

## Chapter 8

# EITC in Japan: A Preliminary Approach

### 8.1 Introduction

The Japanese government referred to an introduction of the income tax credit at the Mid-term Economic Programs in December 2008. The National Tax Commission also proposed tax credit in recent years. The deduction method has been the main tax rule and the credit method would be exceptional under the existing Japanese income taxation. However, increasing economic disparity and the pressing need for more income redistribution have become major policy issues. The tax credit method contributes to relieving the burden of the low-income groups.

The Earned Income Tax Credit (EITC), which has been implemented in the US and other countries, will be one of the policy options for the income tax reform in Japan. This chapter conducts a preliminary estimation for the EITC. Tajika and Yashio (2006a), Tajika and Yashio (2006b), and Abe (2008) already examined the fixed amount of tax credit. On the other hand, the EITC has an income-proportional credit with negative income tax. This tax credit is designed to minimize the adverse labor supply effect. The existing Japanese benefits like public assistance are set as a minimum safety net to maintain living standards. The EITC proposes an alternative concept to the existing Japanese system.

The purpose of this study is to examine how tax burdens will change by introducing a US- type EITC in Japan. The preliminary estimation directly applies the U.S. EITC to the Japanese income taxation. Section 8.2 provides an overview of the JPITC (Japan Income Tax Credit). JPITC is a static tax transfer model with the microsimulation method. Section 8.3 presents simulation results. Section 8.4 concludes this chapter.

### 8.2 An Overview of JPITC

JPITC is a static microsimulation model that deals with income tax. The model composes the dataset of Japanese 1/5,000 population, and it applies the current Japanese income tax rule for each

sample (i.e. the baseline estimation). JPITC simulates an introduction of the EITC in Japan, and its policy effect will be examined.

### 8.2.1 Data Source

JPITC makes its dataset from the *Basic Survey of the Living Conditions of People on Health and Welfare (BSLC)* conducted by the Ministry of Health, Labour and Welfare, Japan. In the 2004 survey of the BSLC, the household survey and the income survey collected 25,091 household records. The household survey includes information of each household such as the number of household members, family type, each member's sex, age, and occupation etc. The income survey presents information of each household member's income with its components.

Building the dataset is as follows. First, the new data set is generated from the 2004 BSLC samples. The sample size is 1/5,000 of the Japanese population. The number of households is about 10 thousands and the number of individuals is about 26 thousands. The BSLC equips the selection multiplier for each sample and JPITC uses this number to develop the initial dataset. Second, two dataset tables – the household table and the individual table – are prepared and the necessary data like household ID, individual ID, sex, age, husband-wife relation ID, parent-child relation ID, and income types and its amounts will be stored in these two tables.

### 8.2.2 Static Tax Transfer Model

#### Income Tax Estimation

Since the EITC is a credit system that subtracts credit amounts from the income tax payment, JPITC has to estimate income tax for each individual as the baseline scenario. Our calculation follows the 2007 Japanese tax provisions<sup>125</sup>.

- (i) Amount of earnings: Taxable earnings are calculated from the dataset. The earnings are broadly defined, including not only salary, but also business income, property rent etc.
- (ii) Deduction from earnings: As for the salary earnings, the employment income deduction is applied. JPITC calculates the employment income deduction. As for business income and property rent, the necessary expenses have already been deducted in the original BSLC dataset.
- (iii) Amount of taxable income (taxation base): Tax allowances are calculated in JPITC, including the basic exemption (380 thousands yen), exemption for dependents, special

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<sup>125</sup> Between 2004 and 2007, the Japanese income taxation experienced two major reforms; (i) tax transfer from the central government to the local governments, (ii) 2 trillion tax increases. We take into account these tax reforms to elaborate the estimation.

exemption for spouses etc. JPITC estimates the number of dependents for each individual by using information of BSLC dataset.

- (iv) Amount of income tax: The respective tax rate is applied to each amount of taxable income to determine the amount of income tax.

=== Figure 8.1 ===

### ***EITC Estimation***

As a starting point of this study, we directly apply the U.S. EITC provisions to the Japanese dataset. The U.S. EITC is a tax credit for certain people who work and have earned income under \$37,783 in 2007. The EITC reduces the amount of tax payment and it can also offer a refund. The main EITC rules in this study are as follows.

- (i) Age: a qualified person should be at least 25 but under 66.
- (ii) Earnings: same with the earnings in a broad sense as stated above, not including public assistance and unemployment benefits.
- (iii) Qualifying EITC child: The EITC child is same with the dependent in the Japanese income tax provisions. The dependent's age is under 19.

=== Figure 8.2 ===

## **8.3 Simulation Results**

### ***Shares of the EITC Individuals and Households***

According to the simulation results, the share of the EITC individuals in the total number of the sample is 10.6%, while the share rises up to 26.0% in the household basis.<sup>126</sup> The EITC aims to deliver tax refund especially to the low-income households. Under this EITC schedule, around one quarter households can receive the EITC. The U.S. rule admits the employment income deduction; on the other hand, the EITC in this study does not offer the deduction to the salary income because the existing Japanese employment income deduction is large in absolute terms. The share of the EITC households might increase with applying the employment income deduction.

The share of the zero-child households reaches 48% of the total EITC households and this means that the EITC can contribute to the adequate income maintenance for the low-income households

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<sup>126</sup> For example, a husband can receive the EITC, but his wife and children cannot receive it.

with no-children. The share of one-child and the share of two-children households are 20% and 24% respectively. The EITC can also serve to the child care in Japan.

==== Table 8.1 ====

==== Figure 8.3 ====

==== Figure 8.4 ====

### ***EITC Expenditure***

The total amount of annual EITC expenditure is 1.02 trillion yen in this simulation scenario. The child benefit is 0.98 trillion yen at the 2007 fiscal year in Japan. The simulation results suggest the EITC will require the same amount of funding.

The total 1.02 trillion yen is divided into (i) the EITC credit only (0.12 trillion yen, 12%), and (ii) the EITC benefit (0.90 trillion yen, 88%). The result shows that EITC is mostly not a tax credit but a tax refund. This is an expected outcome because the EITC is a negative income tax for the poor. The income tax revenue will be consequently decreased from 12.4 trillion yen to 12.3 trillion yen by the EITC tax credit of 0.12 trillion yen.

==== Table 8.2 ====

==== Figure 8.5 ====

==== Figure 8.6 ====

### ***EITC by Age Group***

The average EITC amount is 75 thousands yen for the EITC individuals. Those of age 35-39 enjoy the largest amount of EITC and the average EITC for them is 107 thousands yen. The average income for those of age 35-39 is 1,429 thousands yen and the EITC-Income ratio (i.e. effective EITC rate) is 7.5% ( $=107/1,429$ ). The average EITC and income are almost same for those of age 30-34, age 40-49, and age 45-49. This result suggests that the EITC will help the age groups in 30s and 40s.

==== Table 8.3 ====

==== Figure 8.7 ====

==== Figure 8.8 ====

### ***EITC by Income Group***

The EITC has three stages as income increases; (i) phase-in, (ii) plateau, and (iii) phase-out. This policy design aims to induce the labor supply incentives at the phase-in, to offer sufficient tax refund at the plateau, and to evade the labor supply disincentive at the phase-out. The income group of 1,500-2,000 thousands yen receive the largest EITC amount of 331 thousands yen and their EITC-Income ratio reaches 17.5% ( $=331/1,892$ ). The EITC decreases gradually among the income groups of 2,000-4,000 thousand yen, and it vanishes over 3,778 thousands yen.

==== Table 8.4 ====

==== Figure 8.9 ====

==== Figure 8.10 ====

The simulation results are almost the same as those when we see the EITC estimation at the household basis.

==== Table 8.5 ====

==== Figure 8.11 ====

==== Figure 8.12 ====

### ***EITC by Children Group***

The EITC is not applied to individuals with no children whose income is over 1,260 thousands yen. The average EITC is 32 thousands yen for this zero-child group at income of the 500-1,000 thousands yen bracket. Their EITC-Income ratio is just 3.8%.

The EITC payments will increase as the number of children increases. The EITC reaches up to 300-400 thousands yen for each EITC individual and EITC-Income ratio becomes over 30% for those individuals with one or more children. This result suggests that the EITC can serve as income assistance for the low-income individuals with one or more children.

==== Table 8.6 ====

==== Table 8.7 ====

==== Table 8.8 ====

==== Figure 8.13 ====

==== Figure 8.14 ====

==== Figure 8.15 ====

### ***EITC by Family Type***

The shares of the EITC recipients in each family sub-group are as follows. Their share for the single person household is just 7.3%. This means that just one-fourteenth of the total single person households will receive the EITC because the income limit is relatively low for this sub-group. The share of the EITC at the family nuclei is 27.4% and the share reaches 35.7% for married couple with one or more children. The share will increase as the number of children increases. As for the occupational types of households, the share of the EITC recipients in households where both husband and wife are employed is 46.1%; on the other hand, the share will decrease to 23.4% for one-earner couples. Households with a full-time housewife receives relatively high income in Japan and this is the reason why the EITC share is smaller in this group.

==== Figure 8.16 ====

The EITC-Income ratio reaches the highest value at 7.5% for the mother-less or father-less households. Since there is only one parent in this family type, they usually cannot get sufficient income. The simulation results suggest that the EITC can serve them.

==== Figure 8.17 ====

## **8.4 Concluding Remarks**

Due to the lost decade in 1990s and the weak economic recovery in 2000s, the Japanese employment income did not grow enough and the future prospect cannot help being grim because of the world-wide economic recession from 2008. This study shows that the US-type EITC could serve as income assistance to low-income persons.

Many studies still remain. Among others, further international comparative studies are required to propose a new tax design in Japan. Second, possible policy options should be examined together. For example, abolishing the exemption for dependents will offer the required fund. Third, the effect on the labor supply should be explored. The complicated tax design of the EITC aims to affect the labor incentives. The behavioral model that considers the labor supply issue is the next step in this academic field.

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### Japanese

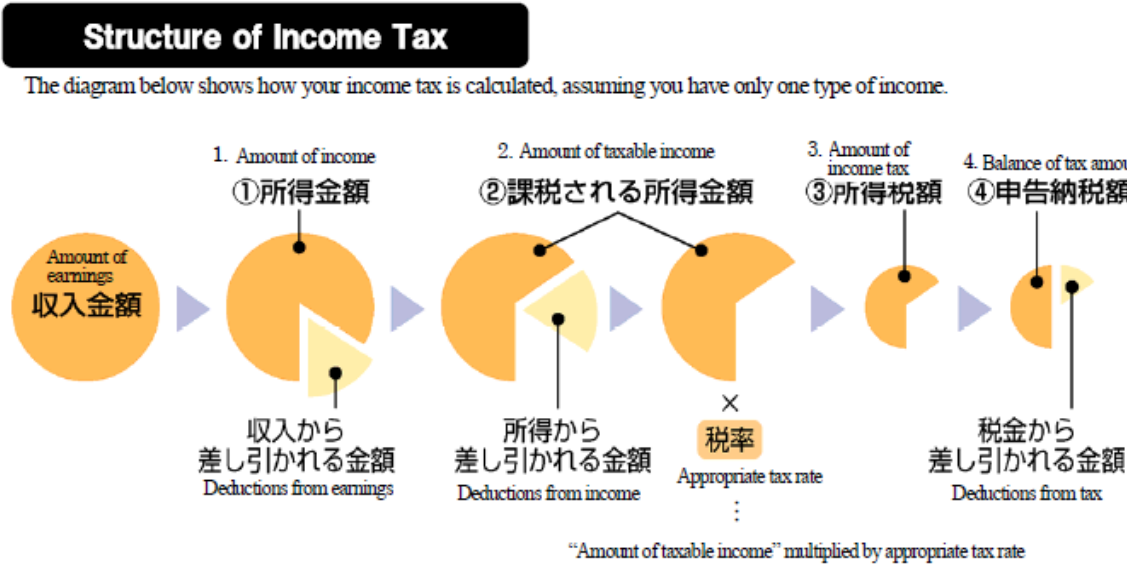
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Figure 8.1 Structure of Income Tax in Japan



Note: 1. “Amount of earnings” includes the following:

- Sales and miscellaneous revenue made by retailers
- Property or land rent in the case of leasing real estate
- Salary, etc. in the case of salaried workers
- Lump-sum payments derived from life insurance policies, etc.

2. “Deductions from earnings” includes the following:

- Necessary deductible expenses (in the case of business income)
- Employment income deduction, etc.
- Deduction for social insurance premiums, etc.

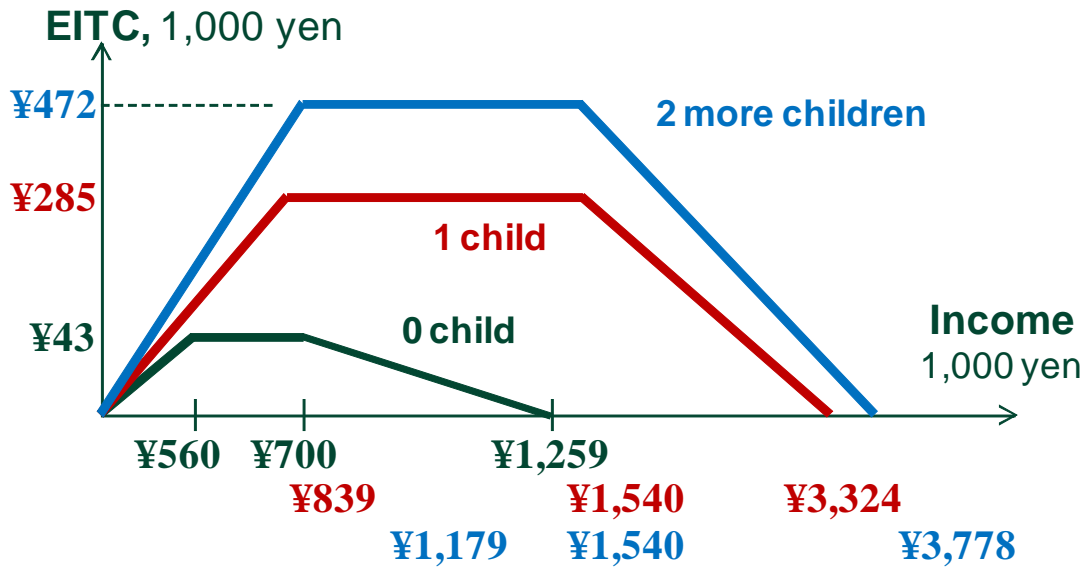
3. “Deductions from income” (refer to “Deductions from income” on page 8 and 33)

4. “Appropriate tax rates” are divided into 6 levels, from 5% through to 40%.

5. “Deductions from tax” (refer to “Deductions from tax” and “Calculating your tax” respectively on page 8 and 46)

Source: National Tax Agency

Figure 8.2 EITC Design



Note 1: We apply the U.S. EITC to the Japanese income taxation directly. The exchange rate is 1 USD = 100 JPY.

Figure 8.3 Shares of the EITC Households

### Share of the EITC Households

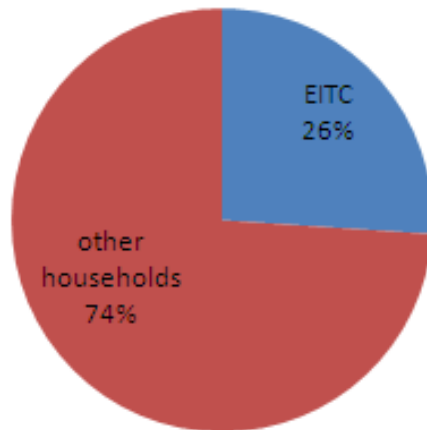
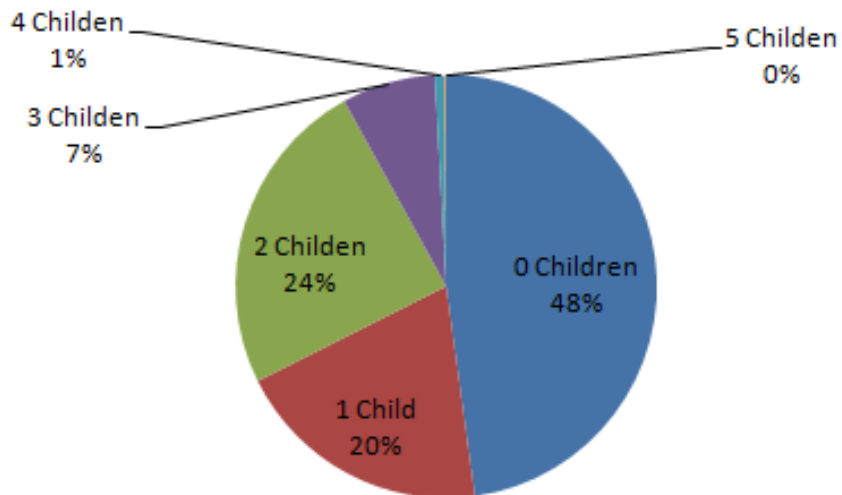


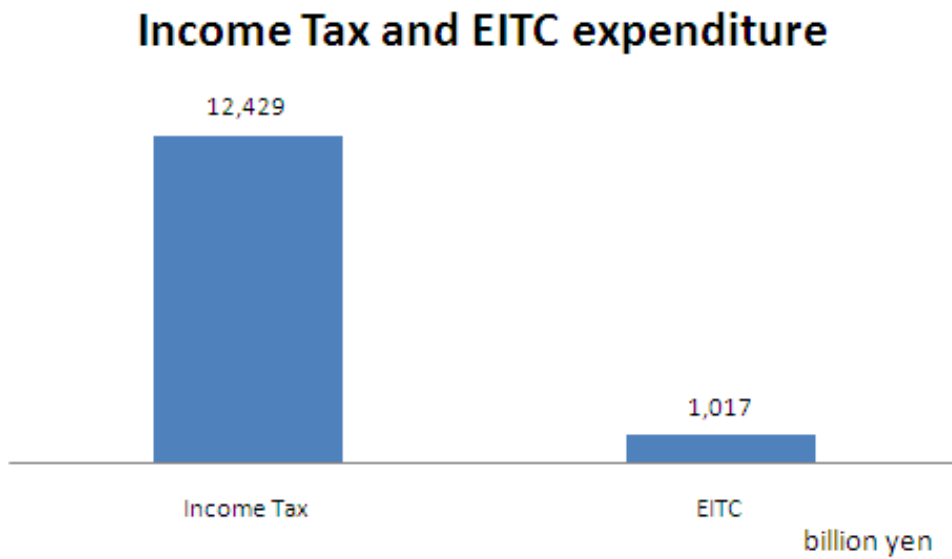
Figure 8.4 Compositions of the EITC Households

### Composition of EITC children



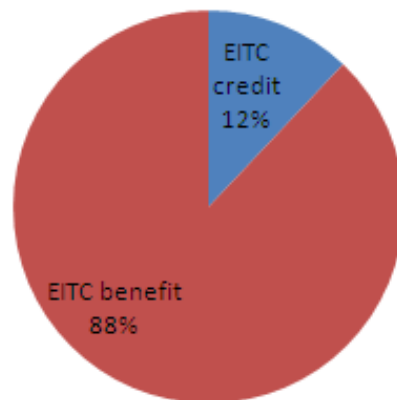
Note 1: Simulation results of the JPITC model

**Figure 8.5 Income Tax and the EITC Expenditure**



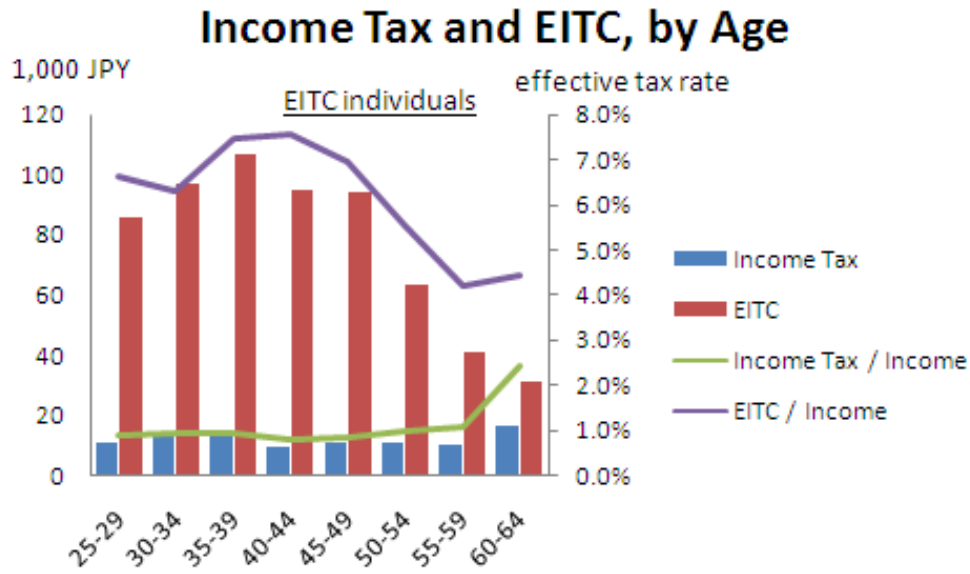
**Figure 8.6 Compositions of the EITC**

### Composition of EITC

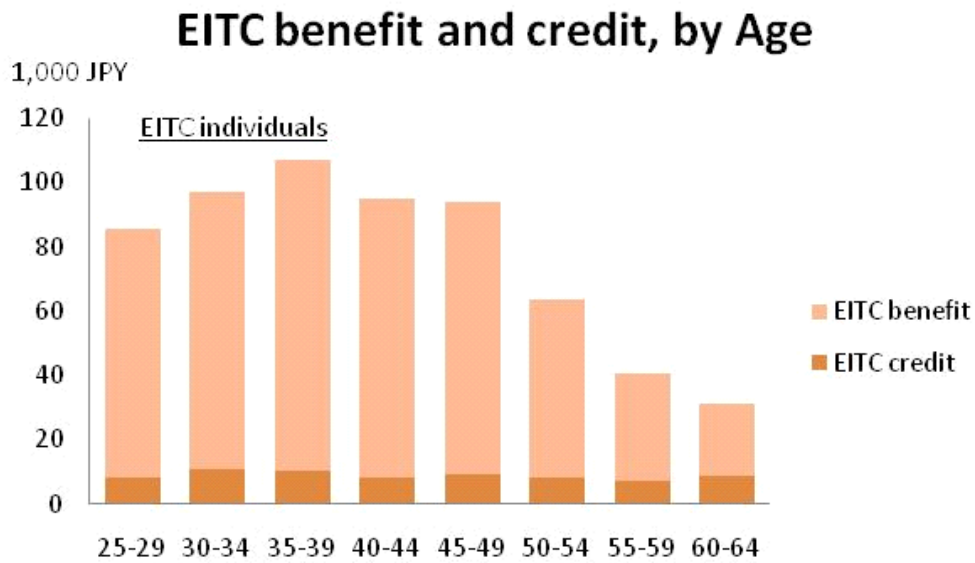


Note 1: Simulation results of the JPITC model

**Figure 8.7 Income Tax and EITC, by Age Group**

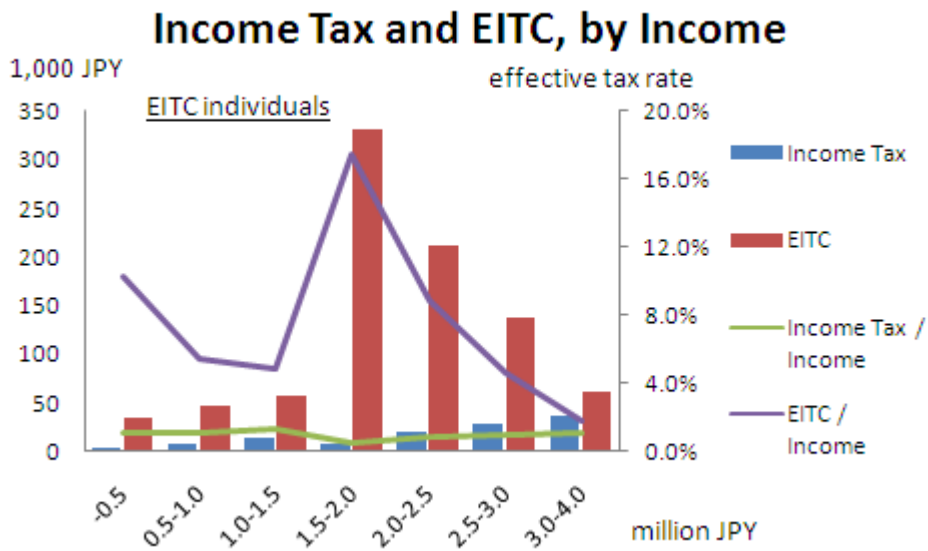


**Figure 8.8 EITC Benefit and Credit, by Age Group**

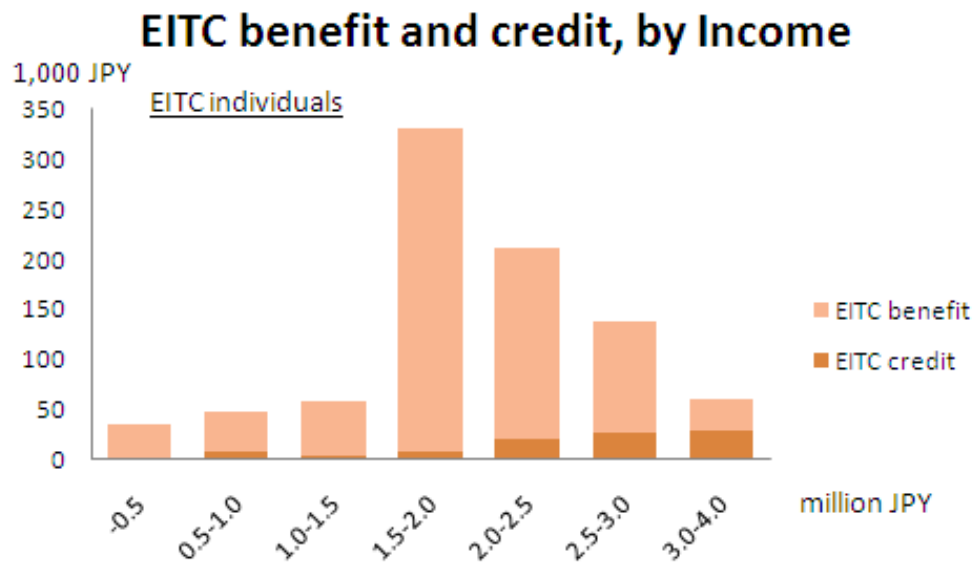


Note 1: Simulation results of the JPITC model

**Figure 8.9 Income Tax and EITC, by Income Group**



**Figure 8.10 EITC Benefit and Credit, by Income Group**



Note 1: Simulation results of the JPITC model

Figure 8.11 Income Tax and EITC, by Income Group at the Household Basis

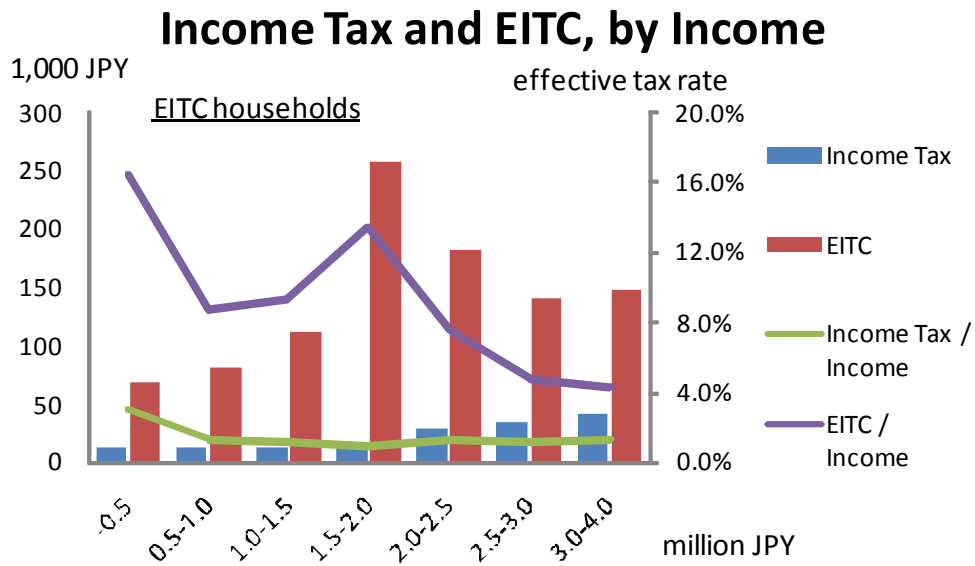
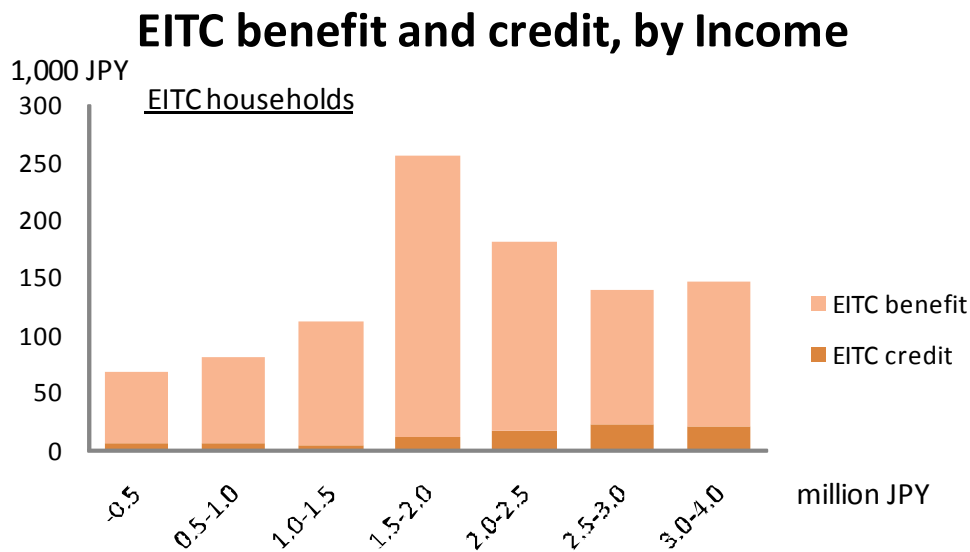


Figure 8.12 EITC Benefit and Credit, by Income Group at the Household Basis



Note 1: Simulation results of the JPITC model

Figure 8.13 Income Tax and EITC, by Income Group with 0 children

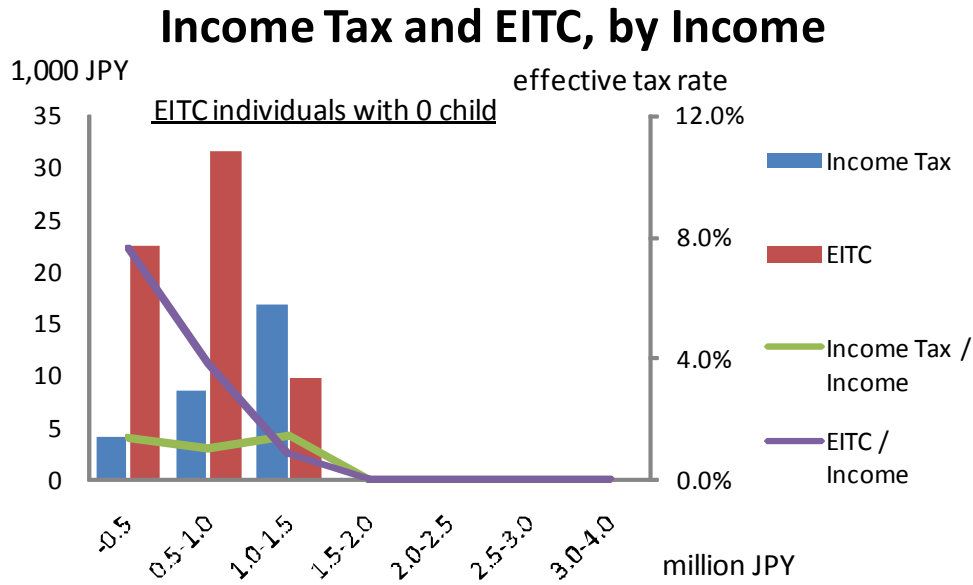
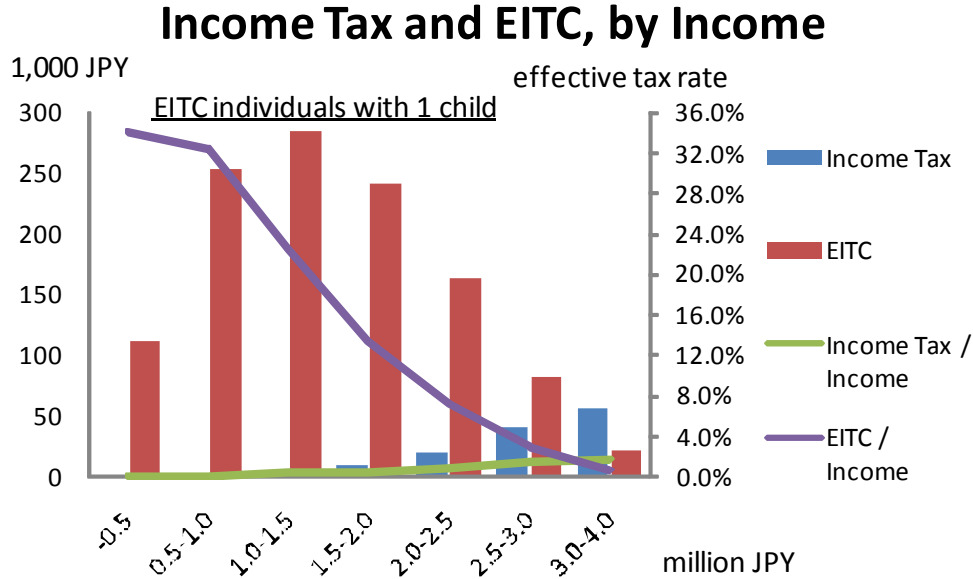
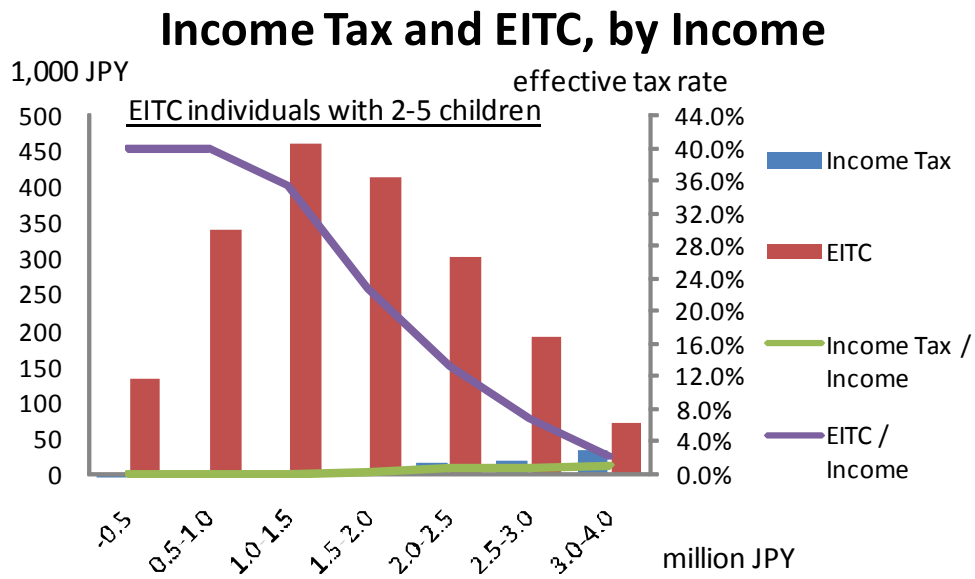


Figure 8.14 EITC Benefit and Credit, by Income Group with 1 child



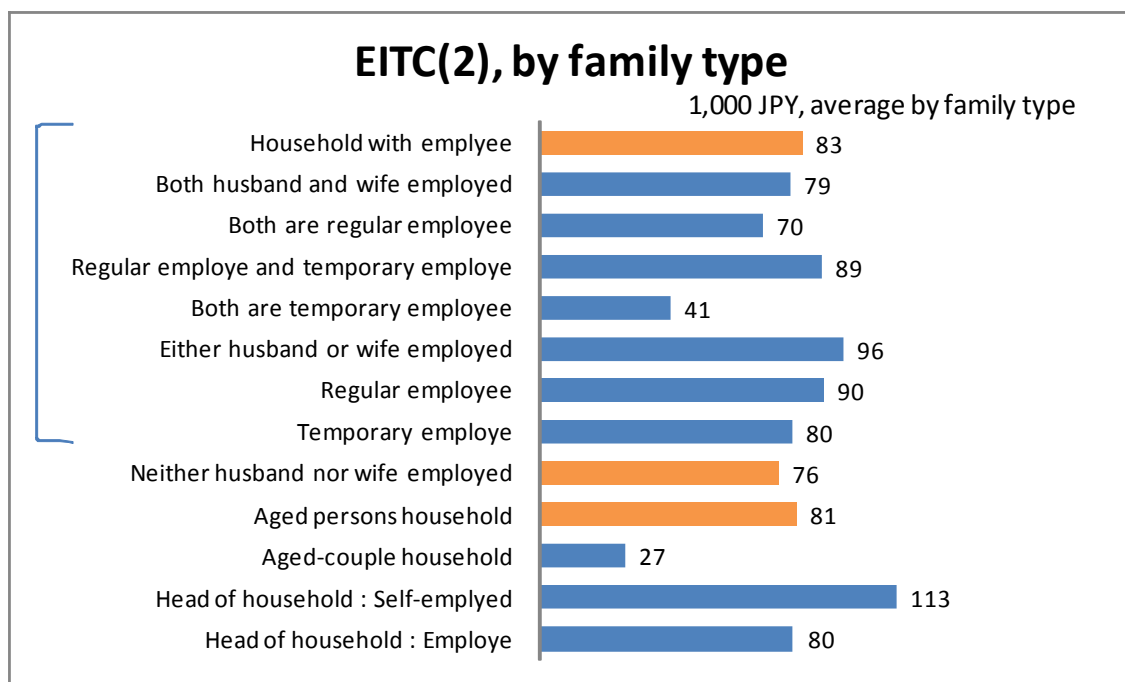
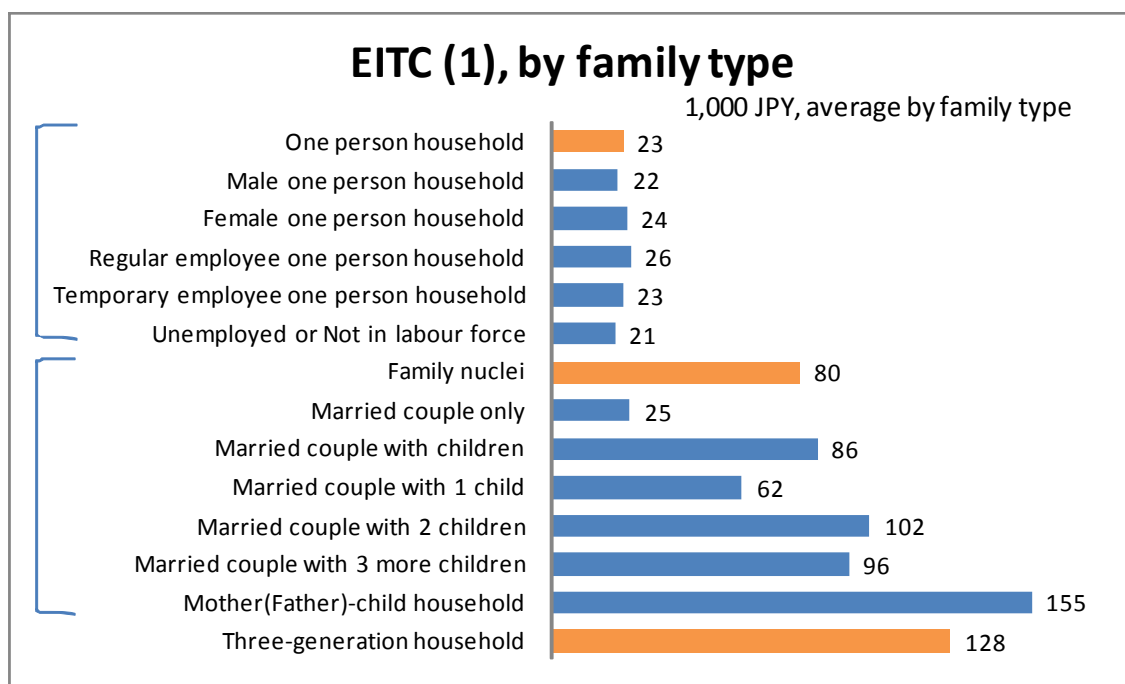
Note 1: Simulation results of the JPITC model

**Figure 8.15 EITC Benefit and Credit, by Income Group with 2-5 children**



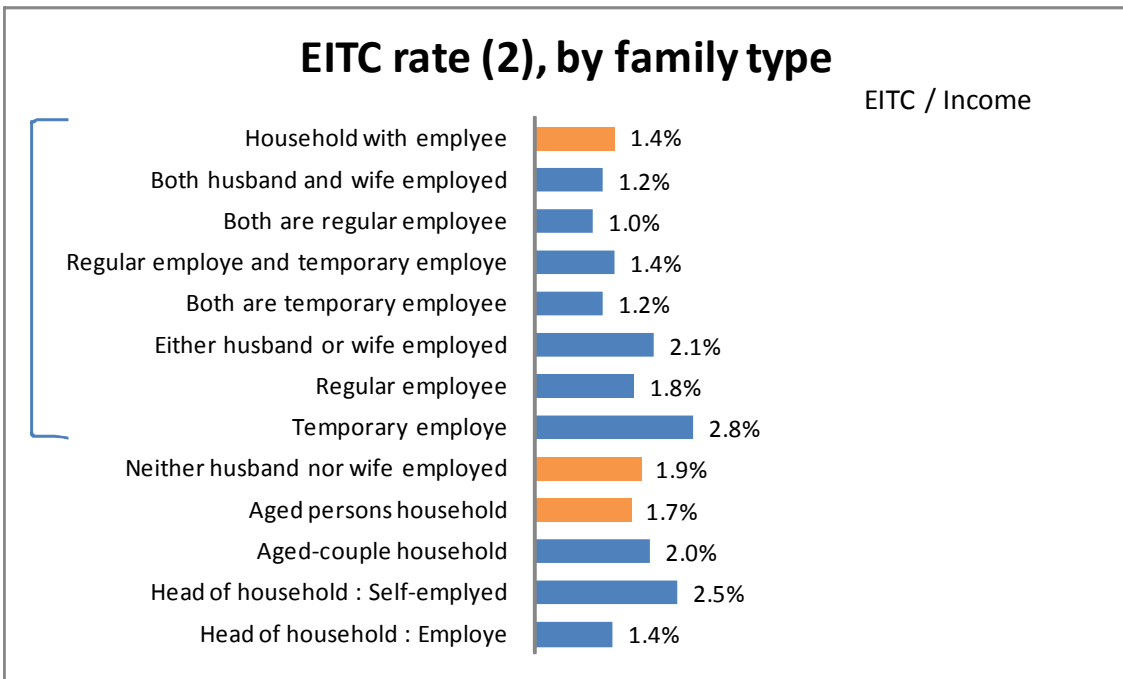
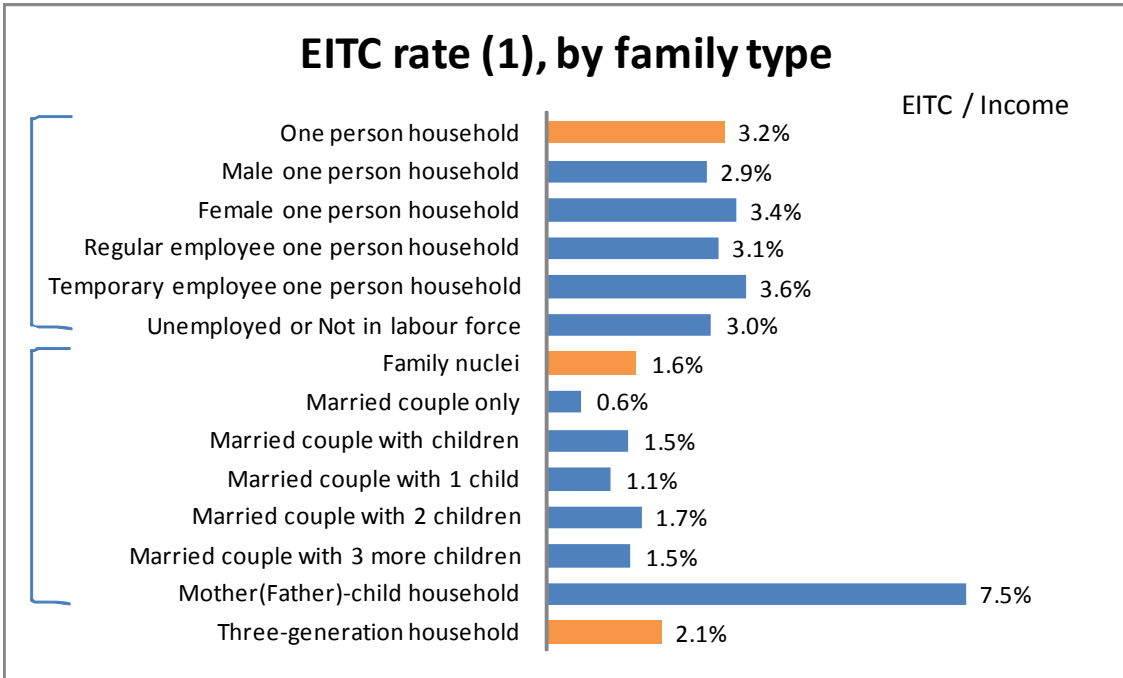
Note 1: Simulation results of the JPITC model

**Figure 8.16 EITC Receipt Ratio, by family type**



Note 1: Simulation results of the JPITC model

**Figure 8.17 EITC-Income Ratio, by family type**



Note 1:

Simulation results of the JPITC model

**Table 8.1 Numbers of Households and Individuals**

	Households		Individuals	
Total	9,390	100.0%	26,483	100.0%
EITC	2,446	26.0%	2,820	10.6%
0 Children	1,170	12.5%	2,038	7.7%
1 Child	483	5.1%	330	1.2%
2 Children	597	6.4%	354	1.3%
3 Children	175	1.9%	89	0.3%
4 Children	18	0.2%	7	0.0%
5 Children	3	0.0%	2	0.0%
EITC Benefit	2,098	22.3%	2,363	8.9%
EITC Credit only	348	3.7%	457	1.7%

Note 1: Simulation results of the JPITC model

**Table 8.2 Fiscal Expenditures of the EITC**

	total (billion yen)	ratio
Income tax (base)	12,429	5.7%
Income tax (after)	12,306	5.6%
EITC	1,017	0.5%
EITC credit	122	0.1%
EITC benefit	895	0.4%
Total income	218,670	100.0%
Local income tax	13,103	
Social insurances	25,876	
Pension	13,375	
Health	9,740	
Care	2,043	

Note 1: Simulation results of the JPITC model

**Table 8.3 EITC by Age (Five-Year Groups), EITC Individuals only**

(1,000 yen) Individuals Age	所得	所得税		EITC			社会保険料		実効税率						
	Income	控除前	控除後	算定額	税額控除	給付	Social	Tax rate	所得稅(前)		所得稅(後)		EITC	EITC控除	EITC給付
		Income tax Base	After	EITC total	EITC credit	EITC benefit insurance			Base	After	Total	Credit			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
25-29	1,294	11	3	86	9	77	153	0.9%	0.2%	6.6%	0.7%	5.9%			
30-34	1,542	14	3	97	11	86	159	0.9%	0.2%	6.3%	0.7%	5.6%			
35-39	1,429	13	3	107	11	96	138	0.9%	0.2%	7.5%	0.7%	6.7%			
40-44	1,256	10	1	95	8	87	132	0.8%	0.1%	7.6%	0.7%	6.9%			
45-49	1,347	11	2	94	9	85	145	0.8%	0.1%	7.0%	0.7%	6.3%			
50-54	1,143	11	3	64	8	55	128	1.0%	0.3%	5.6%	0.7%	4.8%			
55-59	977	10	3	41	7	34	129	1.1%	0.3%	4.2%	0.7%	3.5%			
60-64	699	17	8	31	9	22	91	2.4%	1.2%	4.4%	1.3%	3.2%			
65-69	615	18	9	29	9	20	149	3.0%	1.5%	4.7%	1.5%	3.2%			

Note 1: Simulation results of the JPITC model

**Table 8.4 EITC by Income Groups, EITC Individuals only**

(1,000 yen) Individuals Income	所得	所得税		EITC			社会保険料		実効税率						
	Income	控除前	控除後	算定額	税額控除	給付	Social	Tax rate	所得稅(前)		所得稅(後)		EITC	EITC控除	EITC給付
		Income tax Base	After	EITC total	EITC credit	EITC benefit insurance			Base	After	Total	Credit			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
-500	350	4	1	36	2	34	72	1.1%	0.4%	10.3%	0.7%	9.6%			
500-1,000	872	9	2	47	7	40	74	1.0%	0.2%	5.4%	0.9%	4.6%			
1,000-1,500	1,186	15	10	58	5	53	129	1.3%	0.9%	4.9%	0.4%	4.5%			
1,500-2,000	1,892	9	0	331	9	322	193	0.5%	0.0%	17.5%	0.5%	17.0%			
2,000-2,500	2,380	21	0	211	21	191	243	0.9%	0.0%	8.9%	0.9%	8.0%			
2,500-3,000	2,958	29	2	138	27	110	325	1.0%	0.1%	4.7%	0.9%	3.7%			
3,000-4,000	3,421	38	9	62	29	33	390	1.1%	0.3%	1.8%	0.8%	1.0%			

Note 1: Simulation results of the JPITC model

**Table 8.5 EITC by Income Groups, EITC Households only**

(1,000 yen) Households Income	所得	所得税		EITC			社会保険料		実効税率						
	Income	控除前	控除後	算定額	税額控除	給付	Social	Tax rate	所得稅(前)		所得稅(後)		EITC	EITC控除	EITC給付
		Income tax Base	After	EITC total	EITC credit	EITC benefit insurance			Base	After	Total	Credit			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
-500	412	12	6	67	6	62	265	3.0%	1.5%	16.4%	1.4%	14.9%			
500-1,000	932	12	6	81	6	75	149	1.3%	0.6%	8.7%	0.6%	8.1%			
1,000-1,500	1,198	13	9	112	4	108	202	1.1%	0.8%	9.3%	0.3%	9.0%			
1,500-2,000	1,917	17	5	256	11	245	276	0.9%	0.3%	13.4%	0.6%	12.8%			
2,000-2,500	2,410	29	12	181	17	164	276	1.2%	0.5%	7.5%	0.7%	6.8%			
2,500-3,000	2,990	33	12	140	21	118	416	1.1%	0.4%	4.7%	0.7%	4.0%			
3,000-4,000	3,455	42	22	147	20	127	389	1.2%	0.6%	4.2%	0.6%	3.7%			

Note 1: Simulation results of the JPITC model

**Table 8.6 EITC by Income Groups, 0 Children only**

(1,000 yen) Individuals Income	所得	所得税 控除前	控除後	EITC 算定額	税額控除	給付	社会保険料	実効税率						
	Income	Income tax Base	After	EITC total	EITC credit	EITC benefit	Social insurance	Tax rate Base	所得税(後)EITC	EITC控除	EITC給付	Credit rate		
	(a)	(b)	(c)	(d)	(e)	(f)		(b/a)	After (c/a)	Total (d/a)	Credit (e/a)	Benefit (f/a)		
-500	294	4	2	22	2	20	71	1.4%	0.7%	7.6%	0.8%	6.9%		
500-1,000	825	9	1	32	7	24	70	1.1%	0.2%	3.8%	0.9%	2.9%		
1,000-1,500	1,130	17	10	10	7	3	112	1.5%	0.9%	0.9%	0.6%	0.2%		
1,500-2,000	0	0	0	0	0	0	0							
2,000-2,500	0	0	0	0	0	0	0							
2,500-3,000	0	0	0	0	0	0	0							
3,000-4,000	0	0	0	0	0	0	0							

Note 1: Simulation results of the JPITC model

**Table 8.7 EITC by Income Groups, 1 Child only**

(1,000 yen) Individuals Income	所得	所得税 控除前	控除後	EITC 算定額	税額控除	給付	社会保険料	実効税率						
	Income	Income tax Base	After	EITC total	EITC credit	EITC benefit	Social insurance	Tax rate Base	所得税(後)EITC	EITC控除	EITC給付	Credit rate		
	(a)	(b)	(c)	(d)	(e)	(f)		(b/a)	After (c/a)	Total (d/a)	Credit (e/a)	Benefit (f/a)		
-500	332	0	0	113	0	113	100	0.0%	0.0%	34.0%	0.0%	34.0%		
500-1,000	783	0	0	253	0	253	120	0.0%	0.0%	32.3%	0.0%	32.3%		
1,000-1,500	1,275	5	0	285	5	280	184	0.4%	0.0%	22.4%	0.4%	22.0%		
1,500-2,000	1,812	10	0	242	10	232	218	0.5%	0.0%	13.3%	0.5%	12.8%		
2,000-2,500	2,298	22	0	164	22	143	259	0.9%	0.0%	7.1%	0.9%	6.2%		
2,500-3,000	2,811	42	2	82	39	43	301	1.5%	0.1%	2.9%	1.4%	1.5%		
3,000-4,000	3,181	57	37	23	20	3	398	1.8%	1.2%	0.7%	0.6%	0.1%		

Note 1: Simulation results of the JPITC model

**Table 8.8 EITC by Income Groups, 2-5 Children only**

(1,000 yen) Individuals Income	所得	所得税 控除前	控除後	EITC 算定額	税額控除	給付	社会保険料	実効税率						
	Income	Income tax Base	After	EITC total	EITC credit	EITC benefit	Social insurance	Tax rate Base	所得税(後)EITC	EITC控除	EITC給付	Credit rate		
	(a)	(b)	(c)	(d)	(e)	(f)		(b/a)	After (c/a)	Total (d/a)	Credit (e/a)	Benefit (f/a)		
-500	338	0	0	135	0	135	113	0.0%	0.0%	40.0%	0.0%	40.0%		
500-1,000	856	0	0	343	0	343	117	0.0%	0.0%	40.0%	0.0%	40.0%		
1,000-1,500	1,311	1	0	463	1	462	186	0.1%	0.0%	35.3%	0.1%	35.2%		
1,500-2,000	1,811	6	0	414	6	408	221	0.3%	0.0%	22.9%	0.3%	22.6%		
2,000-2,500	2,329	17	0	305	17	288	263	0.7%	0.0%	13.1%	0.7%	12.4%		
2,500-3,000	2,857	21	0	194	21	174	326	0.7%	0.0%	6.8%	0.7%	6.1%		
3,000-4,000	3,428	34	7	74	28	46	396	1.0%	0.2%	2.2%	0.8%	1.4%		

Note 1: Simulation results of the JPITC model