

The Current Status of the Earned Income Tax Credit in South Korea and the Implication to Japan—Earned Income Tax Credit or Reduced Tax Rate? —Social Improvement and Life Design Research Department
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1—Introduction¹

On January 1, 2008, South Korean government introduced an Earned Income Tax Credit (EITC) to boost work incentives of the working poor through supporting income of the tax system and achieving fairness and efficiency of the social system management by establishing new infrastructure. Simply put, the EITC is a subsidy to support the work for low earners. This is not familiar to the people in Japan, but the system is known to economists. In 1975, the system was introduced to the United States, and currently the system has been adopted in many countries, such as the United Kingdom, Canada, France, Sweden, Netherland, South Korea, and so on; it has passed more than a quarter of a century since the introduction to the United States.

As Japan does not have a similar system, it might be difficult to fully understand the EITC. To explain more specifically, it is an income support for the work system done by supporting one's real income. Kamakura (2010) explains the EITC as follows. "The EITC is, literally, an integrated system of social security benefits and tax credit. To be specific, income taxpayers are offered tax credit, and those who cannot be exempted or are below the minimum taxable ceiling are provided cash benefits. Source of the idea originates from Freedman's negative income tax."²

It aims to increase work incentives of the working poor who earn low income or suffer from economic difficulties by providing financial incentives which are calculated on the basis of their earned income. 'Welfare' is the conventional policy of public assistance, which supports income up to a certain level and is not related to whether the person is working or not; on the other hand, the EITC pursues 'Workfare', that provides assistance in order to increase total income as the working poor work. Therefore, the system can achieve anti-poverty and ease income disparity, and it aims to induce the participation to labor market from the dependence on welfare benefit, by

¹ This paper supplemented and revised Kim, Myoung-jung (2011) "The Current Situation of the Korean Earned Income Tax Credit (EITC)", NLI Research Institute, 2011/10/24 with latest contents and information.

² Retrieved from Kamakura, Haruko(2010) "Overview of the EITC in Foreign Countries", Survey and Information-ISSUE BREIF- No. 678

providing financial assistance to the working poor.

2—Background and Process of the Introduction of the EITC in South Korea

In this section, it is discussed that the poverty rate and the current situation of the working poor in South Korea by utilizing OECD data and precedent studies to explain the background of the implementation of the EITC.

Figure 1 illustrates relative poverty rates among OECD countries and relative poverty rates³ among the working households. Relative poverty rate of South Korea in the mid-2000s (14.6%) highly outweighs the OECD average (10.6%).

To understand the current situation of the working poor in South Korea, Byung-hee Lee, et al. (2010) classifies household in two groups, ‘elderly household’ and ‘non-elderly household’ based on OECD data, and compares South Korean data with the OECD average. As a result, ‘poverty rate of elderly household’ is 48.5% and it exceeds the average OECD of 13.7%. The high poverty rate of elderly household in South Korea is attributed to immature public pension system in terms of payments. Meanwhile, poverty rate of the non-elderly household is 10.9%, and there is a relatively small difference with the OECD average of 10.1%. However, ‘elderly household’ accounts for 21.9% of all poor households and the figure is smaller than 32.1% of OECD; labor problem of working households in South Korea seems to be bigger (Table 1).

The high economically active household ratio that consists of the all poor households in South Korea is attributable to relatively low population aging rate, low rate of participation to labor market of young generation based on employment mismatch, high ratio of non-regular workers with relatively low income level among employees, South Korean government’s insufficient countermeasures for social security for economically active households, and so on.

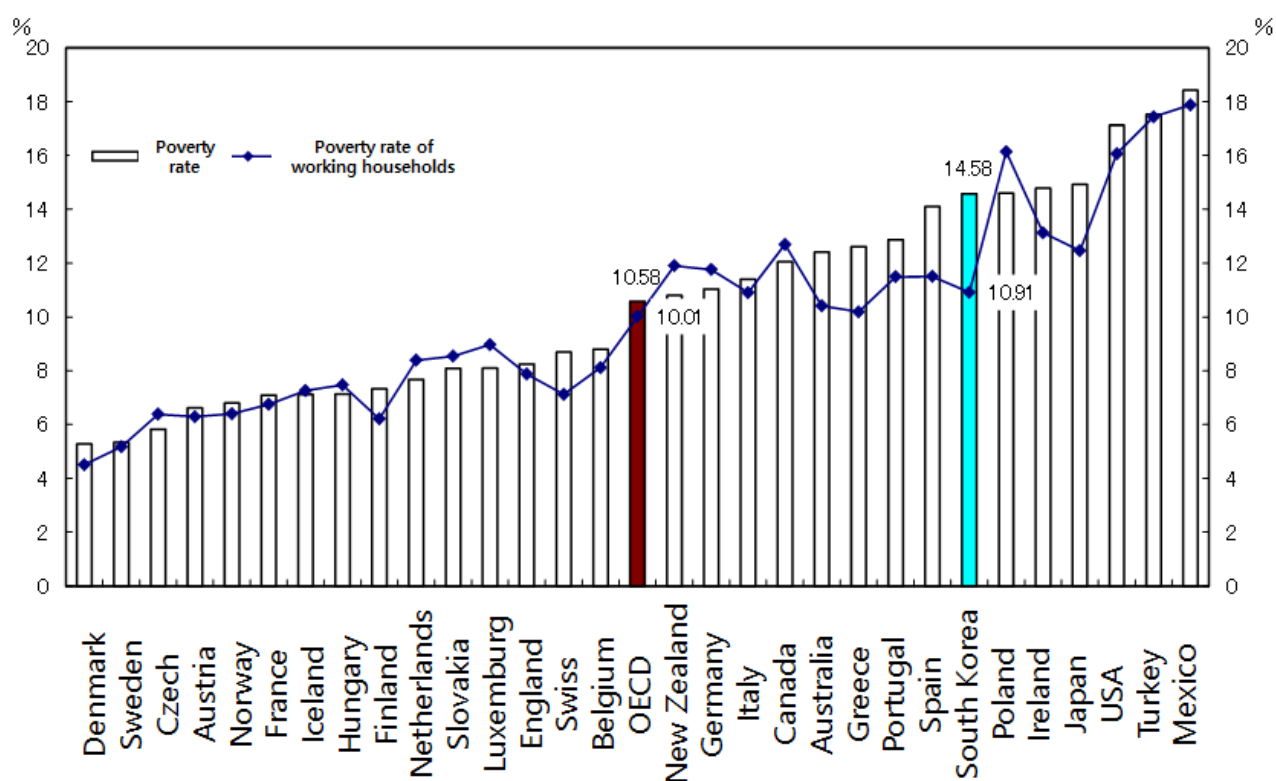
The main reason of poverty among economically active households in South Korea is precarious work. Dae-myung Noh (2009) estimates that about one-third of the unemployed and about a quarter of day laborers are in the poor class (Figure 2).

Young-mi Kim (2009) presents that as the size of an enterprise gets smaller, the years of employment become shorter and the ratio of low income workers gets higher. To be specific, 18.8% of male and 39.1% of female workers in companies of 1~4 workers are low wage employees⁴ while 0.7% of male and 4.0% of female workers receive low wage in companies with more than 1000 employees (Figure 3).

³ According to definition of OECD, the ratio of the people’s equivalent disposable income (disposable income of households divided by square root of the number of households) does not reach half of the entire nation people’s median value.

⁴ The paper defines low-wage as the wage is lower than 50% of the median wage.

Figure1 Poverty Rate and Poverty Rate of Working Households in OECD Countries



(Source) OECD (2009) *Employment Outlook*

Table 1 Comparison in Rate of the Working Poor (South Korea and the OECD Average)

Unit: %

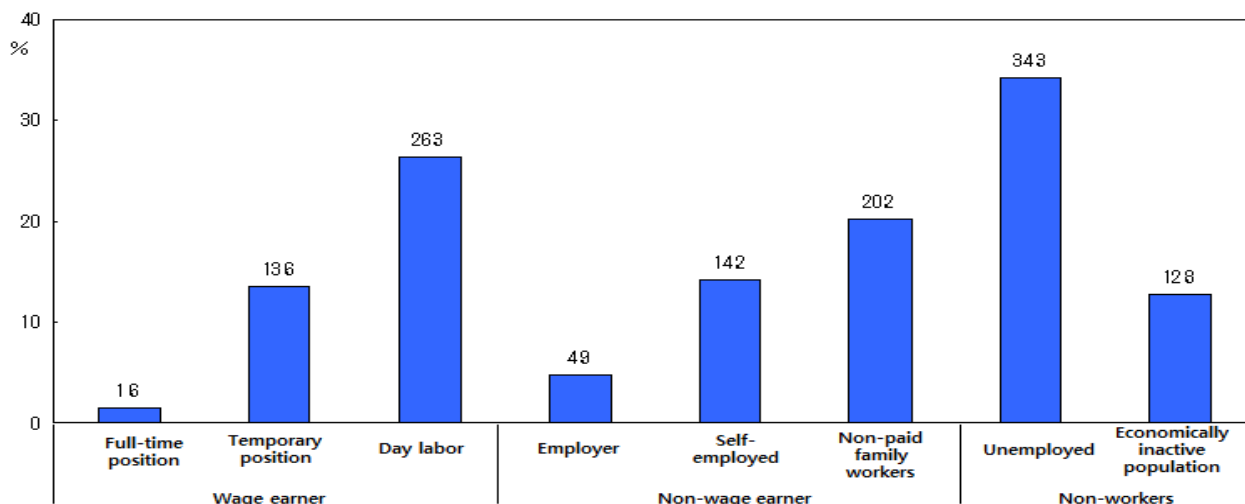
		South Korea	OECD Average
Poverty Rate of the Population		14.6	10.6
Age of the Householder	Poverty Rate of Elderly Households (Poor Elderly Households/Elderly Households)	48.5	13.7
	(A)Poverty Rate of Non-Elderly Households (Poor Non-elderly Households/Non-elderly Households)	10.9	10.0
Ratio of Elderly Households among All Households (Poor Elderly Households/All Poor Households)		21.9	32.1

※Elderly Households: Age of the householder is 65 and above

Non-Elderly Households: Age of the householder is 15~64

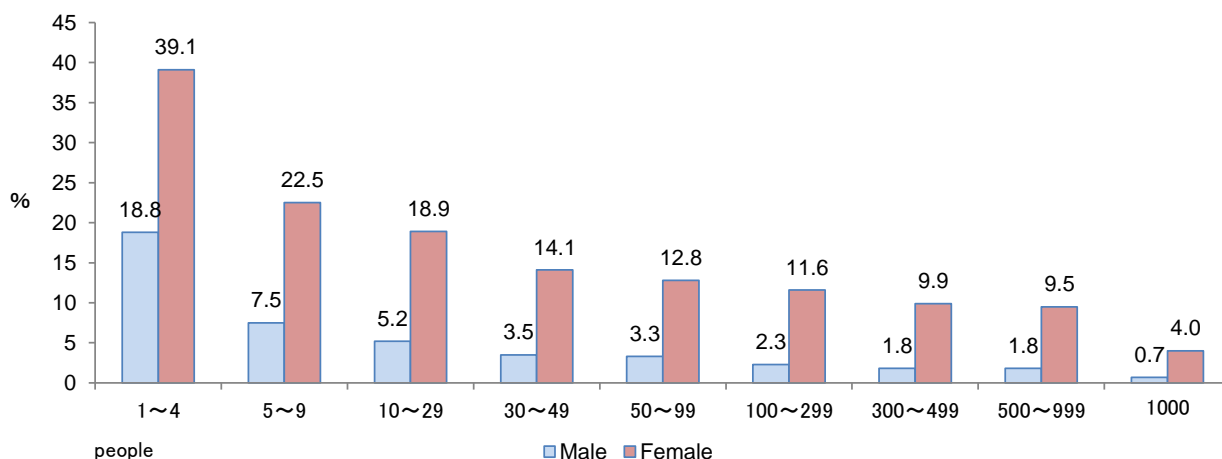
(Source) The author made the table based on Lee, Byung hee, et al.(2010) Working Poor and Policies for Support, p.14, OECD(2009a),“Is Work the Best Antidote to Poverty?”,*EmploymentOutlook*, Geneva: OECD, and OECD(2009b),“The Jobs Crisis: What Are the Implications for Employment and Social Policy”, *Employment Outlook*, Geneva: OECD.

Figure 2 Poverty Rate of Working Generation by Working Status



(Source) No, Dae Myung, et al. (2009) Study on Reform of Activation Policies in Korea, Korea Institute for Health and Social Affairs

Figure 3 Ratio of Low-wage Workers by Size of Firms



※ The paper defines low-wage as the wage lower than 50% or 50% of the median wage

(Source) Kim, Young-mi(2009) The Increase of Small Firms in Korea: Implications for Job Mobility, and Lee, Byung hee, et al.(2009) Study on Reform of Activation Policies in Korea, Korea Labor Institute

From the result, South Korean government introduced the EITC system to address the income gap and the increase of the working poor issues, which stems from globalization of economy in recent years, changes in industrial structure, and expansion of non-regular workers. Especially, ‘the secondary poor’⁵, which consist of the working poor, are put in difficult situations to escape

⁵ An income group that earns income is less than 120% of the minimum cost of living and is excluded from receiving benefits of the National Basic Livelihood Security System, a public assistance system of Korea.

from poverty as they easily become excluded from receiving public assistance like the National Basic Living Security System⁶ and public social insurance for health, unemployment and so on. By 2002, the secondary poor's coverage rate of social insurance was 36.7% for the national pension, 27.7% for the employment insurance, 59.7% for the occupational health and safety insurance and 98.2% for the health insurance. If the health insurance is excluded, a considerable number of the secondary poor are ruled out from the public social security net⁷. To address the problem, South Korean government aims to raise working incentives by linking work and payment of the social insurance. South Korea introduces the EITC for the first time in Asia to shape the environment that promotes the working poor's economic independence and anti-poverty, and to expand and reform the social security network.

That is, by implementing the EITC, South Korean social security network has changed from the two-level system which is composed of public social insurance and public assistance (the National Basic Living Security System) public to the three-level system, and income security system gets more cordial (Table 2).

Table 2 Composition of the Social Security Network Before and After the Implementation of the EITC

	The General Public	The Working Poor (The Secondary Poor)	The Poor
Before the Introduction of EITC (Two Social Safety Nets)	Social Insurance (1st Safety Net)		National Basic Living Security System (2nd Safety Net)
After the Introduction of EITC (Three Social Safety Nets)	Social Insurance (1st Safety Net)	The EITC (2nd Safety Net)	National Basic Living Security System (3rd Safety Net)

(Source) Korean National Tax Service website

3—Process and Overview of South Korean EITC

1 | Process and Changes of the EITC

In 2003, the presidential transition committee of the former president Moo-hyun Noh proposed the implementation of the EITC, and the proposal was legislated. The EITC system related laws and regulations (Clause 2 and Clause 13, Article 100 of the Tax Reduction and Exemption Control Act) were enacted on December 26, 2006, and it was implemented from January 1, 2008; benefits have been paid since September 2009⁸ (Table 3).

After the introduction of the EITC, amendments have been announced and the coverage has

⁶ It corresponds to Japanese Livelihood Assistance System.

⁷ Cho, Sun-joo, et al.(2008) “Earned Income Tax Credit and Female Labor Supply: Empirical Analysis and Policy Issues”, p.51, Korean Women’s Development Institute

⁸ The South Korean EITC structure is basically referred to the EITC of the US.

been expanded gradually. For example, the standard of household has been changed in the amendment of the year 2011, and families without dependent children (married households) also received benefits. Due to the amendment of the 2012, the elderly households of over 60 without a spouse or a child whom they support have been eligible since 2013. In addition, due to the amendment of 2013, the amount of benefits has increased since 2015 and benefits for children have been established. Please refer to Table 4 for main contents.

Table 3 Process of Introduction and History of the EITC in South Korea

Period	Main Contents
Feb-03	The presidential transition committee of the former president, Moo-hyun Noh, proposed implementation of the EITC.
Aug-05	Government decided to implement the EITC.
Oct-05	'Team for Infrastructure to Comprehend Income' was established in the National Tax Service.
Dec-05	'Organization of Panning EITC' was established in Ministry of Finance and Economy.
Dec-06	EITC related laws and regulations (Tax Reduction and Exemption Control Act) were enacted.
Jan-08	EITC was implemented.
Dec-08	Tax Reduction and Exemption Control Act was revised→Scope of eligibility and maximum amounts of annual benefits were expanded.
	- Scope of eligibility: Households of at least two dependent children→Households with children
	- Annual maximum amounts of benefits: 800 thousand won → 1.2 million won
Sep-09	EITC payment began.
Sep-12	Tax Reduction and Exemption Control Act was revised→Scope of eligibility and maximum amounts of annual benefits were expanded.
	- Scope of eligibility: Households with dependent children→Households without children
	- Maximum amounts of benefits: 1.2 million won → 2 million won
Sep-15	- Criteria of house: Homeless or households of only one house of 50 million won and less in terms of market price → Homeless or households of only one house of 60 million won and less
	Expansion of the EITC benefits, establishment of the CTC, expansion of eligibility scope to the self-employed
	Total amount of family members' assets(house, land, building, savings, etc.) is less than 100 million→ Total amount of family members' assets(house, land, building, savings, etc.) is less than 140 million

(Source)The author made the table based on Korean National Tax Service website, etc.

Table 4 Main Changes in the South Korean EITC

Classification		1st Plan for Implementation	Revision in 2008 (Effective in 2009)	Revision in 2011 (Effective in 2012)	Revision in 2012 (Effective in 2013)	Revision in 2013 (Effective in 2014)	Revision in 2013 (Effective in 2015)	
Target	Recipient	The employed		The employed, insurance sellers, door-to-door salesmen			The employed, insurance sellers, door-to-door salesmen, The self-employed	
	Non-recipient	People who received benefits of the National Basic Livelihood Security System in the previous year			People who received benefits of the National Basic Livelihood Security System in March of the application year			
Criteria of Household		Two and more than two children under 18	A child under 18	Household without child, a married couple	Person over 60 without a spouse or a dependent child can apply			
Criteria of Total Income		Less than 17 million won of total amount for a married couple		Without dependent child: 13 million won a dependent child: 17 million won two dependent children: 21 million won three dependent children: 25 million won		Single household: 13 million won One earner household: 21 million won Dual earner household: 25 million won		
Criteria of House		Homeless	Homeless or households of only one house of 50 million won and less in terms of market price	Homeless or households of only one house of 60 million won and less in terms of market price				
Criteria of Assets		Total amount of family members' assets (house, land, building, savings, etc.) is less than 100 million					Total amount of family members' assets (house, land, building, savings, etc.) is less than 140	
Maximum Benefit		-	1.2 million	Without dependent child: 700 thousand won A dependent child: 1.4 million won Two dependent children: 1.7 million won Three dependent children: 2 million won		Single household: 700 thousand won One earner household: 1.7 million won Dual earner household: 2.1 million won		

(Source) The author supplemented the contents by referring to Lee, Dae-woong · Kwon, Gi-hun · Moon, Sang-ho(2015) "Studies on policy effects of the EITC", *The Korean Association for Policy Studies*, Vol. 24, No. 2.

2 | Purpose of the EITC

The South Korean EITC system has purposes to raise work incentives and to support real income of workers and business owners (except for professionals, paid since 2015) who have difficulties in economic independence due to low income by providing the EITC. EITC payment is calculated on the basis of family members, annual gross income, and so on. Maximum payment for a year has been expanded from 1.2 million won of the beginning to 2.1 million won at present⁹.

Table 5 describes the differences between National Basic Living Security System and the EITC. In October 2000, National Basic Living Security System, a public assistance system that corresponds to Japanese Livelihood Assistance System, was adopted to address problems under the previous public assistance system¹⁰.

⁹ In the initial phase, main target was 'the secondary poor'; their household income is less than 120% of the minimum cost of living and they are excluded from receiving benefits of National Basic Living Security System. Working households whose annual gross income is less than 17 million won for the previous year received benefits up to 1.2 million won per year.

¹⁰ Kim, Myoung-jung (2004) "Social Economy Changes in Korea and Trends of Public · Private Social Expenditure after IMF System -Feature: Korean Social Policies after IMF System-", *Foreign Social Security Study*, No.146

Table 5 Comparative Studies on the National Basic Living Security System and the EITC

	National Basic Living Security System	EITC
Year of Execution	2000	2008
Purpose of System	To secure livelihood security and promote self-support of the poor's	To boost the working poor (secondary poor)'s motivation to work and support real income
Eligibility	both working and non-working households below minimum cost of living	working households of the secondary poor
Payment Method	cash and in kind	tax deduction with benefits
Contents of Payment	Based on the principle of subsidiarity, payment is held	Setting phase-in, flat and phase-out ranges Maximum payment amount: 2.1 million won
Requirements for Recipients	income requirement, supporter requirement	gross income requirements, spouse requirement, house requirement, assets requirement
Characteristics of System	income security system	income support system associated with work
Relevant Laws	National Basic Living Security Act	Tax Reduction and Exemption Control Act
Application Method	principle of application + nomination by the government	principle of application

(Source) The author made the table based on National Assembly Research Service(2011), “Current Situation of EITC and Improvement Plan”, etc.

3 | Application Process of the EITC and Standard of Application

Unit of the assessment for South Korean income tax is an individual, while the EITC evaluates whether a household is eligible or not. Recipients of the EITC were limited to employees, and the eligibility has been expanded to the individual proprietor since 2015; however, proprietors without business registration and professionals like lawyers, patent agents, certified public accountants, physicians, pharmacists and so on are excluded. In the initial phase, employees were the only beneficiary of the EITC as income-capture rate of individual proprietors is lower than the rate of employees.

There are two ways to apply for the EITC: submitting an application within a certain period and after the period. If people apply for the EITC between 1st of May and 1st of June every year, they can apply for the assistance within a certain period. On the other hand, if a person applies after the period, between 2nd of June and 1st of December, 10% reduced subsidies for the EITC and the

Child Tax Credit (CTC) ¹¹are provided. People who are eligible to apply for the EITC can apply for it by telephones¹², mobile phones, mobile websites and the internet or visiting tax office¹³.

To apply for the EITC and the CTC, following four standards are needed to be fulfilled.

① Standard for Household

- EITC: As of December 31 every year, the applicant has a spouse or a child under 18 to support, or the applicant is older than 60.
- CTC : As of December 31 every year, the applicant has a spouse or a child under 18 to support.

A child to support needs to meet all of the requirements.

- A child whom a householder supports or an adopted child who lives with a householder. However, grandchild and siblings can be included in his or her dependents¹⁴.
- As of December 31 of the previous year, a child is younger than 18; however, there is no age requirement to the severely disabled.
- Annual gross income is 1 million won and less.

②Standard for Gross Income

- EITC: To receive benefits, gross income of a married couple for the previous year is less than the base amount illustrated in Table 6.

Table 6 Base Amount of Gross Income for Households

Classification of Household	Single Household	One Earner Household	Dual Earner Household
Base Amount of Gross Income	13 million won	21 million won	25 million won

※) Gross income=business income + working income + other income + interest rate • dividend • pension income

Following are calculation methods for types of income.

¹¹ Since fiscal year 2015, a new CTC to provide up to 500,000 won per child annually for applicants who have a child to support is introduced.

¹² Households verified to receive the EITC or the CTC based on income of the previous year.

¹³ If a person is not informed to apply, he or she can apply only by internet or visiting tax office.

¹⁴ Grandchildren and siblings without a parent、 In case a person supports grandchildren and siblings without a parent (including a case with only a father or a mother), annual gross income of a parent is 1 million won and less, or a parent is severely disabled under the Act on the Acceleration of Employment of the Disabled and Occupation Rehabilitation or is classified level 3 or higher under laws of compensation for 'May 18 Democratic Uprising', In case a person supports grandchildren with a parent, the parent is younger than 18 and the parent's annual gross income is 1 million won and less.

- Business income= total revenues × adjustment rates for industries
 - Working income= total salaries
 - Other income= total revenues – necessary expenses
 - Interest ▪ dividend ▪ pension is included in total revenues
- CTC: annual gross income of a married couple is less than 40 million won.

③Standard for Housing: Standards for the EITC and CTC are Equivalent.

As of June 1st of the previous year, all members of a household do not own a house, or in case of having a house, the market price of the house is less than 60 million won (only 1 house).

④Standard of Assets: Standards for the EITC and CTC are Equivalent.

As of June 1st of the previous year, total value of assets (a house, land, a building, savings, etc.) that all members of a household possess is less than 140 million won. Table 7 illustrates the scope of assets and evaluation methods in detail.

Table 7 Assets and Evaluation Methods

Assets	Scope of Asset	Evaluation Method
Lands and Buildings (including houses)	Land and building subject to property tax	Standard value for taxation
Cars	Excluding for cars business use and trucks	Standard value for taxation
Jeonsae Deposits (including deposits for lease)	Jeonsae deposits for stores and house (including deposits for lease)	Rental deposits in the contract
Financial Assets	Total amount of savings over 5 million won for a person	Balance of financial assets
Securities	Total amount of stocks and bonds, installment savings, installment, bank balance, saving insurance, investment trust over 5 million won for a person	Listed stocks: final price
		Other securities: face value
Golf Membership	Membership for using a members-only golf course	Standard market price that National Tax Service announces
Rights to Acquire Real Estates	Rights of tenant as a member of an association	Settlement amounts of estimated value for existing building
	exclusive purchase rights for apartments	Payments until basic date of possession
	Redeemable land bonds	Face value
	Redeemable housing debenture	Face value

※1. In Jeonsae system, instead of paying monthly rents, the renter pays a lump sum of deposits (Jeonsae) when a contract is signed instead of paying monthly rents.

※2. Standard market price is utilized to establish the standard of assessment (acquisition tax, registration tax, fixed asset tax, etc.) on the local tax law.

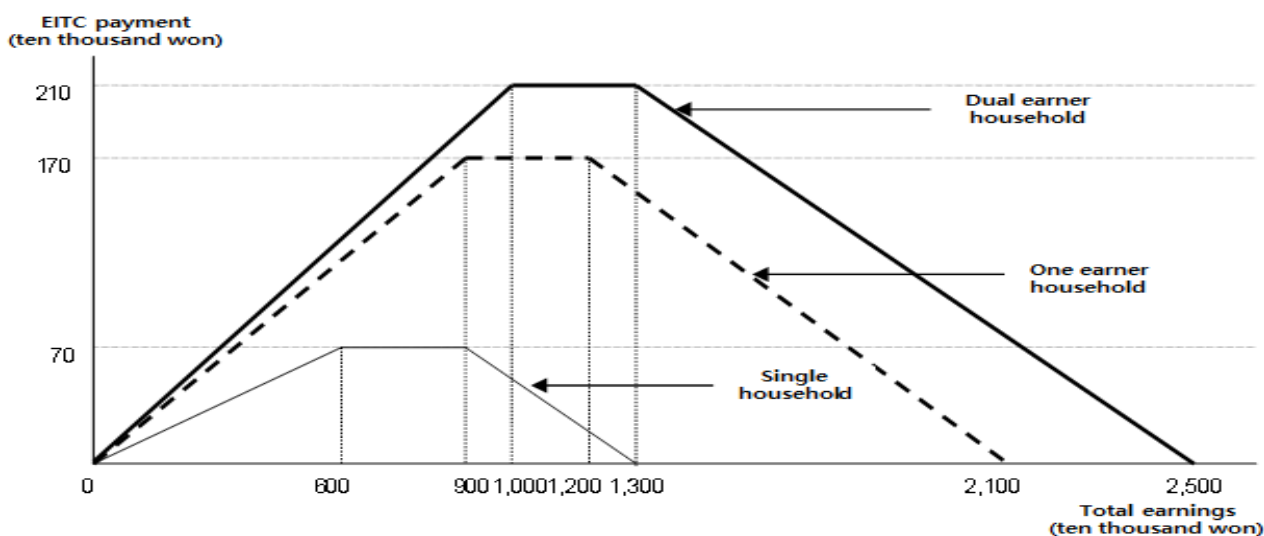
(Source) Korean National Tax Service website

Besides the four standards, an applicant needs to be a South Korean citizen (including a person married with a South Korean citizen) and is not supported by other households.

4 | EITC payment system and current situation for payment

The most important feature of the EITC payment system is that benefit amounts are divided into three parts based on working income level: phase-in range, flat range and phase-out range. In the phase-in range, the EITC benefits increase at a fixed rate as working income increases. In the flat range, maximum amount of benefits are provided regardless of increase in working income, and the EITC benefits decrease at a fixed rate as working income increases in the phase-out range. For example, up to 6 million won of annual gross income is in the phase-in range for single households, and the EITC benefits of single households increase as they work in this range. If single households earn 6~9 million won for annual gross income, they receive a fixed amount, 700 thousand won; if they earn 9~13 million won, the EITC benefits that they receive a decrease as their annual gross income increases (Figure 4). Calculation method of the EITC for each type of households is described in Table 8.

Figure 4 Structure of the EITC in South Korea



(Source) Korean National Tax Service website

In 2015, the CTC was introduced; applicants with dependent children can receive the maximum of 500 thousand won per child for a year as subsidies.

The number of households that receive the EITC increased from 522 thousand in 2010 to 846 thousand in 2013. The amount of benefits increased from 402 billion won to 774.5 billion won for the same period (Table 9), and the EITC has gradually been becoming an established system.

Table 8 Requirements to Receive the EITC and Calculation Methods for Households

Types of Households	Total Income	EITC Benefits
Single Household	Under 6 million won	Total income × (70/600)
	6 billion won ~ under 9 million won	0.7 million won
	9 million won ~ under 13 million won	0.7 million won - (total income - 9 million won) × (70/400)
One Earner Household	Under 9 million	Total income × (170/900)
	9 millio won ~ under 12 million won	1.7 million won
	12 million won ~ under 21 million won	1.7 million won - (total income - 12 million won) × (170/900)
Dual Earner Household	Under 10 million	Total income × (210/1000)
	10 million won ~ under 13 million won	2.1 million won
	13 million ~ under 25 million won	2.1 million - (total income - 13 million won) × (210/1200)

※1. Single household: households over sixty without a spouse or children.

One earner household: non-dual earner households with a spouse or children.

Dual earner household: respective total income of the householder and the spouse is higher than 3 million in the previous year.

※2. Total income= total salaries of earned income + (total revenue of business income × adjustment rate of industry).

(Source) Korean National Tax Service website

Table 9 Changes in the Amounts of the EITC Incentives and the Number of Recipient Households

Unit: thousand households, billion won

	Households that Applied for the EITC(A)	Recipient Households(B)	Payment Rate(B/A)	Ratio of B to the Whole Households	Amount of the EITC Incentives
2010	667	522	78.3	3	402
2011	930	752	80.9	4.3	614
2012	102	783	76.8	4.4	561.8
2013	106	846	79.8	4.6	774.5

(Source) Korean National Tax Service website

5 | Extension of Coverage of the EITC and the CTC to the Self-employed

From 2015, the scope of recipients of the EITC and the CTC has expanded from workers to the self-employed; however, professionals such as lawyers, patent agents, certified public accountants

(CPA), physicians, pharmacists and so on but non-registered business operators are excluded. To receive the EITC or the CTC, the self-employed need to fulfill identical application criteria with those of the workers'. In addition, following procedures need to be completed beforehand.

- Registration of entrepreneur: by December 31st every year
- Final return on VAT: by January 26th every year
- Report on current status of business: business exempt from taxation need to report current status of business. By February 10th every year.
- Report on composite income tax: by June 1st every year

The self-employed, in common with the employed households, receive the EITC and the CTC benefits on the basis of 'total Income of a married couple'; however, considering that the self-employed have more difficulties in securing earnings than the employed do, the benefits to the self-employed is calculated by utilizing adjustment rates for industries. Table 10 demonstrates the adjustment rates for industries, and the rates are set differently for industries. That is, an industry with a high adjustment rate implies that its income support rate to the industry is low, so the adjustment rate is set high.

For example, if A manages a restaurant and earns annual gross revenue of 30 million won and his wife earns 10 million won in a year at a job, annual gross salary of A's household is 23.5 million won (Formula 1)).

Formula 1) Annual gross income of A's household = (30 million won (A's annual gross revenue) × 0.45 (adjustment rate for a restaurant) + 10 million won (wife's total salary)) = 23.5 million

As this satisfies the criteria for base amount of gross income (dual income households) of Table 6, 1,916,250 won is provided as the EITC is based on the calculation of Formula 2.

Formula 2) 2.1 million won – ((23.5 million won (gross income) – 13 million won) × (210/1,200)) = 1,916,250 won

However, in case of B who is engaged in leasing of real estate, even though B's annual revenue and his wife's salary is the same as the annual gross income of A's household, adjustment rate is higher and the amount of gross income increases; therefore, the amount of gross income does not satisfy the criteria for the base amount of gross income (dual income households) of Table 6, the EITC is not provided to B (Formula 3)).

Formula 3) Annual gross income of B's household = 30 million won (B's annual gross revenue) × 0.9 (adjustment rate of leasing real estate) + 10 million won (wife's salary) = 37.5 million won

Table 10 Adjustment Rate for Industries

Types of Industries		Adjustment Rate
A	Wholesale business	20%
B	Retailing, Car-components sales, real estate sales, agriculture·forestry·fishery, mining industry	30%
C	Restaurants, manufacture, construction, electricity·gas·steam·water business	45%
D	Accommodation business, transportation, finance·insurance, commodity brokerage, publication·image·media·information service, sewage·waste treatment·recycling·environmental restoration	60%
E	Service industry (real estates, professional science technology, business facility management, business support, education, health, social welfare, art, sports, leisure, repair, etc.)	75%
F	Leasing real estate, other leasing services, freelancer, individual housework service	90%

(Source) Korean National Tax Service website

Table 11 represents the ceiling of annual gross revenue that self-employed households can apply for the EITC and the CTC; in order to be eligible for the benefits, business income needs to be the only income source for the self-employed.

Table 11 Ceiling of Annual Gross Revenue in Case of the Self-employed Households Only with Business Income

Unit: ten thousand won

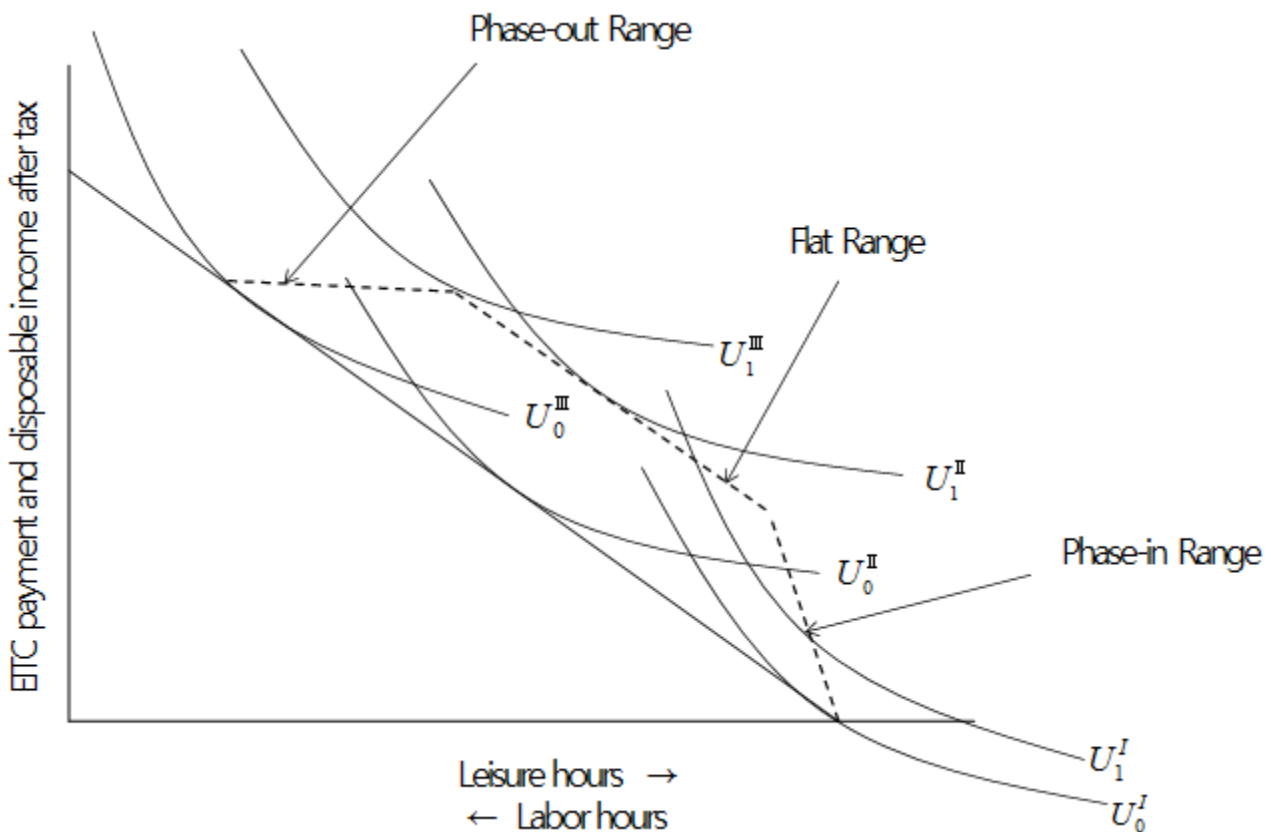
Business Classification	EITC			CTC
	Single Household	One Earner Household	Dual Earner Household	Household with Dependent Children
A	6,500	10,500	12,500	20,000
B	4,333	7,000	8,333	13,333
C	2,888	4,666	5,555	8,888
D	2,166	3,500	4,166	6,666
E	1,733	2,800	3,333	5,333
F	1,444	2,333	2,777	4,444

(Source) Korean National Tax Service website

4—Analysis on Effects and Challenges Ahead

Figure 5 explains the selection of leisure and labor hour as the EITC is introduced. As the EITC is implemented, indifference curve¹⁵ of the people who are not participated in labor market shifts from U_0^I to U_1^I , and both the rates of participation in labor market and labor hours rise. In case of the people who have already been participated, in a phase-in range(the range in which the work incentives increase at a fixed rate as the earned income rises), as the cost of choosing leisure instead of work increases, the increase of labor hours could be expected; however, both the substitution effect¹⁶ and the income effect¹⁷ occur, so its impact on work hour is not clear.

Figure 5 Selection of Leisure and Work Hour When the EITC is introduced



Source) The author revised V.Joseph Hotz & John Karl Scholz (2001) “The Earned Income TaxCredit” National Bureau of Economic Research Working Paper 8078

On the other hand, in a flat range(the range in which maximum amount of benefit is provided regardless of the increase and the decrease of earned income), as indifference curve shifts from U_0^II to U_1^II and the substitution effect does not exist, labor hours decrease. Finally, in a phase-out

¹⁵ Choosing either to work or not is based on utility level (level of satisfaction) of working and leisure. Indifference curve is a device to facilitate the comparison.

¹⁶ Effect that increase in wage rate makes labor supply more favorable, and labor supply increases

¹⁷ Effect that increase in wage rate raises real wage, demand of leisure increases, and labor supply increases if leisure is a normal good (the demand for it increases as income increases).

range(the range in which work incentives decrease as the earned income increases), indifference curve moves from U_0^{III} to U_1^{III} and labor hours decrease¹⁸.

Precedent studies that analyzed effects of the EITC on labor supply can be largely classified into two groups: influences on participation in the labor market and influences on changes in labor hours. Due to the 8-year and relatively short history of the South Korean EITC, there are not many analysis on the effects. In this section, firstly, precedent studies on the EITC of the US that were implemented earlier than South Korea is introduced, and then results of recent studies on the South Korean EITC are presented.

First, there are various studies on how the EITC of the US has influenced the participation in the labor market. Keane (1995) and Keane and Moffitt (1998) estimated that expansion of the EITC would increase labor force participation rate between 1984 and 1996. Dicket, Houser, and Scholz (1995) also demonstrated the analysis result that participation in the labor market increases as income increases. Eliss and Liebman (1996) drew the conclusion that expansion of the EITC led to increase in single-mother families' labor participation rates.

Next, studies on influences of the EITC in labor hours are as follows. Contrary to the numerous studies that shows a positive correlation between the EITC and participation in the labor market, studies on the correlation between the EITC and labor hours do not necessarily converge.

Keane (1995), and Keane and Moffitt (1998) states that the EITC have positive effects on labor force participation as well as the labor market. On the other hand, Hoffam and Seidman (1990), and Browsing (1995) conclude that expansion of the EITC reduces worker's labor hours.

What are the analysis results on introduction of the Korean EITC, which has shorter history than the EITC of the US? Using the NaSTab (National Survey of Tax and Benefit) Panel Data of Korea Institute of Public Finance, Heonjae Song · Hong Kee Bahng (2014) analyzed the influences of the EITC on labor supply. The analyses are carried out for married couple households and single-parent households. The studies show the result that the rates of participation in labor market increases in the phase-in range (the range in which work incentives increases as earnings rise). On the other hand, married couple households reduce labor supply in both flat range (the range in which maximum amounts of incentives are provided regardless of increase and decrease in earnings) and phase-out range (the range in which work incentives decrease as earnings increases); single parent households show different results.

Utilizing 'Korean Welfare Panel', Dae-wonng Lee · Gi-hun Kwon · Sang-ho Moon(2015) analyzed how the EITC benefits affect the labor market participation of low income class, labor hours and

¹⁸ Retrieved from V.Joseph Hotz & John Karl Scholz (2001) "The Earned Income TaxCredit" National Bureau of Economic Research Working Paper 8078, and Dae-wonng Lee · Gi-hun Kwon · Sang-ho Moon(2015) "Studies on policy effects of the EITC", The Korean Association for Policy Studies, Vol. 24, No. 2.

wages with Difference in Difference Analysis (DID Analysis)¹⁹. According to analysis results, employment rate of the group that receives the EITC (treatment group) increased from 70.51% before receiving (in 2008) to 78.20% (in 2012) after receiving, it increased by 7.69 percentage point. On the other hand, employment rate of the group that does not receive the EITC (control group) decreased from 71.85% in 2008 to 66.25% in 2012 by 5.62 percentage point decrease. In terms of labor hours, treatment group increased labor hours by 0.75 month while control group reduced labor hours by 0.19 month during the same period.

Young-joon Chun (2010) classified households into 7 equal groups of the same number by their incomes and analyzed how the EITC influenced labor hours. As a result, the study found out that its effects on the increase in labor hours is not so significant.

Chan-mi Jeong · Jae-jin Kim(2015) analyzed the changes in criteria of the EITC payment in 2014, and the redistributive effects of the CTC on one-earner and dual-earner households, by using the household survey data of 2013. As a result, the EITC and the CTC have positive impacts on poverty rate and income redistribution; on the contrary, poverty rates of single-parent and elderly households increase among the one-earner households.

According to the results of studies in the South Korean EITC, some studies show that implementation of the EITC increased the rate of participation in labor market or the labor hours while other studies present decrease in both the rate and the labor hours; results do not necessarily converge. However, there are many study results that the rates of participation in the labor market and labor hours have positive impacts on average. Especially, there are many

¹⁹ Estimating effect before and after implementing a policy, an equation like follows can be applied.

$$Y_t = \beta_0 + \beta_1 d_t + \varepsilon_t$$

In this equation, Y_t is a variable affected by execution of a policy. d_t is a dummy variable; it becomes 1 if affected by the policy, and it becomes 2 if unaffected. ε_t is an error term, and β_0 and β_1 are parameters for estimation. With estimation results based on this equation, it is possible to interpret that Y increased by policy implementation. However, it is difficult to judge that the policy is the only factor that increased Y. For instance, by enforcing an industrial policy in some prefectures, per capita GDP in the prefectures can increase, but it is impossible to say that the effect is solely due to the policy. That is, there is a possibility that the effect includes not only policy effect but also exogenous effects occur with time (time effect). DID Analysis divide into two groups: treatment group and control group. Treatment group is affected by policy while control group is not. That is, in order to examine net policy effect, it is necessary to analyze both those affected by policy (treatment group) and those unaffected by policy over time (control group).

	Treatment Group (Prefectures affected by Policy)	Control Group (Prefectures unaffected by Policy)
Before Implementing Policy	a	c
After Implementing Policy	b	d

As illustrated in the table above, policy effect before and after implementing on treatment group, prefectures affected by policy, (b - a) includes not only policy effect but also exogenous effect which occurs with time. On the other hand, policy effect before and after implementing on control group, prefectures unaffected by policy, (d - c) solely reflects exogenous effect over time. Therefore, by excluding (d - c) from (b - a), net policy effect that excludes exogenous effect with time is obtained. However, a point to notice is to assume exogenous effects on treatment group and control group is same. This is the main content of DID analysis.

studies that rated the participation in the labor market increases in phase-in range (the range in which EITC benefits increase as earnings increase); therefore, to some extent, the South Korean EITC has achieved the goal set in the initial phase of the system.

However, there are many problems to be solved. First, securing financial resources needs to be prioritized. The scope of eligibility shows a tendency to expand. Budget for the EITC and the CTC was about 150 billion won in the initial period, and budget amounts increased to 1.7 trillion won in 2015. Although South Korean government plans to increase the range of eligible people (Table 12), the actual tax revenues are smaller than the budget due to recession, and securing financial resources is a difficult task for South Korean government.

In addition, self-employed households, exempt from professionals from 2015, can receive the EITC. As the self-employed have more difficulties in securing earnings than the employed do, the EITC reflects adjustment rates for industries of Table 10 and decides the recipients. However, adjustment rate for an industry is 90% and adjustment rates are high in general, so it is difficult for the self-employed to receive the EITC.

In order to provide more EITC benefits for the self-employed in financial difficulties, raising the income capture rate of the self-employed needs to be the first priority. As the income capture rate of the self-employed rises and the adjustment rates decrease, more self-employed households can benefit from the EITC.

South Korean government needs to focus on poor women that form the majority of the working poor for an implementation of the EITC. Many working women are engaged in insecure jobs such as part-time work, and they are susceptible to fall into poverty. In addition, once a person falls into poverty, it is difficult to escape from it. Those facts imply that South Korean government has scarcely implemented significant policies for working women to this day. Therefore, South Korean government needs to implement policies thoroughly for working women including the implementation of the EITC from now on. The policies will promote female participation in the labor market, and it will lead to the establishment of safe environment for them to escape from poverty.

Table 12 Plans to Expand the EITC in Phases

	Applying to Employees		Expanding to Proprietors	Fully Implementing
	1 st Phase	2 nd Phase	3 rd Phase	4 th Phase
	(2008~2010)	(2011~2013)	(from 2014)	(by 2030)
Eligible Households	Homeless households with two or more than two children	Household with one or more children	Household with one or more children	Household without any child is eligible
Number of Recipient Households	About 310 thousand households	About 90 thousand households	About 1.5 million households	About 3.6 million households
Annual Budget	About 150 billion won	About 400 billion won	About 1 trillion won	About 2 trillion 500 billion won

(Source) Ministry of Strategy and Finance (2011), “Tax Law Revision in 2011(Plan)”

5—Implication to Japan

Currently, Japan explores possibilities for improvement in functions of the existing safety net. The South Korean EITC, which has been explained in this paper, is a meaningful case to review. In fact, scholars in Japan have paid interests to the EITC and discussed necessity of the system and adverse effects in case of introduction of the EITC. Morinobu (2008) suggests following four points as tasks in case of introduction of the EITC.

- ① To establish policy goals and clarify the target class to support
- ② To discuss and review the system and policies thoroughly and avoid incoherent policies
- ③ To come up with measures against abuse of the system and the illegal receipt
- ④ To establish structure for clear understanding of the income information as the tax office is in charge of operation and providing incentives

Applying these points to Japanese system, first, in terms of ①, setting working women and young households as the main target for the policy and establishing the same policy goals like South Korea has done are meaningful. Similar to South Korea, the number of the working poor among female workers and young households is increasing rapidly with the expansion of non-regularization of labor force in Japan. In addition, recently the South Korean government introduced ‘Differentiated policies on the EITC based on the number of children.’ As Japan has the same problem of declining number of children, it is a good policy to consider.

For ②, both countries need to implement policies that create the long and stable employment for as many people as possible rather than incoherent and money-pouring policies, and it is a shortcut to secure public finance. Waste of financial resources needs to be prevented under the

context that pouring money is easier than creating stable employment.

For ③ and ④, Japan needs to utilize 'My Number System' which has been implemented since January 2016. However, even though South Korea introduced universal 'Resident Registration Number ID System' before Japan and is able to comprehend individuals' properties and savings, illegal receipt is happening in South Korea and grasping incomes of the self-employed still remains as an issue for government. Considering the South Korean cases, Japan needs to establish more effective system.

Some people state that the EITC needs to be implemented as an alternative plan for the reduced tax rate system. The Abe administration accepted the proposal of Komeito and decided to raise consumption tax rate to 10% in the near future and introduce a reduced tax rate system. However, there are a few dissenting voices from economists on the reduced tax rate system. Reasons for opposing the reduced tax rates are 'increase of political lobbying on the new reduced tax rate system,' 'misallocation of resources due to distortion in price system,' 'tax reduction is bigger for high-income earners with high consumption level, so the system is beneficial to high-income earners,' and 'failed cases in foreign countries.'

December 10 2015, Liberal Democratic Party and Komeito compromised to expand coverage to 'all perishable foods and processed foods', excluding alcohol and dining-out items. If the reduced tax rate is introduced and the new consumption tax increase to 10 % from 8 % is implemented, the government will lose about 1 trillion yen of its expected tax revenue. A part of the revenue shortfall will be covered by utilizing 400 billion yen earmarked for measures to help low-income earners, but no decision has been made on how to secure the remaining 600 billion yen. If financial resources for the remaining part are not secured, the government might consider reducing social security expenditures.

In fact, 1 billion yen, the cost of introducing the reduced tax rate, is comparable to 1.3 billion yen, the estimated cost of introducing the EITC by Shiroishi in 2010. Kawaguchi (2015) explains that there is no big difference between the costs of implementation of the reduced tax rate and the EITC based on the estimated result. He argues for feasibility of the EITC in Japan and necessity of active discussions for implementing the system.

The fundamental intent of the reduced tax rate is 'countermeasure for low-income earners'. However, there are other countermeasures for low-income earners. The EITC which was introduced in this paper is a good example. The EITC boosts the labor force participation rate in the labor market. Not weighted to the reduced tax rate system, Japanese government needs to review and consider the EITC which have shown certain results in the US and South Korea at the same time and implement more effective policies.

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