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Poverty of Children and Older Adults: Taiwan's Case in an International Perspective

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ABSTRACT

Using 1999-2001 Luxembourg Income Study data, we examine cross-national patterns of age-specific poverty rates. Relative to 12 Western countries, Taiwan has a moderate child poverty rate but a much higher elderly poverty rate, leading to the largest elder-child poverty gap. We show that Taiwan significantly differs from the other countries in three factors -- social welfare efficiency, market income inequality, and household composition -- and document poverty differences across household type. Relative to other countries, Taiwan has a low rate of single-parent headed households, a high rate of older adults who live with family members, and fairly inefficient social welfare. Standardization and decomposition analyses systematically test effects of these factors across countries. Results indicate that Taiwan's low welfare efficiency makes the largest contribution to both child and elder poverty rates, but has a much more negative effect on elderly poverty. Older adults' higher rates of co-residence with family members has a strong ameliorating impact on elderly poverty. Implications in light of recent demographic and economic trends in Taiwan and similar East Asian countries are discussed.

Poverty of Children and Older Adults:

Taiwan's Case in an International Perspective

INTRODUCTION

Poverty risk is not uniform across age groups, and the pattern of poverty rates across age groups is not uniform across countries. The causes of overall poverty may be better understood by examining differences in age-specific poverty rates across countries. Taiwan, for example, presents a distinct pattern of poverty among age groups compared to Western countries. According to the study of Bradbury and Jantti (2001), in the mid-1990s, children were more likely to be poor than older adults in 22 Western countries. By contrast, in Taiwan older adults and households headed by older adults were the poorest group (Chen 1996; Ho, Wang, and Leu 2003). By the beginning of the 21st century, according to the poverty figures of the Luxembourg Income Study (LIS) and a study by Förster and d'Ercole (2005), the poverty rate for older adults had increased, with older adults tending to be poorer than children in many Western countries. In the same time period, Taiwan's poverty gap between older adults and children was 17 percentage points, still larger than the gap for 23 Western countries in the LIS.

Poverty results from both structural and individualistic factors. Three major structural factors affecting individual and aggregate poverty include the distribution of

household composition, the labor market, and the social welfare system (Esping-Andersen 1999). In the present study we aim to explore how these structural factors lead to Taiwan's large elderly-child poverty gap, using an international perspective. Twelve Western OECD countries are selected for comparison in the analysis. After reviewing previous studies on the connections between poverty and the market, welfare, and the distribution of household composition, we examine how and why the different development of these three structural factors has led to a different pattern of elderly-child poverty gap in Taiwan.

Taiwan's poverty pattern has important implications far beyond the island itself. Some scholars contend that Taiwan and other East Asian countries such as South Korea and Singapore form a specific type of capitalist welfare regime. These states share some characteristics in the development of the labor market, the distribution of household structure, and social welfare, such as relatively full employment, the dominance of economic development over the development of other institutions, and the subordination of social welfare to economic goals. They also consider family as the major resource for individual welfare and share generational co-residence as a common mode of living arrangement under the influence of Confucianism (Holiday and Wilding 2003; Tang 2000; Walker and Wong 2005; White and Goodman 1998). In addition, in Taiwan, South Korea, Hong Kong, and Singapore, older adults tend to have high

poverty risk (Choi 1996; Hong Kong Council of Social Science 2004; Lee 1998; OECD 2007; Ramesh 1992). Taiwan is the only East Asian country included in the present study, as Taiwan is currently the only East Asian country in the LIS dataset. However, Taiwan's case can be employed as an exemplary East Asian country in comparison with the poverty pattern in Western countries. Through studying Taiwan and Western OECD countries, we may better understand the underlying process of poverty gaps among age groups and thus refine theories and make better predictions for what might result from demographic, economic, and policy changes in the future.

MARKET AND POVERTY: TAIWAN VERSUS WESTERN COUNTRIES

Poverty is closely related to unemployment, under-employment, and low pay. Children living with unemployed and low-paid parents tend to be poor (Meyers and Lee 2003; Smeeding 2002). From the mid-1970s to the 1990s in the Western countries, many jobs were lost due to industrial restructuring (Esping-Andersen 1999; OECD 1999). In 1995, the unemployment rates of eight Western OECD countries were higher than 10%. For instance, the unemployment rates of Finland and Spain were 15% and 22% respectively, the highest among the OECD countries (OECD 2002). Since the late 1990s, the unemployment rates across OECD countries have generally reduced. However, earnings gaps and wage dispersion[1] have increased over the past decade as

[1] Wage dispersion is measured by the D9/D1 ratio, or the ratio of gross wage rates

employment in highly-paid industries and occupations increased most rapidly. For instance, the wage dispersion increased in the US, Australia, New Zealand, Korea, Italy, and particularly in Poland and Hungary. Countries that now have relatively high wage dispersion include the US, Canada, Ireland, and former socialist countries such as Poland and Hungary. After the collapse of socialism and the introduction of a market economy, unemployment increased rapidly in former socialist countries (Boeri and Keese 1992; Cerami 2003; OECD 2002). The larger wage dispersion also corresponds to higher percentages of low-pay workers[2] in countries such as Poland, Hungary, Canada, the US, and Korea (OECD 2003).

Some scholars contend that the low overall poverty rate in Taiwan results partially from characteristics of its labor market, including full employment and compressed earnings (Esping-Andersen 1999; Pempel 1989; Tsai and Ma 1998). Taiwan is among the countries with the lowest unemployment rates. For instance, in 2000, Taiwan's overall unemployment rate was 3%, lowest among the 13 countries in this study (Directorate-General of Budget Accounting and Statistics 2007). Earnings are compressed in Taiwan when compared to Western countries. During the 1990s,

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between the top deciles (90%) and the bottom deciles (10%) (OECD 2003).

[2] Low pay is defined as full-time workers receiving less than two-thirds of median gross earnings (OECD 2003).

Taiwan's Gini coefficient[3] of inequality based on earnings was around 0.3, while the Gini coefficients based on market income in 12 Western OECD countries were between 0.4 and 0.5 (Bourguignon, Fournier, and Gurgand 2001; Oxley et al. 1997).

WELFARE AND POVERTY: TAIWAN VERSUS WESTERN COUNTRIES

In addition to the labor market, a country's social welfare regime is another important resource for individual and household economic well-being. Previous studies found a negative connection between social spending and child poverty, elderly poverty, or overall poverty across countries (Brady 2004, 2005; Cantillon and Bosch 2002; Kenworthy 1999; Moller et al. 2003). In general, countries with larger social spending have lower poverty rates.

Poverty risks of age groups are also related to social policies and welfare regimes. Countries with more comprehensive social welfare policies tend to have lower poverty rates across age groups (Esping-Andersen 1990, 1999; Korpi and Palme 1998). Esping-Anderson (1990, 1999) has identified three regimes among capitalist countries. Countries with *liberal* regimes, including the US, UK, Canada, and Australia, develop

[3] Gini coefficients are one the most commonly used indicators to measure income or earnings inequality. The measurement is based on the Lorenz Curve. The value of Gini indexes ranges between 0 and 1 with 0 presenting complete equality (everyone having the same income) and 1 presenting complete inequality (one person having all the income).

market-oriented social policies and target the needy with limited, means-tested transfers. These countries tend to have higher child and elderly poverty rates. By contrast, *social democratic* regime states provide the highest levels of social provisions with the most universal coverage. In addition, social democratic countries are considered as "women-friendly," providing extensive family benefits, paid maternal leave, and child care, to help women reconcile family and work. The social democratic regime states include all Nordic countries, and tend to have the lowest child and elderly poverty rates. The major social programs of *conservative* regimes are related to occupations and status. The male-breadwinner family, with a traditional division of household labor, is supported by welfare policies (Bussenmaker and Kersbergen 1994; Esping-Andersen 1990, 1999; Forssén and Hakovirta 2002; Gustafsson 1994; Leira 2002; Siaroff 1994). The child and elderly poverty rates generally fall between the liberal and social democratic regimes. Germany, France, Italy, Belgium, and Austria are examples of conservative regimes.

In addition to the three capitalist welfare regimes, former socialist countries also provide extended welfare programs. Former socialist countries spend around 20% of GDP on social programs (OECD 2004). In many former socialist countries such as Czech, Hungary, and Poland, the pre-1989 social security programs were mandatory "pay as you go" programs. During the 1990s, these countries restructured their social

programs. Some common reforms in their welfare systems include raising retirement ages, reducing the elements of redistribution in benefit calculation, and making benefits more earnings-related. The new programs entail larger inequality in benefits between genders and social classes (Makkai 1994; Steinhilber 2002). During the 1990s, with worsening economic problems such as the fiscal deficit and the devaluation of national currency, a number of programs were converted to means-tested schemes, including family allowances in Czech, child allowances, maternity benefits, and family allowances in Hungary, and family allowances in Poland (Förster and Tóth 2000).

It is not clear whether Taiwan and other East Asian countries such as South Korea and Japan conform to the Western welfare state models or whether they form a specific welfare regime. Esping-Andersen (1999) considers Taiwan, Japan, and probably South Korea as countries clustered in the conservative welfare regime. He identifies shared traits in their welfare systems, including familialism, statism, and corporatism. Some other scholars identify unique characteristics underlining the East Asian countries' welfare systems, including low social spending, the emphasis on family rather than the state as a source of social support, the subordination of welfare to economic goals, and the development of social policy as a measure to build political support (Holiday and Wilding 2003; Tang 2000; Walker and Wang 2005; White and Goodman 1998).

Taiwan spends much less on social welfare than Western countries. For instance,

the total public social spending of Taiwan amounted to 8% of GNP in 1995, while the Western OECD countries spend 15% or more of their GDP on public social spending (OECD 2004, Yei and Lai 1998). Like Japan or South Korea, Taiwan's welfare programs are insurance-based and highly related to occupational status. Traditionally, the welfare budget is heavily entitled toward soldiers, veterans, and government employees (Aspalter 2002; Tang 2000). As the process of democratization accelerated after 1987, several welfare programs were introduced during the 1990s, including the National Health Insurance Scheme (NHI), unemployment compensation under the Labor Insurance program (LI), the release of the allowances for aged farmers, and allowances for medium- and low-income older adults. In 2000, more than 76% of Taiwanese older adults were covered by one of these welfare programs (Sun 2002). However, these social provisions are quite limited. The amount of the allowances for older adults is around 20% of the average personal income. The lump sum LI retirement payments add up to no more than 45 months of reported lifetime average earnings. Moreover, the majority of employers underreport the wages of employees to reduce employers' contributions: in 1999, for instance, the reported average earnings were only 50-59% of the real average earnings (Wang 2001). The replacement rate of the LI retirement payment is only 15% of the real average earnings (Sun 2002).

The social provisions for children in Taiwan are also quite limited compared to

Western countries. Taiwan did not have child allowances until the second half of year 2000. Social assistance is the major social program to support children in low-income households. However, social assistance is means-tested and only a very low percentage of households -- less than 1% of households in 1997 -- are the beneficiaries of this program (Lin and Wang 2000).

HOUSEHOLD COMPOSITION AND POVERTY: TAIWAN VERSUS WESTERN COUNTRIES

Co-residence is a way to reduce poverty risk of individuals, especially dependent individuals such as children and the elderly, because income, housing costs, and other costs can be shared (Alcock 1996)**.** Family structure and family size are related to poverty risk. In general, across Western countries, households headed by single mothers and single elderly adults are at higher poverty risk than households headed by coupled parents or coupled older adults (Casey and Yamada 2002; McLahanan and Casper 1995; Rainwater and Smeeding 2003; Ritakallio 2001; Smeeding et al. 2005). Co-residence is a strategy for individuals to cope with financial needs in the face of family disruption or economic hardships. Previous studies indicate that after the collapse of socialism, the poverty rates of former socialist countries increased due to rising unemployment and income inequality, inflation, the privatization of housing, and the decrease of social provisions. In these former socialist countries co-residence

became more common as economic conditions deteriorated, costs of housing grew, and female headship increased (Ahmed and Emigh 2005; Lokshin, Harris, and Popkin 2000).

The differences in household composition in Taiwan compared to the Western societies are considered one important factor leading to their different poverty patterns. One major difference is the prevalence of generational co-residence or multi-adult living arrangements in Taiwan (Sun 2002; Weinstein et al. 1994). In many Western countries the majority of older adults live with their spouses only or live alone (Shirahase 2001; Smeeding 1998). Old-age pension programs, including private and public programs, help the elderly live independently from their adult children (Costa 1998; McGarry and Schoeni 2000). On the other hand, the majority of Taiwanese older adults live with their adult children (Sun 2002). In Taiwan, social retirement programs are quite limited in both coverage and income replacement levels. Thus, many older adults live with their adult children as a strategy for coping with financial hardship after retirement. According to a study by Smeeding (1998), in 1991, 14% of Taiwanese older adults living with family members were poor while more than 50% of those living alone or with spouses only were poor. On the other hand, Western older adults who benefit from social transfers can afford an independent life from adult children, and they tend to have poverty rates similar to those for Western older adults living with

other family members.

Another factor is that, according to the LIS key figures, the proportion of children living with single mothers is relatively low in Taiwan compared to the majority of Western countries. The low rate of single motherhood is due both to a relatively low rate of out-of-wedlock births and to a relatively low divorce rate. Combined, this should contribute to a lower child poverty rate, as children with single parents are more likely to be poor than children with coupled parents (Huang 2000; Department of Statistics, Ministry of Interior, Taiwan 2006).

WELFARE, MARKET, AND HOUSEHOLD

The three structural factors discussed here are not independent: in particular, social policy can affect labor market behavior and household arrangements. For instance, family policies affect mothers' labor force participation and the distribution of market income across household types in several ways. Some scholars contend that welfare generosity can increase market income poverty because social transfers reduce work incentives (Atkinson and Mogensen 1993). On the other hand, the lack of family benefits might push single mothers into the labor force. In the U.S., for instance, which offers few family benefits, single mothers tend to have a high employment rate (Forssén and Hakovirta 2002). Likewise in Taiwan, without universal family benefits, earned income accounted for 72% of the total household income of households headed by

single mothers during the early 1990s (Huang 2000). By contrast, social democratic regimes are considered family-friendly, with public policies intended to make it easier for women to reconcile work and family. Both single mothers and mothers with partners in the social democratic countries have a high labor force participation rate (Forssén and Hakovirta 2002). Scholars suggest that mothers' market income is an important contributor to the low child poverty rates in these countries (Bradbury and Jantti 2001; Hobson 1994).

Social policies affect living arrangements as well. As explained earlier, with retirement benefits, Western older adults can afford to live independently, either alone or with their spouses, whereas Taiwanese older adults, with limited social transfers, co-reside with other family members to cope with financial needs.

HYPOTHESES

In sum, Taiwan's child poverty rate is relatively low, whereas Taiwan's elderly poverty rate is the highest among the 13 countries included in the Luxembourg Income Study. Here, we examine how market inequality, social transfers, and the distribution of household composition contribute to Taiwan's large elderly-child poverty gap. Compared to Western countries, the unemployment rate and earnings inequality in Taiwan are lower. In addition, Taiwan devotes much less money to social spending than Western countries, and its social provisions for children and older adults are very

limited. Finally, in Taiwan co-residence is quite prevalent and single parenthood is less common. We employ demographic standardization and decomposition to examine the relative contributions of these three factors to Taiwan's poverty pattern.

Based on the review of previous research, we hypothesize that the lower prevalence of single parenthood and smaller market income inequality help keep Taiwan's child poverty rate low. Conversely, if Taiwan's living arrangements for children and its market income distribution across household types were similar to those of Western countries, Taiwan's child poverty rate would increase.

On the other hand, the limited social transfers lead to Taiwan's high elderly poverty rate, although the prevalence of co-residence helps reduce the poverty risk of Taiwanese older adults. Again, if Taiwan had similar levels of social transfers to those of Western countries, Taiwan's elderly poverty rate would be lower. In addition, if Taiwan had the living arrangements of older adults of Western countries, Taiwan's elderly poverty rate would be even higher.

Finally, based on the fact that Taiwan's elderly poverty rate is still the highest among the selected countries even though co-residence is prevalent and market income inequality is relatively small, we hypothesize that social welfare makes a larger contribution to Taiwan's elderly poverty rate than living arrangements or the distribution of market income inequality across household types.

DATA AND METHODS

The data source of the present study comes from the Luxembourg Income Study (LIS). The LIS database is a collection of household income surveys from 30 countries, which provide demographic, income, and expenditure information. There are five waves of surveys in the LIS database from 1969 to 2002. The present research is based on the datasets of wave 5, release 2 (1999-2001).

In addition to Taiwan, 12 Western countries are selected for comparison. Australia, Canada, Denmark, Finland, Germany, the Netherlands, Norway, Poland, Sweden, Switzerland, the UK, and the US are selected because their income data are relatively consistent with Taiwan's income data. The income variables for Taiwan and these Western countries all include gross income, whereas other countries such as Austria have only net earnings or income.

Households lacking information on major income items, such as net disposable income, market income, and social transfers, are deleted from analysis. Cases are weighted in the analysis. According to the LIS definition, in many cases, the household weight is a population weight, used to modify the results to reflect the total population. The unweighted sample size of households ranges from 3,642 for Switzerland to 49,261 for the US. The number of households including children and older adults ranges from 998 and 888 (Switzerland) to 17,591 and 11,433 (US).

Poverty Line and Equivalent Scale

The present study uses a relative poverty approach. Scholars contend that the relative approach takes national and historical contexts into consideration and generates a specific poverty standard for each society in each time period (Brady 2002). Therefore it is frequently employed in comparative studies of poverty. For instance, some international organizations such as the OECD, European Commission, and LIS calculate their specific poverty lines based on the relative poverty approach. In light of the above, the present research will use a relative poverty standard.

The poverty line is defined as income below 50% of the net median equivalized disposable household income. The net disposable income is the total household income after-tax and after-transfers.[4] An equivalent scale is used to equate households of different sizes, reflecting economies of scale and consumption. Some international inequality studies are conducted with the scale of power 0.5, or the square root of the

[4] The net disposable income consists of household earnings, cash property income, occupational pensions, social transfers, private transfers, and other cash income and excludes taxes, compulsory contributions, and non-cash benefits.

number of household members.[5] The present study will follow these international inequality studies. We also follow the LIS to bottom code the disposable and market income at 1% of equivalized mean income and top-code at 10 times the median of non-equivalized income.[6]

Market Inequality

Market inequality is measured by the relative poverty rates based on market income across household types. According to the definition of the LIS summary income variables, market income consists of wages, salaries, property cash income, and occupational pensions. Similar to the calculation of the poverty line and poverty rate based on net disposable income, the market income poverty line is income below 50% of the median equivalized household market income.

Social Transfers and Welfare Efficiency

This study examines the effect of social transfers or social welfare on poverty.

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[5] The key poverty and inequality figures published by the Luxembourg Income Study are calculated based on the equivalent scale of power 0.5. Using this scale, four people living together, for example, can live on the same income as two individuals living separately.

[6] For more information regarding the equivalent scale and bottom- and top-coding, please see the LIS relative poverty rates method on the LIS website (http://www.lisproject.org/keyfigures/methods.htm).

Some previous studies evaluate the efficiency of welfare in terms of how much market inequality is reduced through social transfers (Heuveline and Weinshenker 2006). Welfare efficiency is measured by the ratio of poverty rates based on net disposable income to the poverty rates based on only market income. The lower the ratio is, the more the poverty rate is reduced, and therefore the more efficient the welfare programs are.

Living Arrangements of Children and Older Adults

Household members younger than 18 years old are regarded as children and household members who are 65 years old or older are defined as older adults. The living arrangements of children are divided into five types: living with one female adult only, living with one male adult only, living with coupled adults only, living with two or more non-coupled adults, and finally living with coupled adults and other adults. The living arrangements of older adults are divided into four types: single female older adults, single male older adults, coupled older adults only, and older adults living with other household members (including coupled older adults living with other family members).

Analytical Methods

In the present study, we examine how the distribution of living arrangements, market inequality, and welfare lead to the differences of child and elderly poverty rates

between Taiwan and Western countries. Standardization is employed to investigate how Taiwan's child and elderly poverty rates would change if Taiwan's distribution of living arrangements, market inequality, or welfare efficiency were replaced with that of each Western country included in this study. Decomposition analysis is also used to determine the relative contributions of these three structural factors to the differences between Taiwan's poverty rates and those of other countries. For the standardization and decomposition analyses, we assume that no other income sources or relevant behaviors change in response to the changes in social transfers and earnings gaps among age groups, including no changes in household composition, other income items, and no changes in pay or taxes.

Standardization and decomposition are commonly used by demographers and other social scientists to offer insights into the effects of distributional differences between populations. As explained by Das Gupta (1993: 1), "[T]he technique of standardization assumes a particular population as standard and recomputes the overall rates in the populations by replacing their compositions by the compositional schedule of the standard population. ... The decomposition deals with finding the additive contributions of the effects of the differences in the compositional or rate factors in two populations to the difference in their overall rates."

To test the effects of household composition, welfare, and market inequality on

child and elderly poverty, we follow Das Gupta (1993) and Heuveline and Weinshenker (2006). First, the poverty rate (based on net disposable income) for children or older adults is:

$$P = \Sigma\ (H_i \text{ x } P_i) \quad (1)$$

where P is the overall poverty rate for children or older adults in Taiwan, H_i is the proportion of children or older adults living in household type i in Taiwan, and P_i is the net disposable income poverty rate for children or older adults in household type i in Taiwan.

In order to test the market inequality and welfare effects, we use the equations provided by Heuveline and Wenshenker (2006). The re-written equation is a function of three vector factors:

$$P = \Sigma\ H_i \text{ x } M_i \text{ x } (P_i/M_i) \quad (2)$$

where M_i is the market income (before-tax and before-transfers income) poverty rate for children or older adults in household type i in Taiwan and P_i/M_i is the ratio of the net disposable income poverty rate to the market poverty rate for children or older adults in household type i in Taiwan (that is, welfare efficiency). We use W_i to represent P_i/M_i. Therefore, the equation is re-written:

$$P = \Sigma\ (H_i \text{ x } M_i \text{ x } W_i) \quad (3)$$

In the current study, we include 12 Western countries in addition to Taiwan. For

these 12 countries, the same terms are presented in lower case, producing the following equation:

$$p = \Sigma (h_i \text{ x } m_i \text{ x } w_i) \quad (4)$$

Using standardization analysis, we test how Taiwan's child and elderly poverty rates change when the distribution of living arrangements, market inequality, and welfare efficiency are replaced by those of each of the Western countries. The equations for the poverty rates with replaced living arrangements, market inequality, and welfare effect are, respectively:

$$P_j = \Sigma (h_i \text{ x } M_i \text{ x } W_i) \quad (5)$$

$$P_j = \Sigma (H_i \text{ x } m_i \text{ x } W_i) \quad (6)$$

$$P_j = \Sigma (H_i \text{ x } M_i \text{ x } w_i) \quad (7)$$

As the equations show above, for standardization, we replace one of the three factors (Taiwan's distribution of living arrangements for children or older adults, market income inequality, or welfare efficiency) with that of each Western country, while the other two factors remain the same.

Next, we perform decomposition analyses to determine the relative contributions of living arrangements, welfare efficiency, and market inequality to the difference in poverty rates between Taiwan and each of the selected Western countries. The decomposition equations are:

$$p\text{-}P = \alpha\text{-}effect + \beta\text{-}effect + \gamma\text{-}effect \quad (8)$$

$$\alpha\text{-}effect = Q(h_i) - Q(H_i) \quad (9)$$

$$\beta\text{-}effect = Q(m_i) - Q(M_i) \quad (10)$$

$$\gamma\text{-}effect = Q(w_i) - Q(W_i) \quad (11)$$

where *p-P* is the difference in poverty rates between Taiwan and any Western country included in this study, *α-effect* is the effect of the distribution of living arrangements, *β-effect* is the effect of market inequality, and *γ-effect* is the effect of welfare efficiency. $Q(H_i)$ is the *βγ-s*tandardized rate in Taiwan and $Q(h_i)$ and $Q(H_i)$ are the *βγ-s*tandardized rate in any Western country included in this study. $Q(M_i)$ and $Q(m_i)$ are the *αγ-s*tandardized rates. $Q(W_i)$ and $Q(w_i)$ are the *αβ-s*tandardized rates. An example of the calculation of these standardized rates is shown as the following. More equations for the calculation of standardized rates are shown in the Appendix.

$$Q(H_i) = (\Sigma\ (H_i \text{ x } m_i \text{ x } w_i) + \Sigma\ (H_i \text{ x } M_i \text{ x } W_i))/3 +$$

$$(\Sigma\ (H_i \text{ x } m_i \text{ x } W_i) + \Sigma(H_i \text{ x } M_i \text{ x } w_i))/6 \quad (12)$$

RESULTS

Living Arrangements

Consistent with previous studies, the distributions of living arrangements of Taiwanese children and older adults are different from those of the Western countries. Co-residence of adults who are not in couples is much more common in Taiwan than

most of these other countries. Table 1 presents the living arrangements of children in Taiwan and the 12 Western countries. Taiwan's proportion of children living with single adults was the lowest, and the proportion of children living with other adults in addition to parents was the highest. The Nordic and English-speaking countries had higher proportions of children living with single adults.

[TABLE 1 HERE]

Living arrangements for older adults are shown in Table 2. The majority of Taiwanese older adults lived with other family members or relatives while in many Western countries the majority of older adults either lived alone or lived with their spouses only. Poland is the only other country whose co-residence of uncoupled adults is also high, although it is much lower than that of Taiwan. In 1999, 28% of Polish children lived in households that included coupled parents and other adults and 40% of Polish older adults lived with other family members.

[TABLE 2 HERE]

Child Poverty Rates

As described earlier, poverty rates are considered both in terms of market income (that is, only earnings) and in terms of net disposable income (that is, total income after taxes and social transfers). The child and elderly poverty rates based on net disposable income and market income across household types are shown in Table 3 and Table 4.

Looking at poverty rates based on market income, children living with single females only have the highest poverty rates across countries. Children with single mothers in Australia, Canada, the UK, the US, and Germany have particularly high market poverty rates. In these countries, households consisting of children with single males only or non-coupled single adults also have high poverty rates. Children living with coupled parents or coupled parents and other adults are the least likely to be poor. Compared to other countries, Taiwan has the lowest market income poverty rates across household types, except for Norway, which has lower market income poverty rates for children living with multiple non-coupled adults or with coupled adults and other adults.

[TABLE 3 HERE]

In terms of the net disposable income poverty, the social democratic countries including Denmark, Finland, Norway, and Sweden have the lowest child poverty rates across household types. The social democratic countries usually provide more comprehensive family benefits and child allowances. On the other hand, the liberal countries and Poland have the highest child poverty rates across household types. Taiwan and the conservative countries have poverty rates between those of the liberal and social democratic regime countries. Consistent with previous studies, children living with single females have the highest poverty rate in almost all these countries. The only exceptions are for Australia and Denmark, in which children living with

single males show slightly higher poverty rates. Children living with coupled adults are the least vulnerable to poverty risk. Taiwan's child poverty rate is 8%, similar to Germany's.

Elderly Poverty Rates

Elderly market poverty rates are presented in Table 4. Single older adults have the highest poverty rates. Households consisting of coupled older adults only also have high poverty rates. Older adults living with other family members have the lowest market poverty rates. Taiwanese older adults have the lowest overall market poverty rates across the selected countries.

With regard to Elderly poverty rates based on net disposable income, single female older adults are the most likely to be under the poverty line, except among Danish older adults. Taiwan, Australia, the US, and the UK have the highest poverty rates across household types. In contrast to other countries, coupled Taiwanese older adults have a very high poverty rate. Taiwanese older adults living with other family members have a much lower poverty rate compared to older adults living in other household types. By contrast, in the majority of the Western countries, coupled older adults and older adults living with other family members are the least likely to be poor.

[TABLE 4 HERE]

Welfare Efficiency

Table 5 and Table 6 present the efficiency of welfare across the 13 countries for children and older adult poverty. As explained earlier, welfare efficiency is measured in terms of the ratio of the poverty rate based on net disposable income to the poverty rate based on market income. The lower the ratio is, the more efficient social transfers are in reducing market income poverty rates. In general, social transfers have a much greater impact on elderly poverty rates than on child poverty rates. The ratio of welfare efficiency for child poverty rates ranges from 0.15 to 0.88 and the ratio of welfare efficiency for elderly poverty rates ranges from 0.04 to 0.61.

Compared to other countries, Taiwan's welfare is the least efficient since its child and elderly market poverty rate are reduced least. The ratio of welfare efficiency in child poverty for Taiwan is 0.88; that is, 12% of the market income poverty rate is reduced with social transfers. Social democratic countries reduce child poverty most efficiently: 78% to 85% of child poverty rates based on market income are reduced with social transfers in social democratic countries. Welfare efficiency is quite limited for the US and Poland too. Taiwan's social transfers also reduce elderly poverty least, with only 39% of the market income poverty rate reduced. The social transfers of social democratic countries and conservative countries are quite efficient, with 84% to 96% of elderly poverty rates based on market income being reduced.

[TABLE 5 HERE]

[TABLE 6 HERE]

Standardization and Decomposition

Finally, we turn to the standardization and decomposition analyses. Standardization is employed to examine how Taiwan's child and elderly poverty rates based on net disposable income would change if the distribution of living arrangements, market income inequality, and welfare efficiency were replaced by those of each of the Western countries. Decomposition is used to examine the contribution of these three factors to the differences between Taiwan's and Western countries' poverty rates.

The standardization results are shown in Table 7. Consistent with our hypotheses, when the Taiwanese welfare efficiency is replaced with that of any Western country, the child poverty rate and particularly the elderly poverty rate decline dramatically. As indicated previously, Taiwan's social provisions are quite limited either in coverage or levels, and reduce market poverty least of all these countries (see Tables 5 and 6). If Taiwan's social transfers could reduce the elderly income poverty rate to the same degree as the social transfers of social democratic or conservative countries, Taiwan's elderly poverty rate based on net disposable income would decline from 26% to between 1% and 6%. Even substituting the less efficient welfare systems for Taiwan's, such as those of the US and Australia, would reduce Taiwan's elderly poverty rate to

10% to 15%.

[TABLE 7 HERE]

Western countries' welfare programs are also more efficient in reducing child poverty than Taiwan's welfare program. As Table 5 shows, the social democratic countries, with generous family benefits and extensive paid maternal leave, have a higher welfare efficiency in reducing child poverty rates. If the welfare efficiency of the social democratic countries was applied to Taiwan, the poverty rate for Taiwanese children would decrease from 8% to around 2%.

Taiwan's overall child and elderly market income poverty rates are lower than those of Western countries included in this study. Given the market income inequality across household types for Western countries, the net disposable income poverty rates for Taiwanese older adults and for children increase greatly, which is also consistent with our hypotheses. For instance, replacing market poverty inequality across household types with those for the liberal countries leads Taiwan's child poverty to increase from 8% to 19-23%. As Table 2 shows, children in liberal countries and Poland have the highest market income poverty rates across household types among these 13 countries. The liberal countries have larger earnings inequality and wage dispersion, compared to these other OECD countries. Poland also has a high market income inequality, reflecting the growing unemployment rate and wage dispersion after the

collapse of socialism. The replacement with Polish market income inequality also leads Taiwan's child poverty rate to increase to 22%. The social democratic countries have lower market income inequality across household types than the liberal countries and Poland. The wage dispersion in the Nordic countries is lower than that of the liberal countries and Poland. Moreover, Nordic single mothers and mothers with partners tend to have a high labor force participation rate, due to social policies that help them to reconcile family responsibilities and work. As these results show, the relatively egalitarian distribution of market income across household types helps keep Taiwan's children at low poverty risk even though the social provisions for Taiwanese children are extremely limited. Western countries also have higher overall elderly market income poverty rates than Taiwan. With 11 of the 12 Western countries' market income poverty rates, Taiwan's elderly poverty rate increases from 26% to at least 29%.

Finally, the pattern of living arrangements is also an important factor to the poverty gap among age groups. In Taiwan, the majority of children live either with coupled parents or with coupled parents and other adults. Single motherhood is not as prevalent as in the liberal and social democratic countries. In countries such as the US, UK, Australia, and Canada, a high proportion of children living with single mothers and a high poverty rate for those children combine to yield a high overall child poverty rate. With the children's living arrangements of liberal and social democratic countries,

Taiwan's child poverty rate would increase from 8% to 9% to 11%.

Regarding older adults' living arrangements, generational co-residence is very common in Taiwan: 60% of Taiwanese older adults live with other family members, whereas the majority of Western older adults live alone or with their spouses only. Co-residence is particularly important to Taiwanese older adults' economic well-being because social transfers for the majority of retired elders are barely enough to lift them above the poverty line. However, the poverty rates based on net disposable income and market income for Taiwanese older adults living with other family members are low (see Table 4). The prevalence of generational co-residence and the low market income poverty rate both help reduce the overall elderly poverty risk, even though Taiwan's elderly poverty rate is still the highest among these countries. With limited social retirement payments, if Taiwanese older adults had the same living arrangements as Western countries, the poverty rate for Taiwanese older adults would increase from 26% to 34% to 47%. Replacement with Polish older adults' living arrangements adds least to Taiwan's elderly poverty rate, because co-residence is also quite common in Poland. On the other hand, Taiwan's elderly poverty rate would be much higher if it had the living arrangements of many other countries, with high proportions of single female older adults and low proportions of elders living with other family members, including Sweden, Norway, Netherlands, and Denmark.

Table 8 shows the results of the decomposition analysis. These analyses decompose the relative contributions of welfare efficiency, market inequality, and living arrangements to the difference between Taiwan's and Western countries' child and elderly poverty rates. The first column shows the difference between Taiwan's child or elderly poverty rate and that of each country. The next three columns show the contribution of each factor to that difference. To illustrate: Australia's child poverty rate (again using after-transfers disposable income) is higher than that of Taiwan by 6.94 percentage points. The strongest effect driving this difference is the difference in market inequality between the two countries, which contributes +10.24 percentage points. There is also a positive but weak effect for living arrangement differences of +3.43, and a countervailing effect of welfare program differences, at -6.73.

[TABLE 8 HERE]

In liberal countries, child poverty rates are at least seven percentage points higher than Taiwan's child poverty rate. Although differences in household composition -- for example, higher rates of single motherhood in the U.S. -- are not inconsequential, the largest contribution to this difference comes from having higher market income inequality across household types in these countries. Taiwan's child market income inequality across household types is lower than those of the majority of Western countries. The relatively low market income inequality helps keep Taiwan's child

poverty rate low, even though Taiwan's social provisions for families with children are extremely limited. Put another way, although somewhat better social welfare programs reduce child poverty in liberal countries relative to Taiwan (if barely, in the case of the United States), this falls far short of reversing the child poverty due to much greater income inequality across households. As the decomposition analysis shows, replacement with the market income inequality of the liberal countries would lead to an increase in Taiwan's child poverty rate by at least 10 percentage points.

In the social democratic countries, by contrast, child poverty rates are four to five percentage points lower than that of Taiwan. According to the decomposition analysis, this is largely due to the much higher welfare efficiency in these countries.

The decomposition analysis shows a different pattern for elderly poverty rates, which are higher in Taiwan than in any of the other countries examined here. As predicted, the difference in welfare efficiency is the largest contributor to this difference. The welfare programs of social democratic, conservative, and former socialist countries in particular are substantially more efficient, and would reduce Taiwan's elderly poverty rate by 29 to 35 percentage points. While limited social transfers lead to a very high poverty rate for Taiwanese older adults, co-residential living arrangements help keep more Taiwanese older adults financially secure. For instance, adopting the living arrangements of older adults of the Nordic countries would lead to an increase in

Taiwan's elderly poverty rate of at least 10 percentage points.

CONCLUSION

In 2000 the poverty rate for Taiwanese elders was 26%, the highest among the 13 countries included in this study. At the same time, Taiwan's child poverty rate was 8%, much lower than the elderly poverty rate, and lower than the child poverty rates of eight of the 12 other countries. Taiwan's high elderly poverty rate and relatively low child poverty rate produces the largest elderly-child poverty gap among these 13 countries. By contrast, the social democratic countries have low elderly poverty rates and even lower child poverty rates, while the liberal countries have relatively high rates of poverty for both children and the elderly.

Differences in household composition, labor market inequality, and welfare efficiency contribute to Taiwan's distinctive poverty pattern. Among the three factors, differences in welfare provisions are the most important explanation for why Taiwan's elderly poverty rate is higher than those in Western countries. These results also show that the prevalence of co-residence, often with their adult children, is very important in buffering older adults' poverty risk in Taiwan. In the absence of generous social welfare provisions found in other countries, living with family members is an effective strategy used by Taiwanese older adults to cope with financial needs when they leave the labor force.

The child poverty rates in the liberal welfare regimes and in post-socialist Poland are higher than Taiwan's child poverty rate. The most important factor contributing to the difference in poverty rates between Taiwan and these countries is the larger market income inequality across household types in these countries compared to Taiwan. The living arrangements of children in liberal countries also place children at a disadvantage; if children in Taiwan were to experience the same household structure, such as higher rates of households headed by single mothers, it would add three to five percentage points to Taiwan's child poverty rate. In sum, our results show that a more egalitarian market income distribution across household types and limited social transfers lead to the large elderly-child poverty gap in Taiwan—a gap that reflects uniquely greater risks for older adults than for children.

Between the 1980s and 2000, both child and elderly poverty rates in Taiwan increased. In fact, some other East Asian countries are experiencing similar economic and social changes, which may affect their child and elderly poverty risks as well. First, as Taiwan and South Korea are facing the pressure of industrial structural reformation, the unemployment rate and income gap have increased in these countries (OECD 2007). In addition, the incidences of divorce and single parenthood have increased too. It is expected that the poverty rates for children and for working-age adults, particularly young adults, will continue to increase in the future. In addition, extended family

households are becoming less common partially due to decreasing fertility and changes in family traditions: more older adults live either alone or with their spouses only. At the same time, the absolute number of the older population living in poverty is growing as life expectancy increases. It is expected that co-residence of older adults with adult children will continue to decrease (Choi 1996; Hong Kong Council of Social Services 2004; Lee 1998; Sun 2002). Furthermore, social retirement programs are still limited and fragmented in Taiwan, South Korea, Hong Kong, and Singapore. As inter-generational co-residence decreases, the aged population increases, and the income gap increases, the elderly poverty rate and especially the absolute number of elderly who are poor are likely to increase as well in Taiwan, South Korea, Hong Kong, and Singapore.

Since the late 1990s, the Taiwanese government has introduced and expanded several social programs to provide income support to older adults, including the Elderly Farmers Allowances and the Low- and Medium-income Allowances for older adults. Starting in the second half of 2000, allowances for child care expenses have also been allotted. As Taiwanese scholars point out, with the majority of older adults covered by one of these programs, the official poverty rate for Taiwanese older adults has dropped since the late 1990s (Wang 1999). However, the retirement payments provided by the Labor Insurance program and allowances for older adults are limited, and older adults

are still more likely to be poor compared to other age groups. As our analyses show, the relative poverty rate for Taiwanese older adults is much higher than the Western countries studied here. Accordingly, co-residence with adult children is not just considered as the ideal living arrangements for older adults culturally. It remains a valuable practical strategy for Taiwanese older adults to obtain financial support.

Currently the Taiwanese government is formulating the regulations of the new universal National Pension Program. The new program, based on the "pay as you go" funding method, targets those who are not covered by any social insurance programs and provides flat rate benefits. When the National Pension Program is implemented, it would be expected that the poverty rate for Taiwanese older adults would decrease gradually and the elderly-child poverty gap would decrease as well. As the Taiwanese government introduces universal social programs such as the National Health Care Scheme and National Pension Program, it seems that Taiwan is moving away from the East Asian countries and toward a more social democratic regime. However, if we consider the low social spending and the low levels of retirement payments, the lack of comprehensive family benefits, and insured individuals and employers as the major financial sources of these programs, Taiwan cannot be considered as a country clustered in the social democratic regime. Taiwan is still a developing welfare state, developing welfare programs under its unique social context and intensive political competition.

The findings presented here indicate that poverty is tied to intergenerational co-residence for Taiwanese older adults, low market inequality for Taiwanese children, and less efficient welfare programs for both groups. However, while some welfare programs are improving, other economic and demographic changes are moving in the opposite direction. If these trends continue, Taiwan will continue to have substantial problems with elderly poverty in the near future, and may face increased child poverty as well.

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Table 1: Living Arrangements of Children Across Countries, 1999-2001

Welfare Regime/ Country	Single Females	Single Males	Coupled Adults	Non-coupled 2+ Adults	Coupled Adults w/ Other Adults
Taiwan	2.52	1.28	53.74	5.69	36.77
Social Democratic					
Denmark	12.03	1.68	74.14	3.89	8.26
Finland	11.43	1.26	75.80	2.31	9.20
Norway	12.94	2.25	55.14	20.52	9.15
Sweden	16.17	2.91	70.78	1.84	8.30
Conservative					
Germany	10.77	0.62	66.19	10.68	11.74
Netherlands	6.91	0.49	83.48	1.23	7.89
Switzerland	5.36	0.85	80.59	2.02	11.18
Liberal					
Australia	14.11	1.64	66.12	4.32	13.81
Canada	10.33	1.98	68.45	5.17	14.08
UK	18.97	1.46	65.53	3.32	10.72
USA	13.17	1.83	62.06	8.11	14.83
Former Socialist					
Poland	5.74	0.38	59.82	5.77	28.30

Table 2: Living Arrangements of Older Adults Across Countries, 1999-2001

Welfare Regime/ Country	Single Females	Single Males	Coupled Older Adults Only	Living w/ Other Family Members
Taiwan	5.67	5.69	28.84	59.80
Social Democratic				
Denmark	34.11	11.74	47.96	6.19
Finland	31.74	8.27	45.89	14.10
Norway	32.27	9.38	48.05	10.30
Sweden	33.02	12.35	50.39	4.23
Conservative				
Germany	34.53	7.09	48.57	9.81
Netherlands	30.06	8.53	58.93	2.48
Switzerland	27.06	6.53	53.81	12.60
Liberal				
Australia	22.29	9.68	49.32	18.71
Canada	21.06	7.05	47.91	23.98
UK	27.24	9.43	48.68	14.65
USA	22.72	7.50	46.98	22.80
Former Socialist				
Poland	19.97	3.82	36.23	39.97

Table 3: Child Poverty Rates Across Countries, 1999-2001

Country	Total	Single Females	Single Males	Coupled Adults	Non-coupled Adults	Coupled w/ Other Adults
Based on Market Income						
Taiwan	9.09	43.18	16.91	6.04	21.34	9.04
Social Democratic						
Denmark	18.14	56.06	34.49	12.13	23.02	11.26
Finland	17.80	53.85	23.51	12.72	33.91	10.06
Norway	15.64	62.50	27.55	7.85	9.59	6.99
Sweden	19.78	56.59	18.92	11.82	54.70	8.53
Conservative						
Germany	18.00	66.79	44.63	9.78	25.26	11.53
Netherlands	15.55	61.52	28.03	10.98	65.03	15.09
Switzerland	11.96	62.15	15.46	8.50	27.96	9.72
Liberal						
Australia	28.65	78.06	57.57	19.14	40.18	16.62
Canada	24.26	68.43	31.37	18.51	36.31	15.95
UK	34.79	86.24	65.64	20.88	48.90	20.21
USA	27.07	69.42	34.09	17.90	43.21	18.16
Former Socialist						
Poland	24.10	50.06	46.99	16.98	46.97	28.91
Based on Net Disposable Income						
Taiwan	8.00	25.88	15.26	6.66	16.57	7.18
Social Democratic						
Denmark	2.74	6.94	12.28	2.03	2.25	1.22
Finland	2.84	9.02	3.82	1.98	0.00	2.79
Norway	3.41	11.18	8.02	2.23	2.13	1.24
Sweden	4.25	13.50	4.50	2.40	6.42	1.37
Conservative						
Germany	8.96	42.44	17.45	3.98	12.14	2.99
Netherlands	9.80	38.38	13.42	7.26	14.65	10.63
Switzerland	8.90	22.25	14.73	8.36	11.30	5.55
Liberal						
Australia	14.95	40.75	42.14	10.87	12.29	5.69
Canada	15.20	49.52	22.63	11.59	11.64	7.86
UK	16.95	43.38	30.33	11.21	11.16	5.27
USA	21.94	55.53	28.75	15.26	33.47	12.92
Former Socialist						
Poland	18.46	22.71	15.95	17.63	16.99	19.67

Table 4: Elderly Poverty Rates Across Countries, 1999-2001

Country	Total	Single Females	Single Males	Coupled Older Adults Only	Living w/ Family Members
Based on Market Income					
Taiwan	41.93	90.96	75.34	69.91	20.60
Social Democratic					
Denmark	76.24	86.16	81.54	72.35	41.61
Finland	85.99	95.55	93.33	87.01	56.83
Norway	76.31	89.66	89.85	72.75	38.77
Sweden	81.87	93.94	88.21	76.26	35.92
Conservative					
Germany	83.99	92.05	89.62	83.99	51.51
Netherlands	65.94	79.67	56.98	62.17	19.99
Switzerland	83.53	95.16	87.97	83.92	54.55
Liberal					
Australia	73.14	90.13	76.21	77.11	40.83
Canada	57.08	79.16	70.09	56.64	35.52
UK	69.09	86.14	77.32	66.28	41.43
USA	63.78	82.84	70.85	63.60	42.83
Former Socialist					
Poland	79.11	98.40	97.02	95.17	53.21
Based on Net Disposable Income					
Taiwan	25.66	62.62	42.99	41.17	13.03
Social Democratic					
Denmark	12.06	19.11	23.13	5.50	2.99
Finland	8.47	21.21	12.58	0.48	3.37
Norway	11.90	28.98	19.25	1.07	2.21
Sweden	7.68	16.54	10.00	1.54	4.92
Liberal					
Australia	23.02	55.09	48.01	10.56	4.74
Canada	5.04	11.38	8.44	1.90	4.73
UK	17.30	28.76	20.74	13.86	5.20
USA	24.75	45.50	35.24	16.99	16.61
Former Socialist					
Poland	7.00	4.52	5.02	1.22	13.65

Table 5: Welfare Effects on Child Poverty across Countries, 1999-2001

Country	Total	Single Females	Single Males	Coupled Adults	Non-coupled Adults	Coupled w/ Other Adults
Taiwan	0.88	0.60	0.90	1.10	0.78	0.79
Social Democratic						
Denmark	0.15	0.12	0.36	0.17	0.10	0.11
Finland	0.16	0.17	0.16	0.16	0.00	0.28
Norway	0.22	0.18	0.29	0.28	0.22	0.18
Sweden	0.21	0.24	0.24	0.20	0.12	0.16
Conservative						
Germany	0.50	0.64	0.39	0.41	0.48	0.26
Netherlands	0.63	0.62	0.48	0.66	0.23	0.70
Switzerland	0.74	0.36	0.95	0.98	0.40	0.57
Liberal						
Australia	0.52	0.52	0.73	0.57	0.31	0.34
Canada	0.61	0.71	0.73	0.63	0.32	0.47
UK	0.49	0.50	0.46	0.54	0.23	0.26
USA	0.81	0.80	0.84	0.85	0.77	0.71
Former Socialist						
Poland	0.77	0.45	0.34	1.04	0.36	0.68

Table 6: Welfare Effects on Elderly Poverty Across Countries, 1999-2001

Country	Total	Single Females	Single Males	Coupled Older Adults Only	Living w/ Family Members
Taiwan	0.61	0.69	0.57	0.59	0.63
Social Democratic					
Denmark	0.16	0.22	0.28	0.08	0.07
Finland	0.10	0.22	0.13	0.01	0.06
Norway	0.16	0.32	0.21	0.01	0.06
Sweden	0.09	0.18	0.11	0.02	0.14
Conservative					
Germany	0.12	0.21	0.10	0.07	0.05
Netherlands	0.04	0.01	0.07	0.05	0.00
Switzerland	0.16	0.19	0.18	0.14	0.14
Liberal					
Australia	0.31	0.61	0.63	0.14	0.12
Canada	0.10	0.18	0.16	0.04	0.13
UK	0.25	0.33	0.27	0.21	0.13
USA	0.39	0.55	0.50	0.27	0.39
Former Socialist					
Poland	0.09	0.05	0.05	0.01	0.26

Table 7: Taiwan's Simulated Child and Elderly Poverty Rates Using Standardization Analysis

	Welfare		Market		Living Arrangements	
Country	Child	Elderly	Child	Elderly	Child	Elderly
Social Democratic						
Denmark	1.23	4.78	12.74	34.04	9.55	46.96
Finland	1.64	2.56	13.06	43.03	9.24	44.16
Norway	2.04	3.58	8.38	33.44	11.42	45.35
Sweden	1.65	3.49	12.99	33.07	10.24	47.29
Conservative						
Germany	3.54	3.50	11.80	40.25	9.90	45.95
Netherlands	5.54	1.37	15.04	23.08	8.19	47.08
Switzerland	6.18	6.26	10.23	41.46	8.02	43.55
Liberal						
Australia	4.08	10.04	19.81	34.53	10.01	40.86
Canada	4.94	3.55	18.91	28.60	9.40	39.07
UK	3.53	8.63	22.50	32.80	10.82	43.06
USA	7.12	15.13	19.26	32.54	10.23	39.76
Former Socialist						
Poland	6.64	3.88	21.88	43.28	8.52	34.28

Note: Taiwan's actual child and elderly poverty rates are 8% and 25.66%.

Table 8: Decomposition of Household Composition, Market, and Welfare Effects on Child and Elderly Poverty

Country	Difference of Poverty Rates	Welfare	Market	Living Arrangements
Child Poverty				
Social Democratic				
Denmark	-5.27	-9.76	3.13	1.36
Finland	-5.17	-9.51	3.26	1.07
Norway	-4.60	-7.34	0.35	2.38
Sweden	-3.76	-9.20	3.34	2.10
Conservative				
Germany	0.95	-5.21	3.36	2.80
Netherlands	1.79	-3.61	5.41	0.00
Switzerland	0.90	-1.94	2.32	0.51
Liberal				
Australia	6.94	-6.73	10.24	3.43
Canada	7.20	-5.11	9.63	2.68
UK	8.95	-8.16	12.30	4.81
USA	13.93	-1.13	11.37	3.69
Former Socialist				
Poland	10.45	-2.34	12.58	0.21
Elderly Poverty				
Social Democratic				
Denmark	-13.61	-29.39	3.10	12.69
Finland	-17.19	-35.42	7.95	10.28
Norway	-13.76	-29.81	3.23	12.82
Sweden	-17.98	-33.27	3.52	11.77
Conservative				
Germany	-15.28	-33.47	6.47	11.72
Netherlands	-23.24	-32.04	-2.00	10.80
Switzerland	-12.60	-30.11	7.93	9.58
Liberal				
Australia	-2.64	-19.54	4.26	12.64
Canada	-20.63	-27.16	0.48	6.06
UK	-8.36	-22.34	2.48	11.49
USA	-0.91	-13.20	3.00	9.29
Former Socialist				
Poland	-18.67	-32.25	10.45	3.13

APPENDIX

This continues the section on the analytical methods used in this study. More equations of calculation of these standardized rates are shown in the following:

$$Q(Hi) = (\Sigma\, H_i \text{ x } m_i \text{ x } w_i + \Sigma\, H_i \text{ x } M_i \text{ x } W_i)/3 + (\Sigma\, H_i \text{ x } m_i \text{ x } W_i + \Sigma\, H_i \text{ x } M_i \text{ x } w_i)/6$$

$$Q(M_i) = (\Sigma\, h_i \text{ x } M_i \text{ x } w_i + \Sigma\, H_i \text{ x } M_i \text{ x } W_i)/3 + (\Sigma\, h_i \text{ x } M_i \text{ x } W_i + \Sigma\, H_i \text{ x } M_i \text{ x } w_i)/6$$

$$Q(W_i) = (\Sigma\, h_i \text{ x } m_i \text{ x } W_i + \Sigma\, H_i \text{ x } M_i \text{ x } W_i)/3 + (\Sigma\, h_i \text{ x } M_i \text{ x } W_i + \Sigma\, H_i \text{ x } m_i \text{ x } W_i)/6$$

$$Q(h_i) = (\Sigma\, h_i \text{ x } M_i \text{ x } W_i + \Sigma\, h_i \text{ x } m_i \text{ x } w_i)/3 + (\Sigma\, h_i \text{ x } M_i \text{ x } w_i + \Sigma\, h_i \text{ x } m_i \text{ x } W_i)/6$$

$$Q(m_i) = (\Sigma\, H_i \text{ x } m_i \text{ x } W_i + \Sigma\, h_i \text{ x } m_i \text{ x } w_i)/3 + (\Sigma\, H_i \text{ x } m_i \text{ x } w_i + \Sigma\, h_i \text{ x } m_i \text{ x } W_i)/6$$

$$Q(w_i) = (\Sigma\, H_i \text{ x } M_i \text{ x } w_i + \Sigma\, h_i \text{ x } m_i \text{ x } w_i)/3 + (\Sigma\, H_i \text{ x } m_i \text{ x } w_i + \Sigma\, h_i \text{ x } M_i \text{ x } w_i)/6$$