Like most Western countries, population aging is under way in Taiwan primarily due to low fertility and a prolonged life span. The elderly had reached 7% of total population in 1993, and 10.2% at the end of 2007. The proportion of the elderly in Taiwan is not significant in contrast with the developed countries. However, its rate of increase is projected to be one of the fastest in the world. Near 40 percent of the population will be over age 65 in Taiwan in 2050.

Well-being of the elderly includes a lot of related dimensions such as health, care, economy, and family relationship (Herr & Weber, 1999; Wang, 2001, 2006). A lot of significant factors were associated with well-being of the elderly including marriage, living area, living arrangement, health, exercise, leisure activities, and nutrition (Hsieh, 2004; Chao et al., 2004; Lai & Chu, 2002; Wang, 2006). This study mainly focused on the relationship between living arrangement and well-being of the elderly in Taiwan.

This paper is divided into three parts. First, we will show an overview of the changes in population structure and the projection of aging in Taiwan. Second, we will analyze the change in family structure over the recent two decades by using Survey of Family Income and Expenditure (SFIE) data and indicating the living arrangements and well-being of the elderly in Taiwan. Finally, a few social policies responsive to the challenges of population aging are discussed.
1. Changes in population structure

During the Japanese colonial period (1895-1945), the improvement of sanitation measures and controlling epidemic diseases helped to reduce infant mortality rates in Taiwan. Since 1950, Taiwan also witnessed a post-war baby boom in which around 400 thousand babies appeared each year between 1950 and 1967. The total fertility rates (TFRs) peaked at 7 per woman in 1952 and declined since then, although it still remained at least 4 before 1970. The number of births significantly declined in the years between 1967 and 1975 but return to a new peak in 1976, the Year of the Dragon, and again remained at around 400 thousand babies born in the following five years.

Although migration is one of the major factors that determine the population of a society, it had a minor effect in Taiwan in the last five decades. The most important factor was therefore the birth rates, while the death rates did not change much in this period. For instance, the crude death rates (CDRs) declined from 7‰ in the early 1950s to less than 5‰ in the late 70s, when the youth was accounted for an ever large part of the population. The CDRs slightly increased since 1980, basically due to the increasing number of the aged and their deaths. As we can see from Figure 1, the CDRs remained quite stable throughout the latter part of the 20th century, while the crude birth rates (CBRs) declined rapidly from near 40‰ in 1960 to less than 9‰ in 2007.

Although the trend of decreasing birth rates appeared early, starting in the 1950s, it was primarily the launching of family programs by the government, the diffusion of contraception in particular, along with urbanization which contributed to the reduction in fertility in the late 60s and the following two decades. In 1984, the TFR reached 2.1 (the population replacement level), marking an important turning
point in the demographic transition of Taiwan. The TFRs continued to fall until the year 2000, another Dragon Year, when the TFR ascended to 1.7. It however dropped again in the new century and reached 1.1 in 2007, only 203 thousand babies born, about a half of the births 30 years ago. In contrast with the overall global average of the TFRs, which is 2.7, and with that of the more developed countries, which is 1.6, Taiwan is at the lowest level in the world.

Taiwan became an aging society since 1993 when the percentage of the population aged 65 and over reached 7%. The figure was 10.2% in 2007, lower than the average of the developed regions. However, due to the very low fertility rates in recent years and the aging of the baby boomers in the near future, the proportion of the elderly population will rapidly increase. It will reach 20% in 2025, 30% in 2040 and 38% in 2056, according to the middle projection by the Council for Economic Planning and Development (CEPD) (2008) (see Fig. 2). In other words, the aging rates will grow faster in Taiwan than in most of the developed regions in the future.

Fig. 1: Population Changes and Projection in Taiwan: 1961-2056
(see Figure 3). For instance, it will take only 25 years for the aged portion of the Taiwan population to rise from 7% to 14%, second only to Japan in terms of the shortest time span (see Fig. 3).

Fig. 2: Projection of Future Population Age Structure in Taiwan
Fig. 3: Number of Years for Percent of Population Age 65 & Over to Rise from 7% to 14% in Several Countries

Under the trend of population aging, the dependency of the elderly will be more substantial than that of the youth. Table 1 shows that the dependency ratio for the aged population was 13.85% in 2006, and will rise to an estimated 36.38% in 2030 and 66.25% in 2050, while the dependency ratio for the youth will decline from 25.28% in 2006 to 14.17% in 2050, and the total dependency ratio will increase from 39.13% to 80.42%, respectively (see Table 1). Taken the labor participation rates and employment rates into account, the burden for a working age (15-64 years old) person then will ascend to 4.8 times that in 2006. The aging index of the population in 2007 was 53.2% and will reach 100% in 2016, surprisingly, more than 450% in 2050, that is, the elderly population will be at least 4.5 times as large as that of the young (under age 15) population. As a result, the burden of supporting elderly people will become unbearable for most families in Taiwan, and productivity may be likely to fall in the future.
Table 1: Percent Distribution of Population by Age and Dependency Ratio in Taiwan, 2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Total population (million persons)</th>
<th>Age Structure (%)</th>
<th>Dependency Ratio</th>
<th>Young Age Population Ratio (%)</th>
<th>Old Age Population Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0-14 years</td>
<td>15-64 years</td>
<td>65 years and over</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>22.9</td>
<td>18.17</td>
<td>71.88</td>
<td>9.95</td>
<td>39.13</td>
</tr>
<tr>
<td>2018</td>
<td>23.3</td>
<td>12.50</td>
<td>73.14</td>
<td>14.36</td>
<td>36.73</td>
</tr>
<tr>
<td>2030</td>
<td>22.8</td>
<td>10.59</td>
<td>65.56</td>
<td>23.85</td>
<td>52.54</td>
</tr>
<tr>
<td>2050</td>
<td>18.9</td>
<td>7.85</td>
<td>55.43</td>
<td>36.72</td>
<td>80.42</td>
</tr>
</tbody>
</table>

Source:

To conclude, like most of the developed countries, Taiwan in the 20th century also showed the decline in mortality that preceded the decline in fertility. Although less chances of child mortality may cause parents to reduce the number of unnecessary births intended to replace children who might die young, the rising cost of child-bearing and rural-urban migration for work meant fewer children could be afforded and fewer children were needed, respectively. The adoption of family programs along with socioeconomic development undoubtedly caused a significant decline of fertility, particularly in the last four decades in Taiwan.

II. Changes in family structure and living arrangement, and the impact on the well-being of the elderly

A decline in family size and the increase in nuclear families were the major indicators of changes in family structure in Taiwan over the last 50 years. With the
increase in total population and the decline in the household size, the numbers of total households rose rapidly in these years. The average family size is 3.2 people and the total family households reached to 7.5 million. In addition, households with the aged cohabiting also increased significantly. In 1990, around 20% of the overall households had elderly members cohabiting, and it increased to one third of the overall households in 2007 (see Fig. 4).

![Fig. 4: Proportion of the households with the cohabitant aged](image)

The changes in family structure indicated not only a greater proportion of households with aged members, but fewer chances for the elderly to live with their adult children. Table 2 shows the living arrangements of the elderly from the recent three waves of the Survey of Living Conditions of the Elderly in Taiwan. As we can see, the proportion of the elderly who are living alone and living only with a spouse has been rising, while the proportion living with adult children has been falling in recent years. It is worth noting, however, that still more than 60 percent of the elderly are living with their children, which is relatively high compared with most of the developed countries. As of the overall households, the proportion of lone elderly
household roughly remained at 4%, interestingly, the proportion of the aged couple (the aged household head living with a spouse only) household increased from 8% to 11% in the last two decades (see Figure 5).

Table 2: Living Arrangement of the Elderly in Taiwan

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2002</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Live alone</td>
<td>9.2</td>
<td>8.5</td>
<td>13.7</td>
</tr>
<tr>
<td>Live only with spouse/partner</td>
<td>15.1</td>
<td>19.5</td>
<td>22.2</td>
</tr>
<tr>
<td>Live with children</td>
<td>67.8</td>
<td>63.4</td>
<td>61.0</td>
</tr>
<tr>
<td>Others</td>
<td>5.6</td>
<td>7.5</td>
<td>3.1</td>
</tr>
</tbody>
</table>


Fig. 5: Percentages of Households with the aged living alone and living only with a spouse

Due to the changes in family structure along with the trend of population aging, welfare policy on senior citizens has been enhanced by the government in recent years. Whether the rising number of elderly people living separately from their children may
deteriorate their economic security is a crucial theme to be considered for social policies. Table 2 reported the sources of major living expense for the elderly in Taiwan and showed that the proportion of the traditional major living expense source for the elderly, that is, payment provided by children or children-in-law, was falling in recent years, while the proportion of assistance or allowance by the government was increasing over time.

### Table 3: Source of Major Living Expense for the Elderly People in Taiwan (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Working salary (including spouse)</th>
<th>Retirement pay, insurance payment</th>
<th>Savings, interest, rent, investment earnings</th>
<th>Payment provided by children (including children-in-law)</th>
<th>Assistance by society, relatives, or friends</th>
<th>Assistance or allowance by government</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>10.95</td>
<td>11.87</td>
<td>16.11</td>
<td>58.37</td>
<td>0.86</td>
<td>1.23</td>
</tr>
<tr>
<td>1991</td>
<td>10.78</td>
<td>16.07</td>
<td>17.41</td>
<td>52.37</td>
<td>1.09</td>
<td>1.57</td>
</tr>
<tr>
<td>1993</td>
<td>10.85</td>
<td>14.76</td>
<td>19.18</td>
<td>52.3</td>
<td>0.86</td>
<td>1.61</td>
</tr>
<tr>
<td>1996</td>
<td>11.64</td>
<td>17.55</td>
<td>15.21</td>
<td>48.28</td>
<td>0.4</td>
<td>6.37</td>
</tr>
<tr>
<td>2000</td>
<td>13.72</td>
<td>15.93</td>
<td>9.26</td>
<td>47.13</td>
<td>0.53</td>
<td>12.33</td>
</tr>
<tr>
<td>2002</td>
<td>13.4</td>
<td>16.48</td>
<td>10.28</td>
<td>44.11</td>
<td>0.31</td>
<td>14.81</td>
</tr>
<tr>
<td>2005</td>
<td>14.49</td>
<td>13.04</td>
<td>9.22</td>
<td>46.48</td>
<td>0.46</td>
<td>15.97</td>
</tr>
</tbody>
</table>


This implies that the government has played an increasingly important role for protecting the economic security of the elderly. Unfortunately, government transfers seem to have helped not effectively in terms of economic security of the elderly. To examine this issue, we employed data from the Survey of Family Income and Expenditure (SFIE), 1991-2007 waves, to estimate the poverty rates of households with vs. without coresident elderly. The poverty line was defined in this paper as
below half the median of family disposable income. Figure 6 described the trend in poverty rates between 1990 and 2007 for households with and without coresiding elderly. As we can see, the poverty rates of the former remained significantly higher than those of the latter. The gap was shrinking before 1998 but grew again after 2000.

Based on the data in these survey years, the poverty rates of the overall households in Taiwan were between 5% and 7%, which is low compared with developed countries. Likewise, the poverty rates of households with the elderly, although increased in recent years, remained below 10% in most years. Considering that the poverty rates of the elderly households have shown no sign of declining in recent years, we would suggest that the transfers from the government could work better if accompanied by more attractive policies and measures\(^1\) of encouraging the coresidence of the elderly with their adult children in order to improve the economic situation of the elderly in Taiwan.

\(^{(\%)}\)

\(^1\) In Taiwan, Article 17 of Income Tax Act regulated that tax-free amount of supporting parents can be added if taxpayer’s parents aged 65-69. In addition, the preceding amount can increase 50% more if his/her parents aged 70 and over. However, this Article does not regulate that the taxpayer has to live with his/her parents and also provide documents to prove the supporting fact. That is to say, this Article does not encourage people to live with their parents. Besides, the same Act also regulated that tax deduction amount of rent can be NT$120,000 per year at most if taxpayer lives with and supports his/her parents.
On the other hand, the demand for health care for the elderly also keeps rising. For example, the percent of National Health Insurance (NHI) beneficiaries who were elderly was 8.2 in 1995 and rose to 9.8 in 2005, when the share of their medical expenditures accounted for 18.73% of the total. The SFIE data also shows that the amount and the proportion of the medical and health expenditure over household total expenditure increased overtime. Most importantly, the difference between households with aged members and those without aged members was significant. Around 15% of total expenditure was on medical and health for households with aged members, in contrast with only 3.2% for those with no aged family members (see Figure 7). It can be therefore estimated not only that total medical expenditures will keep escalating due to the population aging, but that the differential expenditure will remained significantly different in amount and share between family with and without the aged.

Fig. 6: Poverty Rates of Households with the Aged and the Non-aged in Comparison
Because of the change in living arrangement and family structure, the function of care and support in the family is also deteriorating. For example, 2005 Survey for the Living Conditions of Elderly People indicated that the major caregivers of the elderly with difficulties to do some daily activities\(^2\) were son (13.39%) and spouse/partner (13.20%). However, formal caregivers also occupied 26.06% [foreign carer: 12.40%, native carer: 5.14%, agency serviceperson (including volunteer): 7.63%, and home serviceperson (including volunteer): 0.89%]. As a result, government is asked to take more responsibility for taking care of the elderly by delivering services and providing cash allowances and subsidies. Figure 7 also shows the comparisons for the household with and without aged members in trend of transfer from the government in terms of the proportion over total family income. It is obviously that households with aged members get more transfer than that of the counter part. In 2007, the proportion for the former was 20.1% and 12.5% for the

\(^2\) Based on 2005 Survey for the Living Conditions of Elderly People, 12.67% of the total elderly were difficulty to do some daily activities, sequentially including walking upstairs and downstairs (82.90%), bathing (45.99%), walking on the ground (37.96%), going to bed/getting up/moving seat (37.94%), taking on/off clothes (37.26%), and so on.
latter. However, comparing the gap of government transfer with that of medical expenditure, we might conclude with “ineffective” of the former and explain why there was on-going relatively high rate of poverty for the households with the aged, even at the years of increasing government transfers.

III. Conclusions: How to promote the well-being of the elderly

Population aging is becoming a universal trend. Like most developed countries, the demand for economic security for the elderly in Taiwan keeps rising while the family’s function of economic security protection keeps falling. It seems to be an irreversible worldwide phenomenon that urges the government to reconsider or to adjust her social policies. As we have discussed in the previously sections, policies of encouraging adult citizens to coresiding with their elder parents may keep family care mechanism to work to some extent, that may reduce unnecessary expanding of institutional care system (such as public senior home) and unnecessary medical expenditure (such as hospital shopping for kill lonely time). Particularly there is very high rate (nearly 90%) of own-house in Taiwan so that a large portion of the elderly owns their own home. This also facilitates the policy of “aging in place” where neighborhood and community care are emphasized.

Due to high population density, Taiwan had been facing five decades of fertility declining, even though, the government was reluctant to encourage the increase in fertility, but emphasized the quality of the population instead. It was not until the 2008 presidential election that a clear prenatal policy appeared in Ma’s campaigns, including measures assisting young couples by providing two-years of childcare leave with payment for raising infants, two-year free interest loans to assist young couples to own their home, increasing tax incentives for parents to raise children, tax
deduction of children’s educational costs, birth allowance, and so on. In short, the new government is attempting to create circumstances in which it is easier for young people to marry and raise children. These measures themselves may not be successful in increasing fertility rates in the near future, but intend to stop decreasing the rates.

In contrast, the government has paid much more attention to promote the well-being of the elderly. Partly due to the political consideration for winning elections, some local governments in Taiwan had launched a program, named senior citizen allowance, in the early 1990s, even before Taiwan reached the aging threshold. Besides, the government did some economic security measures of the elderly instead of encouraging elderly to be employed, such as senior citizen allowance ($NT3,000/month$), Living Allowance for Mid- or Low-Income Senior Citizens ($NT3,000/month or $NT6,000/month), Living Assistance for Disabled Mid- or Low-Income Senior Citizens ($NT4,000/month or $NT7,000/month), Veteran's Living Assistance ($NT13,550/month), Old-age Farmers' Welfare Allowance ($NT6,000/month), Old-age Citizens' Welfare Living Allowance ($NT3,000/month), and Old-age Indigenes' Welfare Living Allowance ($NT3,000/month).

In addition, the basic economic security protection for the elderly comes from the occupation-oriented social insurances such as Labor Insurance, Official and Teacher Insurance, Soldier Insurance etc. The biggest occupation-oriented social insurance is Labor Insurance whose beneficiaries are over 8 million (occupying over 80% of total workers in Taiwan). On July 2008, Labor Insurance Regulation was revised and regulated that the retirement benefit of Labor Insurance will change into pension instead of current lump-sum payment since Jan.1 2009. Meanwhile, after preparing for a decade, the National Pension finally launched from Oct.1 of this year.

$^3$ The amounts in the parentheses were regulated by the central government. However, due to the different financial situations in local governments, the real amounts in each city or county may be different.
Besides the revision and pass of law in social insurance for protecting and promoting economic security for the elderly, Labor Retirement Pay Regulation was enacted on July 2005 and regulated that the employer has to pay not less than 6% of the salary of his/her employee into the employee’s personal portable retirement pay account\(^4\). This Act can benefit over 5 million workers (occupying over a half of total workers in Taiwan) who are protected by Labor Fundamental Act.

Regardless of this controversial practice at that time, the government began to provide some programs to protect the health of the elderly, such as National Health Insurance Premium Subsidies to Senior Citizens, Nursing Care Assistance for Mid- or Low-Income Senior Citizens in Hospital, Dental Assistance for Senior Citizens, Auxiliary Assistance for Senior Citizens, Elderly Free Health Checks, etc. Among these programs, the National Health Insurance, launched in 1995, was more beneficial in particular with respect to the health and the medical expenditure of families with the aged. No less important, the government will also spend over NT$8 million totally by implementing the 10-year long-term care plan which started from October 1, 2007.

The measures of this 10-year long-term care plan mainly included care services (including home care service, day care, temporary care; with assistance of service hours based on the level of disability), home health nurse (with assistance of 2 home visits at most per month based on the demand), rehabilitation at home/in community (with assistance of 1 visit at most per week based on the demand), purchase/rent of auxiliary equipment and barrier-free environment at home (with assistance of NT$100,000 at most within 10 years based on the demand), meal (delivery) service [with assistance of 1 meal at most per day for (middle) low income elderly with

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\(^4\) Before the enactment of Labor Retirement Pay Regulation, only Labor Fundamental Act regulated that an employee can get his/her retirement pay from his/her employer if he/she keeps working in the same company over 15 years and aging over 55, or does just over 25 years. Because the conditions are very difficult to reach, the proportion of the workers getting retirement pay is only 4.35% before July 2005.
disabilities, and elderly living alone and with mild disabilities], (home/agency) respite care (with assistance of service days based on the level of disability), transportation service (with assistance of 4 round trips at most per month based on the demand), and long term care agency service (with assistance of NT$18,600 at most per month for middle low income elderly with disabilities). The numbers of beneficiaries by projection will be 270,325 in 2010 and 398,130 (an increase of 47.3%) in 2020 (Ministry of Interior, 2007).

Finally, some other programs have carried out for the assistance of social activities for the elderly to increase their well-being in recent years, such as Evergreen School for Senior Citizens, Community Care for the Elderly, Free Transportation for the Elderly, and so on. There are also some care assistance programs including Special Family Care Allowance for Mid- or Low-Income Senior Citizens, Elderly In-Home Service, Elderly Day Care Service, Nutritional Meal Service for Mid- or Low-Income Senior Citizens, Elderly Protection Services (such as Living Alone On-line Emergency Calls, and Neighborhood Meal Services).

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