

Decomposing Youth Poverty in 22 Countries —Contributions of Household Composition, Social Welfare, and the Market to Cross-national Variations in Youth Poverty*

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Abstract

Based on 2010 Luxembourg Income Study data, this research examines cross-national patterns of rates of youth poverty, using Taiwan as a representative of East Asian welfare regimes and comparing it to 21 countries. With decomposition analyses, I investigate the ways in which three structural factors—household composition, market income poverty, and social welfare—contribute to divergent patterns of youth poverty. Taiwan is a society in which intergenerational coresidence is prevalent but in which young adults and young parents are eligible for limited social provisions. The results show that in Scandinavian countries, leaving the parental home is associated with high levels of poverty, although generous social provisions offset some of

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the poverty risks of young adults. In East Asian countries, despite limited welfare benefits, the prevalence of intergenerational coresidence and lower levels of market income poverty have strong mitigating effects on youth poverty.

Key Words: youth poverty, decomposition, household composition, social welfare

I. Introduction

It is often said that young people are our future. Unfortunately, not all young adults are hopeful about their economic prospects. Many young adults live in poverty (Aassve, Cottini, & Vitali, 2013; Tai, 2012). Chronic poverty in young adulthood can lead to various forms of disadvantage later in life (Vandecasteele, 2011). A comprehensive investigation of the structural factors leading to youth poverty is imperative for enhancing the well-being of individuals throughout the life course.

The expansion of the welfare state has brought social provisions that have lifted many children and older adults out of poverty. However, variations in welfare provisions do not account for international differences in the risk of youth poverty. Previous descriptive analyses have shown high rates of youth poverty in Scandinavian countries where welfare policies feature high social expenditures, comprehensive coverage, and generous benefits. Conversely, low rates of youth poverty have been observed in societies with limited social expenditures and benefits (e.g. East Asia).

Multi-level and multi-dimensional processes determine the life course (Dewilde, 2003; Mayer & Schoepflin, 1989). A combination of factors shapes individual well-being. Esping-Andersen (1999) suggests that social welfare, the family, and the market are essential components of the welfare mix. Indeed, household composition is the key determinant of young adults' economic well-being (Aassve et al., 2013; Iacovou, 2009). Previous studies have revealed a significant increase in poverty for young adults after they leave their parental home (Ayllón, 2015; Mendola, Busetta, & Aassve, 2009), particularly in Scandinavian countries.

If family structure heavily affects young adults' economic security, do varying levels of social welfare provisions contribute to cross-national variations in youth poverty? How does the relative deprivation in market income affect cross-national differences in

rates of youth poverty? To what extent does each structural factor contribute to cross-national variations in youth poverty?

Using data on 22 countries from the Luxembourg Income Study (LIS), this research decomposes the effects of household composition, the market, and social welfare on youth poverty. As the economic well-being of young adults is deteriorating, this study investigates the contributions of household composition, the market, and social transfers to youth poverty. This study expands the scope of international studies of poverty by including East Asian countries, which differ from Western countries in their poverty patterns, living arrangements, welfare systems, and market structures.

II. Background

A. Define Young Adults

Studies have placed young adulthood between the ages of 15 and 24 (United Nations), 18 and 24 (LIS), or 18 and 29 (Arnett, Žukauskienė, & Sugimura, 2014). Considering the profound changes in the transition to adulthood, including a prolonged education period, delayed market employment, and later marriage, Arnett (2000) coined the term “emerging adulthood” (Arnett et al., 2014). According to Arnett et al. (2014), the years from 18 to 29 constitute a distinctive demographic, psychological, and subjective developmental stage. In contrast to children, and to adults in their 30s or older, people aged 18-29 frequently change living arrangements, educational pursuits, work status, and romantic relationships. Most young people aged 18-29 do not feel like adults (Tanner, 2014). Many of the transitions of adulthood, such as changes in residential, educational, and work arrangements, carry an inherent risk of poverty (Iacovou, 2009). In many countries, young adults aged 18-29 are vulnerable to poverty (Aassve et al., 2013; Ayllón, 2015). Based on the discussion above, this study defines young adults as individuals aged 18-29.

B. Young Adults and Poverty from an International Perspective

A high proportion of young adults and households headed by young adults live in poverty in Western countries (Aassve et al., 2013; Ayllón, 2015; Iacovou, 2009). Aassve et al. (2013) reported that in 2005 the poverty rate for young adults aged 18-24 ranged from 10% in Slovenia to 34% in Denmark. In Scandinavia, 17% to 34% of young adults lives below the poverty line. At the peak of the global financial crisis (GFC), the poverty rate for 18- to 24-year-olds skyrocketed. The younger they were when they left the parental home, the more financially disadvantaged they were.

Recent studies have used longitudinal data to address the persistence and dynamics of youth poverty. Although Scandinavian young adults are at high risk of poverty, they leave poverty more quickly than their counterparts in Southern Europe (Ayllón, 2015; Mendola et al., 2009).

There are cross-country differences in the risk of poverty between young adults and other age groups. Although Scandinavian countries have little overall and child poverty, the risk of poverty for young adults is high (Luxembourg Income Study [LIS], 2016). In contrast, young people in East Asia are more financially secure than older adults. For example, in 2006, South Korean households headed by young adults had a poverty rate of 8% versus 40% for households headed by Korean older adults (LIS, 2016; Tai, 2012).

Researchers have attributed this variation in youth poverty across countries to the interplay of the family, the market, and social welfare (Esping-Andersen, 1990, 1999). The following sections review research on the connection of youth poverty to these factors.

C. Social Welfare Regimes

Cross-national disparities in youth economic well-being stem from differences in national welfare systems that define the

entitlements of social categories, compensation for disadvantages in the labor market, and provisions for individuals without sufficient family support (O'Rand & Henretta, 1999). Studies have revealed negative associations between social expenditures and child, elderly, and overall poverty levels (Bradbury & Jäntti, 2001; Kenworthy, 1999; Tai & Treas, 2009). In 2013, total social spending ranged from 10% of gross domestic product in South Korea to 32% in France and Sweden among OECD countries (OECD, 2016). In 2007-2008, social spending favored the elderly in Southern European countries, Japan, Taiwan, and some post-socialist countries. Scandinavian countries, South Korea, and some liberal countries such as Ireland had age-neutral social policies (Lue, Yeh, & Chen, 2014; Vanhuysse, 2013). As these observations show, youth poverty is high in comprehensive and age-neutral Scandinavian welfare states. In contrast, young adults are economically secure in East Asian countries where social expenditures are low. Thus, generous social expenditures and youth-oriented welfare resources do not always translate into less youth poverty. This finding merits further investigation of the factors leading to international variation in economic well-being among youth.

In addition to social expenditures, welfare state typology compares welfare policy, cultural patterns, economic structures, and consequential life outcomes, such as youth poverty, against "an interpretative background" for varying life course experiences in different social contexts (Walther, 2006: 136). Esping-Andersen (1990, 1999), identifies three types of capitalist welfare regimes. In Scandinavian social democratic regimes, welfare provisions are citizenship-based, characterized by universal coverage and high levels of social transfer. School-leavers or individuals with an insufficient contribution history are still entitled to social assistance benefits and vocational training.

Due to a preference for market-oriented solutions, most

Anglo-Saxon liberal regimes provide limited social provisions and target the needy with means-testing entitlements. In response to young adults' economic needs during the school-to-work transition, although allowances are provided for first-time job-seekers in some countries, benefits are low and vocational training tends to be short-term (Cinalli & Giugni, 2013; Esping-Andersen, 1990, 1999; Gallie & Paugam, 2000; Walther, 2006).

Corporatist conservative regimes focus on social insurance programs that sustain status differences with different benefits for different occupational groups, whereas residual social assistance supports individuals in irregular sectors and those not in the labor force. First-time job-seekers or workers in non-core sectors are not covered by insurance-based unemployment protection (Cinalli & Giugni, 2013; Esping-Andersen, 1990, 1999; Gallie & Paugam, 2000; Walther, 2006).

Because of similarities in some Southern European countries such as Greece, Italy, Portugal, and Spain, some scholars have viewed them as a single cluster (Bonoli, 1997; Ferrera, 1996). Their welfare systems have different provisions for workers in core and non-core sectors and separate programs for different occupational groups. Their welfare systems provide high levels of transfer to the regular labor force but only limited social provisions to irregular workers (Ferrera, 1996). Young adults, women, and older adults, usually overrepresented in the irregular sectors or informal economies, thus, are at higher risk of poverty (Guillen & Matsaganis, 2000).

Post-socialist countries comprise the fifth type of welfare state. These countries have experienced similar political and social changes and challenges, including the legacy of socialism and new social costs of transition. In the transition from centralized economies and full social protection to market economies, these countries have restructured their social programs, reducing pension replacement levels, making social provisions more occupation-based, and introducing means-testing for family allowances

(Förster & Tóth, 2000). Their reformed social policies are characterized by high take-up rates of social security but limited benefit levels, removal of subsidies on most goods and services, and increasing privatization of health, social care and education (Aidukaite, 2009; Deacon, 2000). At the same time, post-socialist countries are quite diverse in terms of their social policies. Poland, Slovenia, Hungary, Croatia, the Czech Republic, and Slovakia have undertaken most social-policy reform (Deacon, 2000).

Although youth unemployment has soared since 1989, school-leavers are not entitled to insurance-based unemployment benefits (Vodopivec, Wörgötter, & Raju, 2005). The average replacement rates of unemployment benefits are lower than in Nordic and Western European countries (OECD, 2015). Besides, expenditures and resources allocated to active labor market programs are quite limited (Kuddo, 2009).

Even though Esping-Andersen (1999) considered Taiwan, Japan, and South Korea to be conservative regimes, others (Holiday & Wilding, 2003; White & Goodman, 1998) have noted that East Asian welfare systems are characterized by low social expenditures, dependents' reliance on the family, and productivist welfare policies developed for economic growth and political support. As opposed to social spending accounting for 23% to 32% of GDP in social democratic and conservative countries, in 2009-2010, total public social spending amounted to 10% of GDP in Taiwan, 9% in South Korea, and 22% in Japan (Lue et al., 2014; OECD, 2016). Initially, the Japanese, South Korean, and Taiwanese welfare states targeted soldiers, veterans, and government employees (Tang, 2000). After accelerating democratization during the 1980s and 1990s, and weathering the financial crisis between 1998 and the early 2000s, these governments added occupational categories and disadvantaged groups to social welfare programs. Nevertheless, the social insurance-based welfare systems protect labor market insiders. School-leavers, non-working individuals, and precarious workers

are eligible for only limited benefits (Peng & Wong, 2008).

In short, high levels of youth poverty are observed in advanced welfare regimes and low poverty risks in less developed welfare states. It seems that social welfare does not apply to the alleviation of youth poverty. Further investigation is required to understand the structural effects on youth poverty in welfare states.

D. The Family and Welfare Regimes

Cultural differences in family structure have contrasted the familial values of Eastern and Southern Europe with the individualism of Northern and Western Europe (Laslett, 1988; Reher, 1998). Welfare state regime differences in poverty rates reflect not only distinctive state welfare programs for poverty alleviation, but also cultural strategies that shape individual decisions to safeguard economic well-being through coresidence.

States incorporate cultural norms with welfare policies that either weaken or maintain the family's role as a buffer against poverty. In advanced welfare states, such as Scandinavian countries, responsibilities for support shift from the family to the state (Esping-Andersen, 1999). The social provisions for families with children are moderate in conservative countries like Germany and the Netherlands, low in liberal regimes like the US and the UK, and even lower in Southern Europe, but not as low as in East Asia, where people still rely on the family when they are in economic need.

The family has traditionally been a significant safety net for personal economic security. Coresidence can reduce poverty because it permits pooling of income and the sharing of housing and other expenses. The pattern of living arrangements differs cross-nationally, likely due to differences in social norms, the demographic availability of kin, and financial need (Kiernan, 1986). For instance, in 2010, the percentage of individuals aged 18-35 living with their parents ranged from 14% in Denmark to 60% in

Slovenia (Aassve et al., 2013). The structure of the labor market, welfare policy, and education system also contribute to variations in youth living arrangements. In Northern and Western Europe, alternative arrangements, such as leading independent households at a young age, are possible because of employment opportunities, scholarships, and social transfers. At the same time, with parental support, young people in Southern and East Central Europe tend to live at home until they marry or are employed full-time (Ayllón, 2015).

Multigenerational living arrangements are also prevalent in East Asian countries, reflecting both Confucian cultural traditions and limited social provisions. Older Taiwanese adults prefer intergenerational coresidence. In 2013, more than 65% of Taiwanese older adults voiced a preference to reside with both their spouses and adult children (Ministry of Health and Welfare, 2014). In 2005, the proportion of 18- to 24-year-olds living with their parents reached 90% in Taiwan, 84% in South Korea, and 63% in Japan (Tai, 2012). The percentage of adult children who reported receiving financial support from parents increased from 9% to 16% between 2001 and 2006 (Lin, 2012). Family support via finances and/or coresidence has been the main way for people of all ages to meet their financial needs.

E. The Market and Welfare Regimes

Compared to prime-age individuals, young adults are more likely to be unemployed or hold precarious jobs (Quintini, J. P. Martin, & S. Martin, 2007). Looking OECD countries, in 2014, the youth unemployment rate ranged from 5% in South Korea to 58% in Greece. The highest unemployment levels were observed in Southern European countries and post-socialist countries such as Poland and the Slovak Republic (OECD, 2015).

Wide variations in youth unemployment and underemployment are found across countries. Among the most

important institutional and structural factors contributing to these variations are employment protection regulations and the role of educational systems in signaling (Breen, 2005). Some typologies cluster countries by employment regime based on patterns of employment, employment protection regulations, signaling systems, and other structural indicators (Bambra & Eikemo, 2009; Gallie & Paugam, 2000; Quintini et al., 2007; Vogel, 2003; Walther, 2006). These typologies overlap with Esping-Anderson's (1990) classification of welfare regimes, although some studies show possible convergence across welfare states (Cinalli & Giugni, 2013).

The Scandinavian labor market is characterized by a high rate of employment for men and women, moderate youth unemployment, a high youth-to-adult unemployment ratio, and flexible work hours. Given the tradition of comprehensive welfare systems, employment protection is high (Esping-Andersen, 1990, 1999; OECD, 2015; Quintini et al., 2007; Stier, Lewin-Epstein, & Braun, 2001; Vogel, 2003; Walby, 2004).

Continental countries including Austria and Germany, are characterized by low youth unemployment, low youth-to-adult unemployment, moderate earnings inequality, and intermediate levels of social protection. A key factor in the low youth unemployment is the dual education system—the combination of apprenticeships in companies and vocational education at public vocational schools—to smooth the transition from school to work (Breen, 2005; Quintini et al., 2007; Vogel, 2003; Walby, 2004; Walthier, 2006).

The employment regimes of Anglo-Saxon countries feature low youth unemployment, a high youth-to-adult unemployment ratio, flexibility in the market, high-quality education, but fewer temporary jobs. Compared to Scandinavian countries, labor market income inequality in liberal countries is high, and social protections are limited (Quintini et al., 2007; Vogel, 2003; Walther, 2006).

Southern European countries tend to have low labor force participation for men and women, high unemployment, long bouts

of unemployment, and prolonged duration of transition to permanent jobs. Furthermore, unemployment benefits are limited, resulting in high market inequality (Gallie & Paugam, 2000; OECD, 2015; Quintini et al., 2007; Vogel, 2003; Walther, 2006).

The post-socialist countries, which once offered full employment and relative gender equality, have seen an increase in unemployment and inequality. Since the late 1990s, post-socialist countries, particularly Poland and Slovakia, have had the highest youth unemployment and the largest earnings disparities (OECD, 2015; Quintini et al., 2007).

In East Asia, Taiwan, Japan, South Korea, Hong Kong, and Singapore experienced rapid and sustained economic growth and an egalitarian income distribution. Full employment and a compressed earnings distribution kept the poverty rate down (Esping-Andersen, 1999; Tang, 2000). However, after the 1998 economic crisis and industrial restructuring (i.e. the decline in manufacturing industry and the increase in the service sector), the unemployment rate has risen and earnings gap have widened. In 2014, the unemployment rate for 15-to-24-year-olds reached 12.6% in Taiwan, 10% in South Korea, and 6% in Japan (Li, 2015; OECD, 2015). Although youth poverty levels in East Asia were lower than in most Western countries, the youth-to-adult unemployment ratio of Taiwan and South Korea reached 3.2, higher than the average ratio (2.2) of OECD countries. In 2013, the gross earnings gap (D9/D1) reached 4.7 in South Korea (OECD, 2015). In other words, East Asian countries have moved away from employment regimes featuring low inequality and full employment to societies with rising inequality. In terms of work regulations and employment policy, these countries are characterized by medium employment protection (OECD, 2017) but less effective enforcement of work regulations in some countries (e.g. Taiwan) (Kan & Lin, 2011), low educational signaling, and limited welfare provisions (Breen, 2005).

F. Social Welfare, Household Composition, and the Market

In summary, the three welfare mix components— household composition, social welfare, and the market—shape the opportunity structure. Conventionally, personal economic well-being has relied on family support and market income. In well-developed welfare states where the life course is highly defamiliarized and decommodified, the state is a bulwark against poverty resulting from market labor disadvantage and inadequate family support. Although previous studies have consistently found negative associations between comprehensive welfare resources and poverty in children or the elderly, this observation cannot account for youth poverty. Empirical evidence reveals high levels of youth poverty in societies with high social expenditures (e.g., Denmark, Finland) and low levels of poverty in countries with limited welfare benefits (e.g., South Korea, Taiwan). Applying decomposition analysis to cross-national data will show the contributions of household composition, social welfare, and the relative deprivation in market income to youth poverty differences across countries.

III. Data and Methods

To estimate the contributions of household composition, the market, and social welfare, this research relies on data from the Luxembourg Income Study collected in 2010, except for the data on Japan collected in 2008 (LIS, 2010). I selected 22 countries with consistent income and household composition data to cover a range of social welfare regime types. Japan is included in addition to Taiwan and South Korea to show the poverty of youth in East Asian countries, although the Japanese data collected during the GFC may be less comparable to the data from other countries. The 22 countries provide data on household composition and gross and net household income components, which are required for

examining the effects of household composition, the market income poverty, and social welfare on youth poverty. Following the typologies of welfare regimes proposed by Esping Andersen (1990, 1999) and other scholars (e.g., Ferrera, 1996; Holiday & Wilding, 2003), the countries are grouped into six welfare regimes: social democratic (Denmark, Finland, Iceland, Norway), conservative (Austria, France, Germany, Luxembourg, the Netherlands, Switzerland), liberal (Australia, Canada, Ireland, the UK, the US), Southern European (Spain), post-socialist (Czech Republic, Poland, Slovenia), and East Asian (Japan, South Korea, and Taiwan). As this study focuses on youth poverty, respondents aged between 18 and 29 are selected. The respondents who did not disclose information on gross income, taxes, compulsory contributions, and social transfers, are excluded from the analysis. More detailed information on missing data is shown in Appendix A. Analytic samples are weighted to reflect the total population of each country. The unweighted sample size ranges from 1,279 in Ireland to 75,700 in Norway.

A. Poverty Line and Equivalence Scale

Following the convention of international studies on poverty (e.g., LIS, OECD), this study uses a relative poverty approach to generate a specific poverty standard for each country. 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 taxes and after social transfers.¹ An equivalence scale of power 0.5, or the square root of the number of household members, is used to equate incomes for households of different sizes, reflecting economies of scale and consumption (OECD, 2012). Previous studies have used a wide range of

¹ 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.

equivalence scales. The most commonly used scales include the square root scale (applied here), (old) OECD scale (i.e. household head=1, each additional adult=0.7, each child=0.5), and OECD-modified scale (i.e. household head=1, each additional adult=0.5, each child=0.3) (Förster, 1994; Hagenaars, de Vos, & Zaidi, 1994). For sensitivity tests, I replicated the analyses using the OECD-modified scale. As Burniaux et al. (1998) suggest, while poverty levels may vary depending on different equivalence scales, the trends of poverty over time and the rankings across countries are less likely to be affected. The results and discussion are provided in Appendix B.

B. BTST Income Poverty, Welfare Effectiveness, and Household Composition

The three structural predictors of youth poverty are the market, social welfare, and household composition. The effect of **market income poverty**, aiming to evaluate young adults' relative deprivation in the market income distribution, is measured by the relative poverty rates based on household income before taxes and social transfers ("*BTST income poverty*", or before tax and social transfer income poverty, is used in the following sections) across household types. Although relative poverty and inequality are conceptually and methodologically different, the calculation of relative poverty is interlinked with the measurement of inequality (Foster, 1998; Foster & Shorrocks, 1988). BTST income consists of wages, salaries, property cash income, occupational pensions, and other market income components but excludes any social transfers. Similar to calculation of the poverty line and poverty rate based on net disposable income, the BTST income poverty line is income below 50% of the median equivalized household BTST income.

Welfare effectiveness is measured by the ratio of poverty rates based on net disposable income (after taxes and after social transfers) to the poverty rates based on BTST income. That is, welfare effectiveness is evaluated in terms of how much BTST

income poverty is reduced through social transfers and taxes (Brandolini & Smeeding, 2008; Heuveline & Weinshenker, 2008). The lower the ratio, the more the poverty rate is reduced, and the more effective the welfare programs.

The **household composition** of young adults is divided into nine types: single man with children (<18 years old), single man without children, single woman with children, single woman without children, coupled (i.e., married or cohabiting) young adults with children, coupled young adults without children, young adults with coupled parents, young adults with single parents, and others (e.g. living with grandparents, other relatives, or non-family members).

C. Analytic Methods

Decomposition is used to examine the effects of household composition, BTST income poverty, and welfare effectiveness. As Taiwan shows some unique patterns (e.g. the highest incidence of intergenerational coresidence and relatively low GDP) (Tai, 2012), it is the base country. Accordingly, the decomposition results estimate the contributions of these three structural factors to the differences between Taiwan's poverty rates and those of other countries. For decomposition analysis, I assume that no other income sources or relevant behaviors change in response to the changes in social transfers and earnings, including no changes in household composition, pay, taxes, or other income items. These assumptions are standard in decomposition analysis (Das Gupta, 1993).

To test the effects of household composition, welfare, and BTST income poverty on youth poverty, this study follows Das Gupta (1993) and Heuveline and Weinshenker (2008). First, the poverty rate (based on net disposable income) for young adults is:

$$P = \Sigma (H_i * P_i) \quad (1)$$

where P is the overall poverty rate for young adults in Taiwan, H_i

is the proportion of young adults living in household type i in Taiwan, and P_i is the net disposable income poverty rate for young adults in household type i in Taiwan.

To test the BTST income poverty and welfare effectiveness, I use some of the equations provided by Heuveline and Weinshenker (2008). The rewritten equation is a function of three vector factors:

$$P = \Sigma (H_i * M_i * [P_i/M_i]) \quad (2)$$

where M_i is the BTST income poverty rate for young adults in household type i in Taiwan and P_i/M_i is the ratio of the net disposable income poverty rate to the BTST poverty rate for young adults in household type i in Taiwan (i.e., welfare effectiveness). I use W_i to represent P_i/M_i . Therefore, the equation is rewritten:

$$P = \Sigma (H_i * M_i * W_i) \quad (3)$$

I include 21 countries in addition to Taiwan. For these 21 countries, the same terms are presented in lowercase letters, producing the following equation:

$$p = \Sigma (h_i * m_i * w_i) \quad (4)$$

I perform decomposition analyses to determine the contributions of living arrangements, welfare effectiveness, and BTST income poverty to the difference in poverty rates between Taiwan and each of other selected countries. The decomposition equations are:

$$p-P = \alpha\text{-effect} + \beta\text{-effect} + \gamma\text{-effect} \quad (5)$$

$$\alpha\text{-effect} = Q(h_i) - Q(H_i) \quad (6)$$

$$\beta\text{-effect} = Q(m_i) - Q(M_i) \quad (7)$$

$$\gamma\text{-effect} = Q(w_i) - Q(W_i) \quad (8)$$

More detailed discussion on the analytic method and equations are

shown in Appendix C.

Finally, hypothesis testing is conducted to evaluate whether the three effects contributing to the differences in poverty between Taiwan and another country are statistically significant. Following the method developed by Wang, Rahman, Siegal, and Fisher (2000), I generate 100 resamples from the original sample of each country using the bootstrapping normal approximation method and replicate decomposition to estimate the standard deviations of decomposition analyses. According to Wang et al. (2000), the standard deviations of the sampling distribution may be close to the standard errors of the component effects with 50-200 resamples (Efron & Tibshirani, 1986). Each resample size accounts for 20% of the original sample. Then I conduct 100 decomposition analyses for each country (100 x 22), estimate standard deviations, and conduct t-tests.

IV. Results

A. Household Composition

Table 1 shows household composition patterns by country. Consistent with the living arrangements of young adults revealed in previous studies, more than 60% of young Scandinavian adults lives alone or with their spouses, although about 45% of young Icelandic adults stays with their parents. Meanwhile, the majority of young respondents in Spain, East Asia, and post-socialist countries lives with their parents. With 62% of respondents residing with their coupled parents, the household composition of Taiwan seems to be the most economically beneficial for young adults. In addition, many young people live in households with their grandparents, other relatives, or non-family household members (i.e. category “others”).

Table 1 Household Composition Patterns of Young Adults by Country

Country	N	Single	Single	Single	Single	Coupled	Coupled	Young	Young	
		Man	Man	Woman	Woman	Coupled	Coupled	Adults w/	Adults w/	Others
		w/ Children	w/o Children	w/ Children	w/o Children	w/ Children	w/o Children	Coupled Parents	Single Parent	
<i>Social Democratic</i>										
Denmark	25,224	0.15	15.75	2.11	13.14	10.45	21.27	19.80	6.00	11.34
Finland	3,061	0.29	11.27	0.91	9.93	15.62	36.56	19.54	4.97	9.91
Iceland	1,631	0.12	8.28	2.88	6.13	15.94	14.84	36.97	7.98	6.87
Norway	75,700	0.16	18.52	1.80	15.62	13.63	14.45	24.20	7.63	4.01
<i>Liberal</i>										
Australia	5,623	1.07	6.28	2.15	4.32	10.99	19.60	31.39	8.59	16.57
Canada	9,012	0.63	10.42	1.83	7.25	10.86	12.97	34.50	8.82	12.72
Ireland	1,279	0.16	3.67	4.14	2.74	15.72	7.35	41.52	14.86	9.85
UK	7,075	0.17	6.15	4.17	4.38	15.89	20.34	28.18	10.76	9.96
US	30,460	0.63	6.38	3.66	5.30	16.27	12.96	29.49	11.13	14.16
<i>Conservative</i>										
Austria	1,800	0.22	7.28	1.67	7.11	11.61	11.89	45.28	9.06	5.89
France	5,724	0.14	9.99	1.55	9.42	17.38	20.16	27.53	10.13	3.69
Germany	2,911	0.00	10.65	2.06	11.99	10.07	16.01	37.17	10.48	1.58
Luxembourg	2,042	0.00	3.53	0.88	3.33	12.49	10.00	56.07	10.58	3.13
Netherlands	2,764	0.04	12.99	1.15	12.01	10.31	16.61	33.79	9.48	3.62
Switzerland	2,283	0.09	5.52	0.18	5.56	8.76	17.99	46.10	10.60	5.17
<i>Post-socialist</i>										
Czech Republic	2,849	0.11	4.56	0.70	2.88	11.69	11.76	51.14	13.90	3.26
Poland	18,684	0.80	4.34	1.02	4.46	17.13	7.62	46.68	7.99	9.97
Slovenia	2,105	0.10	4.94	1.00	2.00	12.21	6.94	59.14	9.41	4.28
<i>East Asian</i>										
Japan	1816	1.60	8.32	2.04	7.21	8.09	3.52	46.81	2.75	19.66
South Korea	3,845	0.08	3.93	0.60	4.19	7.67	4.19	60.73	15.95	2.68
Taiwan	7,174	0.52	5.07	0.52	3.37	5.23	1.77	61.63	10.96	10.94
<i>Southern European</i>										
Spain	4,453	0.34	3.30	0.63	2.56	6.62	8.47	58.39	11.83	7.86

B. Poverty Rates

Table 2 illustrates how young adults' economic well-being differs across countries. Based on net disposable income (after taxes and social transfers, see Table 2), the poverty level ranges from 5.16% for Taiwan to 22.81% for Norway. As expected, Scandinavian young adults are the most vulnerable to poverty, followed by their counterparts in Spain and liberal countries except for Australia. East Asian young adults are more economically secure. ANOVA tests are conducted to evaluate whether the differences in poverty rates (based on net disposable income) between Taiwan and other countries are statistically significant. The results show that the poverty rate of Taiwanese young adults is significantly lower than that of their counterparts in 17 of the selected countries ($p < .01$ to $p < .001$). The differences in youth poverty between Taiwan and the other four countries (i.e. Australia, Czech Republic, Luxembourg, and Switzerland) are not statistically significant.

Youth poverty also varies substantially across household type. Not surprisingly, young adults living with coupled parents are less likely to be poor. Young adults living with spouses are also doing well financially. Interestingly, although single young adults with children are generally the most economically disadvantaged, Scandinavian single parents are actually better off than single young adults without children. This is because Nordic welfare regimes are likely to provide generous social provisions for families with children.

Table 3 shows that BTST income poverty rates are substantially higher than poverty rates based on net disposable income for most countries outside of East Asia. As expected, when social transfers and taxes are not taken into consideration, the disparities in poverty across household type widen substantially. While young adults living with coupled parents and married young adults living only with their spouses still fare well, single mothers are most vulnerable, with poverty rates ranging from 13.5% for

Table 2 Net Disposable Income Poverty Rates by Household Composition and by Country

Country	Poverty	Single	Single	Single	Single	Coupled	Coupled	Young	Young	
		Man	Man	Woman	Woman	Coupled	Coupled	Adults w/	Adults w/	Others
		w/	w/o	w/	w/o	w/	w/o	Coupled	Single	
		Children	Children	Children	Children	Children	Children	Parents	Parent	
<i>Social Democratic</i>										
Denmark	18.65	34.21	42.55	27.87	47.59	5.84	10.89	1.40	3.04	14.72
Finland	13.82	28.65	37.09	17.89	36.74	5.04	11.03	1.46	10.22	14.21
Iceland	11.63	0.00	31.57	34.77	43.94	16.46	11.29	0.59	6.70	3.90
Norway	22.81	16.11	48.51	30.85	63.61	6.37	10.13	1.18	4.72	8.23
<i>Liberal</i>										
Australia	5.85	9.61	8.97	44.20	10.56	10.19	2.53	3.42	7.52	3.22
Canada	14.64	10.60	30.37	56.31	35.23	16.69	9.01	4.42	14.71	15.88
Ireland	11.60	48.53	30.52	45.95	23.50	10.31	0.37	3.56	13.38	27.85
UK	14.13	27.13	29.82	19.48	32.30	13.62	7.42	5.62	9.99	37.03
US	18.91	29.7	25.03	58.84	27.47	23.99	13.53	7.44	26.70	18.99
<i>Conservative</i>										
Austria	10.35	0.00	31.94	34.09	26.39	17.50	11.24	1.45	5.44	18.08
France	14.87	7.48	24.12	56.59	29.95	13.16	8.81	7.85	17.43	20.51
Germany	15.23	0.00	41.99	61.65	40.68	16.85	8.40	1.63	8.54	4.58
Luxembourg	6.11	0.00	12.27	77.95	9.46	7.58	6.12	2.91	9.63	14.74
Netherlands	11.83	0.00	32.07	52.26	37.78	5.27	2.78	1.51	6.81	10.02
Switzerland	6.43	0.00	20.93	18.63	13.18	10.69	4.35	3.62	4.01	13.48
<i>Post-socialist</i>										
Czech	6.09	0.00	10.77	72.54	10.85	7.84	6.53	2.51	10.48	10.77
Poland	8.92	12.56	6.40	28.88	7.28	9.97	1.80	8.61	15.09	8.60
Slovenia	8.91	31.14	25.13	83.83	48.67	13.32	2.66	4.56	11.66	5.28
<i>East Asian</i>										
Japan	8.64	10.34	13.25	10.81	10.69	14.29	0.00	4.11	30.00	12.61
South Korea	8.75	47.35	15.33	36.57	25.44	7.18	6.14	5.90	13.53	10.43
Taiwan	5.16	29.25	6.30	25.44	9.38	11.66	5.81	3.01	7.93	7.34
<i>Southern European</i>										
Spain	15.21	25.03	18.97	23.73	16.36	29.45	12.22	12.66	18.57	17.24

Table 3 BTST Income Poverty Rates by Household Composition and by Country

Country	Poverty	Single	Single	Single	Single	Coupled	Coupled	Young	Young	Others	
		Man	Man	Woman	Woman			Adults w/	Adults w/		
		w/	w/o	w/	w/o	w/	w/o	Coupled	Single		
		Children	Children	Children	Children	Children	Children	Parents	Parent		
<i>Social Democratic</i>											
Denmark	31.67	39.47	53.65	74.01	59.81	20.91	24.03	6.41	19.63	35.30	
Finland	22.98	52.71	45.23	80.70	46.06	21.93	16.16	7.93	23.99	37.68	
Iceland	22.17	0.00	46.06	78.25	60.85	37.59	15.17	3.62	21.33	15.89	
Norway	31.05	38.14	53.33	83.98	66.31	20.10	14.78	6.41	23.65	25.54	
<i>Liberal</i>											
Australia	13.09	28.72	13.32	81.60	15.82	24.96	3.39	8.51	24.75	9.53	
Canada	20.54	20.46	32.16	74.21	36.18	29.64	9.65	9.44	25.30	24.53	
Ireland	29.11	84.06	28.33	83.24	22.86	34.34	8.25	23.00	43.35	19.03	
UK	25.51	66.58	37.27	87.18	35.15	32.40	7.08	13.42	32.84	40.45	
US	23.83	35.38	23.71	70.07	27.17	31.33	14.45	11.58	36.33	25.78	
<i>Conservative</i>											
Austria	16.20	33.34	33.32	61.11	30.74	37.73	12.45	4.58	10.60	27.21	
France	21.24	10.28	27.41	76.25	28.78	21.61	8.76	16.99	29.93	36.83	
Germany	24.22	0.10	51.77	94.47	46.79	30.09	13.38	7.18	26.82	31.71	
Luxembourg	14.57	0.00	8.57	82.98	19.26	16.20	6.99	11.38	30.49	18.01	
Netherlands	24.06	0.10	54.41	85.19	58.28	16.80	7.28	7.76	27.80	22.36	
Switzerland	9.90	0.01	25.07	18.63	15.77	11.34	4.25	6.81	18.62	14.19	
<i>Post-socialist</i>											
Czech	9.98	12.39	11.79	69.55	9.69	13.83	6.12	6.32	18.91	14.34	
Poland	14.93	17.81	11.17	33.10	9.67	9.45	1.92	15.26	26.77	25.18	
Slovenia	13.53	31.14	29.15	83.83	51.97	17.92	4.99	9.17	16.87	15.09	
<i>East Asian</i>											
Japan	9.20	10.34	10.6	13.51	13.74	10.88	0.10	5.18	28.00	14.29	
South Korea	9.62	47.35	17.62	28.97	26.18	9.08	6.14	6.54	15.46	8.70	
Taiwan	5.66	24.18	7.01	27.89	6.89	9.50	3.30	3.34	11.69	8.32	
<i>Southern European</i>											
Spain	20.40	12.84	23.13	31.75	23.80	25.43	10.36	17.89	29.55	28.95	

Japan to 94.5% for Germany. Interestingly, BTST income poverty rates are very similar to net disposable income poverty rates in East Asia. This shows that East Asian young adults and young parents mainly rely on market income when social provisions are limited. At the same time, the striking poverty differences between income before and after taxes and social transfers for Scandinavian single parents show the effectiveness of social democratic welfare programs in mitigating poverty of families headed by a single parent, especially when that parent is a mother.

C. Decomposition

Table 4 summarizes the results of decomposition analyses. The first column shows the poverty disparity between Taiwan and each of the other selected countries. The next three columns show the contribution of each factor to that difference. Using Denmark as an example, the country's youth poverty rate (based on net disposable household income) is higher than Taiwan's by 13.49 percentage points. The strongest effect driving this difference is the higher BTST income poverty in Denmark, which contributes +14.79 percentage points. There is also a large positive effect for household composition differences of +8.07 and a countervailing effect of better welfare program effectiveness in Denmark at -9.37.

The difference in youth poverty levels between Taiwan and liberal countries ranges from 0.69 to 13.75 percentage points. Although differences in household composition and higher welfare effectiveness (e.g., in Ireland and the UK) are not inconsequential, the largest contribution to this difference comes from having higher BTST income poverty rates across household types in these countries.

Actually, the BTST income poverty levels across household types are lower in Taiwan than in other countries. The low BTST income poverty keeps Taiwan's youth poverty rate low despite fragmented and limited social transfers for young adults and their family members. Put another way, although the better social

Table 4 Decomposition of Household Composition, BTST Income Poverty, and Welfare Effectiveness

Country	Poverty Difference	Household Composition	BTST Income Poverty	Welfare Effectiveness
<i>Social Democratic</i>				
Denmark	13.49	8.07	14.79	-9.37
Finland	8.66	4.91	12.02	-8.26
Iceland	6.47	4.64	9.43	-7.60
Norway	17.65	9.32	15.50	-7.17
<i>Liberal</i>				
Australia	0.69	1.24	4.47	-5.02
Canada	9.48	3.18	10.36	-4.05
Ireland	6.44	1.86	13.41	-8.82
UK	8.97	2.42	13.11	-6.56
US	13.75	4.04	12.71	-3.00
<i>Conservative</i>				
Austria	5.19	2.44	7.40	-4.65
France	9.71	2.10	12.41	-4.79
Germany	10.08	5.03	11.97	-6.92
Luxembourg	0.95	0.17	5.86	-5.08
Netherlands	6.67	4.15	10.55	-8.02
Switzerland	1.27	0.28	3.55	-2.56
<i>Post-socialist</i>				
Czech Republic	0.93	0.51	3.12	-2.69
Poland	3.77	0.33	6.92	-3.48
Slovenia	3.75	0.11	6.76	-3.11
<i>East Asian</i>				
Japan	3.49	0.48	2.96	0.05
South Korea	3.59	0.02	3.63	-0.05
Taiwan	--	--	--	--
<i>Southern European</i>				
Spain	10.05	0.00	12.49	-2.44

welfare programs in liberal countries reduce youth poverty relative to Taiwan (if limited, in the US), this falls far short of reversing the youth poverty in Canada, Ireland, the US, and the UK due to higher BTST income poverty levels across households. These results indicate that if Taiwan's BTST income poverty rate were replaced with that of the US (without other factors changing), Taiwan's youth poverty rate would increase by at least 12.71

percentage points.

In social democratic countries, rates of youth poverty are 6 to 18 percentage points higher than in Taiwan. This is attributable to much higher BTST income poverty and the lesser prevalence of intergenerational coresidence in these countries. Although the social transfers of social democratic countries reduce Taiwan's youth poverty percentage by 7 to 9 percentage points, living arrangements and BTST income poverty add much more. Together, these factors lead to very high percentages of youth poverty in Scandinavian social democratic countries.

Compared to Taiwanese youth, young adults in some conservative countries are generally more likely to fall below the poverty line. Similar to the decomposition patterns revealed in social democratic countries, higher poverty levels come from more independent living arrangements and higher BTST income poverty levels in conservative countries. In addition, conservative welfare regimes are more effective than the Taiwanese welfare state in reducing youth poverty. For example, adopting the living arrangements and BTST income poverty levels of the Netherlands would add 4 and 11 percentage points to the poverty of Taiwanese young adults, respectively. By contrast, Dutch social provisions would subtract 8 percentage points.

The poverty differences between post-socialist countries and Taiwan are more modest, ranging from 0.93 to 3.77 percentage points. As intergenerational coresidence is also common among Eastern Europeans, the living arrangements do not contribute much to differences in poverty. The difference in BTST income poverty is still the most significant driver of the disparities in poverty between post-socialist countries and Taiwan.

As expected, because intergenerational coresidence is also common in Southern Europe, the differences in household composition patterns do not contribute to the poverty disparity between Spain and Taiwan. Spanish BTST income poverty would add 12.49 percentage points of poverty to Taiwanese young adults although the welfare systems would subtract 2.44 percentage

Table 5 Decomposition of Household Composition, BTST Income Poverty, and Welfare Effectiveness (Based on Resamples)

Country	Poverty Difference	Household Composition	BTST Income Poverty	Welfare Effectiveness
<i>Social</i>				
<i>Democratic</i>				
Denmark	13.36***	8.32***	15.26***	-10.22**
S.D.	0.76	1.47	2.30	3.53
Finland	8.81***	6.22*	13.58***	-10.99 ^
S.D.	1.85	2.79	3.68	5.57
Iceland	6.74**	4.72***	10.25***	-8.22**
S.D.	2.08	1.26	2.37	2.79
Norway	17.76***	9.50***	17.15*	-8.89
S.D.	0.62	2.60	7.44	6.13
<i>Liberal</i>				
Australia	0.89	1.40	5.08*	-5.59
S.D.	0.89	1.53	2.20	3.42
Canada	9.58***	3.38***	10.85***	-4.65**
S.D.	1.48	0.80	1.83	1.69
Ireland	6.84*	2.06 ^	13.65**	-8.88**
S.D.	3.03	1.09	4.05	3.20
UK	9.07***	2.56**	13.55***	-7.03***
S.D.	1.05	0.96	1.57	1.92
US	13.89***	4.14***	13.26***	-3.51 ^
S.D.	0.82	0.82	1.51	1.83
<i>Conservative</i>				
Austria	5.20**	2.59**	7.68***	-5.08**
S.D.	1.75	0.98	1.91	2.11
France	9.76***	2.11*	13.17***	-5.52**
S.D.	1.76	1.01	2.05	2.24
Germany	10.10***	5.12***	12.61***	-7.63**
S.D.	1.92	1.37	2.23	2.75
Luxembourg	1.19	0.18	4.78	-3.77
S.D.	2.37	2.44	3.21	4.07
Netherlands	6.38**	4.25**	10.95***	-8.82**
S.D.	2.49	1.42	2.60	3.08
Switzerland	1.21	0.52	3.28	-2.60
S.D.	1.44	1.42	3.34	1.98
<i>Post-socialist</i>				
Czech Republic	3.56**	0.53	3.02 ^	0.00
S.D.	1.50	0.77	1.79	1.24
Poland	3.86***	0.41	7.45**	-3.99
S.D.	0.68	0.85	2.66	3.38
Slovenia	3.73*	0.21	6.58**	-3.06

S.D.	1.71	0.78	2.00	2.19
<i>East Asian</i>				
Japan	3.56*	0.53	3.04 [^]	-0.01
S.D.	1.50	0.77	1.79	1.24
South Korea	3.79**	-0.02	3.96*	-0.14
S.D.	1.28	0.58	1.75	1.59
Taiwan	--	--	--	--
<i>Southern European</i>				
Spain	10.01***	-0.01	12.61***	-2.59
S.D.	1.47	0.63	2.29	2.02

Note: [^] $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed t-tests)

points. On the other hand, given that other Southern European countries (i.e. Greece and Italy) are excluded from the analysis because the data on gross income are not available for the two countries, Spain alone may not represent the youth poverty pattern in Southern Europe.

In addition, the youth poverty patterns are quite similar in East Asian countries. BTST income poverty is the major contributor to the three percentage point poverty disparity between Taiwan and the other two East Asian countries. The effects of living arrangements and welfare effectiveness are negligible. The decomposition analyses confirm that Japan, South Korea, and Taiwan differ from most Western countries in terms of poverty patterns, household composition, market structures, and social welfare systems.

Finally, Table 5 presents the results for the decomposition analyses and t-tests on the basis of 100 resamples of each country. The results based on the resamples are generally similar to the results based on the original samples. The youth poverty rate for Taiwan is significantly lower than most countries with the exceptions of Australia, Luxembourg, and Switzerland. The more independent living arrangements of young Scandinavian adults significantly contribute to the observed poverty discrepancies. On the other hand, the household composition patterns of young adults from societies with prevalent intergenerational coresidence (e.g. Japan, South Korea, Spain, and post-socialist countries) do

not add much to the poverty differences between Taiwan and these countries ($p > .1$, $df = 99$). The higher levels of BTST income poverty significantly add 4 to 17 percentage points to the poverty of Taiwanese young adults. Finally, the social provisions of most social democratic, liberal, and conservative countries (except for Australia, Luxembourg, Norway, and Switzerland) could substantially reduce the poverty of Taiwanese young adults whereas the welfare systems of Spain, Japan, South Korea, and post-socialist countries do not lead to significant differences in youth poverty.

V. Conclusion

While the economic well-being of youth continues to deteriorate, rates of youth poverty differ substantially across countries. Variations in family composition, the market, and social welfare contribute to cross-national differences in poverty risks. Although generous social provisions are consistently found to alleviate child and elderly poverty, contrary to expectations, high youth poverty has been found in advanced welfare states and low youth poverty in less developed welfare states. This raises the question of why high social expenditures do not translate into low youth poverty and how each structural factor helps shape the economic prospects of young adults. This research decomposes the contributions of these three structural factors to the cross-national disparities in youth poverty. The decomposition analyses confirm that social welfare is critical to the economic well-being of youth. Consistent with previous studies (Tai & Treas, 2009), Western welfare systems, particularly the Scandinavian welfare states, are much more effective in reducing youth poverty than the Taiwanese welfare system. According to these analyses, adopting social democratic welfare systems could reduce youth poverty rates in Taiwan by 7-9 percentage points (or 8-11 percentage points according to the results based on the resamples).

Although social provisions reduce youth poverty, the advantage of Western social welfare is offset by more independent living arrangements and higher BTST income poverty levels in Western societies. The dramatic increase in poverty following young adults' leaving the parental home indicates not only the tremendous impact of household composition, but also the marginalization of young adults in welfare states. Major welfare programs still operate on standard transitions (Furstenberg, Rumbaut, & Settersten, 2004) when adulthood transitions have been increasingly diversified due to prolonged education and postponed entry into the labor market and marriage. School-leavers, first-time job seekers, and young adults cycling between education and work may cease to be eligible for unemployment benefits or social assistance. Thus, young adults are likely to meet economic needs by living with their parents, pooling their household income, and sharing living expenses. Not surprisingly, the prevalence of coresidence with parents is critical for the economic well-being of East Asian and Southern European young adults. If Taiwanese young adults had the same living arrangements as young adults in Scandinavian countries, the poverty level of Taiwanese young adults would increase by 5 to 9 percentage points (or 5 to 10 percentage points according to the results based on the resamples).

The relative deprivation in the BTST income distribution is another factor that undermines the economic security of young adults. Compared to Taiwan, the higher levels of BTST income poverty in Western countries enhance the poverty risk for young adults by 9-16 percentage points (or 10-17 according to the results based on the resamples) in social democratic countries, by 12-13 percentage points in France and Germany, and by 12-14 percentage points in Spain, the UK, and the US.

Of course, the family, the market, and welfare systems are not independent of each other. Living arrangements are interrelated with social welfare and market income when we

assume that total household income (i.e., all social transfers and BTST income from all members) is equally shared. Thus, the composition of household members determines to a large extent the total market income and social transfers a household may receive. In addition, decomposition analysis assumes that the effect of a change in one factor can be analyzed while all other factors are held constant, when realistically, the other factors would also change. For example, an increase in income inequality may prompt people at the bottom of the income distribution to move in with other family members. Alternately, an increase in social welfare programs aimed at young adults may permit them to live independently. Thus, both systematic changes and human agency in dynamic societies mean that decomposition analysis can offer only a partial picture of the determinants of poverty.

Nevertheless, this research makes important contributions to our understanding of youth poverty in the following ways. This study is the first to decompose the contributions of structural factors to international variations in youth poverty. This study estimates the roles of the market, families, and social provisions in buffering poverty for young adults in different countries. For example, the high poverty risk of young Scandinavian adults because of their early independence and low BTST income is offset by more generous social provisions; but in East Asia, the prevalence of intergenerational coresidence compensates for limited social provisions. These findings are essential empirical evidence for policy makers to more adequately respond to the economic predicaments that young adults encounter.

In addition, this research extends the scope of previous comparative studies of youth poverty to include Japan, South Korea, and Taiwan and maximizes the variations in poverty patterns, welfare systems, and market income poverty. While most international studies of youth poverty are focused on young adults in the West, this study concentrates on Taiwan and shows precisely where the financial support for young adults lies in varying social

contexts. Although the rates of youth poverty in East Asian countries are lower than in most Western countries, this observation may obscure the economic struggles of young East Asian adults. Our findings suggest that whereas youth unemployment has been increasing and the wage gaps between young and prime-age adults have been growing wider, East Asian families assume responsibility for the institutional gap for personal economic security from late teens through early adulthood. Furthermore, given limited social provisions for young and old, particularly in Taiwan and South Korea, prime-age Taiwanese and Korean adults may be overwhelmed by the responsibility of supporting both their children and their elderly parents. As long as the support for young and old relies on the family, youth unemployment and other youth-related issues may remain “invisible” to East Asian governments (Inaba, 2011).

In addition, prolonged residential and economic dependency may delay young adults’ acquisition of autonomy and limit their decisions about their family formation and career establishment, both of which may in turn hinder the development of the society (Allyón, 2009). Previous studies have shown that extended coresidence with parents is associated with young adults’ longer spells of poverty in Southern European countries (Allyón, 2009). In contrast, although young Scandinavian adults are at high risk of poverty after leaving the parental home, they exit poverty quickly with more comprehensive social provisions (Allyón, 2015). In addition, extremely low fertility has been observed in countries where intergenerational living arrangements prevail (e.g. East Asia and Southern Europe). For example, the total fertility rate plunged to 0.9 for Taiwan in 2010 and 1.2 for South Korea and 1.3 for Spain in 2015 (Ministry of the Interior, 2015; World Bank, 2015). These findings suggest that extended residential and economic dependence of young adults affect not only the economic well-being of young adults and their family members, but also the progression of individuals’ life course and the development of the

society.

Finally, this study reveals the limitations of welfare regime typology. There are substantial variations within welfare regime types. For example, the youth poverty level in liberal countries ranged from 6% for Australia to 19% for the US in 2010. Norwegian young adults are at much higher poverty risk than their counterparts in Finland and Iceland even though they are usually assigned to the same welfare cluster. Regime typologies are a useful approach to compare and classify patterns, but the results of this paper point to the need for comprehensive studies of the variations within and between state welfare regimes.

Appendix A: Missing data

Some countries from the LIS database have been excluded from the final analysis for the following reasons. The 2010 wave of data is not available for Belgium, China, and Sweden. The income data of Hungary, Georgia, Greece, Italy, and Russia were collected net of taxes and social security contributions and thus I am not able to estimate BTST income poverty and welfare effectiveness based on these data files. In addition, I exclude India, South Africa, and South American countries because these countries generally have a lower national income and their poverty patterns may be less comparable to those observed in most high-income countries. Some countries, such as Israel, that are less likely to fit into in the welfare regime types outlined here (Lewin-Epstein, Adler, & Semyonov, 2004), are also excluded from the analysis.

In addition, respondents are excluded if data are missing on their BTST income (LIS-harmonized measure, including total payments from labor, property, and social or private transfers), total social transfer income (LIS-harmonized, including social security, disability, family benefits, etc.), after tax and transfer income (LIS-harmonized), and individual and household characteristics (e.g. the age and gender of the respondent, the relation of the respondent to household head, the numbers of children and adults in the household, and the gender, age, and partnership of household head). The missing cases account for less than 7% of the survey sample of each country.

Appendix B

A range of equivalence scales is applied based on different technical assumptions about economies of scale in consumption. Among these scales, the most commonly used are the square root scale, the (old) OECD scale, and the OECD-modified scale (Burniaux et al., 1998; Förster, 1994; Hagenaars et al., 1994; OECD, 2012). Poverty rates are affected by different equivalence scales. For sensitivity tests, I replicated the analyses using the OECD-modified scale; the first household member is assigned a value of 1, of 0.5 to each additional adult and of 0.3 to each child. The results are shown in Appendix B. In general, the equivalized income is higher if the economies of scale in consumption are higher (i.e. the value for elasticity is smaller). For example, in a five-member family with fixed household income (say, 60,000 NT dollars per month), families containing more adults (e.g. households in East Asia) will have lower equivalized income (and thus, higher poverty rates) than households with fewer adults if greater weight is given to each additional adult in the household. Thus, compared to the youth poverty rates shown in Table 2 (i.e. based on the square root scale), the results here (i.e. based on the OECD-modified scale) show slightly smaller differences in youth poverty between Taiwan and Scandinavian countries where intergenerational coresidence is much less common.

However, the application of different equivalence scales does not substantially affect the ranking of poverty across countries. This is also observed in the replicated analyses revealed in Table Appendix 1. Additional analyses are conducted to examine the correlation of poverty disparities and the three structural effects based on the two scales. The Spearman's rho values are very high (all pair-wise values are around 0.97, $p < .001$, $n = 22$).

Consistent with the analyses using the square root scale, the countries with higher levels of youth poverty are Denmark, Norway, the US, Germany, and Spain while those with lower rates include Australia, Czech Republic, Japan, Luxembourg, South

Korea, Switzerland, and Taiwan. BTST income poverty still contributes to the poverty discrepancy most substantially in most countries whereas welfare effectiveness also leads to considerable differences in poverty between Taiwan and social democratic and conservative countries. In addition, East Asian countries present similar patterns in terms of poverty levels, household composition, and welfare effectiveness.

Appendix C

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

$$p-P = \alpha\text{-effect} + \beta\text{-effect} + \gamma\text{-effect}$$

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

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

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

$$Q(H_i) = (\sum H_i \times m_i \times w_i + \sum H_i \times M_i \times W_i)/3 + (\sum H_i \times m_i \times W_i + \sum H_i \times M_i \times w_i)/6$$

$$Q(M_i) = (\sum h_i \times M_i \times w_i + \sum H_i \times M_i \times W_i)/3 + (\sum h_i \times M_i \times W_i + \sum H_i \times M_i \times w_i)/6$$

$$Q(W_i) = (\sum h_i \times m_i \times W_i + \sum H_i \times M_i \times W_i)/3 + (\sum h_i \times M_i \times W_i + \sum H_i \times m_i \times W_i)/6$$

$$Q(h_i) = (\sum h_i \times M_i \times W_i + \sum h_i \times m_i \times w_i)/3 + (\sum h_i \times M_i \times w_i + \sum h_i \times m_i \times W_i)/6$$

$$Q(m_i) = (\sum H_i \times m_i \times W_i + \sum h_i \times m_i \times w_i)/3 + (\sum H_i \times m_i \times w_i + \sum h_i \times m_i \times W_i)/6$$

$$Q(w_i) = (\sum H_i \times M_i \times w_i + \sum h_i \times m_i \times w_i)/3 + (\sum H_i \times m_i \times w_i + \sum h_i \times M_i \times w_i)/6$$

where $p-P$ is the difference in poverty rates between Taiwan and any other country in this study; $\alpha\text{-effect}$ is the contribution of the difference in the living arrangements of young adults between Taiwan and another country; similarly, $\beta\text{-effect}$ is the contribution of the difference in the BTST income poverty rates of young adults between Taiwan and another country; finally, $\gamma\text{-effect}$ is the contribution of the difference in welfare effectiveness reducing the BTST income poverty of young adults between Taiwan and another country. Specifically, $Q(H_i)$ is the $\beta\gamma$ -standardized rates for household composition in Taiwan for household type i and $Q(h_i)$ is the $\beta\gamma$ -standardized rate in any other country included in this study. Likewise, $Q(M_i)$ and $Q(m_i)$ are the $\alpha\gamma$ -standardized rates for BTST

income poverty and $Q(W_i)$ and $Q(w_i)$ are the $\alpha\beta$ -standardized rates for welfare effectiveness for Taiwan and any other selected country, respectively. For example, to evaluate the contribution of household composition to the difference in poverty rates between Taiwan and for instance, Denmark, I compute a hypothetical poverty difference by keeping each country's own distribution of household composition but substituting the BTST income poverty rates and welfare effectiveness of Taiwan and Denmark with identical values (Heuveline & Weinshenker, 2008). As the equations show, the identical values are the exhaustive combinations of the BTST income poverty and welfare effectiveness of Taiwan and Denmark (i.e. $M_i \times W_i$, $m_i \times w_i$, $M_i \times w_i$, and $m_i \times W_i$). In other words, the equations show how the disparity in poverty between Taiwan and Denmark would change if each country were to keep its own distribution of household composition but use the identical BTST income poverty rate and welfare effectiveness (i.e. held constant).

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解構青年貧窮：
檢視家戶組成、社會福利與市場等
對 22 國青年貧窮的影響

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摘要

本文使用 Luxembourg Income Study 資料庫，探討造成 22 個國家青年貧窮率差異的結構性因素。本研究採用解構法，檢視的三大結構因素為家戶組成、社會福利、與市場收入相對貧窮率，並以台灣為參照國家，與 21 個工業化國家進行比較。主要的研究目標是解構三大結構性因素對青年貧窮率差異的相對影響。根據資料分析結果，北歐青年貧窮率最高，雖然其社會福利有效地降低貧窮，但是北歐青年離家甚早，加上這些青年的市場收入很低，因此仍有高比例的北歐青年面臨貧窮問題。相對而言，台灣、南韓、日本等東亞國家，即使社會福利有限，由於成年子女與父母同堂的居住安排普遍，並且市場收入貧窮率較低，因此東亞青年貧窮率遠低於許多西方國家。

關鍵詞：青年貧窮、解構、社會福利、家戶組成