relatively small, although the income inequality among the youngest age group is the highest. This high degree of income inequality among the younger age groups might be attributable to the high unemployment among youth in Sweden following the severe economic recession in the mid-1990s. Nevertheless, income inequality in Sweden by age groups is in general small.

In sum, Japan is distinctive because of a gradual increase in the extent of income inequality as the age of the household head becomes older. On the other hand, the relatively high degree of income inequality among the younger age groups can be found in Britain and the United States.

Why is the degree of income inequality among households with the elderly higher than that among households without the elderly in Japan? In the next section, we will speculate on the reasons for the effect of the type of household by examining the income level of each household type.

3-4 Income inequality among the households with the elderly

Once again, in this section, we differentiate households with elderly inhabitants as single-male, single-female, married couples, and "others," referring to households containing elderly and non-elderly coresidents. We will compare the income level of the

sub-groups to see their overall economic situation by calculating the ratio of their median disposable income to that among households without elderly inhabitants. In this analysis, we intend to show the effect of having elderly family members in the household on the level of economic well-being.

Table 5

Table 5 shows the ratio of the median disposable income among households with elderly residents to that among households without the elderly in five countries. The most obvious finding in Table 5 is that the difference in the ratio between the elderly-only household and the household without the elderly is the largest in Japan (63.82), while the difference between the "other" type of household and the household without the elderly is the smallest (104.91). These households, composed of the elderly and other members, occupy a relatively advantaged economic situation compared with the households which do not have any elderly members. In Sweden, households with elderly members (regardless of their overall composition) are economically better off than are households with no elderly members. In contrast, in Great Britain, the United States, and Taiwan, the households without elderly are better off than those with the elderly. The most striking feature in Japan is, therefore, that among households with elderly members, there is significant variation in economic well-being. Households which are composed of only the

elderly are much more economically disadvantaged in Japan, compared with those in other societies, while households which contain both the elderly and the non-elderly members are not disadvantaged at all.

While there are variations in the extent of income inequality between households with the elderly and those without the elderly in all five societies, Japan shows greatest disparity. In order to examine the differences in economic well-being among households with elderly members, the median disposable income levels among the four types of households with elderly membership are given in Table 6.

Table 6

The median disposable income figures of the single male, single female, and married couple households are much lower than that of the "other" (elderly and non-elderly) household, and the discrepancies in the economic situation by household type are larger in Japan than in other societies. In particular, the single female household stands out as the most disadvantaged in Japan: the median disposable income is only 40 percent that of the "other" category. The Japanese single male household is also economically disadvantaged: the median disposable income is 57 percent of that of the "other" category . As we have seen in Table 1, there are variations in the living arrangement among the Japanese elderly. The results shown in Table 6 suggest that

differences in living arrangements among the elderly have direct relevance to their economic well-being.

In contrast, in other societies, living independently from offspring does not always imply economic disadvantage, particularly for the male elderly. Living with the younger generation in Britain, Sweden, and the United States, does not necessarily bring a more favorable economic condition for the elderly. Instead, people with whom the elderly tend to share the living arrangement are probably non-elderly who cannot afford to earn a living by themselves or, alternatively, the unemployed. Consequently, coresidence is likely to reduce the economic well-being of the elderly in these nations.

Figure 6

Figure 6 presents the proportion of single-member households by income decile among households which are composed of only the elderly in five countries. Japan stands out in cross-national comparison. The proportion of the single-member households increases as income decile drops in Japan. Over 70 percent of households belonging to the first decile are single-member households, while less than 20 percent of the households in the tenth decile are single-member households. Japan thus displays a clear negative relationship between single-member households and economic well-being. In other words, the household structure, particularly for elderly living alone, is closely related to economic

prosperity in Japan. On the other hand, in Sweden, one finds that a relatively large number of the single elderly are in good economic health and couples are less well-off than the single elderly. Therefore, the impact of the household type on determining the economic well-being of the elderly differs across nations.

In sum, Japan shows more differences in the economic well-being by household type than do other societies. The economic situation among households with the elderly varies more than that among the households without the elderly. Among households with elderly inhabitants, those which are composed only of the elderly show more variation in income than do those in which non-elderly family members live together with the elderly. Furthermore, in Japan, the income level is more differentiated by household type (for those that contain the elderly on their own or with non-elderly) than it is in other societies. Consequently, income inequality among all the elderly in Japan is greater than in other societies.

3-5 Work of the elderly

One of the characteristics of the Japanese elderly population is a high rate of labour force participation, which, according to Yashiro and Oshio (1999), contributes to greater economic power and leads to higher levels of household savings. In this section, I

examine whether the tendency of older Japanese to work is related to the extent of income inequality among the Japanese elderly.

Table 7

Table 7 shows the proportion of household heads who are in employment by age group in five nations. Once again, Japan and Taiwan stand out. When the age of the household head is over 60, their labor force participation rates are much higher in Japan and Taiwan than in other countries. In particular, the rates among those who are 65 and over are conspicuously high. This high rate of employment among the Japanese elderly is related to the high degree of self-employment among the working elderly. More than half of working elderly aged 65 and over are self-employed, and this figure goes up to about 70 percent when the household head is 75 or older. The same tendency can be seen in Taiwan as well. In these two Asian societies, self-employment seems to be a major avenue for the elderly to continue their work.

Figure 7

Figure 7 shows the proportion of wage and salary income to total disposable income by income decile among households composed only of the elderly. Japan is distinctive in the role of wage and salary income in differentiating the economic well-being among households with the elderly. A significantly higher proportion of wage and salary

income at the ninth and tenth percentile can be seen in Japan than in other societies, and it suggests that the Japanese elderly who occupy the highest income brackets are those who continue to work and derive income as employees. In other words, the Japanese elderly with high levels of income are relatively young and their health permits them to continue employment. On the other hand, private pensions and bequests play a more important role in income inequality in Europe and the United States than in Japan.

In sum, the impact of employment income on determining economic well-being appears to be stronger in Japan, where the rate of labor force participation among the elderly is relatively high. In Europe and the United States, labor force participation rates among the elderly are relatively low: 50 percent of those aged 60 to 64 in the United States, 36 percent in Britain, and 58 percent in Sweden. Consequently, employment income among the elderly does not have a major effect on differentiating the economic well-being among the elderly in these countries. In contrast, in Japan, 67 percent of those aged 60 to 64 and almost half of those aged 65 to 69 are still in the labor force, and employment continues to be one of major resources generating income among the Japanese elderly.

4. Discussion

In this study, I examined the extent of income inequality in Japan, using cross-national comparisons. I constructed comparable measures of income inequality with the Luxembourg Income Studies data set in order to make rigorous cross-national studies of income inequality of Japan, Great Britain, Sweden, Taiwan, and the United States.

According to our analysis of income inequality, Japan is neither especially equal nor unequal in the aggregate; the level of income inequality using the gini coefficient is in the middle in our societies. However, income inequality among households composed of only the elderly is much higher in Japan because Japanese elderly live in a greater variety of household types; about 40 percent of the elderly live in multi-generational households. The three-generational households used to be a typical living arrangement among the elderly in Japan, but it has declined gradually in the last ten years. In its place, one finds an increase in the households composed of elderly single people or older couples. Nevertheless, the proportion of multi-generational households among those that include the elderly is still higher in Japan than in Europe and the United States. In fact, in Sweden, almost all elderly live either alone or with their spouse; similarly in Britain, less than 10 percent of the elderly live with non-elderly family members.

Such a large difference in living arrangement among the Japanese elderly,

compared with the European and American societies, appears to be directly responsible for larger income inequality among the elderly in Japan. In particular, living alone appears to have negative consequences for the economic well-being of the elderly; the single-female household has the worst economic conditions in contemporary Japan. Since women tend to live longer than do men and wives are generally younger than their husbands, elderly women face the risk of falling into the low-income groups after the death of their husbands. Indeed, the proportion of single-female households is gradually increasing in Japan, and the further improvement of the living conditions of these households will become a key policy issue. In contrast, in other societies, the degree of economic condition does not differ greatly by the type of household to which the elderly belong.

Smeeding and Saunders (1998) claim that coresidence with the younger generation can be a safety net for the elderly in Taiwan, and Japan appears to follow this pattern. Coresidence with non-elderly members leads to strengthening the economic level among the elderly, and, in fact, the median disposable income among households with the elderly is higher than that among the households without the elderly. This implies that living arrangements have determinant consequences for the economic well-being of the elderly in Japanese society. Furthermore, the Japanese elderly are more likely to hold jobs than their European and American counterparts, and the income from employment contributes to

greater income inequality in Japan. The elderly are more likely to work and the income derived from their employment has a greater effect on the household's economic wealth in Japan than in other societies.

In summary, according to this research, there are two major reasons for a higher extent of income inequality among the elderly in Japan. One is the variety of living arrangements among the elderly; such diversity of household types appears to be directly associated with the economic well-being of the elderly in Japan. The other is the large impact of employment income among the elderly. Whether the elderly work affects their level of economic well-being in Japan, where the proportion of the elderly who work is larger than that in other societies.

We should no longer treat the elderly as one homogeneous group; a wide range in the level of economic well-being among the elderly should not be overlooked. The Japanese elderly as a whole are sometimes considered to be in a favourable economic condition (Takayama and Arita 1996), but it does not necessarily mean that all the elderly are better off. Due to recent budget cuts by the Japanese government, the imbalance between the contributors (the younger generation) to the pension system and beneficiaries (the older generation) of such a system is a major issue in reforming the social security system in Japan. Since we find that the elderly are by no means homogeneous in their

level of economic well-being, the picture of the young versus the old generation is too simplistic. We then had better take into account the diversity in the economic situations among the elderly and consider the income redistribution within the older generation. In particular, the elderly who live alone face a high risk of falling into poverty in Japan. A policy specifically targeted to the economically disadvantaged elderly should therefore be seriously considered (c.f. Yashiro 1997).

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Table 1 Trends in Household Type in Japan

		1986	1989	1992	1995	1998
Household without the elderly		71.8	68.5	67.2	65.3	62.8
Household with the elderly		28.2	31.5	32.8	34.7	37.2
Total		100.0	100.0	100.0	100.0	100.0
N		36136	37634	33388	30500	30688
Household with the elderly	Male-only	2.3	2.5	2.6	3.2	3.6
	Female-only	9.9	11.1	12.0	12.6	14.3
	Couple-only	17.3	20.7	23.2	24.3	27.5
	Other type	70.5	65.8	62.1	59.8	54.7
	Total	100.0	100.0	100.0	100.0	100.0

Table 2 Household Type by Nation

		Britain	Sweden	Taiwan	U.S.
Household without the elderly		71.2	72.0	75.6	74.5
Household with the elderly		28.8	28.0	24.4	25.5
Total		100.0	100.0	100.0	100.0
N		5950	15684	12311	54171
Household with the elderly	Male-only	14.2	12.5	10.6	12.1
	Female-only	37.2	37.4	6.4	37.5
	Couple-only	40.7	48.5	24.1	38.9
	Other type	8.0	1.6	59.0	11.4
	Total	100.0	100.0	100.0	100.0

Table 3 Median Disposable Income by Household Type in Japan

	1998		1995		1992		1989		1986	
	ratio	Median	ratio	Median	ratio	Median	ratio	Median	ratio	Median
Other type	106.14	316.23	104.91	302.67	102.66	277.38	101.28	231.11	104.40	223.07
Elderly only household	64.75	192.90	63.82	184.13	59.85	161.72	59.50	135.76	53.02	113.28
Household without the elderly	100.00	297.93	100.00	288.50	100.00	270.20	100.00	228.28	100.00	213.67

Note: The unit of median income is in ten thousand yen.

Table 4 Median Disposable Income by Type of Household with the Elderly in Japan

	1998		1995		1992		1989		1986	
	ratio	Median	ratio	Median	ratio	Median	ratio	Median	ratio	Median
Male-only	59.02	186.65	57.24	173.25	61.29	170.00	54.26	125.40	45.75	102.05
Female-only	41.11	130.00	40.13	121.45	37.85	105.00	44.39	102.60	35.57	79.35
Couple-only	71.15	225.00	71.49	216.37	69.34	192.33	69.99	161.75	64.63	144.18
Other type	100.00	316.23	100.00	302.67	100.00	277.38	100.00	231.11	100.00	223.07

Note: The unit of median income is in ten thousand yen.

Table 5 Median Disposable Income by Household Type across Nations

	Japan		U.S.		Britain		Sweden		Taiwan	
	ratio	Median	ratio	Median	ratio	Median	ratio	Median	ratio	Median
Other type	104.91	302.67	88.74	20809.00	85.52	10196.26	106.84	201845.00	82.60	339788.58
Elderly only household	63.82	184.13	97.94	22968.00	90.01	10731.60	102.09	192863.40	78.84	324296.12
Household without the elderly	100.00	288.50	100.00	23450.10	100.00	11923.13	100.00	188916.00	100.00	411338.22

Note: In Japan, the unit of median income is in ten thousand yen. In other societies, the unit of median income is in the original currency.

Table 6 Median Disposable Income by Type of Household with the Elderly

	Japan		U.S.		Britain		Sweden		Taiwan	
	ratio	Median	ratio	Median	ratio	Median	ratio	Median	ratio	Median
Male-only	57.24	173.25	127.54	26540.00	115.90	11817.73	102.71	207314.00	115.11	391121.00
Female-only	40.13	121.45	99.43	20690.00	106.10	10818.08	101.97	205819.00	85.87	291780.00
Couple-only	71.49	216.37	116.74	24292.00	95.96	9743.19	87.19	175986.00	91.67	311500.00
Other type	100.00	302.67	100.00	20809.00	100.00	10196.26	100.00	201845.00	100.00	339788.58

Note: In Japan, the unit of median income is in ten thousand yen. In other societies, the unit of median income is in the original currency.

Table 7 Proportion of Labor Force Participation of Household Heads by Age in Five Countries

	Japan	U.S.	Britain	Sweden	Taiwan
-19	21.9	55.6	26.7	17.0	98.0
20-24	69.1	76.5	62.5	69.3	97.3
25-29	97.9	84.4	75.6	81.1	99.0
30-34	97.9	86.4	81.9	87.4	98.8
35-39	97.6	86.8	82.3	88.1	98.7
40-44	96.7	86.7	83.2	89.8	96.8
45-49	95.2	85.9	83.5	90.3	96.0
50-54	95.0	82.3	74.3	89.1	93.6
55-59	89.7	73.4	61.1	82.3	91.0
60-64	67.2	49.6	35.7	57.5	74.4
65-69	49.3	25.0	12.0	19.5	41.4
70-74	34.1	13.0	6.1	7.1	24.8
75-	20.0	5.4	2.2	2.2	15.5