



RONALD LEE AND ANDREW MASON

# Population Aging and the Generational Economy

A Global Perspective



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## 28. Living arrangements and support for the elderly in Taiwan

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This chapter examines how Taiwanese elders support themselves and are supported by the productive members of the society. Given that the living arrangements of the elderly are usually a significant determinant of their economic welfare, we examine how the composition of income sources of the elders varies by household type. Using the NTA data for 1998, we have found that Taiwanese elders residing with their children relied primarily upon intra-familial transfers, elders living with only their spouses or grandchildren relied on their own resources, and the elders living alone relied heavily on government support.

We first consider the issue of living arrangements of the elderly and their economic security. Next we review Taiwan's rapid economic growth and demographic transition in recent decades and examine the changing pattern of living arrangements and economic support for the elderly. Then, after discussing the data and the methodology used in the analysis, we describe how elders finance their consumption in various living arrangements and report our results under alternative assumptions. In the last section we summarize the findings and suggest topics for future research.

### LIVING ARRANGEMENTS FOR THE ELDERLY

The living arrangements of the elderly are usually a significant determinant of their economic security and welfare. The issue is critical for poor elders in the developing world, where formal welfare systems are less extensive than in more developed countries. It is also of major concern for any economy undergoing rapid dissolution of traditional co-residence patterns. Although co-residence benefits the younger as well as the older generation, in many societies living together with adult children has been 'a fundamental means of ensuring that the day-to-day needs of the older population would be met' (UN Population Division 2005, p. 75).

In Taiwan the proportion of elders (persons aged 65 or older) co-residing

with their offspring dropped from 70.2% to 60.4% between 1986 and 2005, while the ratio of elders relying on children as their main income source plunged from 65.8% to 46.5%, according to the Elderly Condition Survey conducted by the Ministry of Interior (2005). The elderly rely on three major sources to finance their consumption: personal resources (labor income, asset income, and past savings), private transfers, and public transfers. As financial support from adult children has become less reliable as the major source of income, the elderly in Taiwan have depended increasingly on public or personal sources to fund their consumption. Between 1986 and 2005 their consumption of public sources rose from 1.2% to 16.0%, and their consumption of private sources rose from 30.9% to 40.8% (MOI 2005).

A vast literature on the theory of co-residence examines the motivation, benefits and costs, and underlying constraints and preferences of individuals, families, and societies with respect to various living arrangements (Kinsella 1990). Old-age support has been an important focus of this literature, and researchers have sought to identify the determinants of living arrangements of the elders, as well as the direction of support flows within families (Hermalin 2002). Given the paucity of systematic quantitative data, however, these studies usually rely on survey data on attitudes toward co-residence or on the frequency and intensity of various types of support. The results provide useful guidelines but no precise answers to basic questions about the magnitude of and changes in old-age support. One would need more systematic data to address such issues as how personal income complements or substitutes for familial and public transfers, or whether the composition of income sources affects the consumption level of the elderly.

## ECONOMIC AND DEMOGRAPHIC BACKGROUND

Taiwan has experienced tremendous economic growth in the six decades since World War II. Per capita Gross Domestic Product rose from US\$137 in 1951 to US\$17 536 in 2007, with an annual compound rate of 8.6%, although growth has stagnated since 2000. Measured in current international dollars, the per capita income of Taiwan relative to the United States grew from 8.0% in 1951 to 54.2% in 2004 (calculated from Heston et al. 2006).

Fertility reached the replacement level in the early 1980s. By 2007 the total fertility rate had declined to 1.10 births per woman, as compared with 7.04 in 1951 and 2.05 in 1984. For females, life expectancy at birth lengthened from 56.3 years to 81.4 years between 1951 and 2007, and the median age of first marriage rose from 25.7 to 27.5 between 1991 and 2006.

Table 28.1 Social benefits for the elderly: Taiwan, 2005

Program	Social benefit (NT\$ million)	
	Cash	In-kind
Social insurance programs		
National Health Insurance (since 1995)		367,397
Labor Insurance (since 1950)	176,313	10,211
Farmers' Insurance (since 1988)	4,267	4,576
Servicemen's Insurance (since 1953)	7,598	
Employment Insurance (since 1999)	5,282	
Government Employee Insurance (since 1958) and Retired Employee Insurance (since 1965)	2,563	1,546
Pension and old-age benefits		
Government Employee Pension and Servicemen's Pension (revised in 1995)	274,625	
Labor Pension, old system (since 1985)	42,425	
Labor Pension, new system (since 2005)	1	
Pension for Private School Teachers (since 2005)	2,097	
Social welfare		
Old-age Farmers' Allowances (1995–2008)	33,199	
Old-age Citizen Allowance (2002–2008)	25,973	
Veteran Care	17,588	
Assistance for Low-Income Elderly (since 1993)	8,929	
Aborigine Allowance (ages 55–64, 2002–2008)	689	
Other welfare service and social assistance	11,781	54,224
Other	34,443	101,631

Source: DGBAS (2007, p. 10).

Taiwan's total population was about 23 million by the middle of 2010. It is projected to rise to 23.2 million by 2018 and decline afterward, according to the government's medium projection. The dependency ratio of the older population (ages 65+) to the working-age population (ages 15–64) is projected to rise from 13.9% in 2005 to 67.0% in 2051, while the dependency ratio of young people (ages 0–14) is projected to decline from 25.2% to 14.2%.

Social insurance and welfare programs focusing on the older population have greatly expanded since the 1990s (Table 28.1). The National Health Insurance Program, begun in 1995, covers 98% of the population

by extending health benefits to those previously uninsured – for example, young people, housewives, the unemployed, and the elderly.

Government Employee Insurance and Labor Insurance are the two major occupational insurance programs. Both continued to offer non-medical cash benefits after 1995, such as maternity and disability benefits. With respect to old-age benefits, both programs provide a lump-sum retirement payment, and the related Government Employee Pension and Labor Pension offer additional one-time or monthly pension benefits. A National Pension Program was started in 2008, integrating a number of existing social welfare programs, as well as Labor Insurance and Farmers' Insurance, but not yet Government Employee Insurance or Servicemen's Insurance. However, the monthly payment available to pensioners through either the previous welfare programs or the new National Pension Program, in its initial stage, has been only a meager NT 3000–6000 (about US\$85–\$170), as compared with per capita private consumption at NT 25 834 in 2005.

## DATA AND MEASURING SCHEME

Following the NTA methodology as described in Mason et al. (2009) and other chapters of this volume, we draw upon a variety of data sources, including the Family Income and Expenditure Survey (FIES), National Income, and public administrative records on health, education, social insurance, and public assistance in Taiwan. The FIES, the major data source, is a nationally representative survey that has been conducted annually since 1978 and contains income and expenditure information at both individual and household levels. Sampled households are interviewed annually, and selected households are requested to maintain daily diaries of household income and expenditures to serve as a form of quality control. In 1998 the sample size of 14 031 households represented 0.22% of all households in the population.

We classified the basic NTA results by living arrangement. Although the standard NTA data reported are smoothed across ages, our discussion of various living arrangements is based on unsmoothed data by broad age group so as to preserve maximum information. We have applied the same aggregate controls across household types to ensure consistency with National Income data.

In accordance with the classification system used by the United Nations (UN Population Division 2005), modified slightly according to the Taiwan context, the basic comparative scheme used here encompasses five mutually exclusive categories of living arrangement for the non-institutionalized

population: (A) living alone; (B) living with spouse only; (C) living with a grandchild but not a child or with a grandparent but not a parent; (D) living with a child or child-in-law or with a parent or parent-in-law (this category includes the possibility of also living with other relatives or non-relatives); and (E) living with others (other relatives or unrelated people only). Category (D) includes two subcategories: (D1) living with a younger generation (ages 19 or younger) in the household, and (D2) living with adults (ages 20 or older) only.

One feature of this scheme is that the classification is based on familial relationships rather than on marital status. Older persons living alone (household category A) constitute a group that is naturally of social and policy concern, as they are more likely than others to be poor, even in developed economies (Casey and Yamada 2002). In addition to these one-person households, couple households (category B) also represent an independent style of living, with most private transfers taking place between the spouses. In skipped-generation households (category C), the support flow within the household usually goes downward from grandparent to grandchild. Category D is by far the largest group, consisting of both nuclear and extended families, by conventional definition. For those households with at least one young member (category D1), the direction of support may go from the working-age adult to the young dependent and possibly also to elderly parents, whereas for those households with no young members (category D2), the support flow within the family is expected to go upward.

Table 28.2 summarizes the distribution of these five types of household in Taiwan in 1998. Among those elderly living by themselves, 57.2% were male, a much higher percentage than the average ratio for the total population (50.5% according to the FIES 1998). This is probably because many of these elderly males were mainlander soldiers who had come to Taiwan around 1949 with the Nationalist Party government. It may also explain why only 5.9% of elders living in type A households were farmers, whereas a larger portion (19.8%) lived in rural areas than the average of 16.0% for the elderly and 12.5% for the total population. The elderly-couple households also had a greater tendency to live in rural areas (22.3%). As for educational level, elders living alone, with a spouse, or with grandchildren tended to have fewer years of schooling than other elders. Among those elder subgroups, 79.5% of those living alone, 72.4% of those living with a spouse, and 61.5% of those living with grandchildren had only an elementary education or no schooling at all, whereas the average ratio for all elders with only elementary or no schooling was 52.3%. (It was 41.7% for the total population.) Among elders living with only their adult children (type D2), 19.7% had a university degree, whereas the average ratio for the elderly was 12.9% (22.5% for the total adult population).

Table 28.2 Household types: Taiwan, 1998

Type	Percentage of households	Percentage of total population	Percentage of elderly households <sup>a</sup>	Percentage of elderly population <sup>b</sup>	Elderly heads among all elders (%) <sup>c</sup>
	(1)	(2)	(3)	(4)	(5)
(A) Alone	9.63	2.37	3.64	11.29	100.00
(B) Couple	10.96	5.17	9.79	24.83	57.12
(C) Skipped generation	0.90	0.67	1.79	2.18	49.59
(D) Living with children	77.59	91.12	84.35	61.00	8.41
(D1) Young children	(57.80)	(72.50)	(59.25)	(34.55)	(4.92)
(D2) Adult children only	(19.80)	(18.62)	(24.79)	(26.44)	(12.98)
(E) Other	0.92	0.67	0.43	0.71	57.69
Subtotal	100	100	100	100	
Total no.	6,273,056	21,887,030	5,597,613	1,803,191	203,537

*Notes:*

- The third column shows the relative population size of the elderly households, defined as households with at least one elderly member. Younger households are not listed here.
- Column (4) reports the relative size of the elderly population by household type. The differences between columns (2) and (4) indicate that more elderly were living independently (type A and type B), or with grandchildren (type C) than the average, and that fewer than average were living with young family members (type D1).
- The final column shows the percentage of elders who were the economic head of the household. The head, being defined as the main breadwinner of the family, was likely to be a net provider of resources to other family members. The low ratios of elderly heads in D1 and D2 households suggest that the elderly were likely to be net receivers of intra-household transfers if they were not household heads.

*Sources:* Total population is directly from the Council of Economic Planning and Development; the percentage shares are calculated from the FIES, 1998.

## FINANCING ELDERERS' CONSUMPTION

As shown in Figure 28.1, the per capita labor earnings curve exhibits the characteristic inverted U-shape, with most earnings coming from employee compensation (light hatched area) and only 7.2% coming from self-employment (dark area). Total per capita labor income peaks at

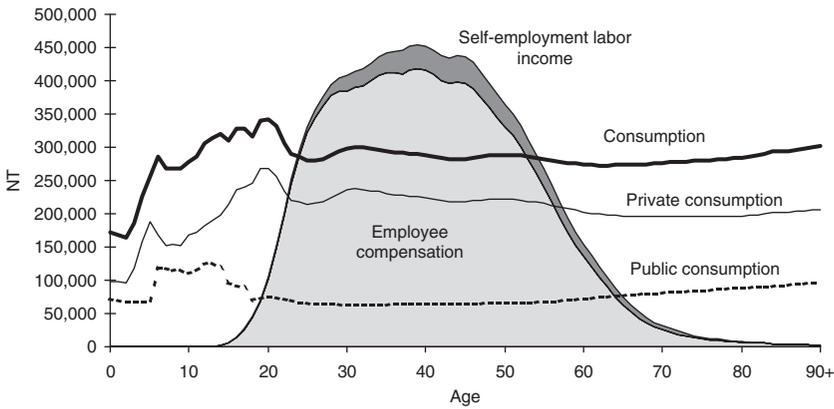


Figure 28.1 Mean consumption and labor income: Taiwan, 1998

age 39 and becomes very low after age 65, the official retirement age in the public sector. For those between ages 25 and 54, mean labor income exceeds total consumption.

The age pattern of consumption (thick line) has a much more dampened shape. Private consumption (thin line) represents 73.2% of total consumption, and public consumption (broken line) accounts for the other 26.8%. Total consumption, which is affected by high education expenses at younger ages, peaks at age 20. The consumption age profile rises at older ages because of rising health care consumption, both private and public.

The level of consumption is a good indicator of welfare level, although it does not translate directly into welfare level because of scale economies within the household and the nature of certain kinds of consumption, such as health care. Figure 28.2 compares the average consumption of elders by household type, omitting type E, which had too few observations to be of significance. The elderly living with grandchildren but without adult children (type C) are seen to have fared the worst, as such elders usually have to support their grandchildren. Those elders living in households with young members (type D1) also had a low consumption level because some of the resources of the family, either from working-age adults or the elderly, were going to the young dependents. The consumption level of the elderly living with only a spouse (type B) was higher, and it was even higher for those living with adult children (type D2). What is somewhat surprising is that the solitary-living group (type A) had the highest level of consumption, in contrast to conventional wisdom (UN Population Division 2005). We examine this phenomenon next.

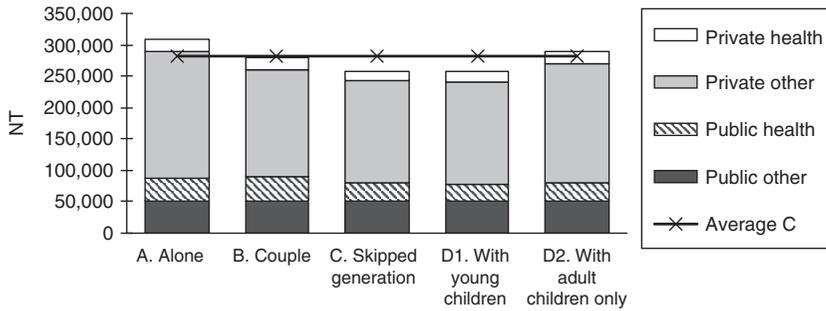
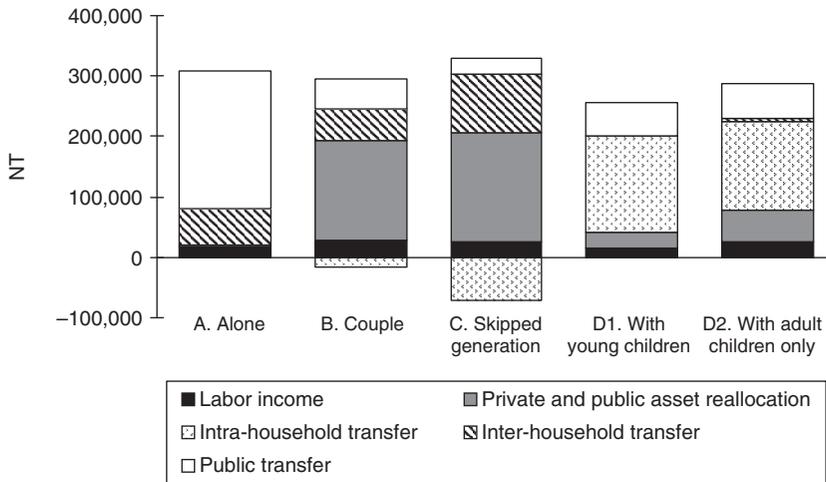


Figure 28.2 Mean consumption level of the elderly by household type: Taiwan, 1998



Note: Public asset reallocation is trivial, and here is combined with private asset reallocation for completeness.

Figure 28.3 Financing elderly consumption under usual NTA assumptions: Taiwan, 1998

Figure 28.3 illustrates six income sources used to finance elderly consumption. All sources are in net terms. We divided private transfers into inter- and intra-household transfers. Private asset reallocation is composed of net private asset income and dissaving. We found that, on average, elders in all five categories were still saving, although their net asset reallocation was small for household types A, D1, and D2. Public

asset reallocation was insignificant, and therefore we combined it with private asset reallocation in the figure.

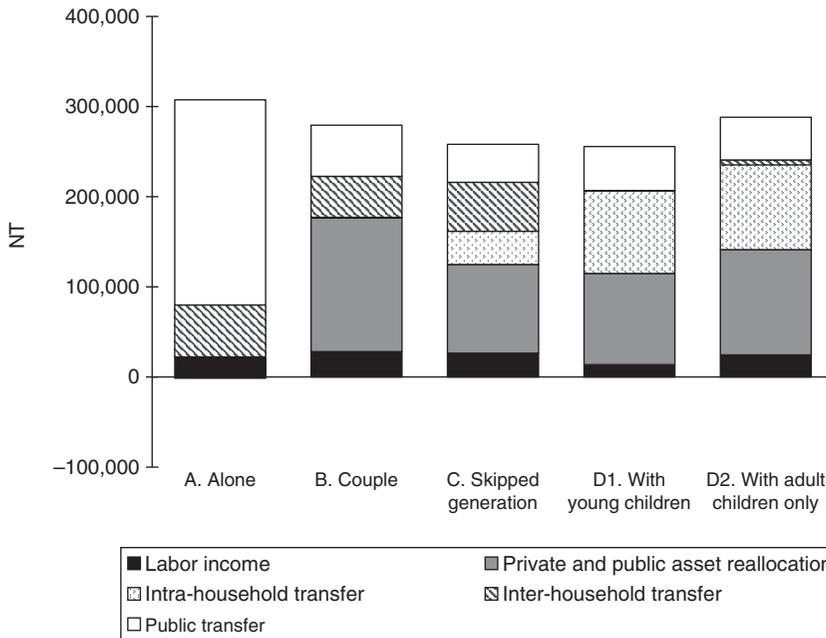
Several interesting points stand out. For elders living alone (type A), public transfer was by far the most important source for financing consumption, and they received far more social assistance than elders in other living arrangements. A likely explanation is that some kinds of welfare assistance, in particular the assistance for low-income elderly, are based on the level of household income and are therefore more favorable to those who live alone. For those living with a spouse (household type B) or only with grandchildren (type C), private asset income (net of savings) was the major source. Although this result may suggest that these elders owned more assets, it could as well be a statistical artifact. Specifically, elders in types D1 and D2 were less likely to be household heads than were those in type B or C, while household assets were owned by household heads under the usual NTA assumption.

Net inter-household transfers were positive in household types A, B, and C, and a substantial portion of them is likely to have come from family members living separately (Tung et al. 2006). But for elders living with children, the amount of inter-household transfers was negligible.

Intra-household transfers were negative for elders in household type B but positive and large in types D1 and D2. In the skipped-generation elderly households, about 50% of the elderly population were economic heads of household (Table 28.2), another 20% were their spouses, and only 30% were dependents. That means most grandparents in this category had to support their grandchildren through intra-household transfers. It follows that their consumption level was the lowest among all elderly. By contrast, intra-household transfers were the dominant income source for those elders who were residing with children, as only a small portion of them (8.4%) were the economic heads.

In sum, our findings indicate that the major source of income to support elderly consumption in Taiwan is intra-household transfers for those elders living with their children, who accounted for 61.0% of all elderly in 1998. Those with no children living in the same household and living with spouses or grandchildren (27.0% of the elderly population in 1998) must resort to their own asset income or dissavings. The elders living alone (11.3% of the elder population) have few personal resources and receive modest inter-household transfers. Government transfers are their major source of income.

The composition of sources to finance consumption depends on the preferences and constraints of the elderly in each living arrangement. The underlying causal relation is beyond the scope of this study, but some of the differences may be related to assumptions about transfers between



Note: Public asset reallocation is trivial, and here is combined with private asset reallocation for completeness

Figure 28.4 Financing elderly consumption under alternative assumptions: Taiwan, 1998

households and asset ownership within households. In the basic NTA methodology, it is assumed that only the household head owns (private) assets, and the head also receives all inter-household transfer flows. As a sensitivity test, we make an alternative assumption: that all household members had equal shares in asset ownership and inter-household transfers.

The disparity between the new results, as illustrated in Figure 28.4, and the original ones is not very large. We see no difference for the older population living alone and little difference for the couple households, because in most cases the spouses were also elders. For elders in the skipped-generation households, private asset reallocation became smaller but was still the major income source. Yet these elders were no longer the net providers of resources to other family members, but rather net receivers, shifting the burden to working-age grandchildren in the household, if any. Finally, for elders living in household types D1 and D2, the importance

of private asset reallocation increased considerably; nevertheless, intra-household transfers remained an importance source.

The true situation may lie either between, or outside, these two sets of assumptions. For example, if most of the household assets come with the elders when they join a type D2 household (in their old age), then both assumptions may understate the role of private assets in funding consumption by the elderly. In any case, the type of living arrangement does seem to be relevant to the composition of income sources.

## CONCLUDING REMARKS

We found that most Taiwanese elders resided with their children in 1998, and they relied primarily upon intra-familial transfers. Elders who lived with only a spouse or grandchildren relied on their own resources, mainly asset income net of savings. Elders living alone relied mostly on government support. Although the results seem to follow naturally from the structure of the household, several points deserve further thought.

First, given that family nuclearization is continuing and population aging is accelerating, the government will have to assume more responsibility for supporting the elderly. The elderly themselves may also need to save more during their working ages or to delay retirement so as to finance their own consumption in old age.

Second, the issue is complicated by the potential substitutability among financing sources. For example, it is likely that an increase in inter-household resource flows compensates for the decrease in intra-household transfers when adult children continue to send money to their parents after forming their own households (Tung et al. 2006). And when national income increases in Taiwan and the government plays a larger role in supporting the elderly, as is often observed in richer countries, it is plausible that public transfers may crowd out either private transfers (Lai 2006; Lai and Orsuwan 2009) or personal savings (Hu et al. 2000). Moreover, public provision of health care or other services may reduce private consumption of such items (Hsieh 2008).

An even more intriguing question is whether the differences observed in the funding of consumption are a result or a determinant of living arrangements. That is, do Taiwanese elders live alone because they have large public transfers, or do they receive large public transfers because they live alone? Do elders living with children rely on intra-familial transfers because they themselves do not have enough assets to spend? Is there some selectivity into other household types? These are issues inviting future investigation.

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