. Compiled from Ministry of Public Management, Home Affairs, Posts and Telecommunications(Statistics Bureau), *Population Census,* Various Years and National Institute of Population and Social Security Research, *Population Projections for Japan: 2000-2050* (January 2002)
2. Projections are median estimates.

Figure 5. The Percentage of the Aged in Population



Note: The aged are people 65 year and older

technical relationship among capital and labor (inputs) and the resulting output. When the amount of capital and labor input increases, production naturally rises as well. According to Solow, when production rises that cannot be explained by increased volumes of capital and labor, these are due to technical progress. Thus, growth accounting quantifies technical advances as the residual after the contributions from capital and labor are subtracted from production rises. Since this definition of technical progress reveals the productivity increases after discounting for not only labor but also capital (that is to say, since it accounts for all factors of production), it is also known as Total Factor Productivity, or TFP.

Figure 6 breaks down Japan's real GDP growth rate into the contributions made by capital inputs, labor inputs and TFP. While the figures vary by period and type of industry (manufacturing or nonmanufacturing), the data presented in the figure reveals that historically Japan's real GDP growth can be almost completely explained by the contributions from capital and TFP. Changes in

labor inputs can only directly account for a small fraction of GDP growth. For example, out of the 11.0% GDP growth achieved for all industries during the 1960s capital contributed 6.9%, TFP 3.7% and labor merely 0.4%. Moreover, labor's contribution remained virtually unchanged from the 1970s through the 1980s, when the real GDP growth rate declined from 11% to 4%. The lower capital and TFP contributions account for nearly all of the reduced GDP growth. On the whole, the contribution of TFP is less in the nonmanufacturing industries than in the manufacturing industries. Nonetheless, the basic pattern whereby capital is the most important factor and the contribution of labor is negligible holds true for both sector, and the contribution of labor is negligible holds true for both manufacturing and nonmanufacturing.

TFP calculation results are not necessarily stable, so we cannot accept the data presented in **Figure 6** (which come from the 1998 White Paper on Industry and International Trade) without some reservation. Regardless, a great many growth accounting analyses indicate that labor's contribution is minimal compared with capital and TFP. Thus, we may conclude that the key factors for estimating Japan's potential growth rate are clearly capital accumulation and TFP, not labor inputs. Thus while many assert that the future decline in Japan' s labor pool is a grave problem, the past experience shows that labor inputs are not a definitive factor for explaining economic growth. Even if we accept that the aging of society and the decline in the working population is problematic, we must remember that the difficulties posed by these demographic trends are only indirect via their influence on capital accumulation and TFP.

So far is the supply side of the economy. We should not forget that demand plays a crucial role in the process of economic growth. Here, before I conclude, I consider the potential purchasing power of the aged in Japan. It is well known that the saving rate in Japan is higher than that in the U.S. In particular, in Japan, the aged keeps relatively high saving rate. Despite high saving rate of the aged, the Bank of Japan survey actually shows that bequest motives are weak, and that precautionary savings are prevalent among the aged in Japan. This means that if risk and uncertainty perceived by the aged are lessened, the saving rate could decline and the additional demand would emerge. The question is how much.

The average aged (70 years and older) in Japan holds 17million yen worth of financial assets. In contrast, the aged (75 years and older) in the U.S. holds 51 thousand dollars which is roughly equivalent to 6.6 million yen. Thus, the average aged in Japan holds almost three times as much financial assets as those held by the U.S. counterpart. I maintain that this relatively large asset holdings

Figure 6. Japan's Real GDP Growth Rate by Factor Contribution

Notes: 1. TFP=Real GDP growth rate - labor's share × workforce (total number of employed workers × total working hours) growth rate – capital's share × capital stock growth rate.
2. Manufacturing data from 1974 forward is adjusted for capacity utilization ratios.
3. Figures for each decade show the average growth rates and average GDP contributions.
4. Figures for all industries and nonmanufacturing industries do not include government and private-sector nonprofit services to the household sector.

Source Date: Compiled by the Ministry of International Trade and Industry from Economic Planning Agency, *National Accounts Annual and Private Sector Enterprises Capital Stock*; from Ministry of Labor, *Labor Statistics Monthly*, and from Ministry of International Trade and Industry, *Trade Statistics*.

Source: FY 1998 White Paper on International Trade.

by the Japanese aged are caused by several factors. Uncertainly surrounding the public medical insurance raises precautionary asset holdings. Underdevelopment of secondary housing market prevents the old from selling his/her house, and possibly spending more on consumables.

What would be the effects on growth if the Japanese aged kept the level of financial assets similar to that held by the U.S. counterpart, and spent more on consumption during the period of his/her retirement? I focus on financial assets here. The aged in Japan holds more financial assets than the U.S. counterpart by ten million yen. I take ten million yen as potential purchasing power of the aged in Japan. The number of households aged 65 and over is 11 million. Thus, if the households spend one tenth of ten million yen over ten years, namely one million yen per year, then an additional amount of consumption in the economy as a whole is 11 trillion yen. Roughly, this amounts to 2% of GDP. Admittedly, my estimate rests on a number of crude assumptions. However, the point is that the aged in Japan holds significant potential purchasing power. How the aged spends or does not spend will crucially affect the Japanese economy in coming decades.

PART V

Chapter 8

Social Security, Health Care, and Social Services for the Elderly in Japan

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Introduction

In the preceding three parts of this booklet, the demographic, social, and economic backgrounds of problems of the elderly have been described in detail. In this part, the author would like to focus his attention on the development and present conditions of social security, health, medical, and social services for the elderly in Japan.

1. Brief History of the Societal Efforts for the Welfare of the Elderly in Japan before the Meiji Restoration

Societal efforts for the welfare of the elderly in Japan can be traced back to charitable work by Buddhist temples in older times. These provided relief to impoverished older persons without family to support and care for them. Since in ancient times Buddhism was in effect the national religion in Japan, it might be said that at that time the state was providing relief to poor elderly persons.

In feudal times, however, societal efforts for relief almost disappeared because of incessant wars between feudal lords throughout Japan.

The Age of Civil Wars came to an end when Japan was unified once again by the Tokugawa regime approximately four hundred years ago. The Tokugawa regime promoted, among other things, mutual assistance between relatives as well as neighbors. At the same time it gave protection and encouragement to Confucianism, Buddhism, and Shintoism (Japanese folk religion with a basic

philosophy of ancestor worship) in order to maintain social order. Thus, filial piety, respect for the elderly, and ancestor worship became the basic moral laws of Japanese society.

Owing to the peace and prosperity of the Tokugawa era, many Buddhist temples were engaged in charity as one of the most important parts of their activities. Needless to say, older persons were the main recipients, as the Tokugawa regime placed a special emphasis on the virtue of respect for the elderly. It should be pointed out, however, that relief was neither the responsibility of the central regime nor of the local feudal lords. In other words, in the Tokugawa era, relief was essentially charity to be performed by Buddhist temples or charitable individual persons, though some feudal lords immortalized their names with their sincere relief efforts.

A. From the Meiji Restoration in 1868 to the End of the Second World War

In 1874, the new Meiji government issued the famous administrative order called "Jutsukyu Kisoku" (Relief Order of 1874), which stipulated that an elderly sick person of 70 or more who had no relatives to support him/her could be given public relief. Other recipients of public relief were orphans and severely impaired persons. It should also be pointed out that the amount of money given as relief was very small, being only sufficient to maintain a bare existence. Furthermore, this order did not cover any indoor relief. Thus, indoor relief to poor children and older persons had to be provided by private charity organizations or individuals. What the government did was only to give these almshouses a partial grant that covered only a very small proportion of actual expenses. This severe Relief Order was kept in effect for more than 60 years until 1932, when a new public relief law (Kyugohoh) was put into practice. The number of almshouses at that time was only 66, and the number of older persons living in these almshouses was only 2,753 throughout Japan.

The new public relief law (Kyugohoh) which was enacted in 1929 and put into practice in 1932 stipulated that the national government should take the responsibility of relief for the poor. Eligibility for relief was eased a little in comparison with the previous order (Jutsukyu Kisoku), though it was still very limited from the standpoint of modern social welfare philosophy. This law lowered the age limit for relief from 70 to 65. In addition, indoor relief was approved as a legitimate form of providing assistance. As a result, the number of older persons institutionalized increased to 4,295 in 1940. That is, the number

of such older persons was nearly doubled in the nine years between 1931 and 1940. The number of relief institutions was, however, still seriously short of the actual needs. Therefore, many older beggars could be seen wandering here and there throughout Japan, while a huge amount of money was ungrudgingly spent for the expansion of military forces.

Japan's entrance into the Second World War in 1941 caused a devastating effect on the lives of Japanese people, especially on the lives of older persons without children on whom to depend, of orphans, and of the disabled. Because of the shortages of food, clothing, and above all, money allocated to the services for these persons, the death rate among the institutionalized, especially that of older persons, was extremely high. Such miserable conditions continued till the end of the Second World War in 1945.

B. From Military State to Welfare State

The defeat of Japan in the Second World War caused a thorough eradication of prewar ultra-nationalism and militarism. Instead, peace, democracy, human rights, and social welfare became the nation's goal. Just one year after the end of the Second World War, Kyugohoh (the old public relief law) was abolished, and a completely new public assistance law (the Livelihood Protection Law) was enacted in accordance with modern social welfare philosophy, though it did not recognize the legal right of people to ask for the provision of public assistance. Five years later, in 1950, the old Livelihood Protection Law was abolished, and the new Livelihood Protection Law was enacted. This is the present Japanese public assistance law, which recognizes the legal right of people to ask for the provision of assistance, and the right of appeal to upper administrative office and also to the court, when the applicant thinks that the decision of the local welfare office is not adequate in light of his/her needs. Owing to this law, the living conditions of poor older persons were significantly improved. One of the most significant effects of the new law was that the previously common sight of elderly beggars essentially disappeared.

In addition to the public assistance law, two important laws were stipulated between 1945 and 1950. The first was the Child Welfare Law of 1947 and the second was the Law for the Welfare of Handicapped Persons of 1949.

Another important step for the construction of the welfare state was the establishment of public pension programs to secure a minimum income after retirement. Actually the first step in this direction, though very limited in its scope, was taken in 1941, before the end of the Second World War, in the

form of a law for the establishment of a public pension insurance for persons employed in mining, manufacturing, and other important firms. Three years later in 1944, one year before the end of the Second World War, this Law was revised so as to expand its coverage. The main goals of the 1941 and 1944 laws were to raise the morale of the employees of key industries, and thereby contribute to the national effort to win a victory in the War. It is to be noted, however, that this law also aimed at collecting money in the form of insurance contributions to finance the huge military expenses needed to continue the war. Whatever its goals may have been, the 1941 Law was the predecessor of the present National Retirement Pension Insurance Program for the Employees of Private Firms (Kosei Nenkin Hoken). In 1954, almost a decade after the end of the Second World War, the 1944 Law was revised so as to cover almost all employees working for private enterprises, including those which have only a very small number of employees.

In contrast with the public pension program for employed persons, the one for self-employed persons was established much later than the former, as will be discussed later in this paper.

C. Social Change and Its Impact on the Lives of the Elderly after the Mid-1950's

Japan underwent a rapid economic development and urbanization from the mid-1950's. The impact of this change was so profound that it is sometimes referred to as "the second industrial revolution." In 1955 the proportion of the population engaged in agriculture was approximately 41 percent. This proportion was reduced to approximately 9 percent in 1985. Rapid industrialization and urbanization greatly affected the lives of Japanese older persons through a number of changes in the social and economic structure of Japan. I shall discuss some of the important ones below.

a) Impact of Demographic Change

As discussed in Part I of this booklet, because of improvements in the general standard of living as well as in medical sciences, the number of very old persons aged 80 years or more, has been increasing significantly. The growth of the "old old" means an increase in the demand for various forms of care services. This increased demand is accelerated by the decreased capability of family caregivers, because the more advanced age of dependent older parents means that the age of their caretaking children has also risen. In many cases, the children themselves are already old and their own health is not adequate to provide needed care.

b) Migration of Younger Persons from Rural to Urban Areas

The reduction in the agricultural population means that there was a great migration from rural to urban industrialized areas. As a result, even in rural areas, the proportion of older persons living alone or only with a spouse increased significantly, though the proportion of such older persons in rural areas is still much lower than in urban areas.

c) Influence of the Dispersion of Industrial Areas

In addition to the great migration of the younger generation from rural to urban areas, due to a dispersion of industrial areas caused by the development of the manufacturing industry, a large number of young people were forced to move to other industrial areas to find jobs. Thus, persons who were born and raised in urban locations often have found it difficult to obtain a job in the same urban area where their older parents live. As a result, in urban areas, too, the proportion of older persons living alone or only with their spouse has increased.

d) Increase in Geographic Mobility

Industrialization has brought about much higher geographical mobility of working people in general. In industrialized societies, people change their jobs much more frequently than before. Even when they remain in the same firm, employees are often forced to move to other industrial areas for various reasons. In such cases, aging parents tend to prefer to remain at the original residence rather than move to an unknown place with the child's family in order to continue to live together. Besides, in Japan's industrialized areas, housing for workers is, generally speaking, not spacious enough for two or three generations to live together.

e) Increase of Working Middle-aged Women

Another conspicuous change is the growing number of working women. Because of the shortage in the male workforce, many married, middle-aged women who were once the most dependable caregivers of dependent older parents are now working outside their homes. In addition, the number of married women who are engaged in full-time professional jobs has been increasing significantly. These women seldom quit their jobs to take care of their aging parents as those with part-time and/or unskilled jobs frequently do.

f) Awakening of the Sense of Selfhood

The awakening of a sense of selfhood among the general public aroused by higher education, higher living standards, and the cultural influence of western industrialized countries has also played a very important role with regard to the change in living arrangements of the elderly in Japan. For example, these days an increasing number of both older and younger generations prefer to live separately from each other just for the sake of personal independence and freedom.

g) Decrease in the Number of Children

The number of children in Japan has decreased rapidly since 1950. As a result, persons with fewer children are now gradually entering the aged population. Obviously, when old people have fewer children, their chances of depending on them are reduced. This factor will make the need for services for old people, both community and institutional, more acute in the near future.

D. Realization of Universal Coverage of Public Pension Insurance and Public Sickness Insurance

The rapid and profound social changes discussed above drew people's attention to the need for a realization of universal public pension insurance and sickness insurance programs. When Japan's rapid economic development started in the middle of the 1950's, public pension insurance only covered employed persons. This held true as well for the case of public sickness insurance. The public sickness insurance program for the self-employed of 1938 was not compulsory. Therefore, quite a large number of local governments did not put this program into practice.

Universal coverage of public sickness insurance was realized by the National Health Insurance Law for Self-employed Persons (Kokumin Kenkouhoken-hoh) which was enacted in 1958 and fully put into practice in 1961. In the same year, universal public pension coverage was also realized by the National Pension Insurance Law for Self-employed Persons (Kokumin Nenkin-hoh) which was enacted in 1959 and put into practice in 1961 (refer to Appendix B).

E. Development of Public Services for the Elderly after 1960

Around the year 1960, Japan managed to succeed in meeting the basic needs of her citizens. At the same time, she finished constructing the basic legislative and administrative framework needed for protecting and promoting

basic human rights, i.e., the Livelihood Protection Law (1950), Child Welfare Law (1947), the Law for the Welfare of the Handicapped Persons (1949), universal coverage of public sickness insurance (1961), and universal coverage of public pension insurance (1961).

Thus, Japan began to pay more attention to the social and humanistic aspects of the lives of the people, and started to develop various public services to meet such needs, including the needs of the elderly for health, social, cultural, and recreational services. It should be noted, however, that the efforts of the national government for the development of public services for the elderly before the 1980's were designed to catch up with those of the other industrialized countries of Western Europe and North America. Except for several minor services, Japan followed the paths which other industrialized countries had trailblazed for the promotion of the wellbeing of the elderly. Therefore, let me touch very briefly on those developments which seem important in light of the purpose of this booklet.

a) Enactment of the Law for the Welfare of the Elderly

In 1963, the national government enacted the Law for the Welfare of the Elderly. This law has two characteristics. First, it is a basic law which stipulates several basic principles to which all the other laws as well as governmental and voluntary actions related to the life of the elderly should conform. At the same time, it is a law which regulates the welfare services for the elderly, including institutional services, community care services, free health-check services, health promotion services, educational services, recreational services, and the like. When this law was enacted, it did not start any new program; in other words, this law was only a compilation of existing services at that time. However, it seems to me that the very existence of this law ultimately played a very important role in the development of various public health and welfare service for the elderly.

b) Tax Deduction Program

The income tax deduction program for those persons supporting parents aged 70 and over was started in 1972, and a similar deduction program for local income tax was started in the following year, 1973. The purpose of tax deduction programs is to stimulate and promote traditional family support and care of aging parents, especially those who are frail and impaired, in their own homes.

c) Development of Old People's Clubs

When the national government enacted the Law for the Welfare of the Elderly in 1963, the legislature requested that local governments should make every possible effort to provide needed help to old people's clubs and other organizations that are working for the well-being of the elderly. Along with the enactment of this law, the national government started the national subsidy program for the establishment and operational expenses of old people's clubs. At present (March 30, 2001), there are 133,138 such old people's clubs throughout Japan, and about 8,740,000 -- approximately 29 percent of the older population aged 60 and over -- are members.

d) National Support for the Establishment of Community Centers for the Elderly

In 1963, the national government started the national subsidy program for the establishment of community welfare centers for the elderly. These centers are multi-purpose senior citizens' centers designed to provide counseling, health, rehabilitational, cultural, and recreational services for the elderly. These centers also play an important educational role. They frequently hold a so-called "old people's college," which is a series of lectures for senior citizens. In addition, a substantial part of their usual programs is educational rather than merely recreational.

e) National Support for Elderly Education Program

The Ministry of Education started the national support for elderly education program in 1973, and now adult education courses for senior citizens are conducted at least once a year in almost all local communities.

F. Developments after 1980

(1) Policy Statement on the "Society of Longevity"

The proportion of the elderly in Japan exceeded 9 percent in the year 1980. Since then, although the level of aging was still low compared to other industrialized countries, the impact of population aging became increasingly clear not only to those who were directly engaged in work for the elderly, but also to the leaders of various areas of Japanese society. In addition, many people also became aware that Japan was to become the most aged country in the world within 40 years, when the proportion of the elderly in this country will be far higher than the present percentage in the Scandinavian countries.

Thus, in the early 1980's, many national government bodies appointed advisory councils and instructed them to investigate policies to be adopted to prepare for the rapidly approaching highly aged society. Among them, the most important was the establishment of the Sub-Cabinet on Aging Society by the national government. In 1985, the national government decided to establish a special Sub-Cabinet to deal with policies to be adopted for the coming "Society of Longevity." In the following year, 1986, a policy statement on the national long-term program to cope with the "society of longevity"' was adopted by the Cabinet. The Cabinet also decided that progress of the national long-term program should subsequently be evaluated regularly.

From the viewpoint of social gerontologists who are well-informed on social policies for the elderly in the advanced countries of Western Europe and North America, the contents of this policy statement are not very new. Moreover, the goals are described in very abstract terms. Therefore, I shall refrain from citing any sections of the policy statement in this paper. It should be stressed, however, that in spite of the lack of substantiality in its contents, the statement played a very important role in the development of social policies for the elderly in Japan. Actually, even before its formal adoption, or while it was in the process of formation, it exerted a strong impact on the policies of various national government bodies.

(2) Enactment of the Fundamental Law on Policies for Aging Society

In November 1995, approximately ten years after the promulgation of the policy statement on the society of longevity, the Fundamental Law on Policies for Aging Society was enacted by the National Diet. The purpose of this law is to establish a more solid and powerful basis for national policies and programs for the aging society than the policy statement of 1986. This was only a kind of administrative guideline set by the national government, though actually it exerted a much stronger impact than expected.

In accordance with the law, in July 1996 the National Cabinet adopted the new policy statement on aging society to replace the former one on society of longevity promulgated ten years earlier. For your information, the present policy statement entitled "General Principles Concerning Measures for the Aged Society" (revised five years later in December, 2001) is attached to this booklet (Appendix A). Because the new policy statement is also written in abstract terms, and its contents are not very new for social gerontologists in industrialized countries, I shall again refrain from citing any parts of the statement.

(3) Programs Started since 1980

a) Enactment of the Law for Health and Medical Services for the Elderly

In 1982, the Law for Health and Medical Services for the Elderly was enacted by the National Diet and put into practice early in 1983. This law was based on the chapter on health and medical services of the Law for the Welfare of the Elderly of 1963. It should be emphasized that the previous programs were substantially enlarged in many respects. One of the most significant revisions was the lowering of the age limit for health checks and preventive services; namely, the age limit was lowered from 60 to 40. According to the law, every local government is required to give health check services regularly to all citizens aged 40 and over. The health check services are given for only a moderate fee or free of charge. This law intends to improve the health of our senior citizens in the next century.

b) Renovation of the Public Pension System

In 1985, Japan's public pension system was completely renovated. The main purpose of this renovation was to restructure public pension programs so that they can function well even at the peak of the aging of our society, which will come around the year 2020. For this purpose, among others, the level of the retirement benefits was considerably lowered, though serious consideration was given to the interests of those who were already receiving retirement benefits. In light of the much longer average life span of women, necessary revisions were implemented.

c) National Subsidy Program for the Establishment of Health Care Facilities

In 1988, the national government started a national subsidy program for the establishment of health care facilities for the elderly (rojin hoken shisetsu). The purpose of such institutions is to provide long-term institutional care for the elderly who are suffering from chronic diseases and need intensive care, but do not need hospitalization. Prior to this, because of the lack of public home-care services and because of lenient public sickness insurance regulations regarding long-term hospitalization, many of them had been hospitalized for long periods. Needless to say, this represented nothing but a waste of society's financial and manpower resources. Another purpose of these institutions is to improve the services to such patients by caring for them in places that are more adequate than nursing homes. In Japan, the nursing home is not a health care institution,

and the health and medical care provided in Japanese nursing homes is therefore limited. The new health care facility for the elderly (rojin hoken shisetsu) is to fill the gap between hospitals and nursing homes. Actually, however, the most important aim of this program is to accelerate the development of long-term care institutions by utilizing the public sickness insurance fund. Previously, nursing homes were established and run with money from general revenues. As it is almost always difficult to expand general revenues, the development of nursing home service in Japan has not kept pace with the rapidly expanding needs for long-term institutional care of the elderly. Many social gerontologists specializing in long-term care of the elderly suggest that, in industrialized societies, the number of beds for long-term institutional care should be at least 4 percent of the population aged 65 and over, even when home care and domiciliary services are well developed. This means that at the peak of population aging, i.e., around the year 2020, Japan will have to have approximately 1,200,000 such beds. It seems to me that without the establishment of this new type of long-term care institution utilizing the money of the public sickness insurance programs, realization of this goal will be almost impossible.

d) National Sheltered Housing Program

In light of the predicted sharp increase in the number of the elderly living alone or aged couples living by themselves, it is quite clear that a special type of housing whose structure and facilities are specially designed to accommodate frail and/or impaired elderly should be developed, so that such older persons may continue to live independently in the community. If we fail to supply such housing in sufficient quantities, the demand for institutional care services will unnecessarily expand, a trend which will be much more costly for society than providing such housing for the elderly. Assisting people to be as independent as possible is clearly one of the most important goals for all human services. However, due to the serious shortage of public housing for middle-aged wage earners, our government has hardly been able to spare any funds for public housing program for the elderly. In 1988 our national government finally decided to start the national sheltered housing program for the elderly.

I hope that this important program will develop fast enough, so that in the future the elderly may not unnecessarily be institutionalized only because they cannot find adequate housing in which to live independently.

e) National Registration System of Trained Careworkers

In 1988 the National Registration System of Trained Careworkers was put

into practice, and the first national examination was held in early 1989. The aim of this system is to improve the quality of careworkers, and thereby secure better services for frail and impaired persons living in the community and also in various types of institutions.

Another reason why our national government started this program was to make preparations for the anticipated growth of private care service agencies. Until then, the national government was reluctant to do anything for the development of care services by for-profit agencies. However, partially because of the slow development and inefficiency of the homehelp service provided by local governments, the national government changed its attitude.

In Japan most homehelpers had been full-time employees of local governments or local social welfare councils which were entrusted with the administration of this service by local governments. In other industrialized countries a substantial proportion of homehelp services was provided by part-time workers. However, due to the law on government employees and also due to pressure from the Union of the Local Government Employees, it was very difficult for local governments to hire part-time homehelpers. This was one of the reasons why our homehelp service had been inefficient and its development very slow. Thus, the national government revised the regulations on the homehelp service system, so that local governments might purchase these services from for-profit agencies. Without the registration system of trained careworkers referred to above, it would be very difficult for the government to control the quality of service provided by for-profit agencies. It was also expected that the registration system of trained careworkers would also make a great contribution to the improvement of the quality of care services provided by public bodies and not-for-profit agencies in the community and in institutional settings.

G. Recent Trends

(1) Ten-year Gold Plan for the Development of Health and Welfare Services for the Elderly

At the beginning of 1990, the "Ten-year Gold Plan for the Development of Health and Welfare Services for the Elderly" was promulgated by the national government. According to this plan, the pace of the development of various public services for the elderly was to be greatly accelerated (**Table 1**).

However, as the Gold Plan of 1990 was significantly revised in 1994 and a new plan was promulgated in1999, the details of the Plan will be given later in this paper in the explanation of the so-called "Gold Plan 21," the newest ver-

Table 1. Gold Plan of 1990 and New Gold Plan of 1994: Goals for 1999

	Gold Plan of 1990	G.P. of 1994
1) In-home service		
Home helpers (persons)	100,000	170,000
Short-term stay service (beds)	50,000	60,000
Day service centers (places)	10,000	17,000
Home care support centers (places)	10,000	10,000
Visiting nurse stations (places)	–	5,000
2) Institutional services		
Nursing homes for the elderly (beds)	240,000	290,000
Health care facilities for the elderly (persons)	280,000	280,000
Care houses (A new type of Home for the Elderly with Moderate Charge) (persons)	100,000	100,000
Multi-purpose senior centers in depopulated Area (places)	400	400

sion of Gold Plan.

The reason why the plan was promulgated was the increasingly obvious gap between the pace of the aging of the Japanese society and that of the development of various social policies of the elderly. In order to cope with the predicted gap between the supply and demand, the national government planned to introduce a new "consumption tax." To persuade the public of the necessity of the new tax, the national government created a long-term plan to cope with the coming aging society and disclosed this along with the necessary huge projected amounts of money -- which could only be raised with the new tax system.

(2) Restructuring of the Administration of Health and Welfare Services for the Elderly

In the year 1990 we witnessed another significant development: a fundamental restructuring of the public health and welfare services for the elderly implemented through the revision of the Law for the Welfare of the Elderly, the Law for the Health and Medical Services for the Elderly and several related laws and orders. The crux of the restructuring can be summarized in the following two points.

a) Decentralization First, by the revision of the Law for the Welfare of the Elderly, the authority to decide the admission of an older person into a home for the aged or nursing home was transferred from the prefectural government to the local government. With this change, the local governments have come to assume all the responsibilities for public health and welfare

services for the elderly, from long-term institutional care to preventive, promotive, and recreational services. This naturally led to better coordination among the various care services in regard to both the maximum quality of life and efficiency.

*b) **Long-term Planning*** As a result of the revision of the two basic laws, all local governments were required to make a long-term plan for the development of health and welfare services for the elderly, including institutional care services, community care services, preventive, promotive, and recreational services. Before the end of fiscal year 1993, all the local governments had completed these long-term plans.

(3) Growing Concern in "Care Security" and Expansion of Goals of the Ten-year Gold Plan

The most conspicuous trend after 1990 with regard to social security and health and social services is the growing concern of people regarding the need for so-called "kaigo hosho" (care security) in the coming highly aged society. "Care security" means a social service system by which all the needs for the care of older persons, including both institutional care and home care, are provided for publicly, regardless of income. In March, 1994, "the Advisory Group on the Welfare Vision in the Coming Highly Aging Society" presented its report to the Minister of Health and Welfare. This report proposed, among other things, the construction of a comprehensive public care service system. It also pointed out that the goals set by the 1990 Gold Plan mentioned above were not satisfactory in light of the predicted future growth of the care needs of older persons.

In September, 1994, the National Advisory Council to the Prime Minister on Social Security disclosed a second report on the "Future Image of the Social Security System." Among other things, the report stressed the pressing need for the construction of a comprehensive public care system as an integral part of our social security system and proposed establishing a public long-term care insurance program as soon as possible.

In response to growing concern over the construction of a public care service system, the national government took two important actions. One was the expansion of the goals of 1990 Ten-year Gold Plan (the New Gold Plan) in 1994. This revision placed an emphasis on the development of community care services, as shown in **Table 1**. The target year of the plan was the same as the original plan, i.e., 1999. It should be pointed out, however, that only two out

of the nine goals of the New Gold Plan of 1994 were attained in the target year 1999, as is shown in **Table 2**. In order to catch up with the continuing rapid increase in the aging population, the Ministry of Health and Welfare promulgated a new long-term plan - Gold Plan 21 -- in 1999 (refer to **Table 2**), which will be discussed later more in detail.

The other action of the national government was the setup of a special task force for the development of a comprehensive public care service within the Ministry of Health and Welfare. Its ensuing development will be discussed in the following section.

(4) Planning and Implementation of Public Long Term Care Insurance

In June, 1996, the Ministry of Health and Welfare finished its first draft of the Public Long Term Care Insurance and presented it to the National Advisory Council on the Health and Welfare Services for the Elderly. After a long, patient negotiation with a number of related government advisory councils, political parties, and representatives of local governments, the Ministry of Health and Welfare finalized its draft in November 1996, and presented it to the National Diet. The draft was finally approved by the National Diet in December 1997.

The Public Long Term Care Insurance System was implemented as of April 1, 2000. It covers both community care and institutional care services for older and middle-aged persons aged 40 and over. In the case of middle-aged persons between 40 and 64, however, the insurance only covers the care services to those who suffer from such age-related illnesses as stroke, or senile dementia.

Contributions to the program are collected from persons aged 40 and over. This means that retired older persons are also obliged to contribute.

The new long-term care insurance is financed with insurance contributions (1/2) and general revenue (1/2). Therefore, in order to cope with the predicted significant increase in the amount of general revenue arising from this system and other related expenditures in the coming highly aging society, the national government raised the rate of the consumption tax from 3 percent to 5 percent from April, 1997.

While the draft of the act was in the process of discussions within the related government advisory councils and public bodies, and later in the process of deliberations at the National Diet, one heard quite a number of opinions, both pro and con, through the media. It seemed, however, that a great majority of Japanese people were in favor of the introduction of the public long-term care insurance. It is expected that the new program greatly raises the level of Japan's health and welfare services for the elderly in the near future.

As for the contents of the new Public Long Term Care Insurance, please refer to the outline of the program in "Attachment I" at the end of Chapter 8.

(5) Promulgation of "Gold Plan 21" a New Long Term Plan for the Development of the Care Services for the Elderly

As the target year of the New Gold Plan came over, a new plan, "Gold Plan 21" was promulgated in 1999 (refer to **Table 2**). It was promulgated for almost the same reasons as those of 1990 and 1994. It is to be pointed out, however, that this time the need for new plan was more acute, because with the creation of the Public Long Term Care Insurance, the demand for various elderly care services will increase at a faster rate than previously. In **Table 2**, the goals of the new "Gold Plan 21" are shown in comparison with the goals of the plan of 1994. As the table shows, the development of various elderly care services is to be accelerated further in the new plan.

Here, let me briefly explain the numerical goals of the Gold Plan 21. They are to be reached before the end of fiscal year 2004.

1. The number of homehelpers will be increased from 176,450 (1999) to 350,000. When the goal is reached, the ratio between homehelpers and the population aged 65 and over will be 1:69.7. It is said that in Sweden this ratio is roughly 1:50. This means that Japan's level will become much closer to that of Sweden than before (in 1999 it was estimated to be 1:127:6). It is to be noted, however, that the figures for Japan include a large number of part-timers. Therefore the actual gap between Japan and Sweden is considerably wider than it appears when we merely compare the statistics.
2. The number of day service centers will be increased from 13,350 (1999) to 26,000. When this goal is reached, Japan will have one such center for every 938 older persons aged 65 and over, or a typical medium-sized city of 100,000 will have approximately 20 such centers.
3. The number of beds for short-term stay service (respite care service) will be increased from 57,085 (1999) to 96,000. It is believed that when the goal is reached, at least the acute needs for this service will be met.
4. The number of visiting nurse stations will be increased from 4,470 (1999) to 9,900, i.e., an almost two-fold increase. When this goal is reached, Japan will have a visiting nurse station for every 2,460 older persons, or a typical medium-sized city of 100,000 will have approximately 8 such stations.
5. The number of beds for long-term institutional care will be increased from 527,029 (1999) to 657,000. This means that when the goal is attained in 2004, the proportion of institutionalized older persons among those aged 65 and over will be 2.7 percent, almost the same as in 1999. Due to the rapid increase in the older population, the Gold Plan 21 will not be able to improve this proportion, which is much smaller compared with countries in Western Europe and North America. It is said that the average proportion among these countries is approximately 5 percent. Parenthetically speaking, however, the average length of stay of older persons in hospitals in Japan is much longer than in other advanced countries. Thus, the actual gap between the needs and the available resources in the year 2004 will be considerably narrower than a purely numerical comparison would indicate.
6. The number of group homes for demented older persons will be increased to 3,200 in 2004. This goal was not included in the former plan. The number of such homes in 1999 was negligible.

Table 2. The Status Quo* in 1999 and the 2004 Goals of Gold Plan 21 (1999)

	The Status Quo* in 1999 (1999 Goals of 1994 Plan)		2004 Goals of G.P.21
1) In-home service			
Home helpers (persons)	176,450	(170,000)	350,000
Short-term stay service (beds)	57,085	(60,000)	96,000
Day service centers (places)	13,350	(17,000)	26,000
Home care support centers (places)	6,648	(10,000)	10,000
Visiting nurse stations (places)	4,470	(5,000)	9,900
2) Institutional services			
Nursing homes for the elderly (beds)	296,937	(290,000)	360,000
Health care facilities for the elderly (persons)	230,092	(280,000)	297,000
Group homes for the demented elderly (places)	–	–	3,200
Care houses (A new type of Home for the Elderly with Moderate Charge) (persons)	44,176	(100,000)	105,000
Multi-purpose senior centers in depopulated Area (places)	266	(400)	1,800

* The figures for Status Quo are the actual number at the end of the fiscal year 1999 (The 31st of March, 2000).

(6) Complete Renovation of Adult Guardianship System

Along with the implementation of the public long-term care insurance program a completely new adult guardianship system was put into practice on April 1, 2000. The basic reasons why the new system was introduced was that, under the new public long-term care insurance program, the users are expected to decide themselves what kind of services they want to use, albeit

below the ceiling set by the assessment of the needs for care services. In addition, they are also required not only to decide the frequencies of such services but also to select the service-providers among several registered agencies. It was feared that for demented older insurees or for insurees with a low level of mental ability because of advanced age -- the number of such persons is believed to increase significantly in a highly aged society -- such a decision or selection would be very difficult or even impossible. In addition, in many cases their spouses are also very old and more or less demented or at a low level of mental ability. Besides, in many cases relatives who are expected to play the role of proxy do not cohabit or reside nearby due to the rapidly changing living arrangements of Japanese older persons. In the course of the planning and preparation of the Public Long Term Care Insurance, it became quite clear that such older persons need to have someone to select or decide in their stead. As a result, preparations for the complete renovation of an adult guardianship system were started along with that of the Public Long Term Care Insurance.

It is to be noted, however, that the renovation was not only for demented older persons. Other important targets include intellectually disabled persons and seriously mentally ill patients. They will also be in greater danger of abuse, because increasingly greater numbers of them will not have parents to protect them due to the prolonged average life expectancy of these persons.

Detailed information about the Japanese new adult guardianship system is presented in "Attachment II" at the end of Part V.

2. The Present Japanese Social Security Programs, Health Care, and Social Services for the Elderly

The previous section on the historical development of Japan's social policies for the elderly may present readers with some difficulties in gaining a clear grasp of the total structure and the present level of Japan's efforts for the welfare of our senior citizens. Therefore, this chapter aims to provide a clear-cut outline of Japan's contemporary social policies and programs for the elderly. In so doing, some explanations may unavoidably restate those given in the previous section.

A. Public Pension Insurance Programs

Roughly speaking, Japan has two tiers of public pension insurance programs by which all adult Japanese people are covered. The first tier is the National Pension Insurance Program (Kokumin Nenkin). This program is the basis of the total Japanese public pension system. The second tier consists of the following three kinds of pension insurance programs: the first is the National Pension Insurance Program for the Employees in Private Firms (Kosei Nenkin); the second is a group of pension insurance programs for the employees of governmental bodies and related agencies; and the third is a group of minor pension insurance programs for special groups of employees, such as teachers employed by private schools, sailors, and the like. In addition, there is a non-mandatory public pension insurance program for the self-employed. The universal coverage of public pension insurance is realized by these mutually independent programs which have been established separately but work cooperatively.

B. Public Sickness Insurance Programs

The structure of public sickness insurance programs is somewhat similar to that of the public pension insurance program. That is, we have several mutually independent programs. The first is the National Health Insurance Program for Self-employed Persons (Kokumin Kenko Hoken). The second is the one for those who are employed by private firms (Kenko Hoken). The third is the one for those who are employed by governmental bodies and related agencies. In addition, there are a number of minor programs for special groups of employees such as teachers employed by private schools, sailors, and the like. By these mutually independent programs, a universal coverage of public sickness insurance is realized.

C. Medical Service

For those aged 70 and over, a special arrangement has been made to reduce the charge for medical services provided by public sickness insurance. Our public sickness insurance covers 80% of hospital charges and 70% of the outpatient service of an older person when he/she is a dependent of the insured. For retired older persons who do not have income other than public pensions, however, these charges (20-30%) are sometimes difficult to bear. To cope with this problem, the Law for Health and Medical Services for the elderly stipulates that the elderly aged 75 and over are required to pay only 10～20 percent of the charge according to the amount of their income. In some regions, such as Tokyo, the age limit has been lowered to 65. Thus, it can safely be said that in Japan, adequate medical services are available to all senior citizens regardless

of the amount of income.

D. Health Check Service

The Law for Health and Medical Services for the Elderly of 1982 requires all local governments to have a health check service for their citizens aged 40 and over, which is free of charge or with only moderate fees. All important medical examinations are included in the program. In general, local governments provide health check services annually for older persons aged 60 and over. For middle-aged persons between 40-59, most of the local governments provide health check services about once every five years. Incidentally, all enterprises employing a certain number of persons (including not-for-profit agencies) are required to provide annual health check services for their employees. Therefore, generally speaking, the local governments only provide their health check services to self-employed persons and unemployed persons, including housewives of the employed and retired persons.

E. Long Term Care

In principle, long-term care is to be provided by two kinds of institutions -- nursing homes for the elderly and health care facilities for the elderly. Due to the serious shortage of beds in these long-term care institutions, a special type of hospital or hospital ward also provides long-term care for the elderly.

a) Nursing Homes for the Elderly

The nursing home for the elderly ("tokubetsu yogo rojin hohmu" in Japanese; literally translated, it means "special nursing home for the elderly") is a long-term care institution which belongs to the category of welfare institutions. Those who want to use this institution should apply to the local government to assess their physical and/or mental conditions. If the result of the assessment shows that the level of his/her physical and/or mental impairment is above a certain level, he/she is qualified to use the service of a nursing home utilizing the Public Long Term Care Insurance. Older patients are only required to pay 10% co-payment and costs for meals. However, because of the serious shortage of nursing homes, especially in the large metropolitan areas of Tokyo, Yokohama, Nagoya, Osaka, and others, in many cases the applicants have to wait for a long time before being actually admitted.

The costs for the construction of nursing homes for the elderly are jointly

born by the State (1/2), Prefectural Government (l/4), and the establisher (l/4).

At present (Oct. 1, 2000) there are approximately 299,000 nursing home beds throughout Japan. As is shown in **Table 2**, the number of nursing home beds is to be increased to 360,000 before the end of fiscal year 2004 by the Gold Plan 21.

b) Health Care Facilities for the Elderly

Health care facilities for the elderly are long-term care institutions designed as halfway houses between hospitals and the community. The procedure to utilize the service of this institution is exactly the same as that for a nursing home.

At present (Oct. 1, 2000), there are approximately 234,000 beds in health care facilities throughout Japan. The Gold Plan 21 intends to increase them to 297,000 by the end of fiscal year 2004.

c) Long Term Care Beds in Geriatric Hospitals

As has been pointed out above, because of the shortage of long-term care beds in nursing homes or health care facilities for the elderly, quite a number of seriously impaired older persons are hospitalized for a long time without any real need for such hospitalization. As of Oct. 1, 2000, the number of such hospitals ("kaigo ryoyo-gata iryou shisetsu") is 3,862, and the number of patients was approximately 103,000. The patients in these wards can utilize the Public Long-Term Care Insurance bearing 10% copayment and the cost for meals.

F. Homes for the Aged

Homes for the Aged are for frail or slightly impaired older persons who are functionally independent in daily living activities but in need of a meal service and a slight domiciliary service. There are two types of homes for the aged. One is called "yogo rojin hohmu" (if literally translated, it means a "nursing home for the elderly") that has its origin in public assistance institutions for the aged. (Hereafter in this paper, this type of home for the aged will be referred to as "an ordinary home for the elderly.") The other is called "keihi rojin hohmu"' (if literally translated, it means a "home for the elderly with moderate charge."). Incidentally, in one type of "keihi rojin hohmu" (Type B), meal services are not provided.

To enter an ordinary home for the elderly, one is requested to apply to the welfare bureau of the local government. On the other hand, to enter a home for the elderly with moderate charge, one can apply directly to the home. The

most important difference between the two is that an ordinary home for the elderly can be used by those older persons who have no income or only a very small income and cannot bear any fees or can only pay partially. The expenses needed to run this type of home for the aged are borne jointly by the national government (1/2), the prefectural government (1/4), and the local government (1/4). The users of this type of institution can not utilize the Public Long-Term Care Insurance. The client as well as the relative who is legally responsible to support and care for the client are charged in accordance with the fee scale set by the Ministry of Health, Labour and Welfare. The administrative definition of the responsible relative is, however, very lenient. The amount of charge is decided according to the amount of income, and, incidentally, the calculation method of the amount of charge is very complicated. It can safely be said that, generally speaking, the amount of charge imposed on the responsible relative is significantly less than the amount of money he/she has to bear when he/she supports and care the client at his/her own home.

In case of a home for the elderly with moderate fee, the living cost should be borne by the residents themselves. In addition, the homes require the residents to bear the administrative costs, though the amount to be actually paid is decided in accordance with the amount of income of the residents.[1]

The remaining amount of administrative expenditures of the homes for the elderly with moderate charge is jointly borne by the national government (1/3) and the prefectural government (2/3).

The cost for construction of an ordinary home for the elderly and a home for the elderly with moderate fee are borne jointly by the national government (1/2), the prefectural government (1/4), and the establisher (1/4).

These days, the buildings and facilities of ordinary homes for the elderly (originally they were public assistance institutions) have been greatly improved. There is still, however, a significant gap in the physical facilities of these two types of home for the aged, though there is not an essential difference in their services.

At present (October 1, 2000), there are approximately 65,500 beds in ordinary homes for the elderly (including homes for older persons with visual or auditory disabilities). The current number of beds in homes for the elderly with moderate charge is approximately 61,700 (October 1, 2000). Most homes of the elderly with moderate charge have a long waiting list, probably because of

[1] In case of Type B homes for the elderly with moderate charge, however, the residents are required to bear 100% of administrative cost.

the shortage of sheltered housing for the elderly in Japan.

G. Retirement Homes

In addition to the publicly supported homes for the aged discussed in the previous section, there are a number of "yuryo rojin hohmu" (if literally translated, "home for the elderly with charge"). Most of these homes provide so-called "lifelong care." Thus, even if residents become severely impaired, the home provides needed nursing care as long as the residents wish. Incidentally, the nursing care service provided by this type of home is covered by the Public Long Term Care Insurance. They are established and run without any public grant or subsidy, the only public support being a low-interest loan program. Therefore, their charges are very expensive, and only those who belong to the upper-income class can afford to enter. At present (October 1, 2000) there are approximately 350 such homes throughout Japan with approximately 37,500 older residents.

H. Day and Home-delivery Services

a) Homehelp Service

At present (March 31, 2000), there are 176,450 homehelpers for the elderly throughout Japan. (In addition, there are approximately 32,800 homehelpers for handicapped persons.) As discussed in the previous part of this paper, the national government is placing a special emphasis on the rapid development of this service, and before the end of fiscal year 2004, the number of homehelpers for the elderly will be increased to 350,000. This service is covered by the Public Long Term Care Insurance. Therefore, those who are assessed as in need of this service can utilize it by paying only 10% co-payment.

b) Visiting Nurse Service

Visiting nurse service is now developing very rapidly in Japan. At present (Oct. 1, 2000), there are 4,730 visiting nurse stations throughout Japan. As mentioned earlier in this paper, the number of the stations will be increased to 9,900 before the end of fiscal year 2004. This service is covered by the Public Long Term Care Insurance. Therefore, the insurees whose level of impairment is assessed as above a certain level are entitled to use this service by paying only 10% co-payment.

c) Day Service for Frail and Impaired Elderly

Day service for the frail and impaired elderly is also developing very rapidly in Japan. At present (Oct. 1, 2000), there are approximately 13,000 day service centers throughout Japan. The number of the centers will be increased to 26,000 before the end of fiscal year 2004, as mentioned previously. Day service centers are obliged to provide transportation service for their users. Some of the day service centers are also providing such home-delivery services as visiting bathing services, meals-on-wheels, and laundry services. These services (except for meal services) are covered by the Public Long Term Care Insurance. Therefore, the insurees whose level of impairment is assessed as above certain level can use these services by paying 10% co-payment.

d) Short-term Stay Service (Respite Care)

Short-term stay services are provided mainly in nursing homes and health care facilities for the elderly. There are also institutions providing only short-term stay services, but the number of such institutions is quite limited. At the end of fiscal year 1999, there were 57,085 beds for short-term stay service throughout Japan. This service is also covered by the Public Long Term Care Insurance. Thus the insurees whose level of impairment is assessed as above certain level can use this service by paying 10% co-payment.

e) Home Care Support Centers

The purpose of the home care support center is to give advice to family caregivers, to provide information on home care, and to refer cases to an appropriate social agency when necessary. Some centers have a showroom of equipment and supplies for home care. According to the national standard, each center should have at least one social worker and one trained nurse. All the centers receive telephone calls 24 hours a day. At present (Oct. 1, 2000), there are 6,964 such centers throughout Japan.

f) Provision of Technical Aids for Home Care

This program is subsidized by the national government. Utilizing this subsidy, all local governments are offering this service. The program covers most of the important technical aids for home care, including specially equipped beds, special mattress, air-pads for the prevention of bedsores, toilet chairs, special automated urinals, fire alarms, automated fireextinguishers, emergency alarm systems, a set of special transmitters and receivers for the loitering demented elderly, wheelchairs, special telephone equipment, and so forth. At present, sixteen kinds of equipment are provided by this program. Many of these technical aids are to be provided by the Public Long Term Care Insurance.

I. Educational and Recreational Services

a) Educational Service

As mentioned earlier in this paper, with the subsidy from the Ministry of Education, Culture, Sports, Science and Technology all local governments have a variety of educational services for their senior citizens. In general, they are provided as a part of the adult education program. Some prefectural governments as well as local governments have special programs and/or facilities for this service. Among them, Inamino-Gakuen (the Inamino School for Senior Citizens) of Hyogo Prefecture in the western part of Japan is very famous for its excellent programs and good facilities.

b) Community Welfare Centers for the Elderly

The main function of community welfare centers for the elderly is to provide recreational and educational services for the elderly. Most of them have a room and facilities for rehabilitation training. Most of them also have a free public bath. In addition, many centers provide counseling service. At present (October 1, 2000) there are 2,271 such centers throughout Japan. The construction of these institutions is subsidized by the national government.

In addition to the community welfare centers for the elderly, there are quite a number of small-scale neighborhood welfare centers for the elderly ("rojin ikoino ie" -- literally translated, "rest and relaxation house for the elderly"). They are serving as places for older persons to visit together and enjoy various recreational activities. At present (October 1, 2000) there are 4,619 such centers throughout Japan. When the local governments construct these houses, they can obtain low-interest loans from the national government.

c) Old People's Clubs

Information on old people's clubs has already been given in a previous part of this paper. Therefore, please refer to P. 168.

J. Programs to Provide Opportunities to be Engaged in Gainful Occupations

Generally speaking, Japanese older persons, especially male older persons,

want to continue to work as long as possible, in order to live a meaningful life as well as to have extra income. To meet these needs, the various services are provided by the Ministry of Health, Labour and Walfare.

Among them the Silver Human Resources Center (Sirubā Jinzai Sentā) is worthy of special mention.

The purpose of the silver human resources center is to find opportunities for light, part-time gainful work for older persons. It is to be noted that this center is to be run by a not-for-profit organization of retired older persons themselves. This is a national subsidized program of the Ministry of Health, Labour and Welfare. Most cities with a population over 100,000 have these centers now.

K. Other Programs

a) Tax deductions

Please refer to Section l, P. 167.

b) Telephone Reassurance Service

This service is popular in Japan, though it is not supported by the national government. In most cases, the service is provided by volunteers, even when it is run by local governments.

c) Services for Improvements, Additions, or Remodeling of Houses for the Elderly

Recently, this kind of service has been growing rapidly, as the Public Long Term Care Insurance provides a limited amount of grant for certain kinds of improvement for a house in which the insuree currently lives. The upper limit of this grant is 200,000 yen (U.S.$1,670).

d) Meal Services

In Japan, a daily meal service is provided by only a very small number of local governments or voluntary organizations. Moreover, almost all of these programs are still in an experimental stage. The reason why this service has not developed in Japan is that almost always such frail and/or impaired older persons who need daily meal service live with their children or are institutionalized. This is due to the underdevelopment of homehelp and other essential community care services. As a result, such frail and/or impaired older persons as those who need daily meal service cannot live independently in the community.

e) Sheltered Housing

Sheltered housing for the elderly was started in 1988, as reported earlier in this paper. Unfortunately it is not yet very well developed in Japan. The fundamental reason is that the national government is still placing a great emphasis on investment for the construction of roads, harbors, and other basic public works. Compared with these public works, public housing, including those for the elderly, receives minor attention from the Ministry of Land, Infrastructure and Transport.

Epilogue

With the start of the new Public Long Term Care Insurance and the new adult guardianship system, Japan has opened the door to a new era of care services for the elderly. The former in particular is expected to create a revolutionary impact on traditional value systems which so far have been placing the primary responsibility to care for aging parents on children, however difficult this may be. Let me explain it more in detail. In short, even at present, ordinary Japanese middle-aged people usually think that children should take care of their aging parents *by all means*. Thus even today, not a small number of middle-aged professional women -- such as veteran school teachers, quit their jobs to take care of their own or their husband's aging parents. In the future, however, ordinary Japanese people will change their attitude, and place the primary responsibility on the public long-term care insurance program. This is because, in the insurance system, the insured can naturally demand the insurer to provide the contracted benefits as a right whether or not the insured has children to depend upon as a caregiver. Thus, the obligation of children toward the care of aging parents will become much lighter than at present. The expected role of children, especially that of the daughters-in-law, will be to provide auxiliary care voluntarily when the services provided by the insurance do not seem sufficient for maintaining the life of aging parents at a decent level.

It seems to me that the public long-term care insurance will give a finishing touch to the democratization and modernization of Japan that started half a century ago amidst the miserable social and economic conditions resulting from the tragic Second World War against universal human values, freedom, democracy, and the equality of all citizens.

<Attachment I>

The Outline of the New Public Long-term Care Insurance Program

(using the exchange rate at the end of the year, 2002: $1.00=¥120.)

1. Time of Start: April 1, 2000

2. Insurer:

Local Autonomy (Municipality). City, Township, Village, and Ku of Tokyo

3. Insuree:

Japanese citizens aged 40 and over

(1) Type I Insuree: Those who are aged 65 and over

(2) Type II Insuree: Those who are aged between 40 and 64

4. Benefits:

*Care and domiciliary services to the insuree who is in need of long-term institutional or home care services or domiciliary services.

*In case of Type II Insuree the program only covers the care service needs or domiciliary service needs caused by such age-related diseases as stroke and Alzheimer's Disease.

5. Insurance Premiums:

A. Type I Insuree

(1) In principle, the amount of insurance fee is to be decided taking the amount of income into consideration.

(2) The amount of insurance fee is to be decided in accordance with the level of services available in the community.

(3) The insurance fee of those whose amount of public pension is above a certain level is to be deducted when a public pension is paid. Those whose amount of public pension is less than a certain level are required to pay individually to the insurer (local government).

B. Type II Insuree

(1) The amount of insurance fee varies according to the kind of public medical care insurance held by the insuree.

(2) The Type II Insuree is to pay the insurance fee along with the insurance fee for public medical care insurance.

(3) The amount of insurance fee varies according to the amount of income in case of the employed. The payment of fee is to be shared between the employed and the employer at the ratio of one to one.

(4) The amount of insurance fee of the self-employed varies according to the amount of income and assets. The national government pays the local government the same amount of contribution as that of the insuree.

6. Estimated Average Amount of Insurance Fee

According to the Ministry of Health, Labour and Welfare the average amount of the insurance fee for Type I Insuree is approximately 2,910 yen (US$24) a month at present. It is estimated that it will be raised to approximately 3,240 yen (US$27) a month after April 1, 2003.

7. Procedures and Contents of Services

(1) When the insuree wants to use the services of the Public Long-term Care Insurance, he/she should apply to the insurer (local government) for the assessment of his/her needs for care and/or domiciliary services. A designated home care service agency (public, not-for-profit, or for-profit) and an institutional care service agency can act as proxy for the insuree.

(2) Once the local government's assessment committee determines that the applicant is in need of the services of Long-term Care Insurance, the cost of services used after the date of application is to be covered by the Insurance.

(3) Assessments are to be done regularly (every six months) after the beginning of the service. Whenever the insuree thinks that his/her physical/mental conditions have worsened (or improved), he/she can ask the local government to reassess his/her needs.

(4) As soon as the application is approved, a care plan should be made either by the insuree oneself or by a licensed caremanager with the informed consent of the insuree. The care plan is to be made in accordance with the approved *degree of care needs* described in Item 7 below.

(5) The insurer (local government) is to pay for a care plan made by a caremanager. The care plan made by the insuree oneself or a licensed caremanager is to be presented to the insurer (local government). The insurer will pay the cost of services to the designated home care service agency according to these care plans presented prior to the start of services.

(6) The amount of money to be used for the insuree who only needs domiciliary service is approximately 61,500 yen a month (approximately US$513).

(7) For the insuree who needs care service in addition to domiciliary service, there are five degrees of care needs. The amount of money to be used for the insuree whose degree of care needs is assessed as the lowest (the 1st degree) is approximately 165,800 yen a month (approximately US$1,380).

It is approximately 358,300 yen a month (US$2,985) for the highest degree (the 5th degree) of care needs.

(8) The degree of the institutional care needs is also measured with a five level scale. The amount of money to be used for the insuree whose level of care needs is the 3rd degree is approximately 269,000 yen (US$2,240) a month for care in a nursing home, 298,000 yen (US$2,480) a month for care in a health care facility for the elderly (rojin hoken shisetsu), and 369,000 yen (US$3,080) a month for care in a long-term care geriatric hospital.

8. The services to be covered by Long-term Care Insurance are as follows:

a) For those who need care services

<Community care services>

*home care service (including domiciliary services)
*visiting bathing service
*visiting nurse service
*visiting rehabilitation service
*utilization of the services of rehabilitation center
*physician's or dentist's call on
*utilization of the services of day care center
*short-term stay service
*group home service for the demented
*care services at the retirement home
*rental service or purchase of technical aids
(This benefit is to be given in addition to the amount of money described above)
*costs for improvement of housing
(This benefit is to be given in addition to the amount of money described above)

<Institutional care service>

*care service in a nursing home
*care service in a health care facilities for the elderly
*care services in a long-term care geriatric hospital

b) For those who need only domiciliary services

*Only domiciliary care service is provided.
*Institutional care is not to be provided.

9. Co-payment

The insuree is required to pay 10 percent of the cost of services in the case of community care services. When he/she is institutionalized, he/she is also

required to pay the cost of meals in addition to 10 percent co-payment. In case the amount of income is smaller than a certain level, the amount of co-payment will be reduced. For those who cannot pay, the co-payment and/or cost of meals will be covered by public assistance.

<Attachment II>

The Outline of the New Adult Guardianship System

Japanese Adult Guardianship System before the Renovation in 2000

Before the renovation in 2000, because of the negative connotations of the Japanese legal terms, "kin-chisansha" (the incompetent) and "jun-kin-chisansha" (the quasi-incompetent)[2], for the two kinds of clients, they were almost always applied to those who were incompetent or quasi-incompetent in the management of their property.

In addition, the previous Japanese adult guardianship system had several serious drawbacks compared with those that have been recently renovated in several Western European countries. First, a "kohkennin" (guardian) for (total) incompetence as well as a "hosanin" (curator)[3] for quasi-incompetence were to be selected and nominated by the court from among close relatives, with the first priority on the spouse. In the highly aged society, however, in many cases the spouse is also very old and does not have a degree of mental ability sound enough to act as such. When other relatives, for example, a child, is nominated, it is not always sure that he/she will do the best in the interests of his/her demented parent. Actually, under the old system there were many cases where a child nominated as a guardian or curator used his/her parents' property only for his/her advantage, neglecting the interests of the parents as well as other children.

Second, under the old system, the court could nominate only one guardian or curator. Besides, it was believed that a legal person was not allowed to become a guardian or a curator, though there was no such article in the Civil Code. In many cases, however, it was difficult for the court to find a single person who was able to play a role of a guardian or curator satisfactorily.

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[2] If literally translated, they mean "those who are forbidden by the court to do any legal transactions" and "those whose conditions are close to kin-chisansha."

[3] If literally translated, this word means "an assisting person."

Third, under the old system, once a person was declared as being incompetent, the result was total, i.e., he or she lost all legal capacity and a guardian (kohkennin) was mandated to take over all the legal authority to make decisions on his/her behalf. It is to be noted, however, that, as mentioned before, for those who were quasi-incompetent (jun-kinchisansha), a curator (hosanin) was nominated by the Family Court. In this case, the quasi-incompetent did not lose all his/her legal capacity. Unlike the case of (total) incompetence, the quasi-incompetent only had to obtain the consent of the curator for the nine acts that were specified in the Civil Code.

Fourth, there was no legal system for a person to nominate a guardian or curator voluntarily while he/she was still sufficiently mentally sound. The only way to have a guardian or curator nominated was to apply to the court. In addition, it took quite a long period of time - at least 6 months - and a large amount of money - more than US $4000 - to have a person diagnosed by the psychiatrists nominated by the court as being (totally) incompetent or quasi-incompetent.

In short, the previous Japanese adult guardianship system was simple, but because of its simplicity and strictness in the due process it had a number of serious drawbacks as an adult guardianship system in a highly aging society.

The Outline of the new Japanese Guardianship System

Introduction of a New Type of Guardianship - Voluntary Nomination of a Guardian

One of the most important points of the renovation in 2000 was the creation of a new type of adult guardianship system in which anyone can nominate a guardian for oneself voluntarily while he/she is still mentally sound. In order to place it in the whole structure of adult guardianship system, "The Law for Voluntary Nomination of Adult Guardian" was enacted by the Diet along with the revision of the Civil Code. The new law stipulates that voluntary nomination should be made in a written contract made by a notary public ("kohshohnin" in Japanese) in the form of a notarial deed ("kohsei-shohsho" in Japanese) and registered according to the procedures stipulated by the newly enacted "Adult Guardianship Registration Act."

This type of guardian is named "nin-i-kohkennin" (voluntarily nominated guardian). In the case of voluntary nomination, a legal person --- including for-profit organizations -- can become a guardian. It is to be noted that, in this type of adult guardianship system, when a client who voluntarily nominated a guardian and registered the contract to "adult guardianship registration system" (please refer to Item 6 of the following section) proves to be more incompetent than the level stipulated by the regulations of the law, the Family Court may nominate a "nin-i-kohken kantokunin" (supervisor to voluntarily nominated guardian) in accordance with the request of a client him/herself, a spouse, a close relative, a voluntarily nominated guardian, or a public prosecutor. The legal effect of the contract for the voluntary nomination of an adult guardian comes into force at the time when the court nominates a supervisor to a voluntarily nominated guardian ("nin-i-koken kantokunin" in Japanese).

Improvement and Extension of Traditional Court-Designating adult Guardianship System

1. The terms, "kin-chisansha" (those who are incompetent in the management of their property) and "jun-kin-chisansha" (those who are quasi-incompetent in the management of their property), were deleted from the Civil Code so as to make the purpose of the renovated adult guardianship system clearer. Instead, the new terms "kohken seido" (guardianship system) and "hosa seido" (curatorship system) were introduced. As for the latter, please refer to Item 3 below.
2. In the previous system, when one was declared by the Family Court as "(totally) incompetent in the management of their property," the result was total and he/she lost all legal capacity. Under the new system, even the (totally) incompetent may keep the capacity to decide such acts for oneself as related to one's daily living, such as the purchase of daily necessities.
3. In place of the former system of quasi-incompetence (jun-kin-chisan), the "hosa seido" (curatorship system) was introduced. When one is declared as being quasi-incompetent, one partially loses legal capacity. That is, only with regard to the nine acts stipulated in the law, does one have to obtain the agreement of the curator. It is to be noted that the Family Court may judge that one also needs to obtain the agreement of one's curator with regard to acts other than stipulated by the Civil Code. Although the name of this partial incompetence system has been changed, the contents are roughly the same as before.

4. Under the previous guardianship and curatorship systems, the law stipulated that when a husband or a wife is declared as being incompetent, the spouse should become automatically a guardian or curator. Under the new systems, however, the Family Court may select any person (including a legal person) as a guardian, curator, or helper (for this term, please refer to Item 5 below.), taking into consideration the specific situations of the case. In addition, the court may nominate more than one person (including a legal person) as guardians, curators, or helpers.)
5. In addition to the guardianship and curatorship systems, a new type of adult guardianship is stipulated in the new system. This is called the "hojo seido" (literally translated as "help system."). The target of this newly added system is those whose level of incompetence is less than that of quasi-incompetence. That is, this system is for those who suffer from mild senile dementia, intellectual disability, or mental disability, and thereby lack a sufficient level of mental ability as a normal adult. For these persons, the Family Court may select and nominate "hojonin" (literally translated as "helper.") in accordance with the application of a client himself/herself, a spouse, a close relative, a guardian, a supervisor of a guardian, a curator, a supervisor of curator, or a public prosecutor. In this case, the court may not start the process of selection and nomination of "helpers" without the informed consent of the client. Under this system the client has to obtain the agreement of a "helper" when he/she performs the act (or acts) designated by the court with the informed consent of the client. The court, however, may only designate such act (acts) among the nine acts explained in the previous part of this section.
6. Under the old system, the declaration of incompetence and quasi-incompetence was to be written down in the family register ("koseki" in Japanese). This is one of the reasons why the old adult guardianship system was abhorred and seldom utilized. Therefore, under the new system, a special registration procedure ("seinen-kohken touki seido", literally translated as "adult guardianship registration system") was created.
7. Under the new system, the sphere of responsibility of a guardian, curator, or helper is enlarged so as to make them responsible to give necessary attention to the client's mental and physical health and the conditions of his/her daily living. They are also obliged to see to it that the clients receive adequate care and assistance. In the previous system they were only responsible for the management of the client's property and the arrangements of care services when he/she suffered from illness. To be more concrete, under the new system, a guardian, curator, or helper is obliged to give as much attention

as possible, so that the client may receive adequate health and medical care, live in a decent dwelling, enter or leave a social welfare institution when necessary, receive needed care services at his/her home, be given a chance to receive adequate education, and be given needed rehabilitation services when necessary. Under the old system, however, a guardian or a curator was only obliged to pay adequate attention when the client suffered from illness so as to recover safely within his/her financial ability. Therefore, the Japanese new guardianship system can be said to belong to a care-taker type, though it is not so positive and radical in this direction as the new German system.

8. Finally, in relation to the newly introduced Public Long Term Care Insurance, the mayor of the local government is given authority to ask the court to select and nominate a guardian, or curator, or helper, when they find a person who does not seem to have sufficient mental ability to properly utilize the services of the insurance. This is because the Public Long Term Care Insurance requires even demented older insurees not only to decide for themselves the kind of services they want to use and to what extent, but also to select the service-providers among several registered agencies.

Chapter 9

Development of Public Long Term Care Insurance and Future Direction of the Elderly Care

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1. Background of the Establishment of Public Long Term Care Insurance (PLTCI)

One of the most important factors behind the establishment of PLTCI is the rapid increase in the number of elderly in need of care, including the bedridden and/or demented. It is predicted that the total number of these elderly will increase from 2.7 million in 2000 to 5.3 million in 2025.

Another important factor is the weakening of firmly rooted family care upon which the Japanese elderly care policy has excessively depended. This is due to drastic changes in family structure and functions attendant upon industrialization and urbanization over the past four decades, although family care of elders is still stronger in Japan than in the major Western industrialized countries.

To cope with these demographic and social changes, a change in Japan's elderly care policy from excessive dependence on family care to substantial expansion of formal care became unavoidable.

2. Purposes of PLTCI

The fundamental purpose of PLTCI is the establishment of what can be called 'universalism' in elderly care policy. Universal elderly care policy has the following four characteristics.

1) Substantial increase of service users

Until recently, elderly care services in Japan had restricted their main users

to low income and/or households comprising only the elderly based on a 'selective' tax scheme. In contrast, PLTCI aims for a dramatic expansion of service users by means of a social insurance scheme.

2) Service utilization based on a contract between users and providers

Service utilization under the fromer selective tax scheme was basically by public administrative agencies, while PLTCI aims for service based on a contract between the users and providers under a social insurance scheme where the users themselves can in principle determine their need for services.

3) Pluralistic service provision

Under the old selective tax scheme, the service providers were confined to municipal governments and the Social Welfare Corporation which is a non-profit private organization stipulated by the Social Welfare Law. In order to provide the variety and quantity of services needed by a substantially increased number of users, PLTCI aims to form a pluralistic service provision system through the participation of various for-profit as well as non-profit private organizations. In other words, PLTCI aims to build what might be called a "quasi-market" for elderly care.

4) Expansion of care cost and generalization of cost payment by the elderly

Under the old selective tax scheme, fees paid by the elderly as well as the total amount of care cost was limited. However, with the substantial increase in service utilization under the new universal insurance scheme, the total social cost for care of the elderly is unavoidable. At the same time, in addition to insurance premiums, the insurees are required to bear the co-payment depending on the service utilized.

The outline of PLTCI is described in <Attachment I> of this booklet.

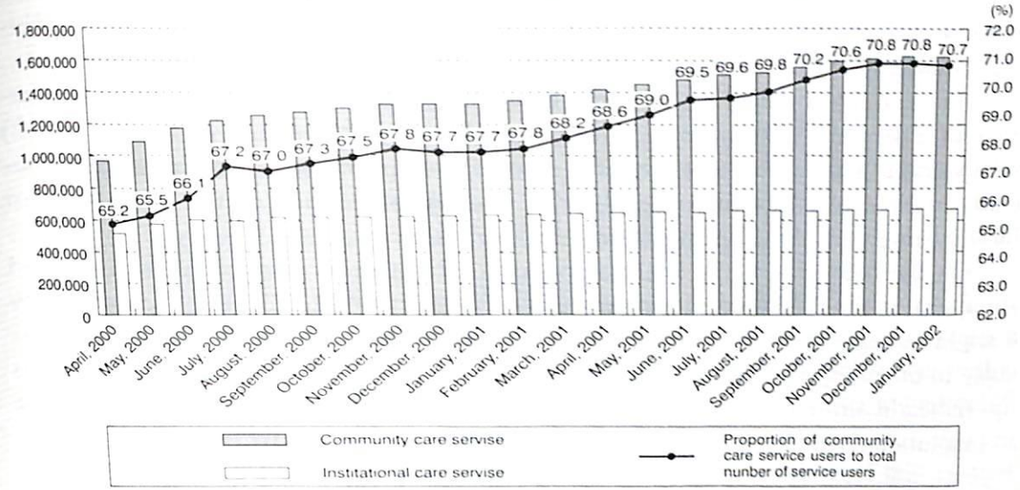
3. Changes and Problems after the Implementation of PLTCI

The major changes and problems in elderly care after the implementation of PLTCI are discussed below in the light of the above-mentioned purposes.

1) Increase in service users

The elderly aged 65 and over who were assessed as entitled to utilize services provided under PLTCI numbered approximately 3,080,000, 12.8 percent of the Type I insurees (65+). Those who utilized institutional care ser-

Figure 1. Number of Service Users
— of Community Care Services and Institutional Care Services —



Source: Ministry of Health, Labour and Welfare, *White Paper on Health, Labour and Welfare of 2002*, p237

vices numbered 680,000, while users of community care services numbered 1,680,000. In other words, there are 2.5 times as many community care service users as institutional care service users. And the total number of users for both types of service numbered 2,360,000.

Comparing the number of users of main community care services between just before and after the start of PLTCI, there was a 52 percent increase in home help services and 36 percent increase in day care services, whereas there was no change in short-term stay service. It is clear that a substantial increase in utilization of community care services was brought about by the implementation of PLTCI. In addition, an increase in the main community care services utilization after the start of PLTCI is also apparent (**Figure 1**).

However, whether or not the present service provision under PLTCI actually meets the real care needs of the elderly is another story. At least two facts suggest the contrary. The first is the gap between the total number of actual service users and those who were assessed as entitled to utilize the services. The total number of service users of a given community or institutional care services, i.e. 2,360,000, corresponds to only about three fourths of those who were assessed as entitled to utilize services, i.e. 3,080,000. The second is the proportion of the benefits actually received to the maximum monthly benefits allowed

to each service user. According to a regular survey conducted by the Ministry of Health, Labour and Welfare on 106 municipal governments in July 2000, the proportion was only 43 percent on average and there was no significant difference among the certified six levels of care needs.

It is said that behind these facts there must be 1) still firmly rooted preference of elders and their family caregivers for family care over formal care, 2) self-restraint from service utilization due to the increase in cost payment, especially in the case of low income elderly, and 3) reluctance of the elderly and/or family caregivers in accepting home delivery services.

On the other hand, the utilization of institutional care services increased somewhat in the first several months after the start of PLTCI, but thereafter only a slight increase was observed (**Figure 1**). This may be partly due to the difficulty in obtaining the necessary real estate in large cities and also partly due to the reluctant attitude of municipal governments as insurers toward the increase in institutional care services which largely raise the total cost of their PLTCI.

2) Service utilization on a contractual basis.

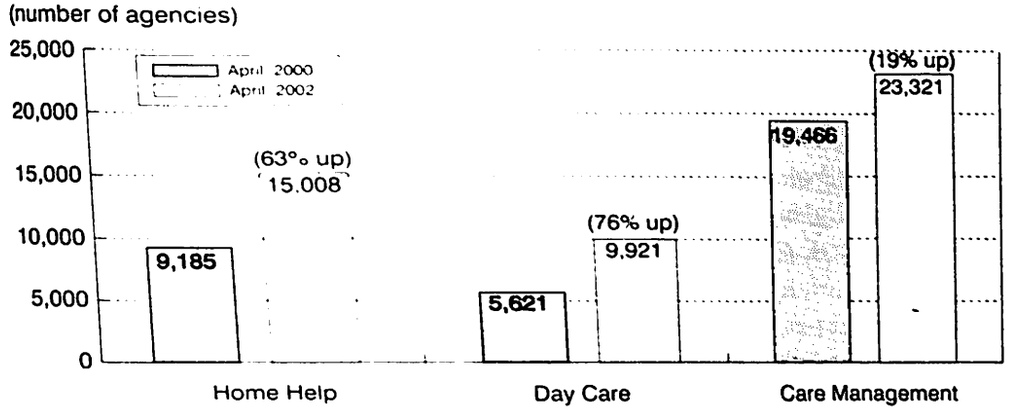
In order to realize universal service utilization procedures based on a contract between users and providers, the following new measures were introduced concurrently with the start of PLTCI.

First, a computerized assessment tool was innovated to make the first stage classification of severity levels of care needs fair and objective. However, there remain several defects to be rectified. Above all, improvement of the tool to accurately assess the care needs of the demented elderly is urgently needed.

Second, the care management system was introduced to assist users make up a plan for utilization of service based on a contract between users and providers. This is the first time that such a care management system was introduced into health and social care in Japan. A care manager's license is given to those who have worked in related fields for more than five years, passed the national examination and received subsequent short-term training. There are several problems to be tackled here as well: ① to enhance the professional quality of care managers, ② to reduce case loads which are too large at the moment and ③ for care managers not to favor unduly the particular providers who employed them but to device care plans based on fairness.

Third, an adult guardianship system was established by an amendment to the Civil Law Act in April 2000, when PLTCI started. This system aims to legally protect those who cannot exercise the right of self-determination, due to dementia and other mental impairments, mainly with regard to property

Figure 2. Change in the Number of Provider's Agencies
— by the kind of community care services —



Source: Ministry of Health, Labour and Welfare, *White Paper of Health, Labour and Welfare of 2002*, p238

administration and partly to health and social care. The outline of this system is described in <Attachment II> of this booklet. In addition to this system, a new social welfare program to advocate the self-determination right of those with relatively slight mental impairments was implemented in October 1999, and was stipulated in the Social Welfare Law later in 2000. The main purpose of this program is to advocate and support such individuals when they utilize PLTCI and other services and to help manage their money in daily life.

3) Increase in multiple service providers

The number of provider's agencies of main community care services clearly increased from April 2000 to April 2002, e.g., 63 percent rise in home help, 76 percent rise in day care and 19 percent rise in care management (**Figure 2**).

The proportion of provider's agencies by type of organization as of July 2000 was as follows: ① Social Welfare Corporation, 48 percent, ② for-profit organizations, 29 percent, ③ Medical Corporation, 11 percent, and ④ municipal governments, 5 percent. However, when we look into these proportions cross-tabulated by type of service, for-profit organizations occupy about 40 percent of provider's agencies in home help services and about 80 percent in rental or purchase of technical aids. Thus, it should be noted that the entry of for-profit organizations into community care services under PLTCI is as yet limited in general, but it has made substantial progress in certain kinds of services.

With regard to providers of institutional care services, there can be seen organizational characteristics corresponding to each of three types of institutions.

Almost all nursing homes are run by the Social Welfare Corporation, whereas almost all long-term care geriatric hospitals are run by the Medical Corporation. Concerning health care facilities for the elderly, more variety of service providers is observed than the above two types of institutions. That is, 74 percent are run by the Medical Corporation, 16 percent by the Social Welfare Corporation and 5 percent by municipal governments.

As mentioned above, the utilization of institutional care services has so far increased only slightly. This means that the entry of new service providers into this field is limited. One of the major reasons for this is that entry of for-profit organizations is totally prohibited in this field. However, it is said that this prohibition will be repealed or alleviated in the near future. If so, the entry of new service providers will increase and effective measures to assure the quality of institutional care will become imperative.

4) Increase of total cost and cost payment by the elderly

The total cost of PLTCI in the budget base was 4,770 billion yen (US$40 billion; US$1=¥120) in fiscal year 2001. The total amount of benefits was 4,210 billion yen (US$35 billion) and the rest 560 billion yen (US$4.7 billion) was the total amount of co-payment of service users. As expected before the start of PLTCI, an enormous quasi-market for elderly care has resulted.

Of the total amount of benefits, 2,530 billion yen (US$21 billion) was taken up by institutional care services, and the rest 1,680 billion yen (US$14 billion) was allotted to community care services. Although the number of institutional care service users accounts for only 29 percent of the total, the benefits take up approximately 60 percent.

It is predicted that the size of the market will grow to more than 10,000 billion yen (US$83 billion) because the number of elderly in need of care in 2025 will be double that at present. However, in order to maintain such an enormous market, a proportional rise in the insurance premium and co-payment imposed on the insuree will be unavoidable.

4. Future Direction of Elderly Care in Japan

As mentioned above, the implementation of PLTCI has clearly brought about a substantial increase in service utilization and a steady increase in multiple service providers. But at the same time, it means that increase in the cost payment by the elderly accompanied with increase in the total amount of care cost is unavoidable and will become larger and larger in the future. This is one

of the most basic dilemmas of any social insurance program in a rapidly aging society.

In the last part of this report, therefore the future directions of elderly care in Japan must be viewed on a more comprehensive and long-term basis. In short, what is required is the development of formal and informal care for the elderly with an appropriate combination of the two. In this report, formal care means care provided by governments, for-profit and/or non-profit private organizations on the basis of tax, social insurance and/or market mechanisms, while informal care means unpaid care provided by family members, community residents and/or volunteers.

1) Development of formal care

PLTCI brought about the substantial increase in service utilization. Nevertheless, as mentioned before, nearly one fourth of those who were assessed as entitled to utilize services did not choose to utilize any service. In addition, those who used such services on average used only less than half the maximum monthly benefits allowed each user. This means that PLTCI has not yet achieved the universal coverage of service utilization. Therefore, it is imperative to further develop PLTCI by solving the problems noted earlier in this report.

On the other hand, however, the other measures of formal care besides PLTCI should also be developed so that the cost payment of the elderly will not become too heavy in the long run. The most important one of these will be a program to prevent elders from becoming in need of care, and especially to prevent them from becoming bedridden and demented. There is already a tax-based 'Program for Care Need Prevention and life Support,' all or part of which municipal governments can implement at will by obtaining the subsidies from national and prefectural governments. However the rate of implementation of this program is as yet very low. Full-scale development of formal care of this type is urgently needed.

2) Development of informal care

Family has provided almost all of the informal care for the elderly in Japan, and the rapid weakening of family care became one of the most important factors that generated the establishment of PLTCI. Therefore, a new type of informal care should be developed mainly with participation by agents other than family. Such informal care may include ① resident participation type community care, i.e. a new form of mutual help among community residents, ② inno-

vative voluntary actions by non-profit organizations stipulated in the NPO Law of 1996, and ③ various other volunteer activities. As in formal care of this kind is generally focused on those with relatively slight disabilities, its main purpose will be to prevent elders from requiring intensive care. This is same as the purpose of formal care other than those covered under PLTCI described above.

3) Appropriate combination of formal and informal care

Formal care and informal care have respective strengths and weaknesses. For example, formal care is appropriate for securing a national or local minimum level of care and providing professional and instrumental care, but it is inclined to manage and control care bureaucratically and inhumanely. By contrast, informal care is more appropriate for emotional and autonomous care but weak in providing professional care. Comprehensive care of the elderly in the future, therefore, would be an optimal combination of both types of care in which the respective strengths of each type of care are fully realized.

In closing, it is hoped that the Japanese challenge to achieve an optimal combination of formal and informal care for the elderly will ultimately become an influential model for elderly care throughout the world in the 21st century.

APPENDIX

A. General Principles Concerning Measures for the Aged Society

B. Chronology of Aging Japan

Appendix A

General Principles Concerning Measures for the Aged Society

Table of Contents

General Principles Concerning Measures for the Aged Society

Part 1: Objectives and Basic Stance

1. Objectives of General Principles

The aging of Japan's social structure is progressing extremely rapidly. This, together with multi-tiered socio-economic changes, exerts widespread correlative influences in the everyday lives of citizens. In the near future, the large post-war generation will reach old age, and Japan will become a full-blown aged society.

Under these circumstances, in order to establish an affluent and vital society with a pervasive spirit of solidarity in which every citizen can feel happy and proud to have lived a long life, it is necessary to ensure sound development of the economy and society and stable improvement of people's living conditions. Measures are to be implemented to constantly revise the socio-economic system to ensure its suitability for the coming aged society, support individual independence and familial roles, and sustain a secure lifestyle through an appropriate combination of self, mutual, and public support.

To achieve this goal, the General Principles have been established in accordance with Article 6 of The Basic Law on Measures for the Aged Society (law No. 129, 1995) (hereinafter referred to as the "Law") as guidelines for basic and comprehensive measures for the aged society to be implemented by the Japanese government.

2. Basic Stance

In principle, measures for the aged society should be implemented with the goal of building a society with the following characteristics as prescribed in Article 2 of the Law:

1) A fair and energetic society where people can be ensured of the opportunity to participate in diverse social activities or work throughout their lives.

2) A society where people are respected as important members of the community throughout their lives and where local communities are formed based on a spirit of independence and solidarity.
3) An affluent society where people can live peacefully and with fulfillment throughout their lives.

In order to achieve these basic principles, it is vital to implement measures for an aging society under a system in which all members of society can help and support each other. This can be achieved through cooperation among all units of society, such as the national government, local governments, corporations, local communities, non-profit organizations, families, and individuals, as well as their active involvement in achieving this goal.

To facilitate such efforts, government measures for the aged society have been promoted in line with the basic positions described below.

(1) Revision of Conventional Stereotypes of the Elderly

Overall, the elderly today are active, healthy, and financially secure. However, the individual situation of elderly people and their living circumstances can vary widely according to gender, state of health, financial situation, family structure, and housing, and thus it is impossible to treat them all in the same way.

Policies are to be developed based on the diversity of the elderly and free from conventional stereotypes of the elderly as physically and financially impoverished.

(2) Emphasis on Prevention and Preparation

Policies are not to be limited to resolving health, financial, and social problems only after these problems emerge and are to be developed systematically throughout citizens' lives. Government is to support citizens' self-help efforts to build up their financial assets, health, learning, and social activity from a young age in order to prevent and prepare for problems that may occur in their old age.

(3) Activation of Local Community Functions

The required infrastructure is to be set up to foster the proactive participation of elderly citizens in local communities and to activate community functions such as mutual support. This infrastructure should be in accordance with the social and economic characteristics of local communities, such as the local aging situation and whether the community is located in an urban or rural area.

(4) Gender Equality Perspective

Policies will be developed from a gender equality perspective so that both men and women can enjoy vitality and security throughout their lives. The government is to implement policies that consider the different situations of elderly men and women and pay special attention to the situation of elderly women regarding lifestyle, finance, and health, as women's life expectancy exceeds that of men.

(5) Use of Technology in Medical Care, Welfare, Information, and Communications

The research, development, and application of technology in the fields of medical care, welfare, information, and communications will be promoted so that their benefits can also be enjoyed by the elderly.

Part 2: Challenges Requiring a Cross-Sectional Approach

In order to advance policies for the aged society, the government must step outside basic sector-specific policy frameworks, identify issues that require a cross-sectional approach, and comprehensively promote related measures, while keeping in mind that the large post-war generation will be entering old age in little over a decade.

1. Realization of Lifestyle Diversity through Support for Independence in Old Age

The government, while respecting the diversity of the elderly, is to provide support so that the elderly may feel secure in leading independent lifestyles.

In providing support for independence in old age, the government is to ensure that elderly people are able to make independent decisions regarding a variety of lifestyle choices. We anticipate an increase in the number of active elderly citizens who express a desire to lead a diversified lifestyle regardless of age, and also an increase in the number of elderly living alone or requiring care. Thus, measures that consider the needs of these elderly people in particular are to be developed.

2. Revision of Systems and Conventional Practices that Treat the Elderly Differently Because of Their Age

Treating elderly people differently simply because of their age may ultimately interfere with their participation in work and various other social activities. Work age limits and other systems or conventional practices are to be revised.

Conversely, uniformly preferential treatment of elderly people based solely on age is also to be revised to ascertain whether or not – as life expectancy increases and the health and financial security of elderly people changes – such treatment is truly necessary; and even if this is necessary, whether or not current age-setting criteria are appropriate.

Issues regarding the infringement of the human rights of elderly people are to be actively addressed in cooperation with relevant agencies.

Furthermore, the spread of universal design is to be promoted so that all citizens, despite declining physical functioning due to aging, are able to enjoy a comfortable life.

3. Strengthening Intergenerational Solidarity

The following measures are to be implemented in order to strengthen solidarity between the elderly and younger generations.

With regard to intergenerational relationships within families, support is to be provided so that citizens are able to strengthen intergenerational solidarity in ways appropriate to their particular family structure.

To ensure greater fairness in intergenerational relationships within the social security system, a balance between benefits and obligations is to be struck. Contribution amounts are to be set in a fair way according to their capacities, regardless of age. In addition, the government is to establish an environment that nurtures a spirit of solidarity supportive of the social security system among the younger generation through education and social participation.

Furthermore, activation of intergenerational interaction, as well as joint participation of elderly and young people in a diverse rage of social activities, including the workplace, is to be encouraged.

4. Promotion of Participation in the Local Community

To promote the participation of elderly people in the local community, infrastructures that support the activities of Silver Human Resources Centers and NPOs and facilitate the start up of localized businesses are to be created.

To facilitate the activity of all citizens, establishment of a barrier free environment for public transport systems, roads, traffic safety facilities, and public buildings is to be promoted under universal design concepts. Furthermore, in order to encourage lifetime local community participation for all citizens, including those of working age, such measures as increased work diversity and flexibility, reduced working hours, and urban planning that reduces commuting time are to be promoted.

In order to promote these cross sectional approaches, interdisciplinary research and evaluation regarding aging and policies for the aged society are also to be encouraged.

Part 3: Basic Measures by Sector

In accordance with the above-mentioned basic approaches for promoting measures for the aged society, the following mid-term guidelines have been established regarding basic measures by sector for each of Working and Income, Health and Welfare, Learning and Social Participation, and Living Environment. Policies are to be developed in accordance with these guidelines.

1. Working and Income

In order to maintain a vital socio-economic system even as Japanese society ages at a rapid pace, employment and working infrastructures that enable elderly citizens, through their knowledge and experience, to support the socio-economic system are to be established.

Taking into consideration the aging of the workforce structure and raising of the age for public pension payment eligibility, stable employment in particular will be secured by raising the retirement age and introducing continued employment systems so that, as a general rule, those who want to work may continue to do so, according to their wishes and capabilities, until age 65.

So that workers are able to balance their working, family, and community lives and effectively use their skills throughout their working lives, measures such as development of occupational skills, reduction of working hours, increased assurance of equal employment opportunities and treatment for men and women, and promotion of childcare and family-care leave systems will be developed.

Post-retirement income will be assured. Income will mainly comprise payments from the public pension system, which is based on social solidarity, supplemented by private income such as from corporate pensions, retirement benefits, or private pensions.

(1) Ensuring Employment and Work Opportunities for the Elderly

(a) Ensuring Employment Until Age 65 by Utilizing Knowledge and Experience

To guarantee stable employment until age 65, education and guidance targeted at employers regarding the raising of the retirement age and introduction of continued employment systems will be provided. It will also be necessary to provide consultation services and support to meet such conditions as implementing these steps and revising employees' wage and compensation systems,

as well as to effectively utilize the various subsidy and benefits systems supporting employment for the elderly.

With consideration to the changes in physical functioning that accompany aging, improvement will be made in such areas as prevention of work-related accidents, maintenance and enhancement of health, and improvement of the work environment.

(b) Supporting and Promoting Reemployment of Middle-Aged and Elderly People

To facilitate the smooth reemployment of middle-aged and elderly workers who have left their jobs for such reasons as retirement or dismissal, employers will be educated and supported regarding their providing reemployment assistance through reemployment support planning systems implemented while the worker is still employed. Workers about to leave their jobs will be provided with career counseling and job-placement services.

Unemployed middle-aged and elderly workers will be provided with unemployment insurance payments so as to ensure lifestyle stability during their period of unemployment. In order to facilitate speedy reemployment, not only will effective career counseling and job-placement services be provided, but measures such as vocational training, creating new job opportunities, and providing employment information will also be implemented.

(c) Securing Diversified Forms of Employment and Work Opportunities

Among the elderly, there is great diversity in work requirements as well as great differences in health and physical fitness. For this reason, diversified forms of employment and work opportunities will be secured.

In local areas in particular, work opportunities will be provided for elderly people seeking post-retirement temporary or part-time employment. To achieve this end, Silver Human Resources Center services will be actively developed through such measures as expanding the operational areas of each center and promoting the provision of daily life support and care services for elderly people.

In addition, to enable workers to plan for their old age or post-retirement lives, not only are they to be provided with the information they need, but also their employers are to be encouraged to provide assistance.

(d) Supporting the Start Up of Businesses

To enable elderly people to start their own businesses by utilizing their career experiences and to create continuous work opportunities, elderly people who desire to start their own businesses will be assisted through the provision of counseling and other supportive services.

(e) Approaches for Realizing a Society in which All Can Work, Regardless of Age

As a step towards easing age restrictions in worker recruitment - a serious barrier to the reemployment of elderly people – public employment security offices will take the lead in providing equal employment opportunities for all, regardless of age, through the education and direction of employers in accordance with guidelines for appropriate employer action.

In the future, it will be necessary to realize a society in which all can work regardless of age. As serious issues affecting employment practices in Japan, the form such a society should take and the infrastructures required to bring it into existence will be examined in conjunction with extensive input from citizens from all walks of life.

(2) Maximizing Workers' Abilities throughout Their Working Lives

(a) Human Resources Development throughout Their Working Lives

To enable workers to use their vocational abilities fully throughout their working lives, it is imperative that not only company-based human resources development but also individual-based vocational ability development be promoted.

Promotion of the following measures is to be achieved; (1) the creation and guarantee of a diverse range of educational and training opportunities made available by the full utilization of educational and training resources such as private educational and training organizations, employers, universities, and NPOs; (2) support for career development through such measures as career consultation; (3) the implementation of comprehensive vocational ability evaluation systems for a wide range of job classifications; and (4) the development of frameworks for gathering and disseminating information about human resources development.

(b) Realizing a Pressure Free Working Environment

The Japanese government has set a target of 1,800 total actual working hours per person per year. To realize this target, emphasis will be placed on encouraging workers to take annual paid holidays and on reducing overtime-working hours. Efforts will continue in reducing overall working hours and creating a pleasant work environment for all workforce members, including elderly people and women.

Furthermore, in addition to encouraging the popularization of "R & R" holidays, a system will be established to introduce workers, including retirees, to participate in volunteer activities.

(c) Maximizing Women's Abilities in the Workplace

To enable women to fully exercise their abilities in the workplace, equal opportunities and treatment for men and women will be guaranteed. Measures such as providing job placement services and vocational training that respond to the needs of women and encouraging women to assume management roles in the agriculture, forestry and fishing industries will also be promoted.

(d) Promoting Measures to Assist Working People Balance Professional Careers and Family Life

A work environment that facilitates workers' taking of maternity leave and family-care leave and re-entering the workplace after leave will be promoted. A work environment supportive of workers involved in childcare or family-care while continuing to work will also be promoted and a framework established that promotes employment or working conditions enabling working people to balance professional careers with childcare and family-care.

(e) Facilitating Diversified Forms of Employment

Infrastructures are to be established to provide workers with a diversity of employment options, such as part-time and temporary work, and to promote telecommuting (remote office), minimal-commuting working arrangements and other forms of employment that utilize telecommunications.

(3) Stable Operation of Public Pension Systems

(a) Establishing Sustainable and Stable Public Pension Systems

As the aging of society proceeds at a rapid pace, a sustainable, secure public pension system, in which the generations provide mutual support, will continue to fulfill the function of solidly supporting the fundamentals of life in old age. To enable this, it will be necessary to advertise and diffuse information about the basic principles and importance of the system, such as emphasizing the rational structure of the pension system as a reliable method for ensuring income for elderly people into the distant future through intergenerational support. It will also be necessary to provide balance between benefits and contributions among generations by the next financial recalculation, planned for 2004.

In order to avoid placing an excessive financial burden on future generations, moves will be made to ensure the early rescindment of the current freeze on increases in pension contributions. With regard to the basic pension, Article 2 of the Supplementary Provisions of the Law Amending the National Pension Law (Law No.18, 2000) states that: "Benefit levels and finance methods will be widely examined and, as an immediate measure, stable sources of revenue will be secured and the proportion of pension benefits covered by the National Treasury will be increased to one half by 2004. Earnest consideration will be given to how this provision should be put into effect with concrete measures to ensure stable sources of revenue.

(b) Creating Public Pension Systems that do not Effect the Lifestyle Choices of Individuals

To respond to the diversification of working styles, such as the increase in part-time employment, and to changes in the lifestyles of women, the pension system will be revised so that no biased treatment arises as a result of citizen's individual lifestyle choices, such as work.

(c) Promoting Integration of Public Pension Systems

In accordance with the March 16, 2001 Cabinet decision, "Regarding the Promotion of Integration of Public Pension Systems," integration of the public pension systems will be further promoted in response to such factors as changes in working structures and the system's progressive maturation, and to ensure the stability and fairness of the public pension systems.

(4) Support for Securing Income for the Elderly through Self-Help Efforts

(a) Maintaining Corporate Pension Systems

Pension systems outside the public pension system such as the corporate pension, the National Pension Fund, and defined contribution pension that complement the public pension system play an important role as a self-help means of boosting income security in old age for citizens in response to their diverse needs. Smooth popularization and application of the newly introduced defined contribution pension system will be ensured. Workers' rights to receive corporate pension benefits will also be protected through such measures as ensuring a smooth switch from the Tax Qualified Pension to other pension systems, in accordance with the Defined Benefit Corporate Pension Law (Law No.50, 2001) enacted in June 2001.

(b) Reform of Retirement Benefit Plans

In light of the large role that retirement benefits will continue to play as a secure income source for elderly people as the aging of society progresses, introduction of external reserve systems will be promoted in order to guarantee retirement benefits. Expansion of retirement benefits among medium and small sized companies will also be promoted.

(c) Promoting the Accumulation of Assets in Preparation for Old Age

In order to help ensure comfortable lifestyles in their old age, citizens will be encouraged to help themselves by building up assets. This is to be promoted through the development of financial products aimed at providing secure in-

come in old age and enrichment of the various financial services available. Measures will also continue to encourage workers to begin building their assets in a planned way before they retire.

In addition, frameworks that enable the utilization of elderly people's private assets as a means of covering their old age living expenses will be developed.

Furthermore, general awareness of guardianship services for the elderly will be increased in order to ensure safe management of the assets of elderly people whose decision-making abilities have diminished.

2. Health and Welfare

The government will comprehensively encourage lifelong health promotion so that a healthy and well lifestyle can be guaranteed and long life enjoyed through efforts to maintain good health from a younger age, to recover from illness or injury as completely as possible, and, even if good health is lost, preserve a healthy lifestyle without the condition worsening.

With respect to care for the elderly, the Long-Term Care Insurance System, which was implemented as a framework for all citizens to provide mutual support for care, will be enforced steadily until it becomes established within society. In addition to establishing an infrastructure for high quality care services through the steady implementation of the "Gold Plan 21," which began in 2000, measures for providing support for elderly people with senile dementia, whose numbers are anticipated to increase rapidly in the future, will be promoted.

To ensure that citizens continue to receive reliable, high quality medical services in the aged society of the future, the medical care system for the elderly must be reconstructed in order to create a framework to maintain the high quality of medical care while keeping increases in medical expenses for the elderly within appropriate limits, and that distributes the financial burden for medical expenses for the elderly fairly among generations and medical insurance systems.

Furthermore, since measures to counteract the decreasing birthrate in Japan are important in constructing a vital and active aged society, measures that support childcare will be promoted comprehensively and systematically.

(1) Comprehensive Health Promotion

(a) Health Promotion throughout Life

Policies will be promoted focusing on "primary prevention" of which involves health promotion and preservation of diseases through the improvement of lifestyles such as nutrition, diet, exercise, relaxation, smoking, and drinking from a younger age. In order to support citizens' health promotion activity, based on their own will, sufficient and appropriate information will be made available, and a supportive social environment around them will be created. Targets will be set based on scientific evidence, taking into consideration the differences in gender and age, and the activities to achieve these targets evaluated appropriately. The evaluation results will be reflected in future health promotion activities.

In order to encourage the health promotion strategies above, advocacy, survey and research will be encouraged. A framework for mutual cooperation and coordination between health promotion-related organizations and NGOs is created. Concrete plans are drawn up for health promotion in local areas.

Furthermore, the implementation of health care management for workers will be promoted in the workplace, and common ground will be established between health services in the community and those in the workplace in order to encourage smooth coordination of these services.

(b) Establishing Health Promotion Facilities

In order to facilitate lifelong health promotion, the establishment of health promotion facilities in local communities is promoted. The establishment of facilities that enable people to promote their health as they experience nature will also be promoted.

In addition, human resources who play the role of providing support for health promotion are to be secured.

(c) Promoting Preventive Care

Preventive care measures will be promoted to avoid a situation in which elderly people become bedridden, require long-term care, and their conditions get worse.

(2) Steady Implementation of the Long-Term Care Insurance System

The Long-Term Care Insurance System, which was established as a system to support the self-sufficiency of elderly people requiring care through the mutual support of all citizens, is to be implemented steadily. Reforms will be made in operational areas as necessary, based on observations of the system in practice, so that the system becomes established.

Measures to support the daily lives of elderly people living alone will also be implemented as measures related to care insurance.

(3) Providing Care Services

(a) Ensuring Required Care Services

Considering the situation regarding local plans for insured long-term care services and provision of high-quality care services that meet the needs of elderly people who need long-term care will be systematically promoted in accordance with the "Gold Plan 21."

To achieve this, training human resources as home helpers and care workers will be ensured, and care related facilities such as special nursing homes and health service facilities for the elderly will be further constructed.

Appropriate popularization and application of nursing care equipment and housing improvements/additions will also be promoted.

In addition, care worker employment management will be reformed, and the capability of both public employment security offices and private job centers to adjust labor supply and demand will be strengthened.

(b) Improving the Quality of Care Services

In addition to improving the skills of care specialists, home helpers, care workers, and others involved in the care of the elderly, information about care providers will be made available through such avenues as telecommunications to enable consumers to make appropriate care service choices and take advantage of high-quality services.

In addition to promoting "new type" special nursing homes for the elderly characterized by all single rooms and group-care unit, efforts will continue to phase out the use of physical restraints in care facilities.

(c) Promoting Supportive Measures for Elderly People with Senile Dementia

To provide support for elderly people with senile dementia, whose numbers are expected to increase rapidly in the future, more group-homes for elderly people with senile dementia will be constructed. In addition, the quality of care available for elderly people with senile dementia will be improved through research and specialist training, and the establishment of research/training networks. The system of counseling for elderly people with senile dementia and protecting their rights will be further promoted.

(4) Reform of the Medical System for the Elderly

(a) Revision of the Eligible Age Range and the Promotion of Public Funds

From the standpoint of focusing on measures to assist people in their late old age, the eligible age for the medical system for the elderly will be 75 years

and over and the proportion of medical expenses covered by government funds will be raised under the current medical system for the elderly until a new medical care system for the elderly is established.

As the eligible age for the medical system is raised, co-payment by people aged between 70 and 74 years inclusive, who will become eligible for general medical insurance, will be considered to be the same as that by people aged 75 years and over.

(b) Revision of Co-payment

Co-payment by the elderly will be a fixed rate (10%) of medical costs. As for people with low incomes, co-payment will be reduced, and co-payment by people with income over a certain level will be raised to a level appropriate to their means.

(c) Optimizing the Growth in Total Medical Expenditure

In order to optimize the growth in medical expenditure, particularly medical expenditure for the elderly, the growth of which greatly exceeds that of the growth of the elderly population, to reasonable levels, guidelines for optimizing growth rates will be set up, and measures for following these guidelines will be considered and implemented.

(d) Establishing a New Medical Services System for the Elderly

Taking into consideration the period in which the aging of society peaks, issues such as the basic characteristics and funding structure of the medical services system, its relationship with Long-Term Care Insurance, and revision of the financial system for the medical system for the elderly, which is mainly covered by contributions from medical insurances, will be discussed in order to establish a new medical services system as swiftly as possible.

(e) Reform of the Medical Services System

Citizens must be assured of the safety and trustworthiness of the medical system through such measures as construction of a framework for the medical services system that maximizes the efficient use of limited resources, and improvement of the quality and effectiveness of medical services while respecting the choices of patients made based on access to reliable information.

(5) Comprehensive Promotion of Measures Supporting Childcare

To respond appropriately and swiftly to the issue of declining birthrates and create a society in which people see their hopes and dreams in family and child rearing, measures supporting childcare, such as providing diversified high quality daycare and enhancing maternal and child health care frameworks, will be promoted comprehensively. The following measures will have particular

priority: (1) promotion of a "zero waiting list" strategy under which daycare centers systematically increase the number of children they can accommodate; (2) enhancement of the supportive role of kindergartens in child rearing; and (3) creation of a framework for after school care.

To enable health and welfare services to respond appropriately to citizen' s needs as well as improve service quality and effectiveness, a variety of organizations such as private companies and NPOs will be encouraged to enter this market, and their healthy growth and activity promoted. To promote the establishment of a framework for comprehensively providing services in neighborhood areas and in which citizens can provide mutual support, the development of community welfare planning by local governments will be supported.

3. Learning and Social Participation

In an aging society where people's values increasingly diversify, it is vital to provide people with opportunities to seek fulfillment in their intellectual and everyday lives and continuously acquire new knowledge and skills in response to socio-economic changes. It is the government's aim to create a lifelong learning system in which people can freely choose their learning opportunities and their efforts can be evaluated appropriately.

In addition, to help elderly people to be active and fulfilled, regardless of their age, as valued members of society and interact with other generations, their social participation, including volunteer activities, should be facilitated and an environment developed in which the elderly can make the most of their free time and enjoy fulfilling lifestyles.

Furthermore, volunteer activities and other social activities performed in Silver Human Resources Centers and NPOs help the elderly to satisfy their wish for self-fulfillment and participation in their local community. They also help the elderly to contribute to enhancing community welfare, and promote a spirit of intergenerational solidarity and mutual support through interaction among generations. Social infrastructures will be developed so that the initiative of all citizens can be respected and they are able to freely participate in these activities.

(1) Creating a Lifelong Learning System

(a) Improving Systems and Infrastructures for Lifelong Learning

With the aim of creating a lifelong learning system and achieving structured improvements in learning opportunities, a comprehensive system to promote lifelong learning will be developed in cooperation with the relevant public and private organizations, such as social education facilities and institutions of higher education. Meetings and conferences will be organized to establish regional cooperation, and master plans necessary for comprehensive implementation will be developed.

In addition, to strengthen the infrastructure for providing lifelong learning opportunities, lifelong learning will be promoted, information and consultation services will be improved, instructors will be trained, and learning achievements will be appropriately evaluated.

(b) Ensuring Diverse Learning Opportunities at School

At primary and secondary educational institutions, understanding of elderly people and challenges concerning the aged society such as care and welfare will be deepened through interaction between students and the elderly in volunteer social service experiences provided with the cooperation of the local community.

Moreover, at higher educational institutions, such as colleges and universities, efforts will be made to implement special enrollment systems for adults, establish night graduate schools, offer day and night courses, and expand the University of the Air service nationwide in order to provide adults with advanced and practical learning opportunities.

School functions and facilities will also be made available to the public for open seminars aimed at local residents and the utilization of unused classrooms for social education.

(c) Providing Diverse Learning Opportunities

In order to meet citizen's diversifying and growing demands for learning, diverse lifelong learning opportunities will be provided through the promotion of social education at community centers, libraries, and museums, cultural activities at art museums, and sports activities, while ensuring the sound development of private sector utilization of information and communication networks.

(d) Supporting Working People's Learning Activities

To develop a system in which working people can learn by taking leave from their workplace for lengthy periods of time, paid-vacation systems for education and training will be promoted and measures will be developed to directly support individual workers who try to develop their occupational skills through their own initiative.

(2) Promoting Social Participation

(a) Promoting Participation of the Elderly in Social Activities

In order to build vital local communities as well as to help the elderly play an active community role, regardless of age, together with other generations as valued members of society, the participation of the elderly in social activities will be encouraged.

To achieve this goal, opportunities will be provided for the elderly and younger generations to further mutual exchange, and the volunteer activities and other forms of social participation of the elderly will be supported. Moreover, education for the social participation of the elderly will be provided, information and consulting services improved, and instructors trained.

In addition, as intergenerational exchange advances, to help utilize the abilities of elderly citizens overseas, programs will be promoted so that the expertise and skills of elderly and retired people can be utilized in overseas technical cooperation and other international activities.

Furthermore, to help the elderly live fulfilling lives in which they can enjoy recreation, sightseeing, hobbies, and cultural activities, leisure facilities for the elderly will be improved, existing facilities will be more effectively utilized, service information will be provided, and subtitled broadcasts will be upgraded.

(b) Improving the Activities Base of Non-Profit Organizations

The base for volunteer activities will be improved through effective cooperation between the relevant local organizations and government organizations, so that all citizens are easily able to participate in NPO activities.

To achieve this, provision of information, consultation, registration, and referral systems for volunteer activities, and implementation of introductory seminars and hands-on experience programs will be promoted.

In addition, training and study for leaders and coordinators of volunteer activities will be implemented, and a base for volunteer activities established.

The expansion and utilization of the Specified Nonprofit Corporation System will also be promoted in order to improve the base for group activities.

4. Living Environment

Since houses serve as the basis for peoples' lifestyles, housing environments will be improved so that people can choose their housing based on their life plans, thereby ensuring lifelong, stable, and comfortable residential living. To achieve this goal, housing standards will be improved, improvement of housing market conditions will be promoted, and housing styles will be diversified so that people can live with or near to their parents. In conjunction with welfare measures, moreover, the provision of housing equipped with daily life supports that allow self-sufficiency or care for the elderly will be promoted.

In order that all people, including the elderly, are able to live safely and securely and participate in society, a continuous barrier free environment that encompasses both soft and hard aspects and extends from home, to public transport, to central city areas will be created.

Under the effective coordination of relevant organizations and with the cooperation of local residents, an environment will be created in which the elderly are protected from traffic accidents, crime, and disasters, and can live safely and securely, particularly those elderly living alone or with disabilities.

Furthermore, considering the status and socio-economic characteristics of the aging society, living environments will be developed to create comfortable urban atmospheres through the use of water and greenery, and to vitalize agriculture, forestry and fishery villages.

(1) Ensuring Stable and Comfortable Housing

(a) Promoting the Provision of High-Quality Housing

To provide high-quality housing which serves as the basis of a stable and comfortable lifestyle, efforts will be made to ensure that two-thirds of the households nationwide achieve the target housing standards by FY 2015 and half of the households in all major cities achieve the same goal by FY 2010. In particular, measures will be taken to ensure that there will be no more housing that is below the minimum housing standards, with particular focus on apartments in major cities.

To achieve this goal, support will be provided for young people to acquire or improve their own housing. With respect to apartments, support systems will be effectively utilized to facilitate the supply of high quality private rented housing and efforts to provide an appropriate supply of public rented housing will be made.

Furthermore, improving housing market conditions, such as the used home market and home renovation market, will also be promoted from the standpoint of making full use of the real estate assets of elderly people.

(b) Diversifying Housing Styles

The construction and extension of housing will be facilitated through the use of loan systems so as to allow people to live with their parents in their own homes.

To protect against conflict when elderly people move into rental housing,

application and expansion of a system of registration for housing that accepts elderly residents will be promoted.

Moreover, public rented housing for the elderly will be supplied, taking into consideration the needs of citizens for communal living arrangements which do not involve blood relations.

(c) Developing Housing that Facilitates Self-Sufficiency and Care

In order to create a stock of housing that meets the needs of elderly people, a target has been set for 20% of total housing in 2015 to be equipped with handrails and wide hallways and have the same floor height throughout. An additional target has been set for a further 20% of housing to be renovated to meet the barrier free requirements of individual residents by the same year.

To achieve these goals, through the promotion of the Design Guidelines for Housing for the Elderly and loan systems, the construction and renovation of houses suitable for self-sufficiency and care for the elderly will be provided.

In addition to promoting the construction or renovation of housing to create public rental housing that caters to the needs of elderly people with declined physical capabilities, a support system will be utilized in promoting the supply of high quality rental housing for the elderly by the private sector.

Furthermore, coordination between housing and welfare policies will be strengthened, with the provision of housing for the elderly equipped with daily life supports, and the development of public housing complexes incorporating daily life support facilities will be promoted.

(2) Comprehensive Promotion of Urban Planning Under the Concept of 'Universal Design'

(a) Comprehensive Promotion of Urban Planning to Meet the Needs of the Elderly

So that all people, including the elderly, are able to live safely and securely and participate in society, a continuous barrier free environment that encompasses both soft and hard aspects and extends from home, to public transport, to central city areas will be created. In addition, urban planning in which people' s homes and their workplaces are closely located will be promoted. Transportation services providing important and diversified support for daily life will also be promoted.

(b) Improving Barrier-Free Public Transportation, Pedestrian Walkways, and the Road Traffic Environment

Public transportation systems will be made barrier-free by installing elevators in traffic terminals such as train stations, and facilities and vehicles will be

improved to ensure the convenience of all citizens, including the elderly.

Standards for roads will be set under the concept of 'universal design', and barrier-free walkway networks will be created through such measures as widening footpaths.

To enable the elderly to cross busy roads and to drive in safety, measures to improve the road traffic environment, such as the installing Barrier-Free Traffic Signals and enlarging and increasing the luminescence of road signs, will be promoted.

(c) Reform of Buildings and Public Facilities

Public buildings such as hospitals and theaters will be made barrier-free. Government facilities that provide over-the-counter services will be converted to meet specifications focusing on the convenience of all citizens, including the elderly.

(d) Coordinating Welfare Policies

Urban planning will be promoted in conjunction with welfare measures so that welfare and medical facilities are systematically distributed within urban areas. The development of parks and other infrastructures will also be promoted. In rural areas, sites for welfare and medical facilities, together with farms and other facilities, will be developed.

(3) Ensuring Traffic Safety and Protection from Crime and Disasters

(a) Ensuring Traffic Safety

In order to prevent the elderly from becoming involved in traffic accidents, traffic safety awareness among elderly people will be spread extensively through the promotion and expansion of such activities as developing traffic safety equipment for the elderly, promoting traffic safety education which focuses on participation, experience, and practice, implementing driving aptitude tests for the elderly, and training 'Silver Leaders' (elderly people trained as traffic safety instructors).

(b) Protection from Crime, Human Rights Infringement, and Corrupt Business Practices

An infrastructure will be established and various measures promoted to protect the elderly from crime, dangers arising from wandering due to senile dementia, human rights infringements, and corrupt business practices.

In particular, efforts will be made to prevent or redress damage to elderly people requiring care caused by abuse by family members or in facilities, and infringements of property rights by family members or corrupt businesses, by expanding awareness of the rights of the elderly, providing human rights coun-

seling, and investigating and dealing with human rights infringements.

(c) Promoting Protective Measures against Disaster

Disaster prevention measures to protect elderly people, who are particularly vulnerable to calamities, will be promoted.

(4) Creating Agreeable and Vital Living Environments

(a) Creating Agreeable Urban Environments

To develop urban environments that are safe, agreeable, and full of greenery, urban parklands will be created, trees planted along roads, and access-oriented waterfronts where the elderly can relax and interact developed. Furthermore, establishing facilities for interaction in disused shops will make shopping centers easier for elderly people to visit.

(b) Creating Vital and Active Rural Communities

In order to create active and vital rural communities, priority will first be on assisting new community members to settle into the rural lifestyle and ensuring the provision of training for them. Conditions will be improved to enable the elderly to fully demonstrate their skills in both work-related activities, such as agricultural, forestry, or fishing skills, and in community activities. A living environment in which the elderly can live safely and comfortably will be developed in keeping with local characteristics. Furthermore, from the standpoint of creating open, vital communities, symbiotic relationships and interaction between urban and rural areas will be encouraged.

5. Promoting Research

The research, development, and use of technology greatly contribute to resolving issues associated with aging societies. Various research activities that help realize an affluent and active aging society, such as research into diseases peculiar to the elderly, health promotion, technical aids for the use of the elderly, household products, and information and communication tools, and the development of infrastructures will be promoted.

(1) Promoting a Variety of Research Activities

(a) Research into Health Promotion and Diseases Particular to the Elderly

With regard to senile dementia, cancer, and other diseases to which the elderly are susceptible, research and development of new medical technologies and pharmaceuticals through the application of cutting-edge science and technology, such as genomic science, and research for clinical application of these results, as well as research that aims to establish effective health and medical technologies, will be promoted.

Research into various areas, such as basic research on aging and research for clinical application of the results of this basic research, research into diseases caused by living practices, research into effective and efficient nursing care, and research into health promotion, will be promoted.

(b) Research and Development of Technical Aids

In order to support the independence of the elderly and reduce care burdens, research and development of technical aids and medical equipment for the elderly will be promoted.

(c) Research and Development of Universal Design Household Products

From the viewpoint of supporting the development of household products, lifestyle infrastructures, and systems which are safe and easy-to-use for all citizens, including the elderly, research and development in the field of human life engineering and of universal design products will be promoted.

(d) Research and Development of Information and Communication Technology

The research and development of new information and communication technology, including both hardware and software technology, to be applied in work, health and medical care, welfare, learning, social involvement, and living environments for the elderly, will be promoted.

(2) Improving the Base for Research Activities

(a) Establishing an Infrastructure for Promoting Research

To enhance treatment and research structures necessary for the comprehensive medical care of diseases particular to the elderly (medical care for longevity), national center for advanced and specialized medical care will be established, relevant experimental research facilities upgraded, and subsidy systems for health science research improved.

To increase the effectiveness of research and development, a database containing information about the physical characteristics of the elderly will be compiled, methods for evaluating technical aids will be established, and standardization appropriate for the aging society promoted.

Support systems for research, such as the provision of biogenetic resources vital to research on aging, will be enhanced.

(b) Personnel Development

Professional researchers will be trained, and resear

change will be encouraged. International collaboration, such as joint research and information and personnel exchange, will also be promoted.

Part 4: Promotional Frameworks and Other Issues

1. Promotional Frameworks

To comprehensively promote measures for the aged society, the Aged Society Policy Council will follow-up on the General Principles, discuss important issues, and prepare an annual report to be submitted to the Diet

2. Important Points to Note in Promotional Activities

The following points are to be noted when promoting measures for the aged society.

(1) Close coordination and cooperation are to be established among the Cabinet Office, the Ministry of Health, Labor and Welfare, and other relevant government bodies, and appropriate adjustments made to each measure accordingly.

(2) Measures are to be promoted steadily based on plans with goals that are as clear as possible. Through policy evaluation and the disclosure of administrative information, measures that are efficient and trusted by citizens are to be promoted.

(3) Information about the aging situation and measures for the aged society are to be gathered and analyzed, and frameworks required for providing citizens with this information are to be developed.

(4) Efforts to widely reflect the opinions of citizens in the promotion of measures for the aged society are to be made. To gain the understanding and cooperation of citizens, effective advertising, education, and guidance are to be provided.

3. Revision of the General Principles

In view of the nature of the General Principles as medium to long-term guidelines for governmental measures for the aged society, they may be revised, if deemed necessary, to take account of changes in the socioeconomic situation.

On publishing the English version of the General Principles Concerning Measures for the Aged Society, the Cabinet Office tentatively translated this document for the Second World Assembly on Ageing, April 2002. The original document is the Cabinet Decision of the Government of Japan in December 2001.

Appendix B

Chronology of Aging Japan

Demographic and Social Trends	Government Policies
1945 End of World War II	1946 The New Constitution is enacted
	1958 The National Health Insurance Law for Self-emplyed Persons and The National Pension Insurance Low for Self-employed Persons are practiced
	1959 The National Pension Insurance Law for Self-employed Persons is enacted
Era of 70-year-long Life (Longevity Society)	
1960 Share of Aged Population : 5.7% Life Expectancy at Birth : Male 65.3, Female 70.2	1961 The National Health Insurance Law for Self-employed Persons and The National Pension Insurance Law for Self-employed Persons are practiced (An Era of Universal Coverage of Public Pension and Public Sickness Insurance begins)
	1963 The Law for the Welfare of the Elderly is enacted
	1964 Trends of raising mandatory retirement age
	1966 National holiday "Respect-for-the Aged Day (keirou-no-hi)" is proclaimed
	1966 The Foundation of Retirement Pension for Employess is established
	1969 The Program "No Charge for the Old-age Medical Care" starts in Tokyo.
Aging Society Begins	
1970 Share of Aged Population : 7.1%	
1972 The Best Seller, *Mental Dementia Person* (*Koukotuno-hito*) is recorded	1973 The Law for the Welfare of the Elderly is revised (Free medical care for the elderly aged 70 and over is practiced at national level)
1973 Oil Crisis	1973 The Policy Office for the Aged is established at the Prime Minister's Office
1973 Designated Sheet for the Elderly called "Silver Sheets" on public transportation	1973 The Public Pension System is revised
	1973 Local Tax Deduction Program for the Aged starts
	1973 The National Support for Elderly Education Program starts
	1975 The Union for the Retired Workers is established
20 Share of Aged Population : 9.1%	
Life Expectancy at Birth :	

Demographic and Social Trends	Government Policies
Male 73.35, Female 78.76	
1981 Number of Households headed by aged person : 2,424,000 which is double over the past 10 years	1982 The Law for the Health and Medical Services for the Elderly is enacted (Partial reinstatement of medical charges for the aged)
1984 Life Expectancy at Birth : Male 74.20, Female 79.78 (World Longest Level of Life Expectancy at Birth)	1985 Mandatory retirement system for national government workers at age 60 is introduced The National Pension Insurance Law is revised (Public pension system is completely renovated)
1985 Female life expectancy at birth reaches 80 years	1986 The Cabinet decides on Guidelines on Policy for a Society of Longevity (Chojusyakai-taisaku-taikou) Health Care Facilties for the Elderly is established
	1987 The National Registration System of Trained Care-workers starts
	1988 The National Sheltered Housing Program for the Elderly starts
1989 TFR : 1.57	1989 The Silver Mark System for the elderly care business is introduced
1990 Share of Aged Population : 12.0%	1990 Ten-year Strategy for the Promotion of the Health and Welfare Services for the Aged ("Gold Plan") is implemented
1990 "Bubble Economy" collapses	Eigth Laws Related to Social Welfare are revised (Commitment of social welfare services to municipality)
	1991 The Law for the Health and Medical Services for the Elderly is revised
1992 Number of Dependent Elderly : 836,000 persons, 16% of those are bedridden persons	1992 The Visiting Nurse Services starts
	1993 All Municipality drafts the Plan for Elderly Health and Welfare The Law for Persons with Disabilities is enacted
Aged Society Begins	
1994 Share of Aged Population : 14.1% TFR : 1.50	1994 Future Image of the Social Security System (The Vision for Welfare toward the 21st Century) is formulated The Gold Plan is revised ("New Gold Plan") Angel Plan (Guideline for the Support of Child Care) is formulated

Demographic and Social Trends	Government Policies
	1995 The Law for the Child Care and Elderly Care Leave is enacted The Basic Law on Measures for the Aging Society is enacted The Government Action Plan for Persons with Disabilities is formulated (A Seven-Year Nomalization Strategy)
1996 TFR : 1.42	1996 The Cabinet decides on General Principles Concerning Meausres for the Aging Society (Koureisyakai-taisaku-taikou)
1997.6.1 Aged Population (19.54mill) exceeded Children Population (19.49 mill) Share of Aged Population : 15.7% TRF : 1.39	1997 Public Long-term Care Insurance Act (kaigohoken-hoan) is enacted (In 2000, the act will be effective)
1998 Japan NGO Council on Ageing (JANCA) is established	1998 Specific Non-Profit Activitiec Promotion Law (NPO-ho) is enforced
1999 TFR : 1.34 International Year of Older Persons 1999 Focal point is Policy Office on the Aging Society, Management and Coordination Agency	1999 The Basic Law for a Gender-equal Society is enforced The Gold Plan 21 starts (revised the New Gold Plan) Angel Plan revised ("New angel Plan")
2000 TFR : 1.36 Population Census Share of Aged Population 17.4% Life expectancy at birth : Male 77.72, Female 84.60	2000 Public Long-term Care Insurance Act (Kaigohoken-ho) is enforced Adult Guardianship System starts The Law for Promotiong Easily Accesble Public Transportation Infrastructure for the Aged and the Disabled (Transportation Accesibility Improvement Law) is enacted
2001 Share of Aged Population 17.9% Centenarian exceed 15,000 (Sep.)	2001 Organization of Government of Japan is reformed The Cabinet decides on new "General Principles Concering Measures for the Aged Society"
2002 The 2nd World Assembly on Ageing is held in Spain by U.N.	

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