Employment-Friendly Welfare Policy and Information Asymmetry: Evidence from Sweden and Korea*

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Abstract: This paper provides a simple theoretical framework for analyzing how welfare polices can affect the incentive to work and compares the recent welfare policy reforms of Sweden and Korea. Sweden has systematically reformed its welfare policies in response to slowing population and economic growth and an aging population. This paper shows that recent Swedish reforms of tax policies and unemployment benefits bear out theoretical predictions that such reforms will help reduce moral hazard and adverse selection problems. In comparison, recent Korean reforms of tax policies and unemployment benefits have focused on moral hazard problems but have largely ignored adverse selection problems.

Keywords: Employment-friendly welfare policy, Information asymmetry, Sweden

INTRODUCTION

Because of the recent economic crisis and the reduction of welfare benefits in many European countries, some maintain that the welfare models of developed European countries have failed. However, this paper argues that recent welfare policy reforms in the developed European countries were a response to fundamental changes in the economic environment, such as slowing population growth, an aging population, and slowing economic growth rates. Currently, Korea is facing similar changes in its

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economic environment. Therefore, we believe it is useful to study these European countries' welfare policy reforms and to assess their performance. In particular, we believe treating various welfare and economic polices together is helpful because they can complement each other or substitute for the other in providing incentives to work.

For example, Sweden has implemented systematic and integrated reforms of various welfare and economic policies, including income tax, unemployment insurance, accident insurance, pension, retirement, and child care. Moreover, Sweden considers employment to be the foundation of economic, social, and psychological welfare. While other European countries have made similar reforms, Sweden has always been a role model for many welfare policies in Korea. Like Korea, and unlike Norway and Finland, which heavily depend on their natural resources, Sweden is an export-oriented economy with large automobile, telecommunication, pharmaceutical, and iron industries.

We analyze Swedish welfare reforms, focusing on their effects on the incentive to work. The biggest challenge of employment-friendly welfare policy arises from the problem of asymmetric information caused by inability of the government to observe workers' ability and effort. For example, expansion of unemployment insurance can cause an adverse selection problem wherein people who have the ability to work choose not to work. Also, it may cause a moral hazard problem whereby unemployed workers do not work hard enough to find new jobs. Thus, in order to develop employment-friendly welfare policies, we also need to construct a theoretical framework for understanding how information asymmetry problems affect the performance of welfare and economic policies.

RELATED LITERATURE

Previous studies and policy discussions have emphasized the moral hazard problems induced by welfare policies (see, e.g., Lee 2015). Chun and Nam (2011), for example, provide a general equilibrium model with moral hazard problems and analyze the impacts of unemployment insurance, basic living security policy, EITC, and minimum wage policy on workers' welfare using a simulation method. Heo (2011) gives an overview of employment-friendly welfare strategies and highlights the connection between employment policy and welfare policy. There is also a large empirical literature on the specific performance of active labor market policies. For example, Jeon, Lee, and Ahn (2014) analyze the impact of job search benefit days on reemployment, and Ahn (2014) analyze the impact of stricter conditions for qualifying for the allowance granted to job seekers who become reemployed before the benefit period ends. Also, Jung (2015) analyzed Korean Welfare Panel Study Data using difference in difference

(DID) combined with propensity score matching(PSM), to estimate the effect of employment insurance. And Choi (2014) analyzed the employment policies for the disabled people in Korea from the perspective of policy tools.

There is also a large literature on the effect of taxation on labor supply. Saez (2000), Eissa and Hoynes (2004), and Blundell, Bozio, and Laroque (2011) study the impact of tax on labor supply at the extensive margin (that is, on labor market participation) and at the intensive margin (that is, on work hours). Jeon and Hong (2009) analyze the effects of the changes in after-tax wage rates due to a change in income tax rates and to a tax deduction for work time. Song and Chun (2011) analyze the effect of tax benefits that promote work among those in low-income brackets.

However, comprehensive studies on the impact of moral hazard and adverse selection problems in conjunction with active labor market policies and tax policies on employment are relatively scarce. In particular, political and institutional points of view have informed most of the national-level studies on Swedish welfare policies and employment policies (Moon 1998, Byun and Chae 2008, Yang and Choe 2014). Moreover, there exist few studies on how the recent series of Swedish welfare and employment policy reforms have contributed to solving information asymmetry problems and increasing employment rates.

Therefore in this study, we first propose a theoretical model for analyzing the impact of employment insurance and tax policies on employment. Drawing on Calmfors, Forslund, and Hemstrom (2002) and Forslund and Fredriksson (2009) we analyze how Swedish employment insurance and tax policies have systematically reduced information asymmetry problems and motivated unemployed people to seek jobs. Then, we analyze and compare the impact of the recent Korean reforms in employment insurance and tax policies.

THEORETICAL FRAMEWORK

Welfare Policies and Information Asymmetry Problems

In 2014, the Korean welfare budget relative to its GDP was 10.4%, which was the lowest among OECD countries. However, with slowing economic growth rates, the attempts to expand welfare benefits are still facing strong opposition. Opponents often argue that welfare benefits are like “drugs” and only reduce the desire to work (Choi 2011). The goal of this paper is to analyze how welfare benefits can undermine the motivation to work and how to design welfare benefits that minimize such a side effect.

There are two ways welfare benefits can reduce the incentive to work. First, low-ability workers, who are entitled to welfare benefits, may be able to receive so much welfare that they are unwilling to seek work. This problem is called a "moral hazard problem." Second, high-ability workers may decide not to work in order to receive welfare benefits. This is called an "adverse selection problem."

These problems could be solved if governments could use the level of job searching and work ability to determine eligibility for welfare benefits. It is difficult, however, for governments to learn who has the ability to work but is negligent in job searching and who has the ability to work but pretends he or she is not able to work. In this section, we provide a simple theoretical model for understanding and resolving these issues in a more systematic manner.

The Moral Hazard Problem

To understand the moral hazard problem, let's consider a subsidy policy that gives ₩500,000 per month to the lowest-income bracket. Let's suppose that if a beneficiary in this lowest-income bracket gets a job and works, he or she can earn ₩800,000 per month but cannot receive the subsidy anymore.

In this case, one might conclude that this worker would choose to work because he or she can earn ₩300,000 more by working. However, this may not be a correct conclusion because it does not consider the disutility of work—the physical and mental stress associated with work, the extent to which it cuts into leisure time, and so forth. For example, if the monetary value of the disutility of work is greater than ₩300,000, this worker would choose to receive the subsidy rather than employment.

For a more general case, we can consider the following model. First, let's denote the benefits of welfare policies with B; job search effort with e; wages after a beneficiary successfully finds a job with W; and income tax rates with t. Let's denote job search probability with $p(e)$; disutility of the job search effort with $C(e)$; and the disutility of work with K. We assume $p'(e)>0$ because the greater the job search effort, the greater the probability of employment. We also assume that $C'(e)>0$ because the marginal disutility of the job search effort may increase as an unemployed person puts in more effort to find a job.

The following equation represents the net expected utility of a welfare policy beneficiary:

$$U(e) = p(e)((1-t)W-K) + (1-p(e))B-C(e) \quad (1)$$

That is, if an unemployed worker gets a job with probability $p(e)$, he or she receives

wage of W. After paying taxes, his or her take-home wage is $(1\text{-}t)W$. If he or she fails to get a job with probability with $1\text{-}p(e)$ then he or she receives welfare benefits as much as B. $C(e)$ shows the disutility of job search activity (e).

The following equation represents the maximization of the net expected utility of the job search effort:

$$p'(e)((1\text{-}t)W-K)-p'(e)B-C'(e) = 0 \tag{2}$$

Note that $p'(e)((1\text{-}t)W-K)$ captures marginal revenue that can be obtained through a job search and that $p'(e)B$ represents the marginal opportunity cost from losing welfare benefits when the unemployed individual gets a job. $C'(e)$ can be interpreted as the direct marginal cost of job search effort.

Equation 2 shows the unemployed worker's job search effort will increase as income tax rates decrease and as wages increase. In addition, as marginal job search probability ($p'(e)$) increases, the unemployed person will increase his or her job search effort. He or she will also increase his or her job search effort as welfare benefits decrease or as the marginal cost of the job search effort becomes smaller.

Policy instruments for reducing moral hazard problems in employment-friendly welfare policies and for increasing the incentive to work can be summarized as a following hypothesis.

> **H1:** The job search effort of an unemployed worker increases when the income tax rate (t) is low, the wage level (W) is high, the marginal job search probability ($p'(e)$) is high, welfare benefits (B) are low, and the marginal job search cost ($C'(e)$) is low.

The Adverse Selection Problem

So far we have assumed that the beneficiaries of welfare policies have the ability to work. However, if a beneficiary has no work ability, then he or she has a very low probability of finding a job, and so lowering the marginal job search cost may not be effective. At the same time, lowering the level of welfare benefits for low- ability workers may contradict the basic objectives of the welfare policies.

Therefore, for the efficient operation of employment-friendly welfare policies it is necessary to separate high-ability from low-ability workers. The government should focus on increasing the incentive to work among those who have high work ability and on enhancing basic living security and increasing the work ability for those who have low work ability. But a key challenge is that the government may not be able to

distinguish between people with high work ability and those with low work ability.

To understand this problem, let's assume that a worker who has high work ability can earn ₩1 million per month by getting a job and that a worker who has low work ability can earn ₩300,000 per month by getting a job. The unemployment insurance benefit is ₩600,000 per month. The disutility from job searching and working is equivalent to ₩500,000 per month.

In this example, if an unemployed worker who has high work ability gets a job, then he or she will get a net utility of ₩500,000 (₩1 million – ₩500,000). However, if this worker receives unemployed insurance benefits without working, then he or she can earn a net utility of ₩600,000. Therefore this unemployed worker will choose to remain unemployed even though he or she has a high work ability.

Likewise, if an unemployed worker who has low work ability gets a job, then he or she will get net utility of –₩300,000 (₩300,000 – ₩600,000). Alternatively, if he or she accepts unemployed insurance benefits without working, he or she can earn a net utility of ₩600,000. Thus, both high work ability workers and low work ability workers will choose unemployment.

To describe this adverse selection problem more generally, we denote wages that a high- ability worker can earn from working by W and wages that low-ability worker can earn from working by w. We denote the disutility that arises from job searching and working by C and the unemployment benefits by B.

If $W–C<B$ then those with high work ability will choose to receive unemployment benefits rather than wages from employment. Those with low work ability person will also choose to receive unemployment benefits because $w–C<B$ from $w<W$.

One way to solve this problem is to make unemployment benefits greater only to those who have low work ability. Suppose that unemployment insurance benefits for a high work ability person is b and that unemployment insurance benefits for low work ability person is B. If $W–C>b$ and $w–C<B$ are satisfied, a high work ability person would choose to work, and a low work ability person would choose to receive unemployment insurance benefits, which is the most desired outcome.

In order to solve the adverse selection problem, a policy should be designed whereby a person who has high work ability would receive lower welfare benefits and a person who has low work ability would receive higher welfare benefits. However, as noted, it can be difficult for governments to secure information about individuals' work ability. Yet there are ways a policy could provide different benefits depending on workers' ability.

For example, a policy could be created that would make it mandatory for an unemployed worker to accept a job provided by the government after he or she had participated in free mandatory vocational training that was tailored to low-ability workers

This vocational training might be helpful only for those with low work ability and not for those with high work ability. Also, the jobs provided by the government might not be good enough for those with high work ability, in which case it might be better for those with high ability to find jobs for themselves. Such vocational training would serve to motivate those workers with high ability to voluntarily choose to work. These policy implications can be summarized as follows.

> **H2:** Designing welfare policy so that it provides relatively low returns to high ability workers can reduce the problem of adverse selection.

CASE STUDY OF SWEDEN AND KOREA

Characteristics of the Labor Supply

In order to understand Swedish employment-friendly welfare policies, it is necessary to examine the characteristics of the Swedish labor supply, especially compared with those of other European countries and Korea.

Female Employment Rates

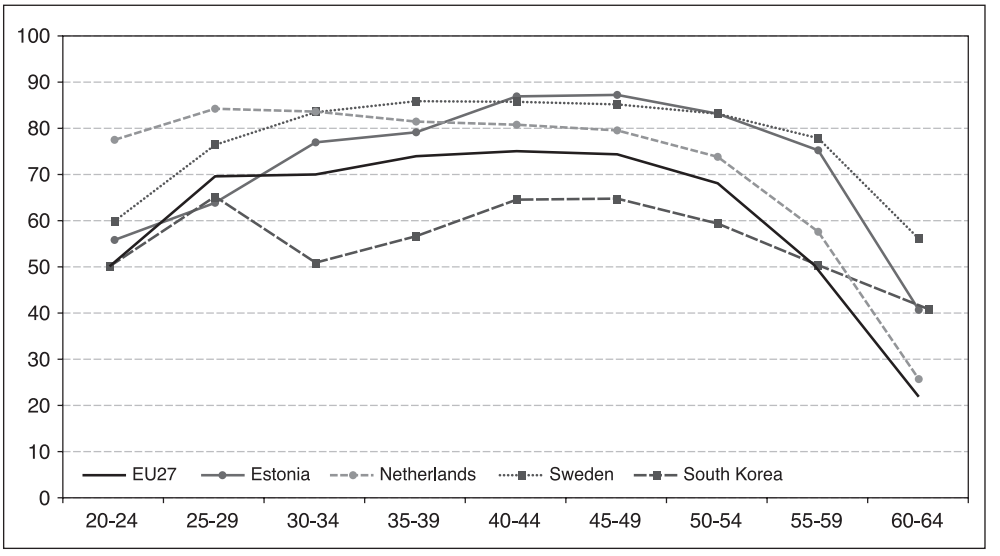
Female labor force participation in Sweden is very high compared to other European countries. In 2008, Swedish female labor force participation was 76.9% while the average for EU countries was 65.5%. Swedish female employment rates are in particular relatively higher in the 30-39 age group and the older than 50 age group, compared with other countries, as figure 1 shows.

In contrast, Korea's female employment rates are generally low. In particular, the employment rates of women aged 30-40 is significantly lower than those in other countries.

Elderly Employment Rate

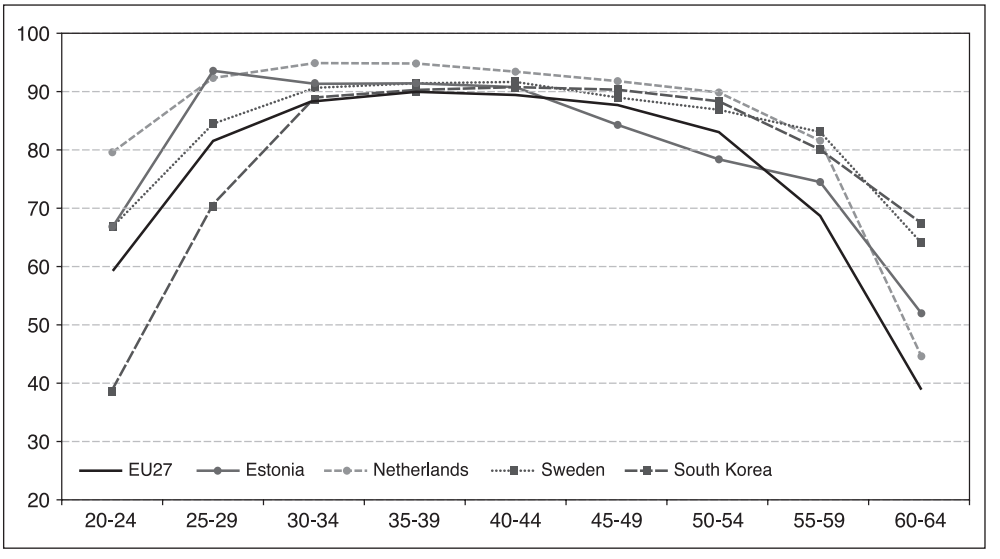
The employment rates of older of Swedish people are relatively high compared with other European countries. The average employment rate in the 60-64 age group is 60.1% in Sweden, whereas the EU average is 30.2%. This difference is due to not only high employment rates of older Swedish women but also high employment rates of older Swedish men (see figure 2). It is noteworthy that employment rates of this age group increased by 8% points between 1997 and 2008.

Figure 1. 2008 Female Employment Rate by Age Group



Source: Forslund and Fredriksson (2009) and the Korean National Statistics portal data (http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1DA7012&conn_path=I3).

Figure 2. 2008 Male Employment Rate by Age Group



Source: Forslund and Fredriksson (2009) and the Korean National Statistics portal data (http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1DA7012&conn_path=I3).

The employment rates of the elderly population in Korea are relatively high. As figures 1 and 2 show, employment rates for women aged 60-64 appear higher than the average of those in EU 27 countries but lower than that of Sweden. For men aged 60-64 Korean employment rates are higher than those in the average EU 27 countries and Sweden.

Implications for Korean Labor Policies

The different characteristics of the labor supply in various countries have several policy implications for Korea. First, since the employment rates among men aged 30-50 show no significant difference across various European countries, including Korea, increasing employment rates among men in this bracket would be difficult.

Second, the fact that Swedish female employment rates, especially in the 30-39 age group and in the above-50 age group are much higher than other EU countries suggests that other countries can also increase female employment rates in these age groups. It is worth exploring in particular how Sweden has increased employment rates among women aged 30-40 because the employment rates for this group are much lower in Korea than they are in the EU and of Sweden.

Third, male and female employment rates in the over-55 age group in Korea are higher than the average rates of the EU and of Sweden. These results suggest that it is necessary to put priority on providing general welfare benefits for this group rather than on motivating them to seek employment.

TAX POLICY REFORMS AND MORAL HAZARD

The Effect of Swedish Tax Reforms on the Incentive to Work

Income Tax Rates

It is important to consider tax policies along with welfare policies not only because tax revenues finance welfare policies but also because income tax rates can affect labor supply, especially considering that marginal income tax rates are one of the most important determinants of the labor supply. Thus, tax rates must be considered together with employment-friendly welfare policies in developing a welfare policy that motivates people to look for work.

In Sweden, local governments impose local income taxes, while the central government imposes general income taxes. Local income tax rates vary across the provinces,

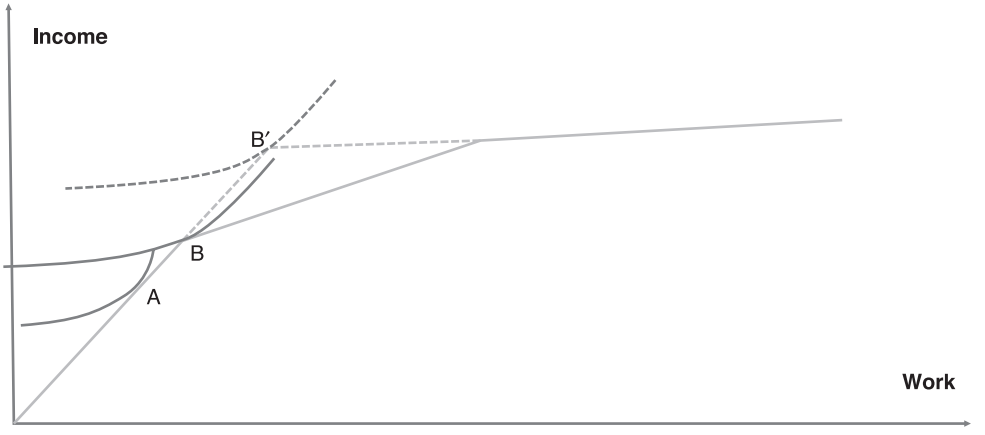
but the average rates are about 30%.

The Swedish tax system has gone through various reforms over the last 40 years. Before 1971, for example, married couples had to pay income taxes based on their joint income. But in 1971, the tax system was revised so that married couples could pay taxes based on their individual income. This reform effectively lowered the marginal tax rates for married women, since income tax rates in Sweden are very progressive. So before the reform, if a husband earned ₩5 million per month and income tax rates were 30%, then when the tax was calculated based on the joint income of a husband and a wife, if the wife had earned an additional income of ₩3 million, their joint income would be ₩8 million and higher income tax rates of 40% would have applied to the wife's income. However, in the wake of the reform, if the wife's income was calculated separately as ₩3 million, then a lower income tax rate of 20% would apply. Our H1 predicts that this tax reform should have increased female labor force participation. Indeed, Selin (2009) finds that the employment rate of married women increased by approximately 10% due to this tax reform.

In 1983-1985, marginal income tax rates for the middle- and the high-income groups decreased, and the number of tax brackets was also reduced. In 1991, the number of tax brackets was reduced to two. If income was lower than a certain income threshold, then the individual did not pay income tax to the central government. If income was higher than the threshold, the individual paid tax at 20%.

The effect of these simplified tax brackets on the incentive to work can be analyzed as in figure 3. The horizontal axis represents working hours and the vertical axis represents income. The indifference curve of a worker has a right-upward sloping shape. The budget line represents after-tax incomes. Higher income tax rates imply a flatter

Figure 3. The Effect of Simplified Tax Brackets on the Incentive to Work



slope for the budget line. The solid budget line shows three tax brackets. Now let's assume that the number of tax brackets is reduced to two as indicated by the dotted budget line.

Then, a worker who chose *A* before the tax reform would not change his or her work hours after it. However, if a worker chose *B* before the simplification of tax brackets, he or she would choose *B′* after the reform. That is, work hours for this worker would increase.

Of course, this simplified tax bracket arrangement may lead high-income workers to reduce their working hours. However, considering that the main target of employment-friendly welfare policies is low-income workers, it is more appropriate to focus on what motivates those in the lower income brackets to seek work.

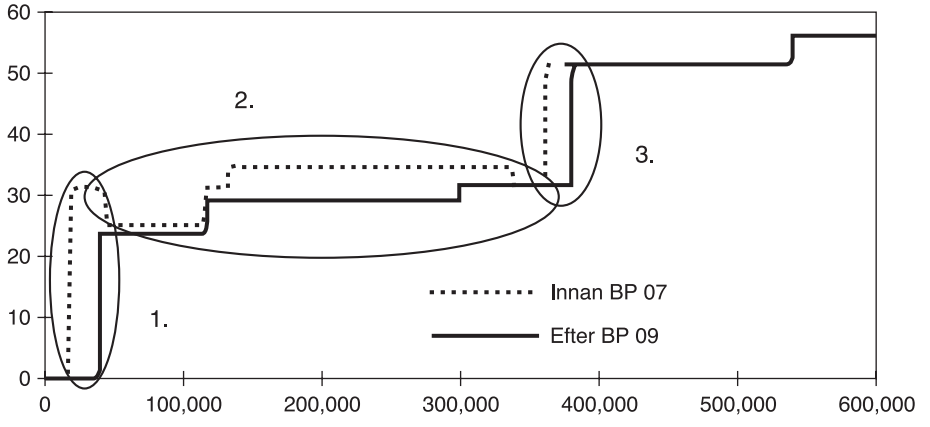
In-Work Tax Credits

Unemployed workers or low-income families who are receiving the benefits of a basic living security policy may find that they cannot receive these benefits anymore if they earn wages by getting a job. So, even when marginal income tax rates for low-income families are zero, effective marginal income tax rates may be very high due to the opportunity cost of losing welfare benefits.

Figure 4, for example, shows that for those with income less than SEK100,000, effective marginal income tax rates were very high before Swedish tax reforms in 2007.

Therefore, some countries have introduced in-work tax credits to help motivate

Figure 4. Swedish Marginal Income Tax Rate Reforms



Source: Forslund (2009).

low-income workers to seek employment. Britain has had such a system for a long time; the Netherlands introduced it in 2001 and Sweden in 2007.

Figure 4 shows that the main effect of this reform has been to lower the marginal income tax rates for low- and middle-class workers. Korea introduced a similar reform in 2008, the earned income tax credit (EITC), under which a married couple receive a tax credit, regardless of their calculated tax, when their joint income is under a certain threshold. This policy offsets the reduction of welfare benefits due to employment and should increase motivation to seek out work.

The Effect of Korean Tax Reforms on the Incentive to Work

Tax Brackets

In Korea, there were five tax brackets as of 2014. In a 2014 reform, Korea decreased the lower limit of the highest tax bracket from ₩300 million to ₩150 million. A goal of this reform was to increase tax rates for high-income earners.

Table 1. 2014 Korean Tax Reforms (in Million ₩)

Before Reform		After Reform	
Tax Bracket	Tax Rates	Tax Bracket	Tax Rates
lower than 1.2	6%	lower than 1.2	6%
1.2 – 4.6	15%	1.2 – 4.6	15%
4.6 – 8,8	24%	4.6 – 8.8	24%
8.8 – **300**	35%	8.8 – **150**	35%
exceeding **300**	38%	exceeding **150**	38%

The impact of this reform on labor supply, with an emphasis on the two highest tax brackets, is shown in figure 5. The solid line represents the budget line before the reform. The dotted line represents the budget line after the reform.

A worker who chose *A* before the tax reform would not be affected by the reform. However, a worker who chose *B* would be making what turns out to be the optimal choice, *B′*, and working hours would decrease. Therefore, it is possible that those workers who belong to the bracket between ₩1.5 hundred million to ₩3 hundred million would find their working hours reduced.

Figure 5. Tax Bracket Changes and Incentives to Work

Earned Income Deduction and Tax Credits

Another important aspect of the 2014 Korean tax reform was the reduction of the earned income deduction and the expansion of tax credits (see tables 2 and 3). In par-

Table 2. Pre-2014 Earned Income Deduction (in ₩10,000)

Gross Wages or Salaries	Amount of the Earned Income Deduction
lower than 500	80% of gross wages or salaries
500-1,500	400+(50% of amounts exceeding 500)
1,500-3,000	900+(15% of amounts exceeding 1,500
3,000-4,500	1,125+(10% of amounts exceeding 3,000)
exceeding 4,500	1,275+(5% of amounts exceeding 4,500)

Table 3. Post-2104 Earned Income Deduction (in ₩10,000)

Gross Wages or Salaries	Amount of the Earned Income Deduction
lower than 500	70% of gross wages or salaries
500-1,500	350+(40% of amounts exceeding 500)
1,500-4,500	750+(15% of amounts exceeding 1,500)
4,500-10,000	1,200+(5% of amounts exceeding 4,500)
exceeding 10,000	1,475+(2% of amounts exceeding 10,000)

ticular, for low-income workers who earn ₩15 million or less, earned income deduction rates have decreased by 10 percentage points. This reduction in earned income deduction credits implies an increase in the effective marginal income tax rate, which could be expected to reduce the incentive to seek work.

Table 4 shows that the tax credits that were expanded are not directly related to earned income, such as credits pertaining to as the number of children in a household and the fixed standard deduction. Also, the special deduction for medical costs, education costs, donations, and insurance premiums has been changed to a tax credit of 15% of the expenditure. However, for low-income families who do not spend much on these items, these tax credits would not have a significant impact. More importantly, these changes have had little effect on the effective marginal income tax rates. Therefore, marginal income tax rates have increased overall, even though the absolute amount of income tax owed may have decreased for certain segments of the population. Thus it is likely that this tax reform has reduced the incentive to seek work. To address this problem, tax credits should be introduced that will lower the effective marginal income tax rates.

Table 4. Change from Earned Income Deduction to Tax Credits

Classification		Earned Income Deduction	After Reform
Additional deduction	Children under 6 Years	₩1 million per child under 6 years	tax credit for children
	Childbirth · Adopted Children	₩2 million per child born or adopted	
	More Than One Child	₩1 million per child for families with 2 children ₩2 million per child for families with more than two children	
Special deduction	Medical Costs	the amount exceeding 3% of gross wages or salary	15% of the amount spent. 25% when donations exceed ₩30 million.
	Education Costs	amount spent	
	Donations	amount spent	
	Insurance Policy	insurance premium	12% of the amount spent.
Standard Deduction		employee: ₩1 million per year businessperson: ₩600,000 per year	employee: ₩120,000 businessperson: ₩70,000
Pension Savings Deduction		₩4 million per year	12% of the calculated tax

Source: National Assembly Budget Office (2014).

UNEMPLOYMENT INSURANCE AND THE ADVERSE SELECTION PROBLEM

Swedish Unemployment Insurance and the Incentive to Work

Characteristics of Swedish Unemployment Insurance

The Swedish unemployment insurance system is funded by tax revenues and is regulated by tax law, but it is managed by 35 independent organizations, most of which are associated with industrial labor unions. In order to receive unemployment insurance benefits, one must voluntarily join one of these organizations and have been a member for at least 12 months. One must also have a certain minimum amount of prior work experience. In addition, the unemployed person should be seeking for a job actively and be ready to accept a job when a suitable one appears. Job search activities are monitored by the managers of the public employment service.

Unemployment insurance benefits can last up to 300 days excluding holidays (or 420 days including holidays). For the first 200 days, 80% of the income the worker was earning when he or she lost the job is provided. After 200 days of unemployment, 70% of the previous income is provided. After 300 days, the unemployed person can receive 65% of the previous income as long as he or she agrees to participate in an activation program whereby the unemployed person activates himself or herself to secure a job. The unemployed person who is not a member of one of the unions but who satisfies other conditions can receive fixed unemployment benefits per day. But the amount paid is much less than that provided by unemployment insurance, and so if an unemployed worker had high income before unemployment, he or she may not end up receiving 70-80% of his or her previous income. Also, the labor unions may negotiate supplemental unemployment insurance benefits through collective bargaining with employer organizations.

As we have noted, one of the biggest challenges in the management of unemployment insurance benefits is distinguishing between unemployed workers without work ability and those with work ability. For those without work ability, the goal should be to focus on ensuring benefits for vocational skills development and living security. For those with work ability, however, providing incentives for them to search for a job would be more important.

Membership Fees and the Adverse Selection Problem

In the past, the membership fee to join Swedish unions was very low, and so most of the workers became members. However, the membership fee has increased significantly

in recent reforms. Thus, the proportion of workers who do not join is increasing.

While such an increase in the membership fee may reduce the welfare of workers, it is worth emphasizing that it can also help mitigate the adverse selection problem. For example, if an unemployed worker with high work ability actively searches for a job, the employment probability is 50%, and he or she can earn ₩3 million per month. Alternatively, if the unemployed person does not search for a job, the employment probability is 0%, and he or she can get ₩2 million from unemployment insurance. If an unemployed worker with low work ability actively searches for a job, then the employment probability is 20%, and he or she can earn ₩2 million per month. Alternatively, if the unemployed person does not search for a job, then the employment probability is 0%, and he or she can get ₩1 million per month from unemployment insurance.

In this example, if the membership fee for the union is ₩300,000, the unemployed person with high work ability would choose to join the union and receive benefits of ₩1.7 million (₩2 million – ₩300,000) rather than choose to search for a job, which has an expected return of ₩1.5 million (50% * ₩3 million). Likewise, unemployed workers with low work ability would also choose to join the union and receive benefits of ₩700,000 (₩1 million – ₩300,000) rather than choose to search for a job, which has an expected return of ₩400,000 (20% * ₩2 million).

Now suppose that the membership fee increases from ₩300,000 to ₩550,000. In this case, unemployed workers with high work ability will search for a job instead of joining the union, since the net benefit of the unemployment insurance is only ₩1.45 million. On the other hand, the unemployed person with low work ability would join the union, since the net benefit of the unemployment insurance (₩450,000 = ₩1 million – ₩550,000) is still greater than that of searching for a job (₩400,000). Thus, the adverse selection problem is mitigated.

Activation Programs and the Adverse Selection Problem

Another interesting feature of the Swedish unemployment insurance benefits is that unemployed workers must participate in the activation program to receive the benefits after 300 days of unemployment. Also the activation program requires unemployed workers to accept suitable jobs that the government finds for them. Such a program can reduce the adverse selection problem in two ways.

On the one hand, unemployed workers who have high work ability can get a job that is better than the job offered by the activation program if they search for a job for themselves. Thus, unemployed workers with high ability would forgo the benefits of the unemployment insurance and choose to search for a job for themselves.

On the other hand, unemployed workers who have low work ability would participate in the activation program, because vocational training and job search support of the activation program can help them and because the quality of the jobs offered by the activation program are likely to be better than the jobs that they can find for themselves.

Therefore, the compulsory activation program can contribute to reducing the adverse selection problem. Consistent with this prediction, Dolton and O'Neil (1996) find that the employment rates of the unemployed increase just before or just after they enter the activation program rather than after they finish the program.

KOREAN UNEMPLOYMENT INSURANCE

The Characteristics of Korean Unemployment Insurance

Korean unemployment insurance is based on the employment insurance act and enforced by regional employment support centers under the Ministry of Employment and Labor. Unlike in Sweden, in Korea, employers with one or more workers are obligated to offer unemployment insurance.

There is no membership fee for this insurance. Workers pay 0.65% of standard monthly wages as the unemployment insurance premium. And employers must contribute the same or a larger amount to the insurance premium as well.

The benefits include unemployment benefits, worker training, parental leave benefits, and so forth. To receive the unemployment insurance benefit, unemployed workers should have worked at least 180 days during the 18 months before becoming unemployed, have the ability and desire to work, and be actively seeking a job. The amount of unemployment benefits can be 50% of the average salary before unemployment but must exceed 90% of the minimum wages, and cannot exceed ₩43,000 per day.

Problems of Moral Hazard and Adverse Selection

In Korea, since unemployment insurance is compulsory and there is no membership fee like in Sweden, adverse selection can be a problem. That is, even workers who have excellent job skills have unemployment insurance and may receive unemployment benefits.

Moral hazard can also be a problem. For example, an unemployed worker can receive the benefits for the maximum days, then work again to satisfy the minimum requirement of 180 days, then quit in order to receive unemployment insurance benefits

again.[1] Unemployed workers are supposed to actively look for a job, but in reality, they may not be.

Similar to the activation program in Sweden, there is a program in Korea that provides 70% of the job-seeking benefits for 60 days to the "person who has applied for jobs referred by the head of the competent employment security center at least three times but fails to obtain a job." However, unlike in Sweden, since the unemployed person does not have to accept a job, there is still a possibility of an adverse selection problem. That is, unemployed workers may try to secure extended benefits by deliberately avoiding taking a job, even though they have high work ability.

CONCLUSION

Sweden has made comprehensive welfare and tax policy reforms in response to the challenges of slowing population growth, aging population, and slowing economic growth. This study shows that this series of Swedish welfare reforms have helped to reduce moral hazard and adverse selection and to increase the motivation to work, thereby making the welfare benefit system sustainable. In contrast, our analysis reveals that recent Korean tax and welfare reforms have not increased the incentive to seek work and may have reduced it. Given that Korea is facing the same challenges as Sweden, these results suggest that future Korean tax and welfare system reforms ought to take into account how such reforms might affect the incentive to seek work.

An important caveat is that our analysis in this paper is mostly qualitative. Thus, it is difficult to make specific policy recommendations. However, our theoretical framework provides testable hypotheses for future quantitative analyses. In particular, it would be interesting to quantify and compare the effects of marginal tax rates, welfare benefits, marginal search cost, and so forth.[2]

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1. Article 40, section 1.1, of the Employment Insurance Act concerning eligibility requirements for job-seeking benefits states that the "number of qualifying days the insured worker spent in covered employment under Article 41 during the 18-month period up to the date of severance from employment (hereinafter referred to as 'base period') shall be at least 180 days in total."
2. For example, in Equation 2 if we assume that $p(e) = \alpha\sqrt{e}$ and $C(e) = ke^{\frac{3}{2}}$, the job search effort is $e^* = \frac{\alpha}{3k}[(1-t)W-K-B]$. Thus, We can potentially quantify the effects of tax rates, wage level, welfare benefits, and etc.

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