

Household Projections for Japan, 1995–2020: Methods and Results

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Abstract Household projections by family type for Japan between 1995 and 2020 were conducted using a multidimensional household transition method. The projection model was based on the transition probabilities of individuals' household positions. These probabilities were estimated from a nationally representative sample survey. According to the projection results, the average household size will decline from 2.82 people in 1995 to 2.49 in 2020. The proportion of one-person households is expected to increase from 25.6% in 1995 to 29.7% in 2020. It was also predicted that the absolute number of households in Japan will start to decrease before 2020. Detailed data are provided in Tables 1–9 and Appendixes 1–7.

1. Introduction

This study projects the number of households by family type in Japan between 1995 and 2020. The initial population for the projection was obtained from the 1995 census. Adjustments were made to ensure consistency with the middle variant of the foregoing population projection (NIPSSR 1997).

The projection results refer to the number of households by family type on October 1 in the years between 1995 and 2020. Family type consists of “one-person,” “couple only,” “couple and child,” “one parent and child,” and “other” households.

2. Methods

2.1. Validity of the Household Transition Methods

The household transition method explicitly traces individuals' transitions between living arrangements. Projection models based on such transition probabilities have been made since the 1980s mainly in Europe (Holmberg 1987; Murphy 1991; van Imhoff and Keilman 1991; Zeng, Vaupel, and Zhengljian 1997).

Most of the recent population projections have been conducted with cohort

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component methods that incorporate specific rates of fertility, mortality, and migration by age and sex. The underlying assumption is that these demographic rates or probabilities are essential to the development of projections. Whereas these rates or probabilities are prepared as input to a projection model, population size, distribution by age, sex, and region are obtained as outputs of the projection. In conventional household projections, however, models are based not on demographic rates or probabilities but on distributions that should be outputs of the projections. The widely used headship rate approach utilizes the proportion of household heads by sex, age, and marital status. This method is similar to one that starts from an assumption of the proportion of elderly people to project the elderly population.

The household transition method is based on transition rates or probabilities of an individual's position in a household. The most important feature of this method is that it relates household formation and dissolution directly to proximate demographic determinants (Bell, Cooper, and Les 1995). Thus, this method is most appropriate for examining the effects of demographic processes such as leaving the parental home, marriage, divorce, urban/rural migration, and co-residence of an elderly parent or adult child on household size and structure. This study represents the first attempt to apply the household transition method to an official household projection for Japan.

2.2. Definition of the Marriage-Household Position

In Japan, the position of an individual in a household is closely related to his or her marital status. Table 1 shows the distribution of household positions by sex and marital status according to the 1995 census. Most heads of households who have

Table 1 Distribution of household positions, by sex and marital status (%)

Household Position	Male			Female		
	Single	Married	Widowed & Divorced	Single	Married	Widowed & Divorced
Head, one-person	17.3	1.7	41.3	10.6	0.5	33.6
Head, couple only	—	23.7	—	—	0.2	—
Head, couple and child	0.2	46.8	0.4	0.0	0.1	0.0
Head, parent and child	1.3	0.3	20.1	0.5	1.3	12.9
Head, other	0.8	17.5	15.5	0.7	0.2	5.6
Spouse	—	0.3	—	—	87.8	—
Child	70.5	6.0	7.3	76.3	1.1	0.5
Spouse of child	—	1.0	—	—	5.9	0.3
Parent	0.0	2.5	13.2	0.0	2.7	45.2
Grandchild	8.6	0.1	0.1	9.5	0.1	0.0
Other relative	1.2	0.1	1.5	1.9	0.1	1.8
Nonrelative	0.2	0.0	0.8	0.4	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Census of Japan (1995).

never married live alone. A married female rarely becomes a head of household. Married males head three types of households: couple-only, couple-and-child, and “other” households. Widowed or divorced males typically head one-person, one-parent and child, and “other” households.

Including atypical combinations of marital status and household position would make the transition probability matrix unnecessarily large. Therefore, it was decided to exclude such rare combinations by choosing a particular member as the “marker” of each household type. The following rules were introduced:

1. The husband is the marker of a couple-only or a couple-and-child household.
2. The parent is the marker of a one-parent and child household.
3. The husband is the marker if his wife is the head of an “other” household.
4. The father is the marker if his single child is the head of an “other” household with a married couple.

As a result, possible combinations of marital status and household position by sex are as follows:

- | | |
|--------|---|
| Male | S: hS Single, marker of one-person household |
| | S: hO Single, marker of other household without married couple |
| | S: nh Single, nonmarker |
| | M: hS Married, marker of one-person or parent-and-child household |
| | M: hC Married, marker of couple-only household |
| | M: hN Married, marker of couple-and-child household |
| | M: hO Married, marker of other household |
| | M: nh Married, nonmarker |
| | W: hS Widowed or divorced, marker of one-person household |
| | W: hP Widowed or divorced, marker of parent-and-child household |
| | W: hO Widowed or divorced, marker of other household |
| | W: snh Widowed or divorced, nonmarker |
| Female | S: hS Single, marker of one-person household |
| | S: hO Single, marker of other household without married couple |
| | S: nh Single, nonmarker |
| | M: hS Married, marker of one-person household |
| | M: hP Married, marker of parent-and-child household |
| | M: sp Married, spouse |
| | M: nh Married, nonmarker other than spouse |
| | W: hS Widowed or divorced, marker of one-person household |
| | W: hP Widowed or divorced, marker of parent-and-child household |
| | W: hO Widowed or divorced, marker of other household |
| | W: nh Widowed or divorced, nonmarker |

For married males, the markers “living alone” and “living only with children” were combined as a one-marriage household position because of the female dominant

procedure to cope with the consistency problem. The initial population was obtained by applying the transformation from head/nonhead to marker/nonmarker to the 1995 census population of Japan. Institutional populations were projected by extrapolating the proportion institutionalized by age, sex, and marital status. Private household populations were projected by applying transition probability matrices by age and sex to the initial population.

The distribution by household positions was calculated from these institutional and household populations. To achieve external consistency with the foregoing population projection, the distribution was applied to the existing projected population to obtain the population by household position. In the end, the reverse transformation from marker/nonmarker to head/nonhead was conducted to obtain the number of heads of household by family type.

2.3. Marriage Projections

Figure 1 shows how the household projections were processed. As in the NCBS

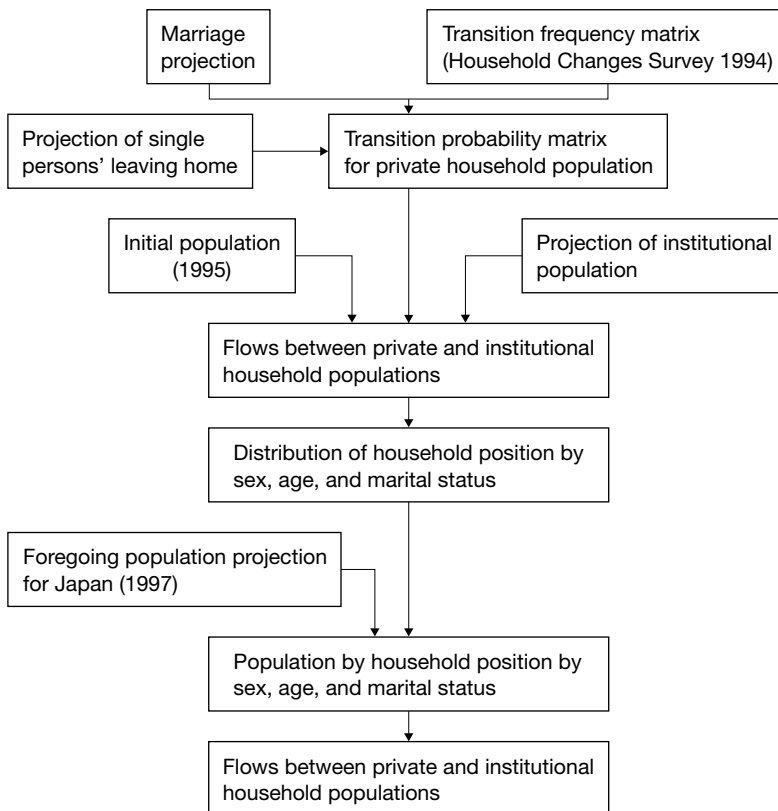


Figure 1 Flow chart of household projections for Japan

model (de Beer 1995), marriages were projected with a dynamic model in advance of the household projections. Except for rare positions, however, marital transitions were incorporated into projection matrices using the transition patterns observed in the household change survey described in the next section. Some elements in the projection matrices were adjusted to account for the recent delay in single persons' leaving the parental home. Thus, unlike the NCBS model, the population in private households was projected dynamically.

Table 2 Probability of age of females at first marriage, by projection period

Age	Projection Period				
	1995–2000	2000–05	2005–10	2010–15	2015–20
15–19	0.11494	0.11222	0.11352	0.11159	0.11091
20–24	0.37624	0.37107	0.36625	0.36776	0.36539
25–29	0.47231	0.50435	0.49462	0.49407	0.49398
30–34	0.28734	0.30730	0.34623	0.35254	0.35699
35–39	0.12855	0.14161	0.16944	0.11465	0.12010
40–44	0.03219	0.04644	0.06167	0.08398	0.03129
45–49	0.01991	0.01497	0.01766	0.02963	0.03504
50–54	0.01613	0.01648	0.01619	0.01648	0.01655
55–59	0.01009	0.01010	0.01045	0.01013	0.01034
60–64	0.00508	0.00511	0.00511	0.00523	0.00514
65–69	0.00284	0.00284	0.00285	0.00286	0.00297
70–74	0.00086	0.00083	0.00082	0.00083	0.00082
75–79	0.00038	0.00039	0.00040	0.00040	0.00041
80–84	0.00014	0.00016	0.00016	0.00015	0.00015
85+	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 Probability of age of females at remarriage, by projection period

Age	Projection Period				
	1995–2000	2000–05	2005–10	2010–15	2015–20
15–19	0.64054	0.65648	0.65266	0.65273	0.65281
20–24	0.64597	0.64032	0.63976	0.63983	0.64023
25–29	0.57572	0.57109	0.57148	0.57319	0.57273
30–34	0.40882	0.42255	0.42044	0.41979	0.42192
35–39	0.24433	0.26105	0.26910	0.26760	0.26680
40–44	0.15891	0.17006	0.17713	0.18147	0.18162
45–49	0.11572	0.12884	0.13670	0.14172	0.14538
50–54	0.06180	0.08322	0.08790	0.09316	0.09732
55–59	0.02469	0.03638	0.04463	0.04563	0.04896
60–64	0.00789	0.01199	0.01469	0.01753	0.01791
65–69	0.00246	0.00351	0.00433	0.00506	0.00612
70–74	0.00040	0.00059	0.00070	0.00080	0.00089
75–79	0.00000	0.00000	0.00000	0.00000	0.00000
80–84	0.00000	0.00000	0.00000	0.00000	0.00000
85+	0.00000	0.00000	0.00000	0.00000	0.00000

Table 4 Probability of age of females at divorce, by projection period

Age	Projection Period				
	1995–2000	2000–05	2005–10	2010–15	2015–20
15–19	0.18232	0.21106	0.21399	0.21423	0.21435
20–24	0.10360	0.12016	0.12288	0.12242	0.12294
25–29	0.06856	0.07905	0.08041	0.08066	0.08043
30–34	0.04887	0.05581	0.05627	0.05585	0.05597
35–39	0.04059	0.04371	0.04405	0.04385	0.04367
40–44	0.04026	0.04347	0.04374	0.04352	0.04322
45–49	0.04085	0.04370	0.04384	0.04345	0.04308
50–54	0.04696	0.04702	0.04727	0.04660	0.04605
55–59	0.06435	0.06264	0.06072	0.06092	0.05979
60–64	0.10107	0.09703	0.09533	0.09141	0.09250
65–69	0.16140	0.15404	0.15066	0.14831	0.14333
70–74	0.23355	0.22543	0.22064	0.21726	0.21515
75–79	0.32364	0.31796	0.31616	0.31373	0.31223
80–84	0.40444	0.40691	0.40940	0.41126	0.41184
85+	0.31795	0.31456	0.31720	0.32109	0.31663

As the starting point of the marriage projections, the 1995 marital status life table was estimated by applying the 1995/1990 transition rates to the 1990 table by Ikenoue and Takahashi (1994). Future probabilities of first marriage and death of spouse were taken from the foregoing population projection (NIPSSR 1997). The 1995/1990 ratios of remarriage and divorce were raised to the power by 1/5 to obtain annual factors of change. It was assumed that the ratio to the previous year will decrease annually so that the change stops in ten years. The assumed female transition probabilities between marital statuses are shown in Tables 2, 3, and 4.

2.4. Transition Frequency Matrix

The former Institute of Population Problems (currently NIPSSR) conducted the Third National Survey on Household Changes in October 1994 (IPP 1996). This survey was designed to obtain the household position of each household member in January 1989 as well as on the survey date. Contingency tables were made to examine the transition pattern between household positions defined in section 2.2.

2.5. Estimating the Transition Probability Matrix

Marital transition probabilities were disaggregated by household position according to the observed transition frequency matrix. This matrix was applied to the census population of 1990 and the results were compared with the 1995 census population. The elements of the matrix were adjusted so the matrix

would produce a result as close to the 1995 census as possible.

The number of single markers of “other” households (S: hO) and currently married but separated markers (M: hS and M: hP) were too small in the survey. Transition probabilities from/to these positions were estimated with some strong assumptions. For example, single markers of “other” households were assumed to transit to the living-alone position (S: hS) within five years unless they married. Currently-married-but-separated markers were assumed to start living with spouses within five years unless the marriage was dissolved.

2.6. Age at Leaving the Parental Household

A delay in the age at leaving the parental home has been reported in developed countries (Goldscheider and Goldscheider 1994; Ravanera, Rajulton, and Burch 1995; Mayer and Schwarz 1989). Analysis of the Third National Survey on Household Changes shows that this delay is also evident in Japan (Suzuki 1997). Figure 2 shows that recent cohorts of single men and women have tended to stay in the parental household longer than before. The observed delay was incorporated into the transition matrix, and the transition probability from single nonmarker (S: nh) to single marker living alone (S: hS) was projected.

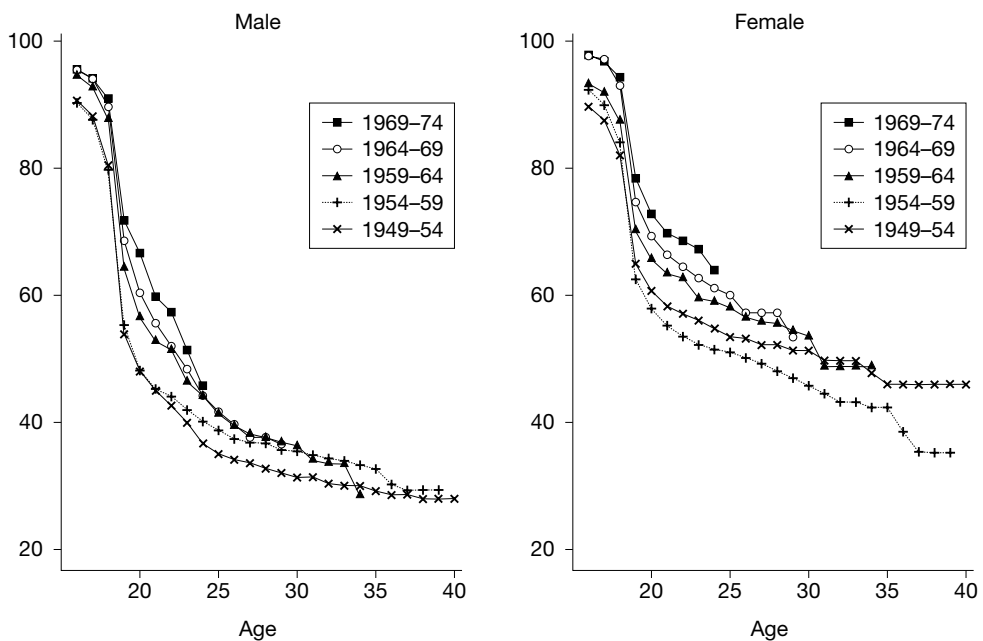


Figure 2 Proportion staying home before marriage

2.7. Projections of the Institutional Household Population

Since the Third National Survey on Household Changes considered only private households, there are no data on the flow between private and institutional households. Therefore, the future institutional population was projected by extrapolating the proportional change between 1990 and 1995. The rate of change in the proportion institutionalized by sex, age, and marital status was discounted so that the change stops in 2020.

Table 5 presents the projected proportion of males and females in institutional households by age. The proportion of both sexes increased at age 85 and over because of the aging within this group. Male proportions between ages 60 and 85 decreased at first because of health improvements but later increased as a result of the proportionate rise of single men and women in these age groups.

Table 5 Projected proportion of males and females in institutional households, by age (%)

Age	Males						Females					
	1995	2000	2005	2010	2015	2020	1995	2000	2005	2010	2015	2020
15-19	3.3	3.3	3.3	3.3	3.3	3.3	2.6	2.6	2.6	2.6	2.6	2.6
20-24	2.4	2.2	2.1	2.0	2.0	2.0	1.2	1.1	1.0	1.0	0.9	0.9
25-29	1.2	1.1	1.0	0.9	0.9	0.9	0.3	0.3	0.2	0.2	0.2	0.2
30-34	0.9	0.8	0.7	0.6	0.6	0.5	0.3	0.3	0.2	0.2	0.2	0.2
35-39	0.8	0.7	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2
40-44	1.0	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
45-49	1.1	0.9	0.7	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.6
50-54	1.3	1.2	1.1	1.0	0.9	0.8	0.6	0.6	0.5	0.6	0.7	0.8
55-59	1.4	1.3	1.5	1.6	1.6	1.6	0.7	0.6	0.6	0.6	0.7	0.8
60-64	1.6	1.5	1.7	2.1	2.5	2.6	0.9	0.7	0.7	0.7	0.7	0.8
65-69	1.7	1.6	1.7	2.0	2.8	3.4	1.3	1.1	0.9	0.9	0.9	0.9
70-74	2.2	1.9	1.9	2.1	2.6	3.5	2.5	2.1	1.9	1.7	1.6	1.7
75-79	3.3	2.8	2.6	2.6	2.9	3.4	5.0	4.3	4.0	3.7	3.5	3.5
80-84	5.3	4.6	4.3	4.0	4.0	4.3	9.5	8.6	8.3	8.0	7.8	7.7
85+	9.8	9.9	10.6	11.2	11.2	11.3	18.3	19.4	21.1	22.5	23.5	23.9

2.8. Initial Population

When the position of “within institution” by marital status is added, there are 15 marriage-household positions for males and 14 for females. The number of markers by age, sex, marital status, and family type was obtained from the 1995 census by exchanging and proportionally distributing the number of heads of households.

2.9. The Flow between Private and Institutional Households

The institutional population by sex, age, and marital status was arbitrarily projected assuming that there was no flow between private and institutional households. The result was compared with the projection described in section 2.7, and the magnitude of flow was estimated. It was assumed that there was only a one-way flow between private and institutional households. It was also assumed that if the flow was from a private to an institutional household, a person living alone had twice as high a probability of being institutionalized as finding other living arrangements.

3. Results

3.1. Population Trends and Households

Table 6 Projected population, number of households,
and mean household size, 1995–2020

Year	Total Population	Household Population	No. of Households	Mean Size
1995	125,570	123,775	43,900	2.82
1996	125,869	124,073	44,416	2.79
1997	126,156	124,359	44,951	2.77
1998	126,420	124,622	45,466	2.74
1999	126,665	124,866	45,952	2.72
2000	126,892	125,088	46,407	2.70
2001	127,100	125,271	46,793	2.68
2002	127,286	125,432	47,188	2.66
2003	127,447	125,569	47,566	2.64
2004	127,581	125,682	47,920	2.62
2005	127,684	125,753	48,227	2.61
2006	127,752	125,784	48,456	2.60
2007	127,782	125,772	48,674	2.58
2008	127,772	125,720	48,865	2.57
2009	127,719	125,626	49,022	2.56
2010	127,623	125,483	49,142	2.55
2011	127,481	125,284	49,200	2.55
2012	127,292	125,037	49,254	2.54
2013	127,056	124,744	49,284	2.53
2014	126,773	124,408	49,295	2.52
2015	126,444	124,025	49,273	2.52
2016	126,068	123,589	49,207	2.51
2017	125,648	123,105	49,146	2.50
2018	125,184	122,582	49,068	2.50
2019	124,679	122,025	48,974	2.49
2020	124,133	121,428	48,853	2.49

Note: Total population is the middle variant of NIPSSR 1997.

Total population = Household population + institutional population.

Mean size = Household population/number of households.

Table 6 gives the projected population, the number of households, and the average household size. The National Institute of Population and Social Security Research (NIPSSR 1997) predicted that the total population of Japan would start declining after 2007. The trend of the private household population was similar to that of the total population. However, the number of households will begin to decline after 2014 (see also Appendix 1). Because the growth rate of households is always greater than that of the population, the mean household size will continue to shrink. It is projected that the mean size of 2.82 in 1995 will decrease to 2.49 in 2020.

3.2. Changes in Household Composition

As shown in Table 7, the increase in the number of one-person, couple-only, and one-parent households and the decrease in that of couple-and-child and other larger households will continue. The continuous increase in small households parallels the decline in the mean household size.

The increase in one-person households will not stop after 2014, when the total number of households starts to decline. As a result, the proportion of one-person households will increase from 25.6% in 1995 to 29.7% in 2020. By 2013, this household

Table 7 Projected changes in household composition, by family type, 1980–2020

Year	Total	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child	
Number of Households (1,000)							
1980	35,824	7,105	21,594	4,460	15,081	2,053	7,124
1985	37,980	7,895	22,804	5,212	15,189	2,403	7,282
1990	40,670	9,390	24,218	6,294	15,172	2,753	7,063
1995	43,900	11,239	25,760	7,619	15,032	3,108	6,901
2000	46,407	12,341	27,349	8,920	14,852	3,577	6,718
2005	48,227	13,171	28,540	9,932	14,627	3,981	6,516
2010	49,142	13,734	29,079	10,541	14,252	4,286	6,329
2015	49,273	14,159	28,967	10,753	13,706	4,507	6,147
2020	48,853	14,531	28,357	10,694	13,043	4,620	5,966
Proportion (%)							
1980	100.0	19.8	60.3	12.5	42.1	5.7	19.9
1985	100.0	20.8	60.0	13.7	40.0	6.3	19.2
1990	100.0	23.1	59.5	15.5	37.3	6.8	17.4
1995	100.0	25.6	58.7	17.4	34.2	7.1	15.7
2000	100.0	26.6	58.9	19.2	32.0	7.7	14.5
2005	100.0	27.3	59.2	20.6	30.3	8.3	13.5
2010	100.0	27.9	59.2	21.4	29.0	8.7	12.9
2015	100.0	28.7	58.8	21.8	27.8	9.1	12.5
2020	100.0	29.7	58.0	21.9	26.7	9.5	12.2

type is projected to overtake the “couple-and-child” household as the dominant type (see also Appendix 1).

Couple-only households will increase until 2015 and then will start decreasing. The decline in this type of household in the last five years is a little slower than that in all households combined. As a result, the proportion of couple-only households will increase to 21.9% in 2020. This figure is 4.5 points higher than that for 1995 (17.4%).

The couple-and-child household was once the dominant type, accounting for more than 40% of all private households in 1980. The decline in this type after 1985 is predicted to continue. As a result, the number of couple-and-child households is projected to decrease by 1,989 in the next 25 years, representing a drop from 34.2% in 1995 to 26.7% in 2020.

Parent-and-child households will continue to increase until 2020, as will one-person households. The number will increase by 1,511 and the proportion will rise from 7.1% in 1995 to 9.5% in 2020.

Other households—mostly extended and multiple-family households—are projected to decrease in both number and proportion: from 15.7% in 1995 to 12.2% in 2020.

3.3. The Age Structure of Household Heads

Table 8 describes projected changes in the age structure of household heads. It shows that the proportion of elderly heads will increase due to the aging of the Japanese population. Table 9 presents the projected distribution of family type by age of household head. By comparing these two tables, we can determine whether

Table 8 Projected changes in the age distribution of household heads, 1995–2020

Year	Total	15–29	30–49	50–64	65+
Number of Households (1,000)					
1995	43,900	6,000	15,923	13,308	8,668
2000	46,407	5,781	15,149	14,521	10,956
2005	48,227	5,033	15,652	14,650	12,892
2010	49,142	4,426	16,183	13,865	14,668
2015	49,273	3,996	16,002	12,687	16,587
2020	48,853	3,852	14,999	12,822	17,180
Proportion (%)					
1995	100.0	13.7	36.3	30.3	19.7
2000	100.0	12.5	32.6	31.3	23.6
2005	100.0	10.4	32.5	30.4	26.7
2010	100.0	9.0	32.9	28.2	29.8
2015	100.0	8.1	32.5	25.7	33.7
2020	100.0	7.9	30.7	26.2	35.2

Table 9 Projected distribution of family type by age of household head, 1995–2020

Year	Total	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child	
Age of Head, 15–29							
1995	100.0	70.9	25.3	10.2	13.2	1.9	3.8
2000	100.0	68.9	26.9	10.7	13.1	3.1	4.2
2005	100.0	68.3	27.5	10.7	13.1	3.7	4.2
2010	100.0	68.4	27.4	10.7	13.1	3.7	4.2
2015	100.0	69.0	26.8	10.4	12.8	3.6	4.2
2020	100.0	70.0	25.9	10.0	12.3	3.6	4.1
Age of Head, 30–49							
1995	100.0	17.7	68.6	8.5	51.5	8.7	13.7
2000	100.0	20.3	68.7	10.5	48.6	9.6	11.1
2005	100.0	22.2	68.6	11.7	46.4	10.5	9.2
2010	100.0	22.8	68.7	12.0	45.4	11.3	8.6
2015	100.0	23.3	68.1	11.7	44.5	11.9	8.6
2020	100.0	23.8	67.5	11.4	43.7	12.4	8.8
Age of Head, 50–64							
1995	100.0	14.8	65.9	20.4	37.5	8.0	19.3
2000	100.0	16.0	65.6	20.2	36.8	8.5	18.4
2005	100.0	17.8	64.4	21.1	34.4	8.9	17.9
2010	100.0	19.6	63.3	21.9	32.0	9.4	17.1
2015	100.0	21.3	63.2	21.7	31.2	10.4	15.5
2020	100.0	22.7	63.1	21.5	30.6	11.0	14.2
Age of Head, 65+							
1995	100.0	25.4	52.3	33.9	12.1	6.3	22.3
2000	100.0	27.1	53.6	34.5	12.7	6.4	19.4
2005	100.0	28.4	54.2	34.8	12.9	6.6	17.4
2010	100.0	29.3	54.4	34.7	12.9	6.8	16.3
2015	100.0	30.0	54.2	34.5	12.8	6.9	15.9
2020	100.0	31.2	53.3	34.0	12.2	7.1	15.5

the changes in age composition or the behavior of household formation and dissolution are dominant for the household changes displayed in Tables 6 and 8.

Table 9 confirms that one-person households are typical for heads of households under age 30. Therefore, declining fertility should reduce the number of one-person households. The predicted increase in this type is totally attributed to behavioral changes such as the increasing propensity to stay single longer or to divorce. According to the table, the inclination to live alone will increase in all ages over 30.

As shown in Table 9, couple-only households are expected to be dominant among elderly heads of households. For this reason, at least a part of the increase in this type is a result of the population aging. However, a behavioral

change in childbearing—either by postponing childbirth or, eventually, not having any children—is also occurring between ages 30 and 49.

The proportion of couple-and-child households will rapidly decrease and that of one-parent household will rapidly increase among household heads aged 30 to 64. Thus, the main reason for these shifts will not be the age composition effect but behavioral changes.

Elderly heads of households are more likely to form “other” households than younger heads. Therefore, the population should favor increasing this family type. Again, the main cause will be behavioral change. In fact, the proportion of “other” households is expected to decrease in all ages over 30.

4. Conclusion

In the 1960s and 1970s, household change in Japan was described as “nuclearization.” This period witnessed an increase in nuclear family households and a decrease in extended and multiple-family households, while the proportion of one-person households was relatively stable. After 1980, however, one-person households started to increase and “other” households continued to decrease, whereas the proportion of nuclear family has been relatively stable. In addition, changes in subtypes of nuclear family households have been taking place, i.e., couple-and-child households have been decreasing and couple-only and one-parent households have been increasing.

According to the projections presented here, these changes will continue; more people will live alone and nuclear families will take simpler forms. These changes can be understood as an increasing diversity in household composition due to the decline of the once dominant couple-and-child family type. In any case, these changes in households will affect a variety of areas such as the demand on housing, utilities, household consumption, and social welfare services.

References

- Bell, M. J. Cooper, and M. Les. 1995. *Household and Family Forecasting Models—A Review*. Commonwealth Department of Housing and Regional Development, Commonwealth of Australia.
- de Beer, J. 1995. “National Household Forecasts for the Netherlands.” In *Household Demography and Household Modeling*, edited by E. van Imhoff, A. Kuijsten, P. Hooimeijer, and L. van Wissen, 251–72. New York: Plenum Press.
- Goldscheider, F., and C. Goldscheider. 1994. “Leaving and Returning Home in 20th-Century America.” *Population Bulletin* 48 (4): 1–35.

- Holmberg, I. 1987. "Household Change and Housing Needs: A Forecasting Model." In *Family Demography*, edited by J. Bongaarts, T. Burch, and K. Wachter, 327–41. Oxford: Clarendon Press.
- Ikenoue, M., and S. Takahashi. 1994. "Marital Status Life Tables for Japan: 1975, 1980, 1985 and 1990." *Journal of Population Problems* 50 (2): 73–96. (in Japanese)
- IPP (Institute of Population Problems), Ministry of Health and Welfare. 1996. *The Third National Survey on Household Changes, 1994*, Survey Series No. 10. (in Japanese)
- Mayer, K. U., and K. Schwarz. 1989. "The Process of Leaving the Parental Home and the Precision of the Timing of the Leaving-Home Stage." In *Later Phases of the Family Cycle: Demographic Aspects*, edited by E. Grebenik, C. Hohn, and R. Mackensen, 145–64. Oxford: Clarendon Press.
- Murphy, M. 1991. "Household Modelling and Forecasting—Dynamic Approaches with Use of Linked Census Data." *Environment and Planning A* 23: 885–902.
- NIPSSR (National Institute of Population and Social Security Research). 1997. *Population Projections for Japan: 1996–2100*, Research Series No. 291.
- Ravanera, Z. R., F. Rajulton, and T. K. Burch. 1995. "A Cohort Analysis of Home-Leaving in Canada, 1910–1975." *Journal of Comparative Family Studies* 26 (2): 179–93.
- Statistics Bureau, Management and Coordination Agency, 1995. *Population Census of Japan*.
- Suzuki, T. 1997. "Household Formation in Japan: A Life Table Analysis." *Journal of Population Problems* 53 (2): 18–30. (in Japanese)
- van Imhoff, E., and N. Keilman. 1991. *LIPRO 2.0: An Application of a Dynamic Demographic Projection Model to Household Structure in the Netherlands*. Amsterdam/Lisse: Swets & Zeitlinger B.V.
- Zeng, Y., J. W. Vaupel, and Wang Zhenglian. 1997. "A Multi-Dimensional Model for Projecting Family Households—With an Illustrative Numerical Application." *Mathematical Population Studies* 6 (3): 187–216.

Methods and Results

Appendix 1 Projected households by family type (1,000)
and mean household size, 1995–2020

Year	Total	One Person	Nuclear Family Households				Other	Household Population	Mean Size
			Subtotal	Couple Only	Couple & Child	Parent & Child			
Number									
1995	43,900	11,239	25,760	7,619	15,032	3,108	6,901	123,775	2.82
1996	44,416	11,506	26,044	7,874	14,971	3,199	6,867	124,073	2.79
1997	44,951	11,736	26,380	8,154	14,931	3,295	6,835	124,359	2.77
1998	45,466	11,952	26,713	8,425	14,898	3,390	6,801	124,622	2.74
1999	45,952	12,150	27,039	8,683	14,872	3,483	6,763	124,866	2.72
2000	46,407	12,341	27,349	8,920	14,852	3,577	6,718	125,088	2.70
2001	46,793	12,518	27,597	9,126	14,813	3,658	6,678	125,271	2.68
2002	47,188	12,693	27,856	9,355	14,762	3,739	6,640	125,432	2.66
2003	47,566	12,861	28,105	9,569	14,715	3,820	6,601	125,569	2.64
2004	47,920	13,023	28,336	9,769	14,668	3,899	6,560	125,682	2.62
2005	48,227	13,171	28,540	9,932	14,627	3,981	6,516	125,753	2.61
2006	48,456	13,292	28,685	10,054	14,588	4,043	6,478	125,784	2.60
2007	48,674	13,417	28,814	10,200	14,508	4,106	6,444	125,772	2.58
2008	48,865	13,531	28,926	10,334	14,425	4,168	6,407	125,720	2.57
2009	49,022	13,636	29,017	10,455	14,335	4,227	6,369	125,626	2.56
2010	49,142	13,734	29,079	10,541	14,252	4,286	6,329	125,483	2.55
2011	49,200	13,819	29,086	10,579	14,177	4,331	6,295	125,284	2.55
2012	49,254	13,912	29,081	10,636	14,065	4,380	6,260	125,037	2.54
2013	49,284	13,998	29,062	10,686	13,949	4,427	6,224	124,744	2.53
2014	49,295	14,081	29,025	10,729	13,827	4,470	6,188	124,408	2.52
2015	49,273	14,159	28,967	10,753	13,706	4,507	6,147	124,025	2.52
2016	49,207	14,225	28,871	10,737	13,600	4,533	6,111	123,589	2.51
2017	49,146	14,307	28,762	10,730	13,470	4,562	6,076	123,105	2.50
2018	49,068	14,387	28,640	10,720	13,333	4,586	6,041	122,582	2.50
2019	48,974	14,464	28,507	10,710	13,191	4,606	6,004	122,025	2.49
2020	48,853	14,531	28,357	10,694	13,043	4,620	5,966	121,428	2.49
Proportion (%)									
1995	100.0	25.6	58.7	17.4	34.2	7.1	15.7		
1996	100.0	25.9	58.6	17.7	33.7	7.2	15.5		
1997	100.0	26.1	58.7	18.1	33.2	7.3	15.2		
1998	100.0	26.3	58.8	18.5	32.8	7.5	15.0		
1999	100.0	26.4	58.8	18.9	32.4	7.6	14.7		
2000	100.0	26.6	58.9	19.2	32.0	7.7	14.5		
2001	100.0	26.8	59.0	19.5	31.7	7.8	14.3		
2002	100.0	26.9	59.0	19.8	31.3	7.9	14.1		
2003	100.0	27.0	59.1	20.1	30.9	8.0	13.9		
2004	100.0	27.2	59.1	20.4	30.6	8.1	13.7		
2005	100.0	27.3	59.2	20.6	30.3	8.3	13.5		
2006	100.0	27.4	59.2	20.7	30.1	8.3	13.4		
2007	100.0	27.6	59.2	21.0	29.8	8.4	13.2		
2008	100.0	27.7	59.2	21.1	29.5	8.5	13.1		
2009	100.0	27.8	59.2	21.3	29.2	8.6	13.0		
2010	100.0	27.9	59.2	21.4	29.0	8.7	12.9		
2011	100.0	28.1	59.1	21.5	28.8	8.8	12.8		
2012	100.0	28.2	59.0	21.6	28.6	8.9	12.7		
2013	100.0	28.4	59.0	21.7	28.3	9.0	12.6		
2014	100.0	28.6	58.9	21.8	28.0	9.1	12.6		
2015	100.0	28.7	58.8	21.8	27.8	9.1	12.5		
2016	100.0	28.9	58.7	21.8	27.6	9.2	12.4		
2017	100.0	29.1	58.5	21.8	27.4	9.3	12.4		
2018	100.0	29.3	58.4	21.8	27.2	9.3	12.3		
2019	100.0	29.5	58.2	21.9	26.9	9.4	12.3		
2020	100.0	29.7	58.0	21.9	26.7	9.5	12.2		

Appendix 2 Projected households by family type and age of household head, 1995

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child	
Both Sexes	Number of Households (1,000)							Proportion (%)					
Total	43,900	11,239	25,760	7,619	15,032	3,108	6,901	25.6	58.7	17.4	34.2	7.1	15.7
15-19	585	569	8	3	3	1	9	97.2	1.3	0.6	0.5	0.2	1.5
20-24	2,537	2,162	278	114	138	27	97	85.2	11.0	4.5	5.4	1.1	3.8
25-29	2,879	1,524	1,235	495	653	87	120	52.9	42.9	17.2	22.7	3.0	4.2
30-34	3,141	866	2,091	486	1,446	159	184	27.6	66.6	15.5	46.1	5.1	5.9
35-39	3,260	572	2,334	276	1,822	236	354	17.6	71.6	8.5	55.9	7.2	10.9
40-44	4,140	617	2,870	236	2,226	408	652	14.9	69.3	5.7	53.8	9.9	15.8
45-49	5,383	760	3,636	360	2,698	577	986	14.1	67.6	6.7	50.1	10.7	18.3
50-54	4,802	670	3,255	561	2,234	460	877	14.0	67.8	11.7	46.5	9.6	18.3
55-59	4,376	634	2,905	887	1,673	345	838	14.5	66.4	20.3	38.2	7.9	19.1
60-64	4,130	664	2,612	1,264	1,087	261	855	16.1	63.2	30.6	26.3	6.3	20.7
65-69	3,466	675	2,018	1,265	570	184	772	19.5	58.2	36.5	16.4	5.3	22.3
70-74	2,355	609	1,228	827	263	139	518	25.9	52.1	35.1	11.1	5.9	22.0
75-79	1,524	469	721	485	132	104	334	30.8	47.3	31.8	8.7	6.8	21.9
80-84	907	301	399	261	65	73	207	33.1	44.0	28.8	7.1	8.1	22.8
85+	415	148	170	98	23	48	98	35.6	40.8	23.7	5.6	11.5	23.6
65+	8,668	2,202	4,536	2,936	1,052	548	1,930	25.4	52.3	33.9	12.1	6.3	22.3
Male	Number of Households (1,000)							Proportion (%)					
Total	35,824	6,224	23,447	7,570	14,989	888	6,154	17.4	65.5	21.1	41.8	2.5	17.2
15-19	347	336	7	3	3	0	5	96.7	1.9	1.0	0.8	0.2	1.3
20-24	1,694	1,383	258	111	137	10	52	81.7	15.2	6.6	8.1	0.6	3.1
25-29	2,333	1,079	1,169	489	650	30	85	46.2	50.1	21.0	27.9	1.3	3.6
30-34	2,767	629	1,974	481	1,441	52	163	22.7	71.3	17.4	52.1	1.9	5.9
35-39	2,916	419	2,165	273	1,816	75	332	14.4	74.2	9.4	62.3	2.6	11.4
40-44	3,646	456	2,576	234	2,220	123	613	12.5	70.7	6.4	60.9	3.4	16.8
45-49	4,662	526	3,216	356	2,691	168	920	11.3	69.0	7.6	57.7	3.6	19.7
50-54	4,121	401	2,914	556	2,228	129	807	9.7	70.7	13.5	54.1	3.1	19.6
55-59	3,713	302	2,647	881	1,669	96	764	8.1	71.3	23.7	45.0	2.6	20.6
60-64	3,417	232	2,414	1,258	1,084	71	772	6.8	70.6	36.8	31.7	2.1	22.6
65-69	2,741	179	1,876	1,260	568	48	686	6.5	68.5	46.0	20.7	1.7	25.0
70-74	1,664	111	1,116	823	262	31	437	6.7	67.1	49.5	15.7	1.8	26.3
75-79	986	77	637	483	132	22	272	7.8	64.6	49.0	13.4	2.2	27.6
80-84	567	57	343	261	64	18	167	10.1	60.5	45.9	11.4	3.2	29.5
85+	251	37	136	98	23	14	79	14.6	54.1	39.1	9.3	5.7	31.3
65+	6,209	460	4,108	2,925	1,050	133	1,640	7.4	66.2	47.1	16.9	2.1	26.4
Female	Number of Households (1,000)							Proportion (%)					
Total	8,076	5,016	2,313	49	43	2,220	747	62.1	28.6	0.6	0.5	27.5	9.3
15-19	238	233	0	0	0	0	4	98.0	0.4	0.0	0.0	0.3	1.7
20-24	843	778	20	2	0	17	44	92.4	2.4	0.3	0.1	2.0	5.3
25-29	546	445	65	6	3	57	35	81.6	12.0	1.0	0.6	10.4	6.4
30-34	374	236	117	5	6	107	21	63.2	31.3	1.3	1.5	28.6	5.5
35-39	344	153	169	3	6	161	22	44.4	49.2	0.8	1.7	46.7	6.4
40-44	494	161	294	2	7	285	39	32.5	59.5	0.5	1.3	57.7	8.0
45-49	721	234	420	4	7	409	66	32.5	58.3	0.6	1.0	56.7	9.2
50-54	680	269	341	5	6	331	70	39.5	50.2	0.7	0.8	48.6	10.3
55-59	663	332	258	6	4	249	73	50.0	38.9	0.9	0.5	37.5	11.1
60-64	713	432	198	6	2	190	83	60.6	27.8	0.8	0.3	26.7	11.6
65-69	725	497	142	5	1	136	86	68.5	19.6	0.7	0.2	18.7	11.9
70-74	692	498	113	3	0	109	81	72.1	16.3	0.5	0.0	15.7	11.7
75-79	539	392	84	2	0	82	63	72.8	15.5	0.3	0.0	15.2	11.6
80-84	340	243	56	0	0	55	40	71.7	16.5	0.2	0.0	16.3	11.8
85+	164	111	34	0	0	33	19	67.7	20.5	0.0	0.0	20.4	11.9
65+	2,459	1,742	428	11	2	415	289	70.8	17.4	0.4	0.0	16.9	11.8

Methods and Results

Appendix 3 Projection of households by family type
and age of household head, 2000

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other	
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child		
Both Sexes	Number of Households (1,000)							Proportion (%)						
Total	46,407	12,341	27,349	8,920	14,852	3,577	6,718	26.6	58.9	19.2	32.0	7.7	14.5	
15–19	511	497	7	3	2	1	8	97.2	1.3	0.6	0.5	0.2	1.5	
20–24	2,143	1,835	221	81	99	41	88	85.6	10.3	3.8	4.6	1.9	4.1	
25–29	3,127	1,652	1,327	533	656	138	148	52.8	42.4	17.0	21.0	4.4	4.7	
30–34	3,565	1,075	2,300	559	1,511	230	190	30.2	64.5	15.7	42.4	6.5	5.3	
35–39	3,559	712	2,592	437	1,852	304	255	20.0	72.8	12.3	52.0	8.5	7.2	
40–44	3,605	591	2,531	262	1,876	393	483	16.4	70.2	7.3	52.0	10.9	13.4	
45–49	4,420	691	2,980	329	2,118	532	749	15.6	67.4	7.5	47.9	12.0	16.9	
50–54	5,480	823	3,649	666	2,420	563	1,008	15.0	66.6	12.2	44.2	10.3	18.4	
55–59	4,768	752	3,140	974	1,781	384	876	15.8	65.9	20.4	37.4	8.1	18.4	
60–64	4,274	746	2,736	1,297	1,148	292	791	17.5	64.0	30.3	26.9	6.8	18.5	
65–69	3,904	759	2,397	1,461	693	243	748	19.4	61.4	37.4	17.8	6.2	19.2	
70–74	3,196	815	1,734	1,195	370	168	647	25.5	54.3	37.4	11.6	5.3	20.2	
75–79	2,017	672	984	664	201	119	361	33.3	48.8	32.9	10.0	5.9	17.9	
80–84	1,193	467	502	316	82	105	223	39.2	42.1	26.5	6.9	8.8	18.7	
85+	647	253	250	144	43	64	144	39.1	38.7	22.2	6.6	9.9	22.2	
65+	10,956	2,965	5,867	3,779	1,389	699	2,124	27.1	53.6	34.5	12.7	6.4	19.4	
Male	Number of Households (1,000)							Proportion (%)						
Total	37,352	6,706	24,725	8,864	14,807	1,055	5,921	18.0	66.2	23.7	39.6	2.8	15.9	
15–19	303	293	6	3	2	0	4	96.7	1.9	1.0	0.8	0.2	1.3	
20–24	1,412	1,173	191	79	98	14	48	83.1	13.5	5.6	7.0	1.0	3.4	
25–29	2,443	1,120	1,225	526	653	45	98	45.8	50.1	21.6	26.7	1.8	4.0	
30–34	3,024	732	2,135	554	1,505	77	156	24.2	70.6	18.3	49.8	2.5	5.2	
35–39	3,133	511	2,393	433	1,846	114	230	16.3	76.4	13.8	58.9	3.7	7.3	
40–44	3,154	427	2,275	259	1,870	146	452	13.6	72.1	8.2	59.3	4.6	14.3	
45–49	3,807	504	2,604	326	2,112	167	699	13.2	68.4	8.6	55.5	4.4	18.4	
50–54	4,689	531	3,225	660	2,414	152	932	11.3	68.8	14.1	51.5	3.2	19.9	
55–59	4,036	394	2,843	968	1,777	99	799	9.8	70.5	24.0	44.0	2.4	19.8	
60–64	3,515	293	2,509	1,291	1,145	73	713	8.3	71.4	36.7	32.6	2.1	20.3	
65–69	3,107	234	2,212	1,455	691	65	661	7.5	71.2	46.8	22.3	2.1	21.3	
70–74	2,348	192	1,599	1,190	369	39	558	8.2	68.1	50.7	15.7	1.7	23.8	
75–79	1,309	134	888	661	201	26	286	10.2	67.9	50.5	15.4	2.0	21.9	
80–84	686	94	417	315	82	21	174	13.7	60.9	45.9	11.9	3.1	25.4	
85+	388	74	203	143	43	17	111	19.1	52.2	36.9	11.0	4.3	28.7	
65+	7,838	729	5,319	3,765	1,386	168	1,790	9.3	67.9	48.0	17.7	2.1	22.8	
Female	Number of Households (1,000)							Proportion (%)						
Total	9,055	5,635	2,623	56	45	2,522	797	62.2	29.0	0.6	0.5	27.9	8.8	
15–19	208	204	0	0	0	0	3	98.0	0.4	0.0	0.0	0.3	1.7	
20–24	731	662	30	2	0	27	40	90.5	4.1	0.2	0.0	3.7	5.5	
25–29	684	533	102	6	3	93	50	77.9	14.9	0.9	0.4	13.5	7.3	
30–34	541	343	165	5	6	153	33	63.4	30.4	1.0	1.1	28.4	6.2	
35–39	426	201	199	4	6	189	25	47.3	46.8	1.0	1.4	44.4	5.9	
40–44	451	164	256	3	6	247	32	36.3	56.7	0.6	1.4	54.7	7.0	
45–49	613	188	376	4	7	365	50	30.6	61.3	0.6	1.1	59.6	8.1	
50–54	791	292	424	6	6	412	75	36.9	53.6	0.8	0.8	52.0	9.5	
55–59	732	359	296	6	4	286	77	49.0	40.5	0.9	0.6	39.0	10.5	
60–64	759	453	227	6	3	218	79	59.7	29.9	0.8	0.3	28.8	10.4	
65–69	797	524	185	6	2	178	88	65.8	23.2	0.7	0.2	22.3	11.0	
70–74	847	623	135	5	0	129	89	73.5	15.9	0.6	0.1	15.2	10.5	
75–79	708	538	95	2	0	93	75	76.0	13.4	0.3	0.0	13.1	10.6	
80–84	507	373	85	0	0	84	49	73.6	16.7	0.1	0.0	16.5	9.7	
85+	258	178	48	0	0	48	32	69.0	18.5	0.0	0.0	18.4	12.5	
65+	3,118	2,237	548	14	3	531	333	71.7	17.6	0.4	0.1	17.0	10.7	

Appendix 4 Projection of households by family type and age of household head, 2005

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other	
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child		
Both Sexes	Number of Households (1,000)							Proportion (%)						
Total	48,227	13,171	28,540	9,932	14,627	3,981	6,516	27.3	59.2	20.6	30.3	8.3	13.5	
15-19	447	434	6	3	2	0	7	97.2	1.3	0.6	0.5	0.2	1.5	
20-24	1,878	1,606	195	71	87	38	77	85.5	10.4	3.8	4.6	2.0	4.1	
25-29	2,709	1,398	1,182	465	571	146	129	51.6	43.6	17.2	21.1	5.4	4.8	
30-34	3,852	1,196	2,443	591	1,561	291	213	31.0	63.4	15.3	40.5	7.6	5.5	
35-39	4,017	890	2,865	512	1,977	376	262	22.2	71.3	12.7	49.2	9.4	6.5	
40-44	3,905	718	2,794	381	1,950	463	393	18.4	71.5	9.8	49.9	11.8	10.1	
45-49	3,877	669	2,631	340	1,779	512	577	17.3	67.9	8.8	45.9	13.2	14.9	
50-54	4,531	782	2,969	569	1,877	522	780	17.3	65.5	12.6	41.4	11.5	17.2	
55-59	5,470	948	3,518	1,113	1,945	461	1,004	17.3	64.3	20.3	35.6	8.4	18.4	
60-64	4,649	872	2,945	1,406	1,214	326	832	18.7	63.4	30.2	26.1	7.0	17.9	
65-69	4,040	822	2,516	1,513	737	266	701	20.4	62.3	37.5	18.2	6.6	17.4	
70-74	3,606	905	2,047	1,382	453	212	653	25.1	56.8	38.3	12.6	5.9	18.1	
75-79	2,737	879	1,401	970	287	144	457	32.1	51.2	35.4	10.5	5.3	16.7	
80-84	1,612	660	698	441	128	129	254	40.9	43.3	27.3	8.0	8.0	15.8	
85+	897	391	328	177	58	94	178	43.6	36.6	19.7	6.5	10.4	19.8	
65+	12,892	3,657	6,992	4,483	1,663	846	2,243	28.4	54.2	34.8	12.9	6.6	17.4	
Male	Number of Households (1,000)							Proportion (%)						
Total	38,457	7,074	25,691	9,872	14,580	1,239	5,693	18.4	66.8	25.7	37.9	3.2	14.8	
15-19	265	256	5	3	2	0	4	96.7	1.9	1.0	0.8	0.2	1.3	
20-24	1,234	1,025	167	69	86	12	42	83.1	13.6	5.6	7.0	1.0	3.4	
25-29	2,106	941	1,079	459	569	51	85	44.7	51.3	21.8	27.0	2.4	4.0	
30-34	3,222	815	2,235	585	1,555	94	172	25.3	69.4	18.2	48.3	2.9	5.4	
35-39	3,447	598	2,621	507	1,970	144	227	17.4	76.0	14.7	57.2	4.2	6.6	
40-44	3,382	512	2,511	377	1,943	190	359	15.2	74.2	11.2	57.5	5.6	10.6	
45-49	3,318	483	2,300	336	1,772	192	536	14.6	69.3	10.1	53.4	5.8	16.1	
50-54	3,855	540	2,593	564	1,872	157	722	14.0	67.3	14.6	48.6	4.1	18.7	
55-59	4,631	545	3,162	1,105	1,940	117	923	11.8	68.3	23.9	41.9	2.5	19.9	
60-64	3,822	379	2,692	1,400	1,211	81	751	9.9	70.4	36.6	31.7	2.1	19.7	
65-69	3,204	275	2,310	1,507	735	68	619	8.6	72.1	47.0	23.0	2.1	19.3	
70-74	2,678	238	1,877	1,377	451	49	562	8.9	70.1	51.4	16.9	1.8	21.0	
75-79	1,859	203	1,285	967	287	32	370	10.9	69.2	52.0	15.4	1.7	19.9	
80-84	930	145	596	440	128	28	190	15.5	64.1	47.3	13.8	3.0	20.4	
85+	506	118	257	177	58	23	131	23.2	50.8	34.9	11.4	4.5	26.0	
65+	9,176	978	6,326	4,467	1,659	199	1,872	10.7	68.9	48.7	18.1	2.2	20.4	
Female	Number of Households (1,000)							Proportion (%)						
Total	9,769	6,097	2,850	60	47	2,742	823	62.4	29.2	0.6	0.5	28.1	8.4	
15-19	182	178	0	0	0	0	3	98.0	0.4	0.0	0.0	0.3	1.7	
20-24	644	581	28	2	0	26	35	90.2	4.3	0.2	0.0	4.0	5.5	
25-29	603	457	102	5	3	94	44	75.7	17.0	0.9	0.5	15.6	7.3	
30-34	630	381	209	6	6	197	41	60.5	33.1	0.9	1.0	31.2	6.4	
35-39	570	292	244	5	7	233	35	51.2	42.8	0.8	1.1	40.8	6.1	
40-44	524	206	283	4	7	273	34	39.4	54.1	0.8	1.3	52.0	6.6	
45-49	559	186	331	4	7	320	41	33.4	59.3	0.7	1.3	57.3	7.4	
50-54	676	242	376	5	6	365	58	35.9	55.6	0.8	0.9	54.0	8.5	
55-59	839	402	356	7	5	344	81	48.0	42.4	0.9	0.6	41.0	9.6	
60-64	827	492	254	7	3	244	81	59.5	30.7	0.8	0.4	29.5	9.8	
65-69	836	548	206	6	2	198	83	65.5	24.7	0.7	0.2	23.7	9.9	
70-74	928	667	170	6	1	163	91	71.9	18.4	0.6	0.1	17.6	9.8	
75-79	878	676	116	3	0	112	87	76.9	13.2	0.4	0.0	12.8	9.9	
80-84	682	515	102	0	0	101	64	75.5	15.0	0.1	0.0	14.9	9.4	
85+	391	273	71	0	0	71	46	69.9	18.3	0.0	0.0	18.2	11.8	
65+	3,715	2,679	666	16	4	646	371	72.1	17.9	0.4	0.1	17.4	10.0	

Methods and Results

Appendix 5 Projection of households by family type and age of household head, 2010

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child	
Both Sexes	Number of Households (1,000)							Proportion (%)					
Total	49,142	13,734	29,079	10,541	14,252	4,286	6,329	27.9	59.2	21.4	29.0	8.7	12.9
15–19	408	397	5	2	2	0	6	97.2	1.3	0.6	0.5	0.2	1.5
20–24	1,644	1,405	171	62	76	33	67	85.5	10.4	3.8	4.6	2.0	4.1
25–29	2,373	1,225	1,035	407	500	128	113	51.6	43.6	17.2	21.1	5.4	4.8
30–34	3,360	1,016	2,158	517	1,364	277	187	30.2	64.2	15.4	40.6	8.2	5.6
35–39	4,302	1,020	2,993	522	2,035	437	289	23.7	69.6	12.1	47.3	10.2	6.7
40–44	4,351	863	3,080	445	2,101	534	409	19.8	70.8	10.2	48.3	12.3	9.4
45–49	4,170	788	2,881	451	1,852	578	501	18.9	69.1	10.8	44.4	13.9	12.0
50–54	3,976	750	2,609	537	1,574	498	617	18.9	65.6	13.5	39.6	12.5	15.5
55–59	4,551	891	2,872	915	1,524	433	788	19.6	63.1	20.1	33.5	9.5	17.3
60–64	5,338	1,075	3,302	1,591	1,334	377	960	20.1	61.9	29.8	25.0	7.1	18.0
65–69	4,395	941	2,712	1,638	782	292	743	21.4	61.7	37.3	17.8	6.6	16.9
70–74	3,743	964	2,148	1,436	482	230	631	25.8	57.4	38.4	12.9	6.1	16.9
75–79	3,106	981	1,653	1,123	351	179	472	31.6	53.2	36.2	11.3	5.8	15.2
80–84	2,190	858	1,005	657	187	161	327	39.2	45.9	30.0	8.5	7.3	14.9
85+	1,234	560	455	239	87	129	219	45.4	36.9	19.3	7.1	10.5	17.7
65+	14,668	4,304	7,972	5,092	1,890	990	2,391	29.3	54.4	34.7	12.9	6.8	16.3
Male	Number of Households (1,000)							Proportion (%)					
Total	38,900	7,330	26,086	10,479	14,202	1,405	5,484	18.8	67.1	26.9	36.5	3.6	14.1
15–19	242	234	5	2	2	0	3	96.7	2.0	1.0	0.8	0.2	1.3
20–24	1,081	898	147	61	76	11	36	83.0	13.6	5.6	7.0	1.0	3.4
25–29	1,841	821	945	402	498	45	74	44.6	51.3	21.9	27.0	2.4	4.0
30–34	2,804	682	1,971	512	1,359	100	151	24.3	70.3	18.3	48.5	3.6	5.4
35–39	3,677	718	2,710	517	2,028	165	249	19.5	73.7	14.1	55.2	4.5	6.8
40–44	3,710	588	2,756	440	2,094	223	365	15.8	74.3	11.9	56.4	6.0	9.9
45–49	3,543	561	2,524	446	1,844	235	457	15.8	71.3	12.6	52.1	6.6	12.9
50–54	3,361	516	2,277	532	1,568	177	568	15.3	67.8	15.8	46.7	5.3	16.9
55–59	3,831	551	2,555	909	1,519	127	725	14.4	66.7	23.7	39.6	3.3	18.9
60–64	4,395	516	3,006	1,584	1,331	91	873	11.7	68.4	36.0	30.3	2.1	19.9
65–69	3,487	346	2,484	1,631	780	72	657	9.9	71.2	46.8	22.4	2.1	18.8
70–74	2,775	269	1,962	1,430	481	51	544	9.7	70.7	51.5	17.3	1.8	19.6
75–79	2,134	246	1,509	1,119	350	39	380	11.5	70.7	52.4	16.4	1.8	17.8
80–84	1,330	205	877	655	187	35	248	15.4	65.9	49.3	14.1	2.6	18.6
85+	690	178	359	238	87	33	153	25.9	52.0	34.5	12.6	4.8	22.1
65+	10,416	1,245	7,190	5,074	1,885	230	1,981	12.0	69.0	48.7	18.1	2.2	19.0
Female	Number of Households (1,000)							Proportion (%)					
Total	10,242	6,405	2,992	62	50	2,881	845	62.5	29.2	0.6	0.5	28.1	8.2
15–19	166	163	0	0	0	0	3	97.9	0.4	0.0	0.0	0.3	1.7
20–24	563	508	24	1	0	23	31	90.2	4.3	0.2	0.0	4.0	5.5
25–29	532	403	90	5	2	83	39	75.8	16.9	0.9	0.4	15.5	7.3
30–34	556	333	187	5	6	176	36	60.0	33.6	0.9	1.0	31.7	6.4
35–39	625	302	284	5	7	272	40	48.3	45.4	0.8	1.1	43.5	6.3
40–44	642	275	323	5	7	311	43	42.9	50.4	0.7	1.1	48.5	6.7
45–49	628	227	356	5	8	343	44	36.2	56.8	0.8	1.3	54.7	7.0
50–54	615	234	332	5	6	321	49	38.1	54.0	0.8	1.0	52.2	7.9
55–59	721	340	317	6	5	306	64	47.2	43.9	0.8	0.7	42.4	8.8
60–64	943	559	297	7	4	286	87	59.3	31.5	0.8	0.4	30.3	9.2
65–69	908	595	228	7	2	220	86	65.4	25.1	0.7	0.2	24.2	9.4
70–74	968	695	186	6	1	179	87	71.8	19.2	0.6	0.1	18.5	9.0
75–79	971	735	144	4	0	140	92	75.7	14.8	0.4	0.0	14.4	9.5
80–84	860	653	128	1	0	126	79	76.0	14.9	0.2	0.0	14.7	9.2
85+	545	382	96	0	0	96	66	70.1	17.7	0.0	0.0	17.6	12.2
65+	4,252	3,059	782	18	4	760	410	72.0	18.4	0.4	0.1	17.9	9.6

Appendix 6 Projection of households by family type and age of household head, 2015

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child	
Both Sexes	Number of Households (1,000)							Proportion (%)					
Total	49,273	14,159	28,967	10,753	13,706	4,507	6,147	28.7	58.8	21.8	27.8	9.1	12.5
15-19	414	402	6	2	2	1	6	97.2	1.4	0.6	0.5	0.3	1.5
20-24	1,505	1,287	157	56	69	32	61	85.5	10.4	3.7	4.6	2.1	4.1
25-29	2,078	1,070	908	358	439	111	99	51.5	43.7	17.2	21.2	5.3	4.8
30-34	2,944	887	1,893	455	1,197	240	163	30.1	64.3	15.5	40.7	8.2	5.5
35-39	3,768	860	2,655	458	1,787	409	253	22.8	70.4	12.2	47.4	10.9	6.7
40-44	4,685	1,048	3,197	442	2,148	607	440	22.4	68.2	9.4	45.9	13.0	9.4
45-49	4,606	932	3,149	512	1,990	647	525	20.2	68.4	11.1	43.2	14.1	11.4
50-54	4,245	869	2,813	637	1,627	550	563	20.5	66.3	15.0	38.3	13.0	13.3
55-59	4,001	843	2,520	822	1,279	419	638	21.1	63.0	20.6	32.0	10.5	15.9
60-64	4,441	991	2,687	1,290	1,048	349	763	22.3	60.5	29.0	23.6	7.9	17.2
65-69	5,053	1,136	3,054	1,858	865	331	863	22.5	60.4	36.8	17.1	6.5	17.1
70-74	4,082	1,083	2,325	1,561	514	250	674	26.5	57.0	38.2	12.6	6.1	16.5
75-79	3,240	1,039	1,738	1,170	375	193	463	32.1	53.6	36.1	11.6	6.0	14.3
80-84	2,509	967	1,196	768	231	197	346	38.5	47.7	30.6	9.2	7.9	13.8
85+	1,703	744	669	364	134	171	290	43.7	39.3	21.4	7.9	10.0	17.0
65+	16,587	4,969	8,982	5,721	2,119	1,142	2,636	30.0	54.2	34.5	12.8	6.9	15.9
Male	Number of Households (1,000)							Proportion (%)					
Total	38,708	7,543	25,883	10,692	13,655	1,537	5,282	19.5	66.9	27.6	35.3	4.0	13.6
15-19	246	238	5	2	2	0	3	96.7	2.0	1.0	0.8	0.2	1.3
20-24	989	821	134	55	68	11	33	83.1	13.6	5.5	6.9	1.1	3.4
25-29	1,614	719	830	354	437	39	65	44.5	51.4	21.9	27.1	2.4	4.0
30-34	2,455	593	1,730	451	1,193	87	132	24.1	70.5	18.4	48.6	3.5	5.4
35-39	3,224	599	2,406	454	1,781	171	219	18.6	74.6	14.1	55.2	5.3	6.8
40-44	3,965	746	2,827	437	2,141	250	391	18.8	71.3	11.0	54.0	6.3	9.9
45-49	3,869	644	2,754	507	1,981	266	471	16.7	71.2	13.1	51.2	6.9	12.2
50-54	3,563	592	2,462	631	1,620	211	510	16.6	69.1	17.7	45.5	5.9	14.3
55-59	3,345	524	2,238	817	1,273	148	583	15.7	66.9	24.4	38.1	4.4	17.4
60-64	3,632	515	2,425	1,284	1,045	96	692	14.2	66.8	35.3	28.8	2.7	19.1
65-69	4,021	461	2,791	1,851	863	77	770	11.5	69.4	46.0	21.5	1.9	19.1
70-74	3,031	327	2,121	1,554	512	54	583	10.8	70.0	51.3	16.9	1.8	19.2
75-79	2,224	271	1,582	1,166	374	41	372	12.2	71.1	52.4	16.8	1.9	16.7
80-84	1,541	244	1,039	766	231	42	258	15.8	67.4	49.7	15.0	2.7	16.8
85+	991	250	542	363	134	44	199	25.2	54.7	36.7	13.6	4.5	20.1
65+	11,808	1,553	8,074	5,701	2,114	259	2,182	13.1	68.4	48.3	17.9	2.2	18.5
Female	Number of Households (1,000)							Proportion (%)					
Total	10,564	6,616	3,084	61	52	2,971	865	62.6	29.2	0.6	0.5	28.1	8.2
15-19	168	164	0	0	0	0	3	97.9	0.4	0.0	0.0	0.3	1.7
20-24	516	465	23	1	0	21	28	90.1	4.4	0.2	0.0	4.1	5.5
25-29	464	352	78	4	2	72	34	75.8	16.9	0.9	0.4	15.6	7.3
30-34	489	295	163	4	5	153	31	60.3	33.3	0.9	1.0	31.4	6.4
35-39	544	261	249	4	6	238	34	48.0	45.7	0.8	1.1	43.7	6.3
40-44	720	302	369	5	8	357	49	41.9	51.3	0.6	1.0	49.6	6.8
45-49	737	288	396	6	8	382	53	39.1	53.7	0.8	1.2	51.8	7.2
50-54	682	277	352	6	7	339	53	40.7	51.6	0.8	1.0	49.7	7.8
55-59	656	319	283	5	6	271	55	48.6	43.1	0.8	0.9	41.4	8.3
60-64	810	477	263	6	4	253	70	58.9	32.4	0.7	0.5	31.2	8.7
65-69	1,032	676	264	7	2	254	93	65.4	25.5	0.7	0.2	24.6	9.0
70-74	1,051	755	204	7	1	196	91	71.9	19.4	0.6	0.1	18.7	8.7
75-79	1,015	768	156	4	0	152	91	75.6	15.4	0.4	0.0	14.9	9.0
80-84	968	723	157	2	0	155	88	74.7	16.3	0.2	0.0	16.0	9.1
85+	712	495	127	0	0	126	91	69.4	17.8	0.0	0.0	17.7	12.7
65+	4,779	3,417	908	20	5	883	454	71.5	19.0	0.4	0.1	18.5	9.5

Methods and Results

Appendix 7 Projection of households by family type
and age of household head, 2020

Age	Total	One Person	Nuclear Family Households				Other	One Person	Nuclear Family Households				Other
			Subtotal	Couple Only	Couple & Child	Parent & Child			Subtotal	Couple Only	Couple & Child	Parent & Child	
Both Sexes	Number of Households (1,000)							Proportion (%)					
Total	48,853	14,531	28,357	10,694	13,043	4,620	5,966	29.7	58.0	21.9	26.7	9.5	12.2
15–19	422	410	6	3	2	1	6	97.2	1.4	0.6	0.5	0.3	1.5
20–24	1,524	1,305	157	55	68	33	62	85.6	10.3	3.6	4.5	2.2	4.1
25–29	1,906	980	836	328	403	105	91	51.4	43.9	17.2	21.1	5.5	4.8
30–34	2,582	772	1,666	403	1,056	208	143	29.9	64.5	15.6	40.9	8.0	5.6
35–39	3,299	746	2,330	405	1,571	354	222	22.6	70.6	12.3	47.6	10.7	6.7
40–44	4,126	881	2,857	390	1,894	573	388	21.4	69.2	9.4	45.9	13.9	9.4
45–49	4,992	1,167	3,264	508	2,031	725	562	23.4	65.4	10.2	40.7	14.5	11.3
50–54	4,668	1,019	3,056	704	1,743	609	593	21.8	65.5	15.1	37.3	13.0	12.7
55–59	4,260	964	2,690	920	1,305	465	606	22.6	63.1	21.6	30.6	10.9	14.2
60–64	3,894	921	2,346	1,134	881	331	627	23.7	60.3	29.1	22.6	8.5	16.1
65–69	4,197	1,027	2,479	1,501	683	296	690	24.5	59.1	35.8	16.3	7.0	16.4
70–74	4,713	1,274	2,653	1,799	574	280	786	27.0	56.3	38.2	12.2	5.9	16.7
75–79	3,546	1,155	1,892	1,279	402	210	500	32.6	53.3	36.1	11.3	5.9	14.1
80–84	2,636	1,026	1,264	803	248	214	345	38.9	48.0	30.5	9.4	8.1	13.1
85+	2,088	882	862	464	183	215	344	42.2	41.3	22.2	8.8	10.3	16.5
65+	17,180	5,365	9,150	5,845	2,090	1,215	2,665	31.2	53.3	34.0	12.2	7.1	15.5
Male	Number of Households (1,000)							Proportion (%)					
Total	38,079	7,748	25,247	10,634	12,990	1,623	5,083	20.3	66.3	27.9	34.1	4.3	13.3
15–19	251	242	5	2	2	0	3	96.7	2.0	1.0	0.8	0.2	1.3
20–24	1,002	835	134	54	68	12	34	83.3	13.3	5.4	6.7	1.2	3.4
25–29	1,479	656	763	324	401	38	59	44.4	51.6	21.9	27.1	2.6	4.0
30–34	2,156	515	1,524	399	1,051	74	116	23.9	70.7	18.5	48.8	3.4	5.4
35–39	2,823	517	2,114	401	1,566	147	192	18.3	74.9	14.2	55.5	5.2	6.8
40–44	3,500	621	2,533	386	1,887	261	346	17.7	72.4	11.0	53.9	7.5	9.9
45–49	4,156	837	2,818	502	2,022	294	502	20.1	67.8	12.1	48.6	7.1	12.1
50–54	3,881	680	2,671	698	1,736	237	531	17.5	68.8	18.0	44.7	6.1	13.7
55–59	3,533	597	2,389	914	1,297	178	547	16.9	67.6	25.9	36.7	5.0	15.5
60–64	3,165	487	2,113	1,128	877	107	565	15.4	66.8	35.7	27.7	3.4	17.9
65–69	3,316	452	2,250	1,495	680	74	614	13.6	67.8	45.1	20.5	2.2	18.5
70–74	3,521	416	2,419	1,791	573	55	686	11.8	68.7	50.9	16.3	1.6	19.5
75–79	2,440	317	1,720	1,275	401	44	402	13.0	70.5	52.3	16.4	1.8	16.5
80–84	1,616	267	1,094	801	248	46	255	16.5	67.7	49.6	15.3	2.8	15.8
85+	1,240	308	701	463	183	55	231	24.8	56.5	37.4	14.7	4.4	18.6
65+	12,132	1,761	8,183	5,825	2,084	274	2,188	14.5	67.5	48.0	17.2	2.3	18.0
Female	Number of Households (1,000)							Proportion (%)					
Total	10,775	6,782	3,109	60	53	2,997	883	62.9	28.9	0.6	0.5	27.8	8.2
15–19	171	168	0	0	0	0	3	97.9	0.5	0.0	0.0	0.4	1.7
20–24	522	470	23	1	0	22	28	90.1	4.5	0.2	0.0	4.1	5.5
25–29	427	323	72	4	2	67	31	75.7	17.0	0.9	0.5	15.6	7.3
30–34	426	257	142	4	4	134	27	60.3	33.3	0.9	1.0	31.4	6.4
35–39	476	229	216	4	5	207	30	48.3	45.4	0.8	1.1	43.5	6.3
40–44	626	260	323	4	7	312	42	41.6	51.7	0.6	1.2	49.9	6.7
45–49	836	330	446	6	9	431	60	39.4	53.3	0.7	1.1	51.6	7.2
50–54	787	339	385	6	7	371	63	43.1	48.9	0.8	0.9	47.2	8.0
55–59	728	367	301	6	8	287	60	50.5	41.3	0.8	1.0	39.5	8.2
60–64	729	434	234	5	4	224	61	59.5	32.0	0.7	0.6	30.7	8.4
65–69	881	575	230	6	2	222	76	65.3	26.1	0.7	0.3	25.1	8.7
70–74	1,192	858	234	7	2	225	100	72.0	19.6	0.6	0.1	18.9	8.4
75–79	1,107	837	172	4	0	167	97	75.7	15.5	0.4	0.0	15.1	8.8
80–84	1,020	760	170	2	0	168	90	74.5	16.7	0.2	0.0	16.5	8.8
85+	849	575	161	0	0	160	113	67.7	19.0	0.0	0.0	18.9	13.3
65+	5,048	3,605	967	20	5	941	477	71.4	19.1	0.4	0.1	18.6	9.4