Population Aging and Living Arrangements of the Elderly in Japan

Kojima Hiroshi

1. Introduction

The terms for aging (*kōreika*) and hyper-aging (*chō-kōreika*) have been popular in Japan for a couple of decades. After the "1.57 Shock" (the public sensation associated with the media coverage of the then record-low total fertility rate of 1.57 for 1989) in 1990, low fertility has suddenly become a public agenda. The term *shōshika* [trend toward less children] became popular after its first use in the *1992 White Paper on the National Life* (Keizai Kikakuchō 1992) and came to be often used side by side with *kōreika* by scholars, policy-makers, politicians, and business people as well as mass media.

At the same time, the measures to cope with the two interrelated demographic trends have become policy topics particularly because the changes in family structure and functions have made it difficult for families to keep supplying the care of the elderly and young children as they traditionally did without further support from the larger society. The so-called Gold Plan for the elderly and the Angel Plan for children were formulated several years ago. The new law for long-term care insurance was enacted in December 1997 and was implemented in April 2000. More effective support for child rearing has been debated within the government.

Japan's social policy has been criticized for its heavier reliance on the "traditional" family which gave most support for the care of the elderly, young children, and others. Today's intergenerationally extended households are also said to be a family-adaptive strategy in order to cope with the lack of social policy measures for the care of the elderly and young children as well as housing and income maintenance, in the light of higher labor force participation of married women in outside employment (Morgan and Hirosima 1983). However, the Japanese family seems to be overburdened now due to the changes in itself as well as its socio-economic environment.

One of the relatively unknown major changes, which has come to limit the capacity of the family to support the elderly, is the drastic change in the size and composition of sibship among current middle-age genera-

tions (which may be called "sibling configuration transition"), caused by the decline in both fertility and infant or child mortality in the immediate postwar period. The sibling configuration transition should have drastically changed the availability of parents to children for coresidence and support as well as the availability of children to parents because in Japan only one married child is expected to live with the parents and to give them major support. The social policy measures have to be strengthened in response to both the current and previous fertility and mortality decline to provide adequate care for young children and the elderly for the welfare and reproduction of the population.

This article describes the trends in population aging in Japan and its demographic determinants and consequences. It discusses the social policy implications of aging with special reference to the coresidence of elderly parents and adult children, particularly drawing on the results of multinomial logit analysis of the data from the 1989 National Household Survey conducted by the Institute of Population Problems (Jinkō Mondai Kenkyūjo) (currently, National Institute of Population and Social Security Research (Kokuritsu Shakai Hoshō Jinkō Mondai Kenkyūjo)). The first half of the article partly draws on KOJIMA (1995b: 197–203) and the second half partly draws on KOJIMA (1993: 1–5), while the projection figures and the analyzed data set are updated.

2. TRENDS IN POPULATION AGING

Japan's population, which was 84.1 million in 1950, has reached 126.9 million in 2000, making Japan the ninth most populous country in the world. The annual growth rate was about 3% during the immediate postwar period, but decreased to the order of 1% in the mid-1950s, and remained at this level through the mid-1970s. Then, it fell below 1% and has continued to decline further to the level around 0.2%. The slower growth of population is mainly due to the decline in fertility and mortality. Both declined rapidly in the immediate postwar period. Then, fertility stayed around the replacement level and declined further beginning in the mid-1970s. Mortality continued to fall further, particularly in the older age groups.

Table 1: **Trends in the age composition of the Japanese population, 1920–2100 (%)**

Year	Total (in thousands)	0–14	15–64	65+	65–74	75+
Enumerated						
1920	55,963	36.5	58.3	5.3	*3.9*	*1.3*
1930	64,450	36.6	58.7	4.8	*3.4*	*1.4*
1940	73,075	36.1	59.2	4.7	*3.5*	*1.2*
1950	84,115	35.4	59.6	4.9	*3.7*	*1.3*
1960	94,302	30.2	64.1	5.7	*4.0*	*1.7*
1965	99,209	25.7	68.0	6.3	*4.4*	*1.9*
1970	104,665	24.0	68.9	7.1	*4.9*	*2.1*
1975	111,940	24.3	67.7	7.9	*5.4*	*2.5*
1980	117,060	23.5	67.3	9.1	*6.0*	*3.1*
1985	121,049	21.5	68.2	10.3	*6.4*	*3.9*
1990	123,611	18.2	69.5	12.1	*7.2*	*4.8*
1995	125,570	15.8	69.4	14.5	*8.8*	*5.7*
2000	126,926	14.6	67.9	17.3	*10.2*	*7.1*
Projected						
2000	126,926	14.6	68.1	17.4	*10.3*	*7.1*
2005	127,708	13.9	66.2	19.9	*10.9*	*8.9*
2010	127,473	13.4	64.1	22.5	*11.7*	*10.8*
2015	126,266	12.8	61.2	26.0	*13.5*	*12.5*
2020	124,107	12.2	60.0	27.8	*13.6*	*14.2*
2025	121,136	11.6	59.7	28.7	*11.9*	*16.7*
2030	117,580	11.3	59.2	29.6	*11.7*	*17.8*
2040	109,338	11.1	58.0	30.9	*14.9*	*18.4*
2050	100,593	10.8	53.6	35.7	*14.2*	*21.5*
2060	91,593	10.7	53.5	35.8	*12.7*	*23.1*
2070	82,506	11.3	53.5	35.2	*13.2*	*22.0*
2080	74,931	11.9	53.6	34.5	*13.1*	*21.4*
2090	68,966	12.4	54.0	33.6	*12.5*	*21.1*
2100	64,137	13.1	54.3	32.5	*12.3*	*20.2*

Note: The figures are as of October 1 each year and include Okinawa.

Sources: KOKURITSU SHAKAI HOSHŌ JINKŌ MONDAI KENKYŪJO (2000, 2002); KŌREISHA KOYŌ KAIHATSU KYŌKAI (2001).

This led to a sharp decline in the proportion of the child population (aged 0–14) while that of the aged population (aged 65+) continued to rise, as

Table 1 shows. The share of the working-age population (aged 15–64) rose from 59.6% in 1950 to 68.9% in 1970, and has virtually leveled off at around 70% thereafter. On the one hand, the share of the child population, which was 35.4% in 1950, has dropped to 14.6% by 2000. On the other hand, the proportion of the aged population rose rapidly, from 4.9% in 1950 to 10.3% in 1985. The speed of aging has been accelerating since then, and in 2000 the share of the aged population has reached 17.3%. As a consequence, the median age of population increased by 19.3 years from 22.2 in 1950 to 41.5 in 2000 (see Table 2).

As Table 1 shows, the aged population is projected to increase further according to the new series of official population projections, which was published by the National Institute of Population and Social Security Research, Ministry of Health, Labor and Welfare in January 2002. According to the medium variant, the total population will increase continuously from 126.9 million in 2000 to 127.7 million in 2006 and decrease continuously thereafter to 126.9 million in 2013, 100.6 million in 2050, and 64.1 million in 2100. While both the child population and the working-age population will gradually decrease, the aged population will almost continuously increase from 22.0 million in 2000 to 36.5 million in 2043 before starting to gradually decrease. The median age of population will increase from 41.5 years in 2000 to 53.9 years in the late 2050s and the early 2060s and will then continue to decrease to 50.5 years around 2100 (see Table 2).

The population of Japan is expected to experience rapid aging not previously observed in the West. The proportion of the elderly among the total population will rise from 17.3% in 2000 to 28.7% around 2025, which will probably make Japan the most aged country in the world. It is projected to rise further to the highest level of 36.0% around 2054 before starting to decrease. Among the elderly, the proportion of "older old" population (aged 75 and over) is expected to dramatically increase from 7.1% in 2000 to over 16% in 2025. It is projected to reach the highest level of over 20% in the 2050s.

3. Demographic Determinants and Consequences of Aging

3.1 Demographic determinants

As mentioned above, the rapid aging of Japan's population has been led by the rapid decline in both fertility and mortality. After falling below the replacement level at 2.05 in 1974, the total fertility rate (TFR) went into steady decline and reached the record low level of 1.34 in 1999 (although it has slightly increased to 1.36 in 2000). This TFR decline is explained by the respective trends of its two components: the fertility rate among married

women and the proportion married among women. While the former has remained fairly constant until the mid-1990s, the latter has greatly declined.

In other words, the trend toward higher age at marriage and a higher proportion remaining never-married has greatly reduced the incidence of marriage among women in their twenties, and this may be regarded as the primary demographic determinant of the recent TFR decline and therefore of population aging. In fact, in 2000, the proportions never-married among women aged 25–29 and 30–34 (54.0% and 26.6% respectively) have more than doubled compared with those in 1975 (20.9% and 7.7%). It can also be noted that the mean age at first marriage among women rose constantly from 24.7 in 1975 to 27.0 in 2000.

Life expectancy at birth in 2000 has come to be 77.72 years for males and 84.60 years for females, longer than in any other country in the world. It has been lengthened by two years during the last decade. Recently, however, the total number of deaths is on the increase due to population aging which has increased the relative number of older persons with a higher mortality risk. At the same time, age-standardized mortality has been declining in the old age groups.

An examination of life expectancy trends in the light of age-specific death rates shows that it was the mortality decline among infants and children and among youth that made a great contribution to the lengthening during the early 1960s. Since the 1970s, however, mortality decline in the middle and old-age groups have been responsible for most of the lengthening. In recent years, there has been a particularly large mortality decline in the old age groups, which is promoting population aging (see also Lützeler in this volume). Life expectancy at birth is expected to reach around 79 years for males and 86.5 years for females around 2015.

3.2 Demographic consequences

One of the most direct demographic consequences of population aging is the increase in the age dependency ratios and the aged-child ratio (see Table 2), although some demographers regard them as indicators of aging itself. The total dependency ratio is the ratio of the combined child population (aged below 15) and aged population (aged 65+) to the working-age population aged 15–64 (per 100), while the child dependency ratio and the aged dependency ratio represent the ratio of each population group to the working-age population (per 100). As Table 2 reveals, the total dependency ratio, which was 67.7 in 1950, continued to fall until it attained the lowest level of 43.3 in 1991 and 1992. Since then, it has risen to 46.9 in 2000. It is projected that it will continue to rise and reach its first peak of 87.4 in 2054. It will then decline slightly before resuming its rise

to reach another peak of 86.9 at around 2071. It will then continue to decline to 84.0 in 2100.

Table 2: **Trends in mean age and economic dependency ratios, 1920–2100**

Year	Median age	Dependency ratio			Aged/ child	Non-active/ active
		Total	Child	Aged		
Enumerated						
1920	22.2	71.6	62.6	9.0	14.4	105.3
1930	21.8	70.5	62.4	8.1	13.0	117.6
1940	21.9	70.9	62.7	8.2	13.1	125.0
1950	22.2	67.7	59.4	8.3	13.9	133.5
1960	25.6	55.9	47.0	8.9	19.0	114.1
1965	27.4	47.1	37.9	9.2	24.4	106.9
1970	29.0	45.1	34.9	10.3	29.4	99.0
1975	30.6	47.6	35.9	11.7	32.6	110.3
1980	32.5	48.4	34.9	13.5	38.7	107.2
1985	35.2	46.7	31.6	15.1	47.9	103.0
1990	37.7	43.5	26.2	17.3	66.2	93.6
1995	39.7	43.9	23.0	20.9	91.2	88.4
2000	41.5	46.9	21.4	25.5	119.1	87.6
Projected						
2000	41.5	46.9	21.4	25.5	119.1	87.6
2005	42.9	51.0	21.0	30.0	143.2	86.2
2010	44.4	56.1	20.9	35.2	168.3	89.4
2015	46.1	63.4	21.0	42.4	202.3	92.4
2020	48.0	66.7	20.3	46.4	228.9	94.0
2025	49.8	67.5	19.5	48.0	246.5	95.4
2030	51.2	69.0	19.0	50.0	262.7	–
2040	52.9	79.3	19.7	59.6	302.3	–
2050	53.4	86.7	20.1	66.5	330.8	–
2060	53.9	87.0	20.0	66.9	333.7	–
2070	53.4	86.9	21.1	65.8	311.8	–
2080	52.5	86.6	22.2	64.4	290.8	–
2090	51.7	85.3	22.9	62.3	271.7	–
2100	50.5	84.0	24.1	59.9	248.0	–

Note: The figures are as of October 1 each year and include Okinawa.
Sources: KOKURITSU SHAKAI HOSHŌ JINKŌ MONDAI KENKYŪJO (2000, 2002); KŌREISHA KOYŌ KAIHATSU KYŌKAI (1997, 2001).

This fluctuation of the total dependency ratio reflects the fluctuation of both the child dependency ratio and the aged dependency ratio, although the movement of the aged dependency ratio may be considered more important. The child dependency ratio has kept decreasing from 59.4 in 1950 to 21.4 in 2000 and is projected to attain the lowest level of 18.9 around 2031 and to fluctuate mostly around 20 until around 2060 before starting to rise. The aged dependency ratio, which was 8.3 in 1950, has risen to 25.5 in 2000. The aged dependency ratio, which was 8.3 in 1950, rose to 25.5 in 2000. It is projected to increase steadily to 67.4 up until about 2054 before starting its decline to reach 59.9 in 2100.

The aged-child ratio is the ratio of the number of aged persons to the number of children (per 100), which simultaneously takes into account the numbers and changes at both ends of the age distribution. Its change is very dramatic, especially after 1970 when the proportion of the aged surpassed the 10% mark. It was only 13.9 in 1950 but has risen to 119.1 in 2000. It is projected to continue its rise to the highest level of 336.9 in 2055 before starting its decline to 248.0 in 2100.

In contrast to the total dependency ratio, which is a measure of demographic dependency or age composition, the economic dependency ratio is a measure of economic dependency. It is defined as the ratio of the economically inactive population to the active population over all ages (per 100). It was 133.5 in 1950 and decreased to 99.0 in 1970. However, it increased again to 110.3 in 1975. Then, it kept decreasing to 87.6 in 2000. It is projected to continue its decline to 86.2 in 2005 and to resume rising to 95.4 in 2025, which marks the last year in the projection made by the Employment Policy Research Committee (Ministry of Health, Labor and Welfare). It is expected to rise faster between 2005 and 2015 because it is based on previous population projections which assumed a lower speed of population aging than is forecasted now. It is also expected to rise after 2025 because this measure, at least partly, moves in parallel with the total dependency ratio.

Other demographic consequences include the changes in the sex ratio and marital status composition among older people. Since mortality is generally lower among females than males, females outnumber males among the elderly. The sex ratio (males per 100 females) of the aged population was 72.1 in 2000 and it decreased with age. It was 72.5 in 1950, 76.6 in 1960, 78.3 in 1970, 73.2 in 1980, 67.2 in 1990, and 69.8 in 1995. These changes do not seem to be systematic, but the change by age group generally shows a trend toward a lower sex ratio, especially in recent years.

There is a trend toward a higher proportion married among the elderly due to the mortality decline, especially among middle and old ages,

although the level is much higher for males due to their higher mortality and higher age at marriage. The proportion married was 64.6% among older males and 25.1% among older females in 1950, but it has increased to 83.1% and 45.5% respectively in 2000. Conversely, the proportion widowed has declined rapidly among males and "younger old" females (aged 65–74) due to the mortality decline. However, on the one hand, the decline is much slower among "older old" females (aged 75 and over) due to the sex differential in mortality and the larger age difference between spouses. On the other hand, the absolute number of "older old" widows increased rapidly from 0.58 million in 1950 to 3.91 million in 2000, while the male counterpart increased from 0.19 million to 0.63 million. There is a growing concern as to who will take care of those "older old" widows. Many of them have been taken care of in intergenerationally extended households, but the potential availability of kin to take care of them is said to be declining.

4. HOUSEHOLD CONTEXTS OF AGING

4.1 Intergenerational household extension of the elderly

While Japan has many individual demographic features in common with developed societies in the West, including low levels of fertility and mortality, it exhibits different developments in the area of family demography, which it seems to share more with newly industrializing and developing societies in the East. Given that Japan does not lag behind other developed societies in socioeconomic development, this suggests that family patterns do not necessarily change in the same direction with socioeconomic developments. It is even possible that some aspects of socioeconomic and demographic development may facilitate the realization of traditional family patterns that vary from society to society. The rapid change in sibling configuration among adults in Japan, as a result of fertility decline in the past, may be one of those aspects because of the normative pressure on the eldest children to live with older parents and support them.

In many parts of prewar Japan, the intergenerationally extended or stem family household was the normative living arrangement for the older parents and their eldest son. When parents did not have any sons, they often lived with their eldest daughter and son-in-law. Coresidence was generally continuous, or began again when the eldest child married or the parents retired, and normally ended with the death of parents. Living arrangements were closely related to the primogeniture custom which gave priority to males.

Table 3: **Trends in living arrangements of the elderly (aged 65+), 1960–2000 (%)**

Year	Total (in 1000)	Institutional households	Ordinary households				
			Subtotal	Relative extended	Couple only	Non-relative	1-Person
1960	5,398	1.1	93.8	86.8	7.0	0.2	4.3
1965	6,236	–	–	83.8	9.1	0.3	4.6
1970	7,393	2.2	90.3	78.7	11.6	0.2	5.8
1975	8,865	3.0	89.1	74.1	14.9	0.1	6.6
1980	10,647	3.6	87.8	69.8	18.1	0.1	8.3
1985	12,468	4.2	86.1	65.5	20.6	0.1	9.5
1990	14,895	4.3	84.6	60.5	24.1	0.1	10.9
1995	18,261	4.2	83.6	55.9	27.8	0.1	12.1
2000	22,005	4.7	81.4	50.5	30.9	0.2	13.8

Note: The figures are as of October 1 each year and include Okinawa from 1975 onward.

Source: Kokuritsu Shakai Hoshō Jinkō Mondai Kenkyūjo (2000); Sōmushō Tōkeikyoku (2001).

Although there has been a steady decline in the proportion of intergenerationally extended households in the postwar period, the majority of older persons aged 65 and above still live with their adult children (in the extended household), as Table 3 shows. The proportion of older persons in one-person and couple-only households is on the rise, but lower than in the West. The percentage of older persons in institutions is leveling off at a lower level. Moreover, the large majority of "older old" persons still live with a married child in the extended household (other relative households).

4.2 Economic and housing situations of elderly households

The coresidence of elderly parents and their adult children involves various economic and social factors. It may not necessarily represent one-sided help from either generation. Moreover, the motivations may be different between generations. Table 4 reveals the changes in the annual income of "aged households" and its composition. The average annual income has kept growing relatively fast during the past two decades, considering that the nominal wage in 1995 is 2.24 times as high as in 1975. This is mainly caused by the rapid growth in the amount of public pension while the amount of earned income has been relatively stable since the 1980s.

Table 4: **Annual income of aged households and its composition, 1975–1998 (%)**

Year	Total annual income		Earned income	Property income	Public pension	Other social security transfers	Remittance and others
	in ¥ 1,000	in %					
(old def.)							
1975	[1,147]	100.0	56.0	9.7	26.2	–	8.1
1980	[1,981]	100.0	44.2	7.8	40.3	2.2	5.6
1985	[2,393]	100.0	39.6	6.8	47.2	3.9	2.5
1990	[2,898]	100.0	30.4	9.2	54.8	2.1	3.5
1991	[3,053]	100.0	34.2	9.6	52.2	1.6	2.4
(new def.)							
1991	[2,737]	100.0	28.6	9.8	57.1	1.8	2.7
1992	[2,960]	100.0	30.5	8.9	57.0	1.2	2.4
1993	[2,928]	100.0	30.9	7.0	58.9	1.8	1.5
1994	[3,050]	100.0	27.8	7.2	60.5	1.4	3.0
1995	[3,169]	100.0	24.8	8.0	62.7	0.9	3.7
1996	[3,160]	100.0	26.6	6.0	62.5	1.0	3.9
1997	[3,231]	100.0	26.6	6.3	63.6	1.0	2.5
1998	[3,355]	100.0	23.3	8.0	64.5	1.2	3.1

Note: Old definition: "aged households" consisting of only one man aged 65 and above and/or one woman aged 60 and above, allowing for the addition of never-married persons aged under 18. New definition: "aged households" consisting of only one man aged 65 and above and/or one woman aged 65 and above, allowing for the addition of never-married persons aged under 18.

Source: KŌREISHA KOYŌ KAIHATSU KYŌKAI (2001).

The relative share of each income source has changed drastically during the two decades. On the one hand, the proportion of earned income has continued to decline from 56% in 1975 to 23.3% in 1998. On the other hand, public pension represented only 26% in 1975 but has grown rapidly to around one-half by the mid-1980s. Then, it has gradually increased to almost two thirds in 1998. The proportion of property income has hovered around 8% during the two decades while that of remittance and other income decreased from 8% in 1975 to 3% in 1985 and has remained around the same level. This may suggest that the transfer income from non-coresiding kin has become insignificant during the two decades while the transfer income from the government has grown fast.

However, the majority of the elderly lives with their adult children and possibly grandchildren. In such cases, the average household income and the proportion of earned income are much higher, which suggests that there should be much more intergenerational transfer in cash or kind within the same household, although the data are not available. It is also likely that the direction of transfer may not be always from adult children to elderly parents within the same household even at one time. Parents may be actually paying the larger share of the living expenses. They can give in-kind help to their children in terms of housework and child care. They often do not collect any rent from their children living in their house. It may be that a certain level of wealth of either generation is necessary for maintaining a larger house and expenditure, although it is also possible that the intergenerational household extension is a family-adaptive strategy among those who cannot afford separate housing.

Data on housing are available for households with persons aged 65 and above. In 2000, 83.9% of these households lived in owned housing, 9.1% in private rent housing, 0.4% in company housing, 5.8% in public housing, and 0.9% in rented rooms and other accommodations. The housing situation of elderly single-person households seems to be less favorable: 63.4% in owned housing, 22.4% in private rent housing, 0.5% in company housing, 11.3% in public housing, and 2.5% in rented rooms and other accommodation. In contrast, 95.2% of three-generation households are located in owned housing, which may suggest that an owned house (presumably a larger one) is almost a prerequisite for parent-child coresidence (Sōmushō Tōkeikyoku 2001).

5. Intergenerational Household Extension of Married Children with Older Mothers

5.1 Introductory remarks

This section analyzes the effects of wealth and housing (representing feasibility of coresidence) as well as sibling configuration (representing mainly availability of kin for coresidence) and geographic factors (representing availability, feasibility, and desirability) on the intergenerational household extension.

While the proportion of older persons in the extended household has decreased in the 1980s, the proportion of married males aged 20–39 in the extended household seems to have increased slightly (Hirosima 1987). The two trends may seem contradictory, but the prevalence of intergenerationally extended households can differ according to whether the unit of

observation is parents or married children. Similarly, the postwar fertility decline has had different effects on the potential availability of kin to live with for each generation because only one married child is expected to live with the parents. Considering the increasing number of "older old" widows and the decreasing potential source of their support due to the fertility decline, it was considered appropriate to analyze the determinants of married child's coresidence with an older mother.

5.2 Analytical framework

The following empirical analysis is based on an analytical framework for determinants of coresidence of married male household heads with older parents, particularly mother or mother-in-law who are more likely to survive their husbands due to their lower mortality and lower age at marriage. It is a modified version of the framework developed by KOJIMA (1989, 1990). The analysis is restricted to male household heads because female household heads tend to be unmarried, and unmarried heads are much more likely to live alone.

In the analytical framework, coresidence with either the male head's mother or his wife's mother (mother-in-law) is assumed to be determined by three intervening variables: the availability of kin for coresidence, the feasibility of coresidence, and the desirability of coresidence. Each of these three is, in turn, determined by a set of independent variables.

The availability of kin for coresidence is determined by the demographic characteristics of the head and his wife. These include the head's age (hypothesized to have a positive effect on coresidence) and the sibling configuration of the head and his wife represented by the sib size (a negative effect on coresidence with own mother) and the possession of four types of siblings including older brothers (for the wife only), older sisters, younger brothers, and younger sisters (a negative effect on coresidence with own mother). The availability is more strongly affected by the norm about the choice of kin to live with, which may be represented by the eldest-child status meaning the oldest among sons or the oldest daughter without brothers (a positive effect on coresidence with own mother).

The feasibility of coresidence is affected by economic and housing characteristics of the household. The economic situation is represented by monthly spending per person (hypothesized to have a positive effect on coresidence). Housing situation is represented by the number of rooms per person (a positive effect on coresidence) and home ownership (a positive effect). The desirability of coresidence is generally influenced by the norms and values concerning parent-child coresidence, inheritance

rules, and arrangements for home making and for the care of the elderly and young children. These factors indicate the strength of social, economic, and cultural alternatives to coresidence. In this study, they are represented by region and urban versus rural residence: a positive effect of residence in the Tōhoku area (with a higher prevalence of extended family households) and a negative effect of residence in Southern Kantō (Tōkyō Metropolitan Region) as well as Kyūshū (with a lower prevalence) on coresidence are hypothesized. Further, a negative effect of metropolitan/urban residence and a positive effect of rural residence are expected, although in part these variables also represent availability and feasibility. The list and frequency distribution of these independent variables are presented in the Appendix Table at the end of this article.

5.3 Determinants of coresidence

Table 5 shows the results of a multinomial logit analysis related to the data from the 1989 National Household Survey conducted by the then Institute of Population Problems, focusing on the effects of these independent variables on the coresidence of married male household heads with their mother or mother-in-law who are both alive and aged 60 and above, leaving about 700 cases. The dependent variable in this model is trichotomous: coresidence with the head's mother (18.6%), coresidence with the wife's mother (4.5%), and separate residence from either of them (76.9%). For easier interpretation, the results are presented in the form of relative odds instead of the original coefficients. The odds for the reference category of each variable is set at 1.00 and the relative odds for other categories are calculated as the exponentiated coefficients. The results of binomial logit analysis for each type of coresidence are also presented in the Appendix Table.

Table 5: **Determinants of coresidence of married couples with an older mother, Japan 1989**

Independent variables	Restricted model			Extended model		
	H's Mo. vs. Separate	W's Mo. vs. Separate	H's Mo. vs. W's Mo.	H's Mo. vs. Separate	W's Mo. vs. Separate	H's Mo. vs. W's Mo.
Husband's Age						
(15–39)	1.00	1.00	1.00	1.00	1.00	1.00
40–44	3.58**	1.08	3.31#	2.79*	0.76	3.67#
45–49	4.40***	1.26	3.49	3.86**	1.12	3.44
50+	9.13***	2.17	4.21	7.92***	1.23	6.43#
H's Eldest-Son Status						
eldest son	6.76***	0.52	13.06***	9.40***	0.67	14.09***
(non-eldest)	1.00	1.00	1.00	1.00	1.00	1.00
Husband's Sib Size						
1–2	1.12	0.47	2.37	0.93	0.39	2.37
(3–4)	1.00	1.00	1.00	1.00	1.00	1.00
5+	0.60	0.47	1.28	0.88	0.77	1.14
H's Older Sister						
existent	1.37	1.35	1.19	0.86	0.94	0.91
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
H's Younger Brother						
existent	0.75	0.62	1.20	0.52#	0.46	1.11
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
H's Younger Sister						
existent	0.76	2.11	0.36#	0.56	2.05	0.27#
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
W's Eldest-D. Status						
eldest daughter	0.29*	1.12	0.26	0.15**	0.77	0.19
(non-eldest)	1.00	1.00	1.00	1.00	1.00	1.00
Wife's Sib Size						
1–2	0.66	1.56	0.42	0.51	1.26	0.40
(3–4)	1.00	1.00	1.00	1.00	1.00	1.00
5+	1.37	1.36	1.01	1.64	1.67	0.98
Wife's Older Brother						
existent	0.74	0.20#	3.68	0.65	0.15#	4.45
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
Wife's Older Sister						
existent	0.80	0.40	1.98	0.73	0.36	2.02
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
W's Younger Brother						
existent	0.70	0.10*	7.21#	0.39*	0.06**	6.70#
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00

Wife's Younger Sister						
existent	0.82	1.06	0.78	0.57	1.04	0.55
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
Spending per Person						
high				0.25**	0.37	0.66
(medium)				1.00	1.00	1.00
low				1.23	2.51	0.49
Rooms per Person						
large				4.48**	6.78*	0.66
(medium)				1.00	1.00	1.00
small				1.01	0.13#	7.75
Home Ownership						
non-owner				0.06***	0.62	0.09*
(owner)				1.00	1.00	1.00
Region						
Tōhoku				1.16	3.94	0.29
Southern Kantō				0.33**	0.91	0.36
Kyūshū				0.56	5.07*	0.11*
(others)				1.00	1.00	1.00
Urban-Rural Resid.						
metropolitan				1.46	34.60**	0.04*
large cities				0.84	12.00*	0.07*
(other cities)				1.00	1.00	1.00
rural				2.38*	14.94*	0.16

Note: ***: p<0.001; **: p<0.01; *: p<0.05; # p<0.10 (levels of significance). Reference categories are in parentheses.

Source: Data Tape from the *1989 National Household Survey*, Jinkō Mondai Kenkyū-jo.

The first three columns of Table 5 show the results of a restricted model with demographic variables only. The first column presents the effect of each variable or category on the odds of coresidence with the head's mother, relative to separate residence. The household head is more likely to live with his own mother as he gets older, probably because she becomes older and less healthy. As expected, the head who is an eldest son is almost seven times as likely as non-eldest sons to live with his mother relative to living separately from either mothers. He is less likely to live with his mother when his wife is the eldest daughter (without brothers), as expected.

The second column shows the effect on the odds of coresidence of the household head with his wife's mother, relative to separate residence. He is much less likely to live with her when his wife has either older brothers or younger brothers than otherwise, which is also as expected. A negative

effect is larger for having younger brothers, possibly because they are more likely to be never-married and stay home long after the wife's marriage.

The third column presents the effect on the odds of coresidence with his own mother, relative to coresidence with his wife's mother. He is more likely to live with his own mother compared to living with his mother-in-law when he is aged 40–44, which may or may not be related to the fact that his wife is more likely to be born during the prime years of the postwar baby boom (the late 1940s). He is, as expected, also much more likely to live with his own mother when he is an eldest son or when his wife has younger brothers, while he is less likely when he has younger sisters, which may indicate a new tendency among older parents, i.e., to seek care and support from their own daughter rather than a daughter-in-law and a corresponding tendency among their children's generation.

Columns four to six of Table 5 show the results of an extended model including socioeconomic and geographic variables. The effects of demographic variables are largely similar even after the inclusion of these variables, suggesting that demographic variables have relatively independent effects on coresidence behavior. However, there are also some effects that become significant or larger. The household head's age comes to have a clearly positive effect on the odds of coresidence with his own mother, relative to coresidence with his wife's mother, probably because the head's mother who tends to be older than the wife's mother becomes older. The positive effect of the head's eldest-son status and the negative effect of the wife's eldest-daughter status on the odds of coresidence with the head's mother, relative to separate residence, become much larger, which may be considered natural. Both the head's possession of younger brothers and the wife's possession of younger brothers come to have a significantly negative effect on the odds of coresidence with the head's mother relative to separate residence. The negative effect of the husband's possession of younger brothers is probably caused by their tendency to be never-married and stay home, which should discourage coresidence of the head's couple. The negative effect of the wife's possession of younger brothers, however, is somewhat difficult to interpret. Perhaps this is also related to the above-mentioned new tendency among older parents to seek care and support from their own daughter rather than a daughter-in-law and a corresponding tendency among their children's generation.

The effects of socioeconomic and geographic variables are only partly as expected. A better economic situation seems to discourage coresidence with the wife's mother, relative to separate residence, which is contrary to the hypothesis. Probably the spending per person represents a result rather than a determinant of household structure. A larger housing unit

tends to encourage coresidence with the head's mother and the wife's mother and a smaller one tends to discourage coresidence with the wife's mother as expected, but this may also be due to the reversed causation. Home ownership tends to encourage coresidence with the head's mother relative to both separate residence and coresidence with the wife's mother, as expected.

Contrary to the hypothesis, living in the Tōhoku area does not have any significant effects, and living in Kyūshū encourages coresidence with the wife's mother, which may be related to the traditional custom of inheritance by the eldest daughter found in some areas of this southwestern part of Japan. Living in Southern Kantō, however, tends to discourage coresidence with the head's mother, relative to separate residence, as expected. It also comes as no surprise that living in rural areas encourages both coresidence with the head's mother and coresidence with the wife's mother, relative to separate residence. Unexpectedly, however, living in metropolitan areas and large cities also encourages coresidence with the wife's mother, relative to both separate residence and coresidence with the husband's mother, which may reflect either the housing shortage in these areas or more readily available child care from the wife's own mother when the wife works by commuting long distances. If this is the case, social policy measures related to housing and child care should be strengthened in metropolitan and larger urban areas.

5.4 Determinants of coresidence plans

Table 6 shows the results of an analysis focusing on determinants of the household head's future coresidence plans, using the same sets of independent variables and the same restrictions for case selection. The dependent variable in this analysis is also a trichotomous one: plan to live with the head's mother (31.1%), plan to live with the wife's mother (7.3%), and plan to live separately from either of them (61.6%). Compared with Table 5 showing the results for current coresidence, similarities as well as differences can be detected. The effects of age are similar but less pronounced, possibly because of an uncertainty about the survival of parents and the heads themselves.

Table 6: **Determinants of coresidence plans of married couples with an older mother, Japan 1989**

Independent variables	Restricted model			Extended model		
	H's Mo. vs. Separate	W's Mo. vs. Separate	H's Mo. vs. W's Mo.	H's Mo. vs. Separate	W's Mo. vs. Separate	H's Mo. vs. W's Mo.
Husband's Age						
(15–39)	1.00	1.00	1.00	1.00	1.00	1.00
40–44	1.64	1.91	0.86	1.36	1.71	0.80
45–49	2.42*	1.57	1.54	2.11#	1.38	1.53
50+	3.34**	1.71	1.96	2.65*	0.92	2.89
H's Eldest-Son Status						
eldest son	10.99***	0.44	24.76***	12.51***	0.61	20.38***
(non-eldest)	1.00	1.00	1.00	1.00	1.00	1.00
Husband's Sib Size						
1–2	1.22	1.10	1.12	1.07	0.78	1.38
(3–4)	1.00	1.00	1.00	1.00	1.00	1.00
5+	0.52#	0.55	0.94	0.47*	0.74	0.64
H's Older Sister						
existent	1.82*	2.04	0.89	1.76#	1.61	1.09
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
H's Younger Brother						
existent	0.67	0.54	1.24	0.68	0.42#	1.62
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
H's Younger Sister						
existent	0.59#	1.48	0.40#	0.54	1.21	0.45
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
W's Eldest-D. Status						
eldest daughter	0.45	1.63	0.28	0.28*	1.10	0.26
(non-eldest)	1.00	1.00	1.00	1.00	1.00	1.00
Wife's Sib Size						
1–2	0.49#	1.35	0.37	0.52	1.04	0.51
(3–4)	1.00	1.00	1.00	1.00	1.00	1.00
5+	1.76#	1.51	1.17	1.98#	1.38	1.44
Wife's Older Brother						
existent	0.84	0.25*	3.38#	0.85	0.21*	4.12#
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
Wife's Older Sister						
existent	0.74	0.66	1.13	0.84	0.63	1.33
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
W's Younger Brother						
existent	0.68	0.23*	2.96	0.61	0.20*	3.10
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00

Wife's Younger Sister						
existent	0.86	0.78	1.10	0.76	0.69	1.10
(non-existent)	1.00	1.00	1.00	1.00	1.00	1.00
Spending per Person						
high				0.76	0.60	1.26
(medium)				1.00	1.00	1.00
low				3.29**	3.22#	1.02
Rooms per Person						
large				2.91*	9.07**	0.32
(medium)				1.00	1.00	1.00
small				2.06#	0.57	3.63
Home Ownership						
non-owner				0.23***	0.34	0.66
(owner)				1.00	1.00	1.00
Region						
Tōhoku				0.71	1.84	0.39
Southern Kantō				0.71	1.96	0.36#
Kyūshū				0.74	3.94#	0.19*
(others)				1.00	1.00	1.00
Urban-Rural Resid.						
metropolitan				1.56	5.05*	0.31
large cities				2.34**	6.40**	0.36
(other cities)				1.00	1.00	1.00
rural				2.55*	2.34	1.09

Note: ***: p<0.001; **: p<0.01; *: p<0.05; # p<0.10 (levels of significance). Reference categories are in parentheses.

Source: Data Tape from the *1989 National Household Survey,* Jinkō Mondai Kenkyūjo.

The effects of eldest-son status seem to be more pronounced. Presumably, those eldest sons who are currently living separately from their mothers have plans to live with her in the future. Further, significant effects of sib size become apparent: the household head from a larger family is less likely to plan to live with his mother, and a wife from a larger family is more likely to plan to live with his mother as expected from the results for current coresidence. Obviously, there are some household heads who postpone living with their mothers. On the one hand, the head's possession of older sisters comes to have a positive effect and that of younger sisters comes to have a negative effect on the odds of planning to live with his mother, relative to planning to live separately, of which the latter may also be an indication of the new tendency mentioned above. On the other hand, the head's possession of younger brothers comes to have a negative effect on the odds of planning to live with the wife's mother, relative to planning to live separately, which is somewhat difficult to interpret.

The effects of socioeconomic and geographic variables on coresidence plans are largely similar to those on current coresidence. However, there are two notable exceptions. A smaller number of rooms per person comes to have a positive effect on planning to live with the head's mother, relative to planning to live separately, which may suggest that some heads living in a small housing unit either plan to move to a larger house for coresidence in the future or to the parents' house. Living in large cities comes to have the same effect, which may be explained in the same way. Anyway, the results suggest the difficulties in finding a suitable housing unit for intergenerational household extension, especially in large cites. Therefore, social policy interventions regarding housing in large cities are to be anticipated.

6. Policy Implications and Conclusion

The effects of the household head's eldest-son status and the wife's eldest-daughter status as well as the possession of brothers on current and future coresidence suggest that the primogeniture custom is still alive in contemporary Japan: The eldest children are more likely than the non-eldest to live with their parents, possibly for old-age support in exchange for a larger share of inheritance. The sib size of either spouse does not have any significant effects on current coresidence, possibly because its effect is potential as shown by its significant effects on coresidence plans. A negative effect of the head's possession of younger sisters on the odds of coresidence with his mother relative to the wife's mother suggests that crowding in terms of gender roles in the household discourages the coresidence of her sister-in-law on the one hand. But, on the other hand, it may be an indication of a new tendency for older mothers to seek care and support from their own daughter rather than a daughter-in-law particularly because the negative effect is clearer for coresidence plans.

The positive effects of the eldest-child status on the odds of current and future coresidence with own parents are much larger than the effects of most other sibling configuration variables in terms of the absolute size of coefficients. The effects of the wife's possession of younger brothers is also large. If these tendencies will remain stable, fertility decline, which has caused population aging as well as the sibling configuration transition, may not necessarily decrease the potential availability of old-age care and support by adult children to parents through coresidence, since it will increase the proportion of eldest children in younger generations while it will decrease the average sib size.

However, if the observed trend among older parents to seek care and support from their own daughter rather than a daughter-in-law and a corresponding tendency among their children's generation becomes predominant, it can lead to intragenerational and intergenerational conflicts in some cases and a lack of care and support for the elderly in others. On the one hand, when eldest sons are no longer designated as the primary care-takers or inheritors of their parents, children may compete for the care of rich parents in exchange for a larger share of inheritance resulting in conflicts between children and parents with different preferences. On the other hand, there may be competition arising among children to avoid caring for poor parents without assets to inherit. In either case, social policy interventions may be called for. However, all these social policy measures, including those supporting child rearing, should be integrated into one comprehensive family policy for intergenerational support and societal reproduction.

In addition, some Western demographers including HÖHN (1988) suggest that the impact of indirect policies on fertility, i.e., social policies, is much stronger than that of population policies designed explicitly to affect fertility. If this is the case, a comprehensive family policy for intergenerational support and societal reproduction may have favorable effects even on fertility, thus easing demographic and other constraints imposed on the family.

A comprehensive family policy should be based on a group of principles. They include intergenerational solidarity and gender equity which may be universal as underlying principles (KOJIMA 1994, 1995b), but their surface representation as policy measures may be modified by the specific demographic, social, economic, and cultural contexts found in each society. Modifications fit for Japan may have policy relevance to other countries in East or Southeast Asia and possibly those in the West.

REFERENCES

HIROSIMA, Kiyosi (1987): Recent Changes in Prevalence of Parent-child Coresidence in Japan. In: *Jinkōgaku Kenkyū* 10, pp. 33–41.

HÖHN, Charlotte (1988): Population Policies in Advanced Societies: Pronatalist and Migration Strategies. In: *European Journal of Population* 3, 3/4, pp. 459–481.

KEIZAI KIKAKUCHŌ (1992): *Heisei 4-nenban kokumin seikatsu hakusho* [White Paper on the National Life 1992]. Tōkyō: Ōkurashō Insatsukyoku.

KOJIMA, Hiroshi (1989): Intergenerational Household Extension in Japan. In: GOLDSCHEIDER, Frances K. and Calvin GOLDSCHEIDER (ed.): *Ethnicity*

and the New Family Economy: Living Arrangements and Intergenerational Financial Flows. Boulder, San Francisco, and London: Westview Press, pp. 163–184.

Kojima, Hiroshi (1990): Variables associées à la cohabitation des parents et de leurs enfants mariés au Japon. In: Prioux, France (ed.): *La famille dans les pays développés: Permanences et changements*. Paris: INED/PUF, pp. 231–242.

Kojima, Hiroshi (1993): Sibling Configuration and Coresidence of Married Couples with an Older Mother in Japan. In: *International Journal of Japanese Sociology* 2, pp. 1–16.

Kojima, Hiroshi (1994): Kazoku seisaku no kihon gensoku (jō) [Basic Principles of Family Policy, Part 1]. In: *Kaigai Shakai Hoshō Jōhō* 109, pp. 16–26.

Kojima, Hiroshi (1995a): Kazoku seisaku no kihon gensoku (ge) [Basic Principles of Family Policy, Part 2]. In: *Kaigai Shakai Hoshō Jōhō* 110, pp. 75–95.

Kojima, Hiroshi (1995b): Aging in Japan: Population Policy Implications. In: *Korea Journal of Population and Development* 24, 2, pp. 197–214.

Kokuritsu Shakai Hoshō Jinkō Mondai Kenkyūjo (2000): *2000 jinkō no dōkō. Nihon to sekai* [Population Trends 2000. Japan and the World]. Tōkyō: Kōsei Tōkei Kyōkai.

Kokuritsu Shakai Hoshō Jinkō Mondai Kenkyūjo (2002): *Nihon no shōrai suikei jinkō. Heisei 14-nen 1-gatsu suikei* [Population Projections for Japan: 2001–2050. January 2002]. Tōkyō: Kokuritsu Shakai Hoshō Jinkō Mondai Kenkyūjo.

Kōreisha Koyō Kaihatsu Kyōkai (1997): *Kōrei shakai tōkei yōran* [Statistical Compendium on the Aging Society]. Tōkyō: Kōreisha Koyō Kaihatsu Kyōkai.

Kōreisha Koyō Kaihatsu Kyōkai (2001): *Kōrei shakai tōkei yōran* [Statistical Compendium on the Aging Society]. Tōkyō: Kōreisha Koyō Kaihatsu Kyōkai.

Morgan, S. Philip and Kiyosi Hirosima (1983): The Persistence of Extended Family Residence in Japan: Anachronism or Alternative Strategy? In: *American Sociological Review* 48, 2, pp. 269–281.

Sōmushō Tōkeikyoku (2001): *Heisei 12-nen kokusei chōsa hōkoku, dai 2-kan, sono 1: zenkoku-hen* [2000 Population Census of Japan, Volume 2–1: Japan]. Tōkyō: Sōmushō Tōkeikyoku.

Appendix Table: **Frequency distributions and determinants of coresidence with each mother**

Independent variables	FREQUENCIES (%)	H's Mother vs. Other Types	W's Mother vs. Other Types
Husband's Age			
(15–39)	23.9	1.00	1.00
40–44	29.9	3.40**	0.90
45–49	20.8	4.83***	1.26
50+	25.4	9.33***	1.88
H's Eldest-Son Status			
eldest son	50.9	9.37***	0.37*
(non-eldest)	49.1	1.00	1.00
Husband's Sib Size			
1–2	22.7	1.17	0.92
(3–4)	42.5	1.00	1.00
5+	34.8	0.65	0.57
H's Older Sister			
existent	48.1	1.03	1.69
(non-existent)	51.9	1.00	1.00
H's Younger Brother			
existent	48.1	0.59	0.84
(non-existent)	51.9	1.00	1.00
H's Younger Sister			
existent	46.3	0.63	1.36
(non-existent)	53.7	1.00	1.00
W's Eldest-D. Status			
eldest daughter	14.0	0.16**	3.15
(non-eldest)	86.0	1.00	1.00
Wife's Sib Size			
1–2	25.4	0.34*	0.96
(3–4)	45.1	1.00	1.00
5+	29.5	0.61	1.29
Wife's Older Brother			
existent	42.8	0.69	0.39
(non-existent)	57.2	1.00	1.00
Wife's Older Sister			
existent	46.2	0.71	0.66
(non-existent)	53.8	1.00	1.00
W's Younger Brother			
existent	49.0	0.47*	0.38
(non-existent)	51.0	1.00	1.00

Wife's Younger Sister			
existent	41.6	0.55#	0.91
(non-existent)	58.4	1.00	1.00
Spending per Person			
high	16.9	0.26**	0.48
(medium)	70.1	1.00	1.00
low	13.0	1.13	1.43
Rooms per Person			
large	12.2	4.07***	3.33*
(medium)	69.5	1.00	1.00
small	18.3	1.11	0.24
Home Ownership			
non-owner	23.1	0.06***	0.71
(owner)	76.9	1.00	1.00
Region			
Tōhoku	7.7	2.40#	6.06**
Southern Kantō	28.7	0.31**	0.76
Kyūshū	11.4	0.57	2.93#
(others)	52.2	1.00	1.00
Urban-Rural Resid.			
metropolitan	14.4	1.48	11.09**
large cities	35.2	0.66	3.37#
(other cities)	30.7	1.00	1.00
rural	19.7	2.21*	4.26*

Note: ***: p<0.001; **: p<0.01; *: p<0.05; # p<0.10 (levels of significance). Reference categories are in parentheses.

Source: Data Tape from the *1989 National Household Survey*, Jinkō Mondai Kenkyūjo.