

Analysis of the effectiveness of the parental leave system using a tax and benefit model

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1. Introduction

Parental leave is a system designed to allow workers to take a leave absence from their place of employment in order to care for their young children without endangering their career. Since parental leave in South Korea is unpaid leave, the amount of income forfeited during that leave is closely related to both the government's childcare support policy and job security. Against this backdrop, this research will explore the ways in which the tax and benefit system affects household income before and after parental leave when one of the wage earners in a double-income family takes this leave. To do so, the net income replacement ratio in South Korea's tax and benefit system was analyzed with an eye to parental leave and a simulation was carried out on the variations in net income replacement ratios by income level that would result from adjustments to parental leave benefits. Based on the results, recommendations were made for the improvement of the country's parental leave benefit system.

2. Analysis model

The tax and benefit model used in this research spans South Korea's tax program, national basic livelihood security program, earned-income tax credit program, childcare support program, and maternity protection program.^[A] The version in place in 2009 was used for most programs, while the childcare support system, which was revised in the second half of 2008, includes both programs for the first and second half-year. The model was designed to classify households into single-member, single-income, and double-income families as well as groups based on whether the family has one or two children at the ages of zero, one, three, or five. Only cash income was taken into account in analyzing this model. Net income is comprised of total income less income tax and social insurance fees but including social security benefits. The total income earned from employment is represented as against the average salary of South Korean workers.

[A] The OECD Tax-Benefit model, which was created to facilitate international comparisons, is designed to analyze the socio-economic effects of taxes and social benefits. For South Korea, only income tax and a limited number of benefit systems are included in this model. Therefore, for this research a new model was crafted based on the OECD model in order to cover South Korea's taxes and benefits system.

The total monthly income used in the analysis is 2.887 million won (34.650 million won per year) for 2008 and 2.711 million won (32.530 million won per year) for 2009, which was calculated by reflecting the rate of wage increase in 2009. In the case of an individual wage worker, the employee's share of social insurance fees was assumed to be 4.5% of salary for the national pension, 2.54% for medical insurance, and 0.45% for employment insurance. As for employment insurance, 0.45% is for unemployment benefits and 0.45% for job security and vocational development, which is the rate applied to businesses on the priority support list. Meanwhile, 0.24% was deducted for industrial accident compensation insurance, which is an average of the rates assigned to industries ranging from manufacturing to real estate to business services, excluding the mining industry which covers a small number of workers but includes a high incidence of work-related accidents.

The fluctuations in net household income and in the income of the family member who takes the leave were examined in terms of the net income replacement rate when one of the wage earners in a double-income family with two children aged one and three takes a 12-month parental leave. The net income of a double-income household prior to the leave refers to the combined earned income of both wage earners less income tax, social insurance fees, and childcare expenses. The income tax and social insurance fees of the two wage earners are assessed separately however, the net childcare expenditure is assessed by subtracting from the total childcare outlay of the family any childcare subsidies provided based on household income. Accordingly, if one of the two wage earners takes a parental leave, the decreased household income, along with the parental leave benefits, would affect the amount of the governmental childcare subsidy. In order to investigate the changes in the net income of those households by household income level, the income of one of the two wage earners was set to 100% of the average salary and the income level of the one who takes the leave was altered according to a regular pattern.

3. Effects of Parental Leave

The South Korean parental leave system formerly allowed workers with a child of three years of age or younger to take an unpaid leave of up to 12 months. In 2010, however, the age limit on the child was increased to six.^[B] Since employers are not obliged to provide salary during the leave, it is difficult for workers earning an insufficient livelihood to benefit from the system. In an effort to ease the burden placed on disadvantaged families, employment insurance offers a flat 500,000 won parental leave benefit to all workers who take such leave, regardless of their income level.

[B] The amendment, which took effect in February 2010, applies to employees whose child was born January 1, 2008 or later.

When comparing net income before and during parental leave using the tax-benefit model, a double-income household with two children with the income of the parent who continues to work set to 100% of the average salary, the net income replacement rate was equal or higher if the parent taking the leave cares for the child at home and that parent's income is below 30% of the average salary (See 'Direct caretaking' in Table 1). As for households with an income level of 130-143% or 147-154% of the average salary, net income during the leave remained above 90% of the before-leave income. That is, net income did not vary much before and during the leave among household in which the combined income of the two wage-earners was 154% or less of the average salary.

The net replacement rate was 0.826 for households with an income level of 167% of the average salary and 0.761 for those making 180% of the average salary. When the combined household income was equivalent to 100% of the average salary, the net replacement rate totaled 0.683. When the couple continued to send their child to a daycare center during the leave, the net replacement rate showed slightly lower than among those who cared for their child at home (See 'Childcare expenses' in Table 1). However, the trend in the net replacement rate by household income remained more or less identical. The decrease in net income during the leave is less abrupt than the decline in total household income due to several factors including reduced income tax and social insurance fees charged to the decreased household income, lower childcare expenses due to the governmental childcare subsidy and/or direct caretaking, and the parental leave benefit.

Regarding changes in the net replacement rate resulting from parental leave after the modifications to the childcare support policy made in July 2009, the net replacement rate by household income remained substantially unchanged. Since the upper limit of household income for entitlement to the governmental childcare subsidy was raised, households that earned 120-127% or 147-161% of the average salary came to enjoy an increased childcare subsidy after July. As a result, their net replacement rate fell slightly, since the level of increase in the childcare subsidy for their income loss during parental leave was diminished.

For the childcare support policy that went into effect in July 2009, the net replacement rate of parental leave was also examined by family type. Overall, the more children in a family and the younger those children are, the higher the replacement rate climbs. Regarding families with household incomes of 167% of the average salary, the replacement rate during parental leave was 0.797 for those with two children at one and three years of age, 0.749 for those with a one-year-old child, and 0.736 for those with a three-year-old child. In other words, the level of compensation provided through tax reductions and benefits to compensate for net income loss during parental leave among double-income households with two children at one and three years of age each was 4.8 percentage points and 6.1 percentage points higher than for

families with a one-year-old child and a three-year-old child, respectively. The difference in net income compensation rate by family type was the greatest among households whose income level was 167-200% of the average salary. As for the 140-160% of average salary income bracket, however, those families with a one-year-old child showed a higher net income compensation level than those with two children at one and three years of age. Such a gap in the replacement rate by family type stems from the amount of the government subsidy shifting commensurate with the reduced household income.

Table 1. Net income replacement rate of parental leave

(Households with two children at one and three years of age each)

	Before-tax income	Parental leave benefit	Income tax	Social insurance fees	Childcare expenses	Direct caretaking
Household income as percentage of average salary	Prior to June 2009					
20	0.833	0.987	0.989	1.001	1.050	1.088
33	0.752	0.891	0.893	0.904	0.940	0.974
47	0.680	0.806	0.807	0.817	0.922	0.956
50	0.666	0.789	0.791	0.801	0.900	0.933
67	0.599	0.709	0.712	0.721	0.797	0.826
100	0.500	0.593	0.601	0.609	0.659	0.683
133	0.429	0.508	0.523	0.531	0.565	0.586
150	0.400	0.474	0.494	0.500	0.529	0.548
167	0.375	0.444	0.466	0.471	0.495	0.513
200	0.333	0.395	0.419	0.422	0.440	0.456
	After July 2009					
20	0.833	0.987	0.989	1.001	1.001	1.038
33	0.752	0.891	0.893	0.904	0.940	0.974
47	0.680	0.806	0.807	0.817	0.843	0.874
50	0.666	0.789	0.791	0.801	0.825	0.855
67	0.599	0.709	0.712	0.721	0.797	0.826
100	0.500	0.593	0.601	0.609	0.659	0.683
133	0.429	0.508	0.523	0.531	0.565	0.586
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Note : The before-tax income represents the total income replacement rate; the parental leave benefit indicates the total earned income after the leave plus the parental leave benefit divided by total earned income before the leave; income tax and social insurance fees means the net income replacement rates minus income tax and social insurance fees, respectively, from the total earned income before and after the leave.

Of the 68,000 workers who received a maternity leave benefit in 2008, 42.6%, or 29,000, also filed for the parental leave benefit. A number of studies have been conducted to examine the effect of the parental leave benefit, with the majority focused on the size of the benefit and the payment methods. This research, similarly designed to review the effectiveness of the parental leave system, investigated the net income replacement rate of parental leave with a flat grant and a flat rate system. For the purpose of comparison, the analysis used double-income households with two children at one and three years of age and an income level of 160% of the average salary since the current parental leave benefit, 500,000 won, is roughly 30% of the income of the parent taking the leave in those households.^[C]

The household net income replacement rate when the flat grant for a parental leave benefit is increased from 500,000 won to 570,000 won was compared with the situation of a flat rate being raised from 30% to 35%. Based on current parental leave benefits, the two situations were assumed to create an identical effect in households that earn 160% of average salary.^[D] In the case of a flat rate, the lower limit was set to 500,000 won, equivalent to the current parental leave benefit, and the upper limit to 800,000 won and one million won. The resulting net replacement rate for parental leave among double-income households is shown in Figure 1.

First, the case where the benefit was raised from a flat 500,000 won to 570,000 won was analyzed. In households practicing direct caretaking during the leave, net income was increased by 2.4% among those with household incomes of 120% of the average salary 2.0% for 150%

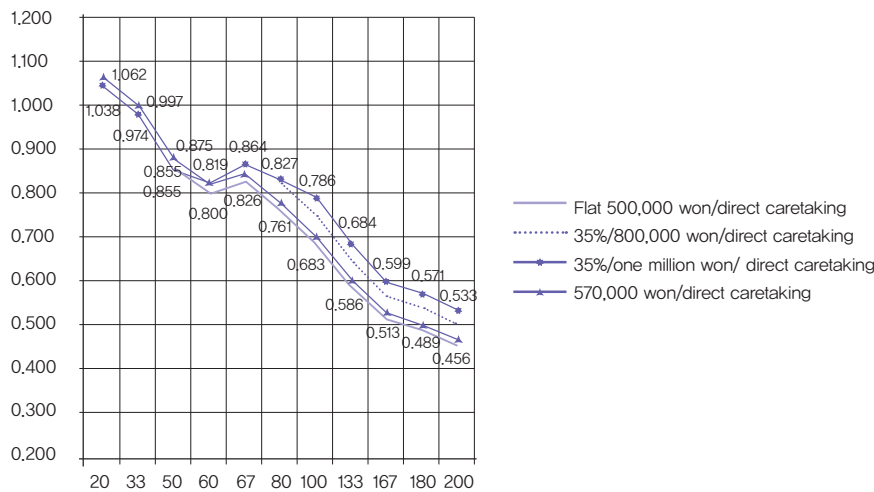
[C] The annual average income of families whose household income is 167% of the average salary totals 5.203 million won: the higher of the two wage-earners contributes 3.252 million won and his/her partner 1.63 million won. When household income amounts to 133% of average salary, it totals 4.320 million won with the higher wage-earner providing 3.253 million won and 1.070 million won from the other.

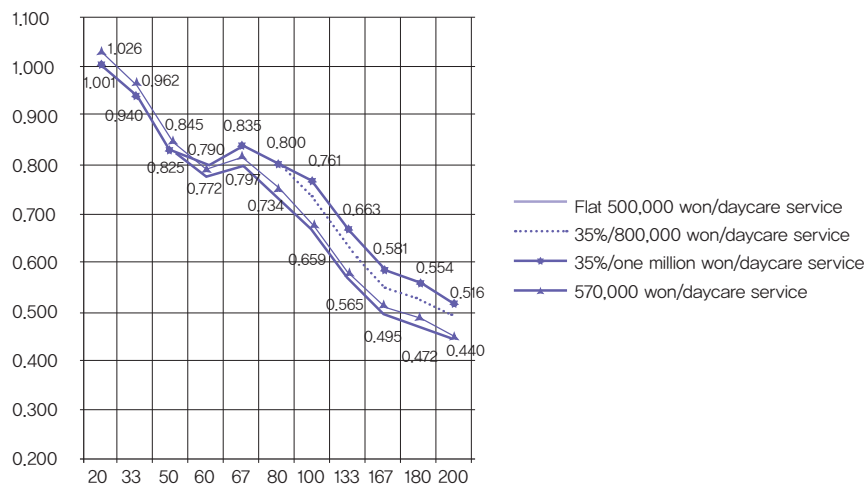
[D] The amount of the benefit with a flat 35% raise is equivalent to 569,000 won.

1.6% for 200% and 1.1% for 300%. In other words, the higher the household income before the leave, the lower the effect of the increase in the net income replacement rate.

On the other hand, if the parental leave benefit was increased from 30% to 35% (with an 800,000 won upper limit), the increase had no effect among families with a household income below 154% of the average salary, since 35% of the monthly earned income was less than the 500,000 won lower limit. As for the families with household incomes of 155% of the average salary or higher, the replacement rate rose more steeply as household income grew. Due to the 800,000 won cap, however, the net replacement rate peaked (7.4%) at 185% of the average salary and then began to decline, registering 6.9% for 200% and 4.6% for 300%.

In addition, the flat amount and flat rate increase methods were compared. The two methods show the same increase effect at a household income of 160% of the average salary. In the case of a flat amount increase, net income was raised by 2.4% among those with a household income of 120% of average salary when one of the parents cared for the child at home. However, the effect of the increase in net income began to diminish after that point, marking 1.6% at a household income of 200% of average salary. As to a flat rate increase, the net income increase effect was zero at a household income of 154% of the average salary. In the 170-300% of average salary household income bracket, the net income increase effect showed a low of 4.5% and a high of 7.4%. In particular, the effect was the most pronounced at a household income of 180-200% of average salary. When a modification of the parental leave system was simulated, the changes in the replacement rate shown among double-income families with two children at one and three years of age demonstrated a similar pattern as among those with a single one- or three-year-old child.





Note : ‘Direct caretaking’ indicates that the parent taking the leave cares for the child at home; ‘daycare service’ means the child is sent to a daycare center.

Figure 1. The effect on net income replacement rate of an increased parental leave benefit

4. Conclusion

Parental leave benefits are designed to compensate for declines in household income that may result from this leave and to prevent interruption of a worker’s career. In order to evaluate the suitability of methods for increasing the parental leave benefit, net income replacement rate should be analyzed in combination with the effect of the increase on household income.

According to the analysis by means of a tax and benefit model, the net income replacement rate of parental leave benefits among double-income families was over 0.90 for households earning 130-143% or 147-154% of the average salary and over 0.80 for those who bring in 155-180% of average salary. For these households, the decrease in net household income resulting from taking a parental leave was not particularly severe since their income would be replaced by the parental leave benefit, increased governmental subsidies commensurate with reduced household income or decreased childcare expenses through direct caretaking, together with reduced income tax and social insurance fees. As a result, a flat rate increase with top and bottom limits appears to be more effective than offering a flat grant increase, regardless of the income level of households or individuals.

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