LIS
Working Paper Series

No. 676

A Comparative Study of the Institutional Factors Influencing Working Poverty: Focusing on Two-parent Households in Developed OECD Countries

Sang-Yong Sim

Revised April 2018

Luxembourg Income Study (LIS), asbl

A Comparative Study of the Institutional Factors Influencing Working Poverty: Focusing on Two-parent Households in Developed OECD Countries

Sang-Yong Sim

2016

A Comparative Study of the Institutional Factors Influencing Working Poverty: Focusing on Two-parent Households in Developed OECD Countries

by

Dr. Sang-Yong Sim
Associate-Professor of Department of Social Welfare
School of Humanities and Social Science
Sangji University
Sangjidae-gil 83
Wonju, Gangwondo, Korea
Email: ssy@sangji.ac.kr

* This work was published in the *Korean Social Security Studies* and was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2015S1A5A2A01009258).

A Comparative Study of the Institutional Factors Influencing Working Poverty: Focusing on Two-parent Households in Developed OECD Countries

Abstract

This study identified institutional factors influencing working poverty by comparing developed OECD countries. This study used the working poverty rate of two-parent families with children under 18 as the dependent variable. Pooled time-series cross-sectional regression analysis with an unbalanced panel design was performed. The supply-side factors in mixed capitalist economies are ineffective at reducing working poverty reduction. As a result, the severity of working poverty is not transitory in many developed capitalist countries. However, making rash generalizations of poverty convergence is inadvisable because working poverty varies greatly by country. This research finds the factors that help reduce working poverty reduction include work-family reconciliation spending, family cash spending, proportional representation system, left seat, cumulative left cabinet, union density, wage setting coordination, and employment protection for regular and irregular workers. Therefore, the contributory factors influencing working poverty reduction must be found in each country's institutional context and actors' roles. Surprisingly, contrary to popular belief, the political institution variables and labor market institution variables have a greater effect on working poverty reduction than the welfare institution variables in general. The proportional representation system, employment protection for regular workers, and unionization rate are the most powerful variables. The result indicates that the performance of socialist democratic countries based on the high-road system is being maintained at present.

Key Words comparative study, pooled time-series cross-sectional regression analysis, working poverty

.

A Comparative Study of the Institutional Factors Influencing Working Poverty: Focusing on Two-parent Households in Developed OECD Countries

Ⅰ. Introduction

At the end of the 1980s, poverty emerged as a new topic of discussion. In particular, poverty among the working class was rediscovered as a social issue. The rising rate of working poverty has caused anxiety among researchers and policy makers because working poverty is shaped by social forces. More importantly, the inter-country gap of working poverty continues to expand rather than converge. Indeed, the difference in working poverty is more significant than in overall poverty. Thus, identifying the social forces influencing working poverty reduction is at the core of poverty research.

Recent poverty research allows a broader insight into the relationship between poverty and macro factors (Alderson, 1999; Gustafsson and Johansson, 1999; Alderson and Nielsen, 2002; Brady, 2003a; Brady, 2003b; Moller, Bradley, Huber, Nielsen and Stephens, 2003; Mahler, 2004; Kenworthy and Pontusson, 2005; Brady, 2005; Brady, 2006). According to the findings, poverty convergence resulting from the degeneration of the socioeconomic environment has not occurred. The international difference in poverty reduction stems from institutional factors involving welfare, political, and labor market systems.

Unfortunately, studies of working poverty from the micro-level point of view that focus on a single country make it difficult to generalize the findings internationally. The characteristics of the working poor vary across countries. Thus, any generalization should be made with caution. Further, the close relevance between working poverty and macro factors has not been reflected in this body of research. This can undermining its persuasive power internationally (Crettaz and Bonoli, 2010).

This study aimed to identify those institutional factors influencing working poverty by comparing developed OECD countries. To achieve this goal, pooled time-series cross-sectional regression analysis with an unbalanced panel design was performed. As a proxy index of working poverty this research used international data collected from two-parent families with children under 18. Despite the various operational definitions of working poverty, long-term time-series international indexes that reflect these definitions are lacking. The LIS reports the child poverty rate of two-parent households by applying 50% of median income as the criterion. Conceptually, households with children under 18 belong to the working generation. Therefore, this study renamed the child poverty rate of two-parent households as two-parent families with children under 18. Therefore, the results

are useful for comparative analysis.

This research has a limitation in that it does not include single-parent households, single households, and couple households without children. However, two-parent families are typical families and account for a significant proportion of the working generation. In particular, because the characteristics of atypical households do not have to be considered, this research can offer a representative result that identifies the current picture of working poverty and its macro causes.

This study is different from existing comparative studies on working poverty such as Brady, Fullerton, and Cross (2009) and Brady, Fullerton, and Cross (2010). They carried out multi-level research that considers both micro and macro factors. However, their studies are limited by their capacity to identify the macro factors influencing working poverty. While abundant individual cases have been conducted and various micro factors found, cross-sectional data from fewer than 20 countries have been examined. For this reason, multi-level research falls short of being able to replace macro-level comparative research based on time-series cross-sectional data.

In addition, this research reflects newly added indexes in the 2000s and studies the period from the 1980s to 2010. By contrast, existing studies have used data collected to the 1990s.

Ⅱ. Theoretical Background and Research Review

1. Degeneration of the Socioeconomic Environment

Economic environments are thought to have a greater impact on working poverty than on overall or elderly poverty, because a growing economy increases demand, which creates more employment opportunities. Hence, working poor households can take the opportunity to exit poverty. In the past, expanding standardized employment in manufacturing sector was one way in which to alleviate working poverty (Blank, 2000). On the contrary, the overall poverty rate includes households headed by economically inactive individuals. Hence, economic environments affect working poverty more strongly than overall poverty.

However, in recent years, economic environments that affect poverty alleviation have been identified to have different patterns. First, as quantitative growth based on Fordism reached saturation, the chronically slow-growing economy started to weaken the trickle-down effect of economic growth (Norton, 2002). Furthermore, although the economy is growing, the incomes of the working class may not rise, unless a labor-friendly factor income distribution is attained, and the labor market structure is worsening. As a result, paradoxically, economic growth itself can exacerbate income inequality and increase relative poverty (Tobin, 1994). Second, the recent phenomenon of

de-industrialization casts a dark shadow over efforts to alleviate working poverty. The expansion of the service industry is producing a de-standardized and demand-oriented labor market with polarized employment. Slow-growing labor productivity has intensified competition between workers and the unemployed, yielding perpetuating low wages and unemployment (Myles and Pierson, 2001). The transition to the service economy has brought about a downward standardization of wages, growing job insecurity, low wages, and increasing income inequality. For these reasons, job growth in the service sector has not translated into working poverty reduction (Andress and Lohmann, 2008; Kollmeyer, 2013).

On the contrary, women's participation in economic activity can positively affect to the domestic economy (Albrecht and Albrecht, 2007; Schwartz, 2010). While participation in economic activity by high-class women can exacerbate income inequality, expanding employment opportunities for the working poor can increase household income and contribute to working poverty reduction considering that the economic participation of low-class women is relatively high (Christopher, England, Smeeding and Ross, 2002).

Moreover, a change in demographic environments can influence the degeneration of working poverty. In the past, a young population structure and nuclear families could effectively alleviate working poverty (Estévez-Abe, 2005; Bonoli, 2006; Crettaz and Bonoli, 2010). However, recent studies have found different trends. The growth in atypical households has become the focus of research. For typical households, the growing elderly population and presence of children are major factors that can undermine the earning power of households. When poverty is measured at the household level, the presence of non-working members has a determining effect on the horizontal income distribution, even in typical households (Kollmeyer, 2013). Except for welfare intervention, children and the elderly are more vulnerable because of life-cycle characteristics (Kangas and Palme, 1998). The growth in the proportion of the elderly is thus an important factor affecting household poverty. Moreover, the number of children in a household also influences working poverty. Meanwhile, the presence of an unemployed adult child who resides with his/her parents because of the high rate of unemployment has emerged as a risk factor exacerbating poverty in southern Europe (Crettaz and Bonoli, 2010).

2. Institutional Factors Affecting Working Poverty Reduction

1) Welfare Institutions

According to neoclassical economics, welfare systems impede the efficient distribution of resources

and undermine growth potential because of their inherent unproductiveness (Barro, 1991). According to this logic, welfare expansion interrupts trickle-down effects and undermines efforts to alleviate working poverty. However, this argument lacks a sufficient logical basis in reality. According to Harberger's hypothesis, tax expenditure is unrelated to making inroads toward economic growth (Benbaou, 1996). Furthermore, the findings of Bassanini's (2000) empirical study support Aschauer's hypothesis that government expenditure does not interfere with the accumulation of private capital; by contrast, it rather helps improve basic social conditions. Pryor (2004) also reports that the small governments of many Anglo-Saxon countries affect the potential for economic growth negatively, whereas the large governments of Nordic nations have a positive effect. Further, the low level of welfare provision by small governments has been found to increase income inequality and poverty, leading to a vicious cycle that reduces the potential for economic growth if the ability of the low-income class to accumulate human capital is impaired (Benbaou, 1996).

Recent discussions on the varieties of capitalism (VoC) have focused on the institutional context. The VoC approach views a well-established welfare system that mediates resource distribution at the national level as a public good. In uncoordinated liberal market economies (LMEs), capital pursues the low-road (low-skill/low-wage) production regime. Private mediation is dominant between capital and workers seeking short-term benefits. In coordinated market economies (CMEs), however, capital pursues the high-road (high-skill/high-wage) production regime and social mediation operates on the bases of seeking long-term benefits (Hancké, Rhodes and Thatcher, 2007). In CMEs, welfare systems emerge as an agenda of corporatism because public goods ensure skill accumulation and the stability of labor reproduction (Granados and Knoke, 2005).

LMEs loathe supplying public goods, and aim to adopt the majoritarian political model. A government has a limit in its regulatory role to encourage a market economy. On the contrary, the governments of CMEs play an enabling role under the consensus political model. Because these nations have the capabilities to protect aggregative public goods, they promote interest representation systems and comprehensive collective deals between capital and labor (Lijphart, 1999; Soskice, 2007). As a result, LMEs correspond to the Beveridge system of liberal welfare states, in which public assistance is of great importance and a low flat-rate benefit is provided. Among CMEs, the Continental European welfare state operating industry-level mediation has an elective affinity with the Bismarckian welfare state based on employment-based transfer benefits. Northern European nations operating macro-level mediation have an elective affinity with the socialist democratic welfare state. They provide universal flat-rate and income-related benefits with public social services (Huber and Stephens, 2005).

From the gender perspective, children and family policy can alleviate working poverty. Generally, the cash benefits for children complement yearned income (Huber, Stephens, Bradley, Moller and

Nielsen, 2009). But they are ineffective at reconciling the work and family of women. In this regard, work-family reconciliation policy can help women participate in paid work. Moreover, child-care policy can set the conditions under which they can escape from the burden of raising children, while parental leave policy can help meet caring needs without suffering unemployment (Christopher, 2002; Leitner, 2003; Moller and Misra, 2005; Brady and Burroway, 2012).

Previous studies have found that generous welfare benefits have more effect on poverty alleviation than structural factors (Brady, Fullerton and Cross, 2010). The level of welfare provision is relevant to poverty alleviation in OECD countries (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Brady, 2003b; Brady, 2006; Brady and Kall, 2008; Brady, Fullerton and Cross, 2009; Brady, Fullerton and Cross, 2010). Because public health spending provides health-related allowances, it serves as a buffer against decreasing earning power due to illness or injury (Brady, 2003b; Brady and Kall, 2008; Scruggs and Allan, 2006; Brady, Fullerton and Cross, 2010). Indeed, the poverty rate can improve if the short-term income replacement rate of unemployment benefit is high (Moller, Bradley, Huber, Nielsen and Stephens, 2003). Children and family spending also has a positive effect on poverty alleviation (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Brady, Fullerton and Cross, 2010). Poverty studies from the gender perspective find that spending on family and work-family reconciliation policy can help reduce single mother poverty (Huber, Stephens, Bradley, Moller and Nielsen, 2009; Brady and Burroway, 2012). On the contrary, public assistance alone cannot alleviate poverty (Moller, Bradley, Huber, Nielsen and Stephens, 2003).

2) Labor Market and Political Institutions

Labor market institutions are thought to have greater impacts on working poverty than on overall poverty because these variables affect income capacity directly. According to the VoC approach, the provision of public goods leads to regime-specific performance (Deer, 2005). This view considers poverty alleviation to be a public good. As such, the results depend on the characteristics of the labor market.

Because LMEs pursue the low-road production regime, private mediation between capital and labor is dominant. The low unionization rate, corporate-level labor–capital negotiation, and low employment security are typical characteristics of an uncoordinated labor market system. In CMEs pursuing the high-road production regime, the negotiation between labor and capital is based on strategic social mediation. Therefore, the labor market in the CMEs is characterized by high unionization, industry-level or national-level wage negotiation, and high employment security. These join to enlarge active labor market policy in Nordic countries particularly (Hancké, Rhodes and Thatcher, 2007).

Previous studies tend to focus on the impact of the labor market system on poverty. Among labor market system indicators, the unionization rate has been consistently argued to help reduce poverty (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Brady, 2003b; Brady, Fullerton and Cross, 2009; Brady, Fullerton and Cross, 2010). Others suggest that concentrated wage negotiation can also alleviate poverty (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Brady, 2003b; Brady, Fullerton and Cross, 2010), while employment protection contributes to poverty reduction (Brady, Fullerton and Cross, 2010). Some studies report that active market policy can reduce poverty (Brady, Fullerton and Cross, 2009), whereas others suggest that these two factors are not correlated (Brady and Kall, 2008; Brady, Fullerton and Cross, 2010).

The majoritarian political model popular among LMEs ideally features the simple majority voting system, simple majority cabinet, and discrepancy between congress and the administration. On the contrary, CMEs tend to adopt the consensus political model characterized by the proportional representation system, coalition government, and balance of power between congress and the administration. Thus, the difference in the constellation of the political system influences party composition and inter-party relationships (Austin-Smith, 2002; Ontiversos and Verardi, 2005; Iversen and Soskice, 2006). The majoritarian political model typically features a two-party system that excludes the left party. Although the left party is still prevalent, policy stability is interrupted by the single power of the government. Further, "catch all" parties tend to be eager to attract more votes from median voters, and therefore do not favor progressive agenda such as welfare expansion. On the contrary, because the consensus political model forms the multi-party system institutionally, the proportional representation system ensures the influence of the left party on the government. Additionally, considering a social income function, there is a strong tendency to create a center-left coalition cabinet (Iversen and Soskice, 2008).

In LMEs, a conflict-ridden political culture such as the "winner takes all" type is dominant and a minimalist regulatory government that tends to be against social mediation runs the state. In CMEs, however, in which a political culture based on negotiation and compromise takes root, the enabling government tends to pursue comprehensive and mediated benefit. Therefore, political actors pursue agreements with labor and capital regarding not only wage and welfare policy but also finance and labor market policy (Granados and Knoke, 2005).

Previous studies have focused on identifying the influence of the left party on poverty alleviation on the basis of power resources theory. These studies can be divided into two camps—those arguing that the left party contributes to poverty reduction (Brady, 2003b; Scruggs and Allan, 2006) and those arguing that the two are unrelated (Scruggs and Allan, 2006). Some studies report that a cumulative left cabinet which affects the stabilization of the institutional influence of the left party, helps reduce poverty (Brady, 2003b; Brady, Fullerton and Cross, 2009). According to other studies,

the government type and electoral system, parliamentary cabinet system and size of valid electoral districts are closely related to poverty reduction (Ontiversos and Verardi, 2005; Scruggs and Allan, 2006). These studies report that the number of institutional veto points (e.g., federalism, bicameral system, national referendum) reduces absolute poverty butt enlarges relative poverty. However, the number of institutional veto points unrelated to the absolute poverty of the working class. According to Lijphart (1999), the institutional veto points are weakly associated with the consensus political model, and thus the generalization of this view is limited.

Ⅲ. Research Design

1. Research Object and Major Variables

To identify the institutional causes of working poverty, this research sought to verify the theoretical assumptions of previous poverty researches. Hence, it selected 15 countries that can represent the welfare and production regimes of developed OECD countries for which comparable indexes of the independent variables can be obtained. In particular, it excluded southern European countries, countries previously in the Communist Bloc, East Asian countries, and Central and South American countries. Data spanning 1981 to 2010 were used. Data collected before the 1980s were excluded because more than one index was missed among the continuous variables.

Recent data missing indexes on continuous variables were also eliminated. This research includes 104 cases and the panel data ranged over 24 years.

As a proxy index of working poverty, this research used the working poverty rate of two-parent families with children under 18. As mentioned earlier, the LIS reports the child poverty rate of two-parent households by applying the criterion of 50% of median income. Conceptually households with children under 18 belong to the working generation. Therefore this study renamed the child poverty rate of two-parent households as two-parent families with children under 18. The control variables consisted of socioeconomic variables, and period-fixed dummies were included to detect the time effects.

Institutional factors as independent variables were selected based on a review of the theoretical background and previous research. Finally, to guard against neglecting statistical parsimony, this research constructed institutional variables strictly.

<Table 1> The definition of variables and archival sources

Variables	description
Dependent variable	
Working poverty rate	the poverty rate of two-parent households with children under 18 by applying the criterion of 50% median-income threshold
Control Variables	
- Socioeconomic variables	
GDP per capita (log)	real GDP per capita in 2005 international dollars (log)
Industrial employment	industrial employees as % of wage and salaried employees
Male employment rate	male civilian employees as % of population 15 years and over
Female employment rate	female civilian employees as % of female population 15 years and over
% population over 64	population aged 65 years as % of total population
% population 0-14	population aged under 15 years as % of total population
- period-fixed dummy	1980s (ref.), 1990s, after 2000
Independent Variables	
- Welfare institution variables	
Work-family reconciliation spending	sum of childcare and parental leave spending as % of GDP
Family cash spending	family cash spending as % of GDP
Unemployment spending	unemployment spending as % of GDP
Incapacity spending	incapacity spending as % of GDP
- Political institution variables	
Government type	parliamentary system (ref.), presidential or collegiate executive system
Election system	proportional representation system (ref.), modified proportional representation system, single member simple plurality system
Left seat	share of seats in parliament won by parties classified as left in the most recent election
Cumulative left cabinet	cumulative left cabinet score from 1946 to the year of the observation
- Labor market institution variables	
Union density	net union membership as % of employed wage and salary earners
Wage setting coordination	1=fragmented wage bargaining confined largely to individual firms or plants / 2=fixed or alternating industry and firm level bargaining / 3=industry level bargaining with no or irregular pattern setting / 4=mixed industry and economy-wide bargaining / 5=economy-wide bargaining
Employment protection (regular)	0=least strictness / 6=most strictness
Employment protection (irregular)	0=least strictness / 6=most strictness

Sources 1) The poverty rate of two-parent households with children under was renamed from the child poverty rate of two-parent households. (LIS Inequality and Poverty Key Figures, http://www.lisdatacenter.org)

2) The independent variables were arranged based on Brady, Beck and Stephens (2014).

Regarding welfare institutions, welfare policies expected to be relevant to working poverty reduction were selected almost for the first time in this body of the research. However, instead of sickness spending, this research adopted incapacity spending. While Brady, Beck, and Stephens (2014) provide data on the generosity of sickness benefit, they could not be used in this research, because some indexes were missing. The OECD homepage (http://stats.oecd.org) does not provide data on paid sick leave spending separately (occupational injury and disease or other sickness daily allowances). Incapacity spending consists of the sum of disability pensions, occupational injury insurance, sick pay, and related in-kind benefits. Total social spending and public health spending were excluded as independent variables, as they are closely related to pension spending and elderly-related public health spending. Hence, total social spending and public health spending can significantly reduce overall or elderly poverty (Brady, Fullerton and Cross, 2010). However, logic suggests that these two types of spending are not closely related to working poverty since that the direct benefit on the working generation is low because of the low proportion of them that reside with the elderly, whereas the rising burden on total social spending and public health spending diminishes their disposable income (Jacobs, 2000).

Regarding political and labor market institutions, the left cabinet was excluded as an independent variable, because, according to the previous studies (e.g., Scruggs and Allan, 2006) the sporadic seizing of power by the left party would not help formulate stable anti-poverty policies. This is in striking contrast to research (Brady, 2003b; Brady, Fullerton and Cross, 2009) that reports that a cumulative left cabinet can greatly stabilize the institutional influence of the left party. Moreover, active labor market spending was unable to be included as an independent variable because data on certain countries could not be obtained. To ensure statistical parsimony, this research did not include other proxy variables such as public employment.

2. Statistical Treatment and Analysis Method

Panel data are temporally uneven and the number of countries varies depending on the time point. Moreover, cross-sectional data outnumber time-series data. Further, panel data do not satisfy the assumption of the independence of errors and because inter-unit heteroscedasticity is immeasurable, standard errors are calculated inaccurately. All these factors make it difficult to apply ordinary least squares or Beck and Katz's panel corrected standard error models. In addition, pooled time-series cross-sectional regression analysis using a panel corrected standard error model should not be performed if the time points are less than 10 or 15. The average time point of this study is only 6.9. While such regression analysis can be used when a large amount of homogeneous time-

series data are extracted from a relatively small amount of panel data, it cannot be used if the cross-sections completely outnumber the time-series or if the data are temporally uneven, as in this research. Finally Parks–Kmenta's feasible generalized least squares model assumes serial correlation errors as well identical auto-regression processes for each unit. This method can be applied if large amount of homogeneous time-series data are extracted from a relatively small numbers of units. As such, it cannot be applied if the cross-sectional units are more numerous than time-series units or if data are uneven over time (Huber, Stephens, Bradley, Moller and Nielsen, 2004).

Given the foregoing, this study performed pooled time-series cross-sectional regression analysis with an unbalanced panel design. The random-effects model is a matrix of weighted averages derived from both the within-unit estimates of a fixed-effects model and a between-effects model. Hence, this model can accommodate both of between-unit and within-unit variants. It includes both general error terms and unit-specific error terms, and eliminates the variants that correspond to country-specific average (Alderson, 1999). Meanwhile, fixed-effects model performs the OLS analysis that includes unit-specific constants, and it replaces within-unit variants with unit-specific average for all variables (Alderson, 1999; Hsiao, 2003). Hence, this model regards that the unobserved variables are related to the observed variables. This contrasts with the random-effects model in which the unobserved variables are treated as random factors (Wooldridge, 2002). However, according to Beck and Katz (2001), the traditional fixed-effects model has a limitation in that it can only be applied in time-invariant variables.

Considering the existence of time-invariant variables, this research applied a hybrid random-effects model. Allison (2009) suggests that the hybrid random-effects model can combine the advantages of fixed-effects and random-effects model. First, it allows us to estimate the fixed-effects and between-effects. Second, it can estimate the effects of time-invariant variables. Therefore, traditional random-effects and hybrid random-effects models yield different results when the number of time-points is small and the data unbalanced, as in this research. Further, the hybrid random-effects model can control for unobserved heterogeneity by sacrificing the efficient estimator of the random-effects model. By applying the hybrid random-effects model in a random-effects context, this research included the time-invariant variables (e.g., the government type and the election system, in this study). However, regarding time-varying co-variation, the country mean is treated as fixed-effects in a linear model, and the deviation from the mean is identical to the estimate that would be produced with the country-fixed effects.

IV. Results

The Appendix presents the descriptive statistics of the variables. The overall poverty rate is 9.3%,

and the working poverty rate is 6.9%. The standard error of the working poverty rate (3.97) is larger than that of the overall poverty rate (3.80). The United States has the highest working poverty rate (14.1), followed by the United Kingdom (11.1), Canada (10.2), Ireland (10.1), and Australia (9.3). The lowest working poverty rate is found in Finland (2.2), followed by Sweden (2.8), Norway (2.8), Denmark (3.0), Germany (4.2), the Netherlands (4.5), Belgium (4.8), France (5.9), Luxemburg (6.1), and Austria (7.5).

This research constructed four models. As the basic model, model 1 included the socioeconomic variables. Model 2, model 3, and model 4 were constructed to identify the influence of the institutional variables while controlling for that of the socioeconomic variables. After adding the welfare institution variables in model 2, the political institution variables and labor market variables were included in mode 3 and model 4 respectively. Following Brady, Fullerton and Cross (2010), the t-time variables were included as the independent and dependent variables. Regarding per capita GDP, t-1 year and natural-log values were selected. Period-fixed dummies were included in all models. In addition, government type and election system were modified as dummy variables. <Table 2> shows the results of the regression analysis performed to identify the institutional causes of working poverty reduction.

The findings of the research can be summarized as follows.

First, the results for the socioeconomic variables look gloomy. The economic variables including GDP per capita do not contribute to working poverty alleviation. Even worse, industrial employment and male employment rate worsen working poverty. Some studies report that employment expansion in the manufacturing sector does not reduce poverty (Brady, Fullerton and Cross, 2009; Brady, Fullerton and Cross, 2010). The negative effect of male employment on working poverty reduction is the first novel finding of this research, because this gender-sensitive variable was included for the first time in comparative poverty work. In addition, in contrast to previous studies (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Brady, 2006; Brady and Kall, 2008), we find that the female employment rate does not help reduce working poverty.

These results imply that future analysis must consider employment quality (i.e., whether employment provides an adequate living) in addition to employment quantity (Kollmeyer, 2013). Thus, future studies must consider additional factors such as the incidence of low pay and inter-decile ratio P90/P10 if time-series indexes can be obtained.

Finally, the percentages of population over 64 and under 15 are found to be major factors in increasing working poverty. These results are consistent with the theoretical background.

Second, the results for the welfare institution variables offer noteworthy implications. The

<Table 2> The determinants of working poverty in OECD Countries (N=104)

	Model 1	Model 2	Model 3	Model 4
Control variables				
- Socioeconomic variables				
GDP per capita (log)	-0.111	-0.106	-0.022	-0.012
	(1.91)	(1.81)	(1.85)	(1.60)
Industrial employment	0.037	0.078	0.004*	0.120
	(0.06)	(0.06)	(0.05)	(0.05)
Male employment rate	0.197	0.307**	0.192*	0.236***
	(0.07)	(0.07)	(0.05)	(0.05)
Female employment rate	0.072	0.139	0.068	0.101
	(0.05)	(0.04)	(0.04)	(0.04)
% population over 64	0.273**	0.412***	0.351***	0.265***
	(0.23)	(0.26)	(0.24)	(0.15)
% population 0-14	0.393***	0.384***	0.427***	0.379***
	(0.18)	(0.17)	(0.16)	(0.14)
- period-fixed dummy				
1990s	0.130*	0.132*	0.175**	0.172**
	(0.60)	(0.57)	(0.63)	(0.65)
after 2000	0.199*	0.182	0.266**	0.180
	(0.95)	(0.91)	(0.97)	(1.00)
Independent variables				
- Welfare institution variables				
Work-family reconciliation spending		-0.163**	-0.181**	-0.225***
		(0.41)	(0.39)	(0.36)
Family cash spending		-0.126	-0.014	0.026
		(0.55)	(0.61)	(0.37)
Unemployment spending		-0.022	-0.005	-0.024
		(0.30)	(0.27)	(0.23)
Incapacity spending		0.472	0.061	-0.130
		(0.44)	(0.40)	(0.20)
- Political institution variables				
Presidential or collegiate executive system			-0.137	
			(1.00)	
Modified proportional representation system			0.267**	
			(1.39)	
Single member simple plurality system			0.524***	
			(1.09)	
Left seat			-0.186**	
			(0.02)	
Cumulative left cabinet			-0.196	
			(0.05)	
- Labor market institution variables				
Union density				-0.267***
				(0.14)
Wage setting coordination				-0.127*
				(0.20)
Employment protection (regular)				-0.295***
				(0.36)
Employment protection (irregular)				-0.167**
				(0.20)
Constant	-8.374	-18.105	-23.108	3.215
	(20.84)	(21.19)	(21.25)	(16.15)
LR	26.15***	36/66***	61.93***	58.43***

* p<.10, ** p<.05, *** p<.01 (Two-tailed test)

Note 1: Standardized regression coefficient and standard error (in parentheses).

2. The ML (maximum-likelihood) random-effects model was applied.

regression analysis shows that work-family reconciliation spending affects working poverty alleviation, whereas the family cash spending is not significant. The children- and family-related benefit should not be restricted to the cash benefit for children for having alleviated the poverty of the working generation who care for their own children. Indeed, the cash benefit for children is not low in the major Continental European countries in which the working poverty rate is relatively high comparing with northern European countries. In addition, the standard deviation of work-family reconciliation spending (0.78) is larger than that of family cash spending (0.57). These results suggest that the combination of the cash benefit for children and work-family reconciliation policies (i.e., child-care policy and parental leave policy) are important for alleviate female poverty (Moller, Bradley, Huber, Nielsen and Stephens, 2003; Huber, Stephens, Bradley, Moller and Nielsen, 2009; Brady, Fullerton and Cross, 2010; Brady and Burroway, 2012).

Unemployment spending does not alleviate working poverty because this simply reflects the rate of unemployment. As economic conditions worsen, rising unemployment would make working conditions unstable and intensify downward competition. Hence, rising unemployment spending can be identified as a poverty risk for the working generation. Thus, it is better for unemployment spending to be weighted by the unemployment rate.

Incapacity spending does not relate to working poverty reduction, perhaps because of data limitation. As mentioned in the previous section, incapacity spending consists of the sum of disability pensions, occupational injury insurance, sick pay, and related in-kind benefits. Hence, the direct benefit on the working generation is relatively small, while the rising burden on social security tax lowers disposable income. To capture the real influence on the working generation, it would be better to formulate continuous data on paid sick leave spending rather than apply the generosity of incapacity spending or the sickness benefit.

Third, the results for the political institution variables generally confirm the theoretical background. The result of the election system is significant, showing that proportional representation has a superior effect on reducing working poverty than the modified proportional representation system or single member simple plurality system.

The standardized regression coefficients in model 3 indicate that the election system is the most powerful variable for reducing working poverty, especially compared with the welfare institution variables. As mentioned in the previous section, the differences in the constellation of political systems influence party composition and inter-party relationships. CMEs tend to adopt the consensus political model in which proportional representation systems are prevalent to forms multi-party systems institutionally.

The result for the cumulative left cabinet is not significant. This is unsatisfactory from the standpoint of the theoretical assumptions. Recall that the influence of the cumulative left cabinet is significant if

the election system is dropped from the model (result not shown). In other words, the proportional representation system secures the influence of the left party in the government (Iversen and Soskice, 2008). Therefore, this research can conclude that the cumulative left cabinet has helped reduce working poverty indirectly. Hence, the left seat affects working poverty alleviation. This result is consistent with the theoretical assumptions.

The influence of government type is not significant. That is, there is no meaningful difference in the effect on working poverty reduction between the parliamentary system and presidential or collegiate executive system. The result for government type is influenced by the peculiarity of this nominal variable. To capture the real influence of government type, it must be rescaled by at least three scales. Brady, Beck, and Stephens (2014) classify the presidential and collegial system by using the same scale. However, the United States (presidential systems) as well as Finland and France (collegial systems) have different political models.

Fourth, the results for the labor market institution variables support the theoretical assumptions. Union density, wage setting coordination, and employment protection for regular workers and irregular workers, all help reduce working poverty.

The standardized regression coefficients in model 4 indicate that employment protection for regular workers and unionization rate are the more powerful variables in this respect. The impact of employment protection for regular workers in reducing working poverty is mainly because many countries encourage permanent employment. In addition, the positive effect of union density means that the power of labor unions can have a decisive effect on promoting wage and labor market policy, welfare policy, and finance policy (Granados and Konke, 2005).

This study included wage setting coordination as an independent variable for the first time in poverty research. Despite the recent tendency toward decentralization, which can weaken the function of coordinated negotiation, this result means that the more coordinated negotiation occurs, the greater is the reduction in working poverty. Nationwide coordinated negotiation is the core high-road element of social democratic countries (Hancké, Rhodes and Thatcher, 2007).

This study also includes employment protection for irregular workers for the first time. The result occurs with the theoretical assumptions. The contribution of employment protection for irregular workers represents 56.6% of employment protection for regular workers (0.295 vs. 0.167). This composition effect is low because the proportion of irregular workers is low in most countries. Further, the standard error of employment protection for irregular workers (1.40) is larger than that of employment protection for regular workers (0.85), suggesting that the employment protection mechanism for irregular workers is malfunctioning in many countries. The proportion of irregular workers has been growing in many countries (particularly, among female workers), and therefore employment protection for irregular workers must be closely monitored to investigate female

poverty (Barier, Brygoo and Viguier, 2003).

Ⅴ. Conclusion

The severity of working poverty is not transitory. Working poverty remained high since the 1980s and has persisted because of the worsening of demographic factors. An ageing population and the presence of children in working households aggravate working poverty. However, the supply-side factors in mixed capitalist economies are ineffective at reducing working poverty reduction. The regression analyses presented herein indicate that economic factors such as economic growth, industrial employment, and female employment fail to help working poverty alleviation. What are worse, industrial employment and the male employment rate exacerbate working poverty.

More significantly, this research finds that making rash generalizations of poverty convergence is inadvisable because working poverty varies greatly by country. This research finds the factors that help reduce working poverty reduction include work-family reconciliation spending, family cash spending, proportional representation system, left seat, cumulative left cabinet (although the effect is indirect), union density, wage setting coordination, and employment protection for regular and irregular workers.

Therefore, the contributory factors influencing working poverty reduction must be found in each country's institutional context and actors' roles. Surprisingly, contrary to popular belief, the political institution variables and labor market institution variables have a greater effect on working poverty reduction than the welfare institution variables in general. The proportional representation system, employment protection for regular workers, and unionization rate are the most powerful variables.

In general, the alleviation of working poverty alleviation by these institutional factors is superior in socialist democratic countries. Our regression analyses indicate that the typical characteristics of the welfare, political, and labor market institutions of socialist democratic countries help reduce working poverty. Hence, the performance of socialist democratic countries based on the high-road system is being maintained at present.

References

Albrecht, D. E. and Albrecht, C. M. 2007. "Income Inequality: The Implication of Economic Structure and Social Conditions." *Sociological Spectrum*. 27. pp.165-181.

Alderson, Arthur S. 1999. "Explaining Deindustrialization: Globalization, Failure, or Success?" *American Sociological Review*. 64. pp.701-721.

Alderson, Arthur S. and F. Nielsen. 2002. "Globalization and the Great U-Turn." *American Journal of Sociology*, 107. pp.1244-1299.

Allison, P. D. 2009. *Fixed Effects Regression Models*. Newbury Park: Sage.

Andress, H-J. and H. Lohmann. 2008. *The Working Poor in Europe: Employment, Poverty and Globalization*. Cheltenham: Edward Elgar.

Austin-Smith, D. 2002. "Redistributing Income under Proportional Representation". *Journal of Political Economy*. 108. pp.1235-1269.

Barier J. C., A. Brygoo and F. Viguier. 2003. *Precarious Employment in Europe: A Comparative Study of Labour Market related Risks in Flexible Economies*. Centre d'etudes de l'emploi ESOPE Project 27.

Barro, R. J. 1991. "Economic Growth in a Cross Section of Countries." *Quarterly Journal of Economics*. 106. pp.407-443.

Beck, N. 2001. "Time Series-Cross Section Data: What Have We Learned in the Past Few Years." *Annual Review of Political Science*. 4. pp. 271-293.

Beck, N. and J. N. Katz. 2001. "Throwing Out the Baby with the Bath Water." *International Organization*. 5. pp.487-495.

Benbaou, R. 1996. *Inequality and Growth*.NEER Working Paper 5658.

Blank, R. M. 2000. "Fighting Poverty: Lessons from Recent U. S. History." *Journal of Economic Review*. 88. pp.348-351.

Bonoli, G. 2006. "New Social Risks and the Politics of Post-industrial Social Policies" in Armingeon, K. and G. Bonoli. (eds.) *The Politics of Post-Industrial Welfare States: Adapting Post-war Policies to New Social Risks*. Oxford and New York: Routledge.

Brady, D. 2003a. "The Poverty of Liberal Economics." *Socio-Economic Review* 1. pp.369-409.

Brady, D. 2003b. "The Politics of Poverty: Left Political Institutions, the Welfare State and Poverty." *Social Forces*. 82. pp.557-588.

Brady, D. 2005. "The Welfare State and Relative Poverty in Rich Western Democracies, 1967-1997." *Social Forces*.83(4).pp.1329-1364.

Brady, D. 2006. "Structural Theory and Relative Poverty in Rich Western Democracies, 1969-2000." *Research in Social Stratification and Mobility*. 24(2). pp.153-175.

Brady, D. and R. Burroway, 2012. "Targeting, Universalism and Single Mother Poverty: A Multi-level Analysis Across 18 Affluent Democracies." *Demography*.49(2).pp.719-746.

Brady, D., A. Fullerton and J. M. Cross. 2009. "Putting Poverty in Political Context: A Multi-Level Analysis of Working-Aged Poverty Across 18 Affluent Democracies." *Social Forces* 83(1). pp.271-299.

Brady, D., A. Fullerton and J. M. Cross. 2010. "More than Just Nickels and Dimes: A Cross-National Analysis of Working Poverty in Affluent Democracies." *Social Problems*.57(4).pp.559-585.

Brady, D., E. Huber and D. Stephens. 2014. *Comparative Welfare States Data Set*. http://www.lisdatacenter.org/resources/other-databases.

Brady, D., D. Kall. 2008, "Nearly Universal, But Somewhat Distinct: The Feminization of Poverty in Affluent Western Democracies, 1969-2000." *Social Science Research*.37(3).pp.976-1007.

Crettaz, E. and G. Bonoli. 2010. *Worlds of Working Poverty: Cross-National Variation in the Mechanisms That Lead Poverty among Workers*. LIS Working Paper No. 539.

Christopher, K. 2002. *Helping mothers escape poverty: As European policy shows, better wages and generous supports are better cure than promoting marriage*. LIS Working Paper No. 298.

Christopher, K., P. England, T. M. Smeeding and K. Ross. 2002. "The Gender Gap in Poverty in Modern Nations: Single Motherhood, the Market, and the State." *Sociological Perspectives*. 45. pp.219-242.

Deeg, R. 2005. "Path Dependency, Institutional Complementarity, and Change in National Business Systems" in Morgan, G., R. Whitley and E. Moen (eds.). *Changing Capitalism?: Internationalization, Institutional Change, and Systems of Economic Organization*. Oxford and New York: Oxford University Press.

Estévez-Abe, M. 2005. "Gender Bias in Skills and Social Policies: The Varieties of Capitalism Perspective on Sex Segregation." *Social Politics*.12(2). pp.180-215.

Granados, F. J. and D. Knoke. 2005. Organized Interest Group and Policy Networks. inJanoski, T., R. Alford, A. Hicks and Mildred A. Schwartz (eds.) *The Handbook of Political Sociology: States, Civil Societies, and Globalization*. New York: Cambridge University Press.

Gustafsson, B. and M. Johansson. 1999. "In Search of Smoking Guns: What Makes Income Inequality Vary Over Time in Different Countries?" *American Sociological Review*. 64. pp.585-605.

Hancké, B., M. Rhodes and M. Thatcher. 2007. "Introduction: Beyond Varieties of Capitalism" in Hancké, B., M. Rhodes and M. Thatcher (eds.). *Beyond Varieties of Capitalism: Conflict, Contradictions, and Complementarities in the European Economy*. Oxford: Oxford University Press.

Huber, E. and J. D. Stephens. 2005. "Welfare States and the Economy" in Smelser, N. J. and R. Swedberg (eds.). *The Handbook of Economic Sociology. (2nd ed.)*. New York and Oxford:

Princeton University Press.

Huber, E., J. D. Stephens, D. Bradley, S. Moller, and F. Nielsen. 2004. *The Welfare State and Gender Equality.* LIS Working paper No. 279.

Huber, E., J. D. Stephens, D. Bradley, S. Moller, and F. Nielsen. 2009. "The Politics of Women's Economic Independence." *Social Politics*.16(1). pp.1-39.

Iversen, T. and D. Soskice. 2006. "Electoral Institutions, Parties, and the Politics of Class: Why Some Democracies Redistribute More Than Others." *American Political Science Review*.100(2).pp.165-181.

Iversen, T. and D. Soskice. 2008. "Partisan Politics, the Welfare State, and Three Worlds of Human Capital Formation." *Comparative Political Studies*. 41(4/5). pp.600-637.

Jacobs, D. 2000.*Low Inequality with Low Redistribution? An Analysis of Income Distribution in Japan, South Korea and Thailand Compared to Britain*. Centre for Analysis of Social Exclusion. London School of Economics Casepaper 33.

Kangas, O. and J. Palme. 1998. *Does Social Policy Matter? Poverty Cycles in OECD Countries*. LIS Working Paper No. 188.

Kenworthy, L. and J. Pontusson. 2005. "Rising Inequality and the Politics of Redistribution in Affluent Countries." *Perspectives on Politics*. 3(3). pp. 449-471.

Leitner, S. 2003. "Varieties of Familialism: The Caring Function of the Family in Comparative Perspective." *European Societies*. 5. pp.353-375.

Lijphart, A. 1999.*Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*. New Haven and London: Yale University Press.

LIS. *LIS Inequality and Poverty Key Figures* (http://www.lisdatacenter.org).

Mahler, Vincent A. 2004. "Economic Globalization, Domestic Politics and Income Inequality in the Developed Countries: A Cross-National Analysis." *Comparative Political Studies*.37(9). pp.1025-1053.

Mincer, J. 1966. "Labor-Force Participation and Unemployment: A Review of Recent Evidence" in Gordon, R. A. and M. Gordon (eds.). *Prosperity and Unemployment*. New York: Wiley.

Moller, S., D. Bradley, E. Huber, F. Nielsen and John D. Stephens. 2003. "Determinants of Relative Poverty in Advanced Capitalist Democracies." *American Sociological Review*. 68. pp.22-51.

Moller, S., and J. Misra. 2005. *Familialism and Welfare Regimes: Poverty, Employment and Family Policies*. LIS Working Paper No. 399.

Morillas, J. R. 2009. *Redistribution as an Income Mobility Process: The Identification and Measurement of Redistribution*. LIS Working Paper No. 513.

Myles, J. and P. Pierson. 2001. "The Comparative Political Economy of Pension Reform" in Pierson P. (ed). *The New Politics of the Welfare State*. Oxford: Oxford University Press.

Norton, S. W. 2002. "Economic Growth and Poverty: In Search of Trickle-Down". *Cato Journal*.22(2). pp.263-275.

Ontiversos, D. and V. Verardi, 2005.*Electoral Systems, Poverty and Income Inequality*. LIS Working Paper No. 402.

Perrson, T., G. Roland and G. Tabellini. 2000. "Comparative Politics and Public Finance." *Journal of Political Economy*. 108. pp. 1121-1161.

Pryor, F. 2004. "Market Economic Systems." LIS Working Paper No. 404.

Schwartz, C. 2010. "Earnings inequality and the Changing Association between Spouses' Earnings." *American Journal of Sociology*. 115. pp. 1524-1557.

Scruggs, L. and J. Allan. 2006. "The Material Consequences of Welfare States." *Comparative Political Studies*.39(7). pp. 880-904.

Soskice, D. 2007. "Macroeconomics and Varieties of Capitalism" in Hancké, B., M. Rhodes and M. Thatcher (eds.). *Beyond Varieties of Capitalism: Conflict, Contradictions, and Complementarities in the European Economy*. Oxford: Oxford University Press.

Wooldridge, J. M. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge: MIT Press.

Appendix

The mean values of variables by country

	poverty w-povrt	GDP incap	industry gov-type	Memp election	femp leftseat	over64 leftcum	0-14 union	care+lea wageset	famcash re-EPL	unemp irre-EPL
total	9.3	30361.1	28.9	57.0	49.4	14.4	19.0	0.9(0.6/0.3)	1.1	1.5
(104)	6.9	2.6	-	-	36.0	17.5	41.2	2.9	1.9	1.8
AUL	12.7	29866.6	26.6	61.9	50.7	12.2	20.9	0.4(0.3/0.1)	1.6	0.8
(7)	9.3	2.1	0	0	52.1	18.1	28.6	4→2	1.3	0.9
AUS	8.4	28704.3	36.0	57.1	46.4	15.3	17.1	0.8(0.3/0.5)	2.0	1.2
(5)	7.5	2.8	0	0	44.8	32.1	38.4	4	2.8	1.5
BEL	6.5	23660.0	33.4	47.8	36.0	15.5	18.1	0.2(0.1/0.1)	1,9	3.0
(6)	4.8	3.0	0	0	32.8	15.2	53.2	4→5	1.7	4.0
CAN	12.0	29744.6	25.4	57.3	53.1	12.4	19.2	0.3(0.1/0.2)	0.6	1.1
(9)	10.2	1.0	0	2	20.6	0	32.1	1	1.3	0.3
DEN	6.6	28694.0	27.8	57.0	55.8	15.4	18.0	2.4(1.8/0.6)	1.0	2.3
(7)	3.0	4.8	0	0	43.6	30.1	73.0	4	1.6	1.9
FIN	6.0	25663.3	31.6	52.2	52.0	15.0	18.1	1.8(1.0/0.8)	1.0	2.2
(7)	2.2	4.2	1	0	40.9	22.5	73.6	3→5→3	2.4	1.9
FRA	8.0	25958.2	21.5	48.7	44.2	15.6	19.1	1.3(0.9/0.4)	1.2	1.7
(5)	5.9	1.7	1	1	38.1	14.8	8.7	2	2.4	3.5
FRG	7.9	27775.3	37.8	51.8	44.5	18.2	14.5	0.6(0.4/0.2)	0.9	1.4
(6)	4.2	2.0	0	0	49.2	16.5	24.7	4→3→4	2.8	2.2
IRE	12.2	26417.9	33.9	55.0	40.9	11.2	23.3	0.3(0.2/0.1)	1.2	1.7
(8)	10.1	1.8	0	0	18.4	5.4	41.9	4→3	1.6	0.4
LUX	5.8	53195.8	28.0	77.3	55.0	13.9	18.2	0.7(0.3/0.4)	1.8	0.7
(8)	6.1	2.7	0	0	35.9	14.3	42.8	2	2.8	3.8
NET	5.8	27049.3	25.6	58.1	44.5	13.4	18.5	0.8(0.4/0.4)	0.9	2.3
(8)	4.5	4.8	0	0	38.0	11.8	23.7	4→3	3.0	1.8
NOR	6.8	36177.1	23.9	56.4	56.6	15.3	19.4	1.7(1.0/0.7)	0.8	0.7
(6)	2.8	4.6	0	0	45.2	40.4	55.6	4→5→4	2.3	3.1
SWE	6.3	24812.9	29.6	53.4	55.4	17.3	18.4	2.3(1.5/0.8)	1.0	1.4
(6)	2.8	4.9	0	0	52.0	39.6	81.5	5→4→5→3→4	2.9	2.9
UKM	13.0	25645.6	30.5	54.4	49.2	15.7	18.8	0.6(0.5/0.1)	0.8	0.8
(8)	11.1	2.4	0	2	47.1	20.9	33.8	1	1.0	0.3
USA	17.4	36743.9	24.6	58.5	53.2	12.6	21.1	0.2(0.2/0.0)	0.2	0.5
(8)	14.1	1.1	1	2	0	0	0	1	0.2	0.3

Note1: poverty (Overall poverty rate), w-povrt(Working poverty rate), GDP (GDP Per capita), industry (Industrial employment), memp (Male employment rate), femp (Female employment rate), over64 (% population over 64), 0-14 (% population under 0-14), care+lea (Work-family reconciliation spending), famcash (Family cash spending), unemp (Unemployment spending), incap (Incapacity spending), gov-type (Government type), election (Election system), leftseat (Left seat), leftcum (Cumulative left cabinet), union (Union density), wageset (Wage setting coordination), re-EPL (Employment protection (regular)), irre-EPL (Employment protection (irregular))

2: standard deviation: poverty (3.80), w-povrt (3.97), logGDP (0.30), industry (6.16), memp (7.61), femp (8.37), over64 (2.12), 0-14 (2.22), care+lea (0.78), famcash (0.57), unimp (1.03) incap (2.86), gov-type (0.40), modified proportional representation system (ref.: proportional representation system) (0.32), single member simple plurality system (ref.: proportional representation system) (0.43), leftseat (15.69), leftcum (12.74), union (21.21), wageset (1.38), re-EPL (0.85), irre-EPL (1.40)

3: AUL (85, 89, 95, 01, 03, 08, 10), AUS (94, 95, 97, 00, 04), BEL (85, 88, 92, 95, 97, 00), CAN (87, 91, 94, 97, 98, 00, 04, 07, 10), DEN (87, 92, 95, 00, 04, 07, 10), FIN (87, 91, 95, 00, 04, 07, 10), FRA (89, 94, 00, 05, 10), FRG (89, 94, 00, 04, 07, 10), IRE (87, 94, 95, 96, 00, 04, 07, 10), NET (83, 87, 90, 93, 99, 04, 07, 10), NOR (91, 95, 00, 04, 07, 10), SWE (81, 87, 92, 95, 00, 05), UKM (86, 91, 94, 95, 99, 04, 07, 10), USA (86, 91, 94, 97, 00, 04, 07, 10).