
Evaluating tax and benefit reforms in 1996- 2001: the experience of Finland

Background

- Severe depression in the beginning of the 90s
- High unemployment remained in the mid 90s
- General consensus that unemployment was a structural problem that should be dealt with structural reforms.
- The Government appointed a high level working group in 1995: "Incentive trap" working group.



-
- The system was to be reformed so that taxes, benefits and charges for public services would always encourage work instead of living on social benefits.
 - The working group came up with proposals that:
 - increased tax deductions on low earnings
 - changed the way day care fees were determined
 - lessened the degree of means-testing of labour market support
 - increased co-ordination between the housing allowance and social support systems.



-
- The government accepted the proposals in 1996 and the reform was fully implemented by 1998.
 - After 1998 the focus has shifted to improve the incentives of the income tax system.
 - Most benefits have risen slower than wages => improved incentives without reform.

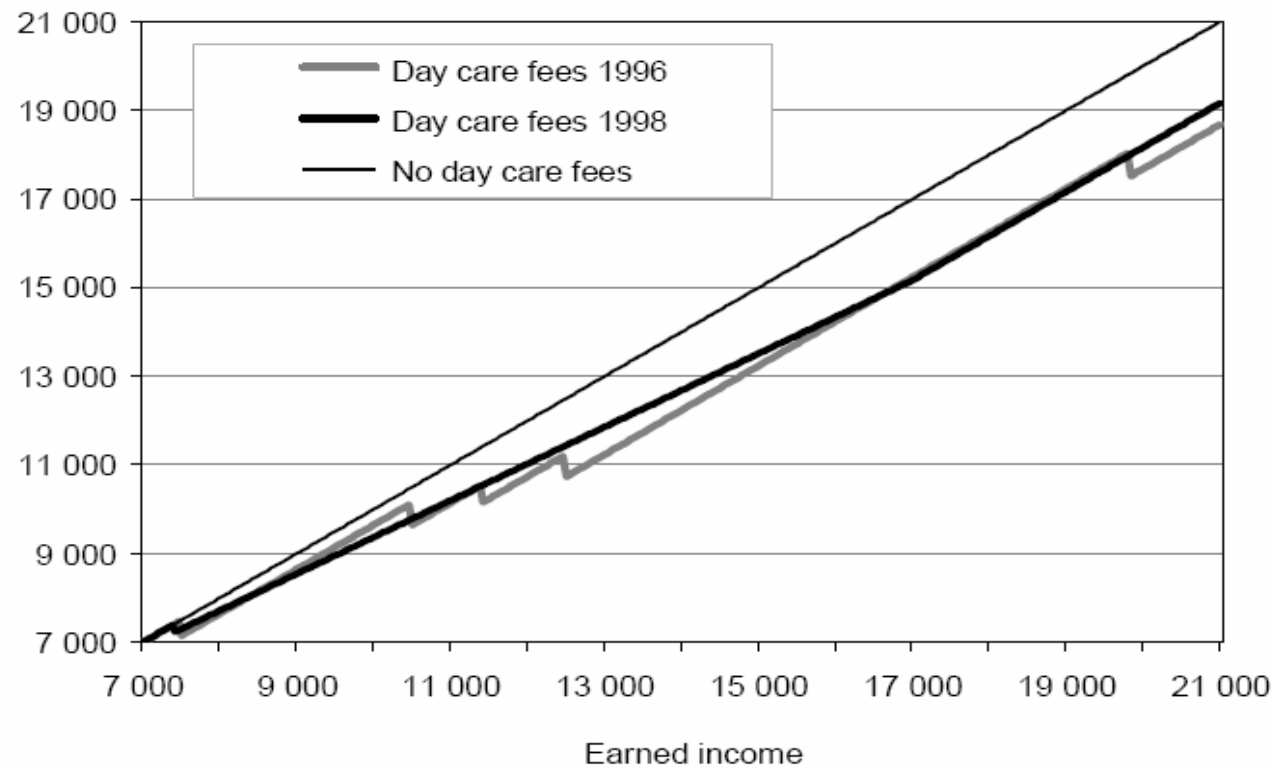
Evaluation of the reform

- Expected incentive effects of each part of the reform were assessed
- Effective marginal tax rates.
- DID-estimation for two parts of the reform.
- Group-wise estimation strategy to assess the overall impact of the reform.

Detailed assessment:

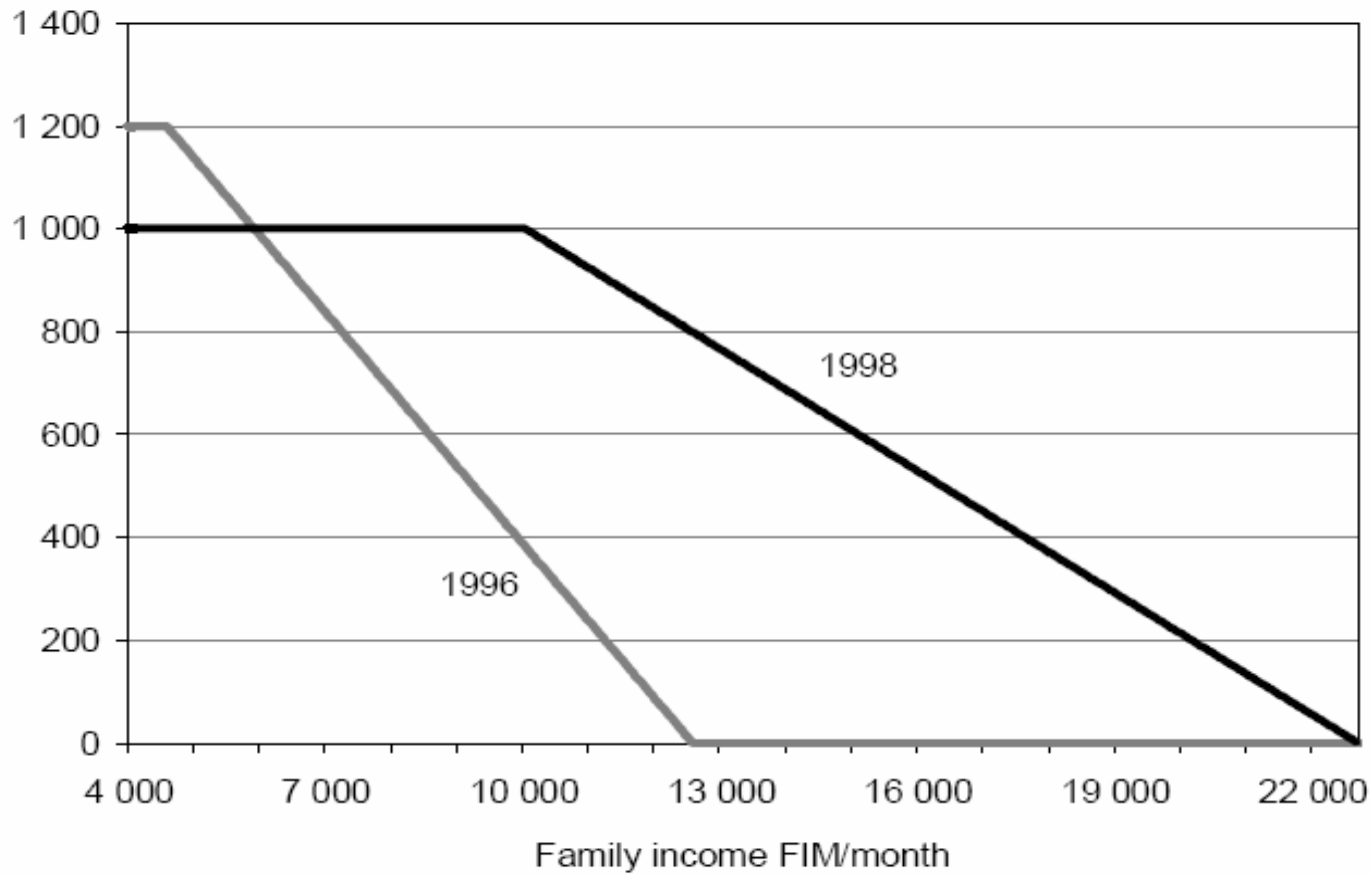
1. Families with small children

Earned income - day care fees



Effect of family income on the child home care allowance supplement.

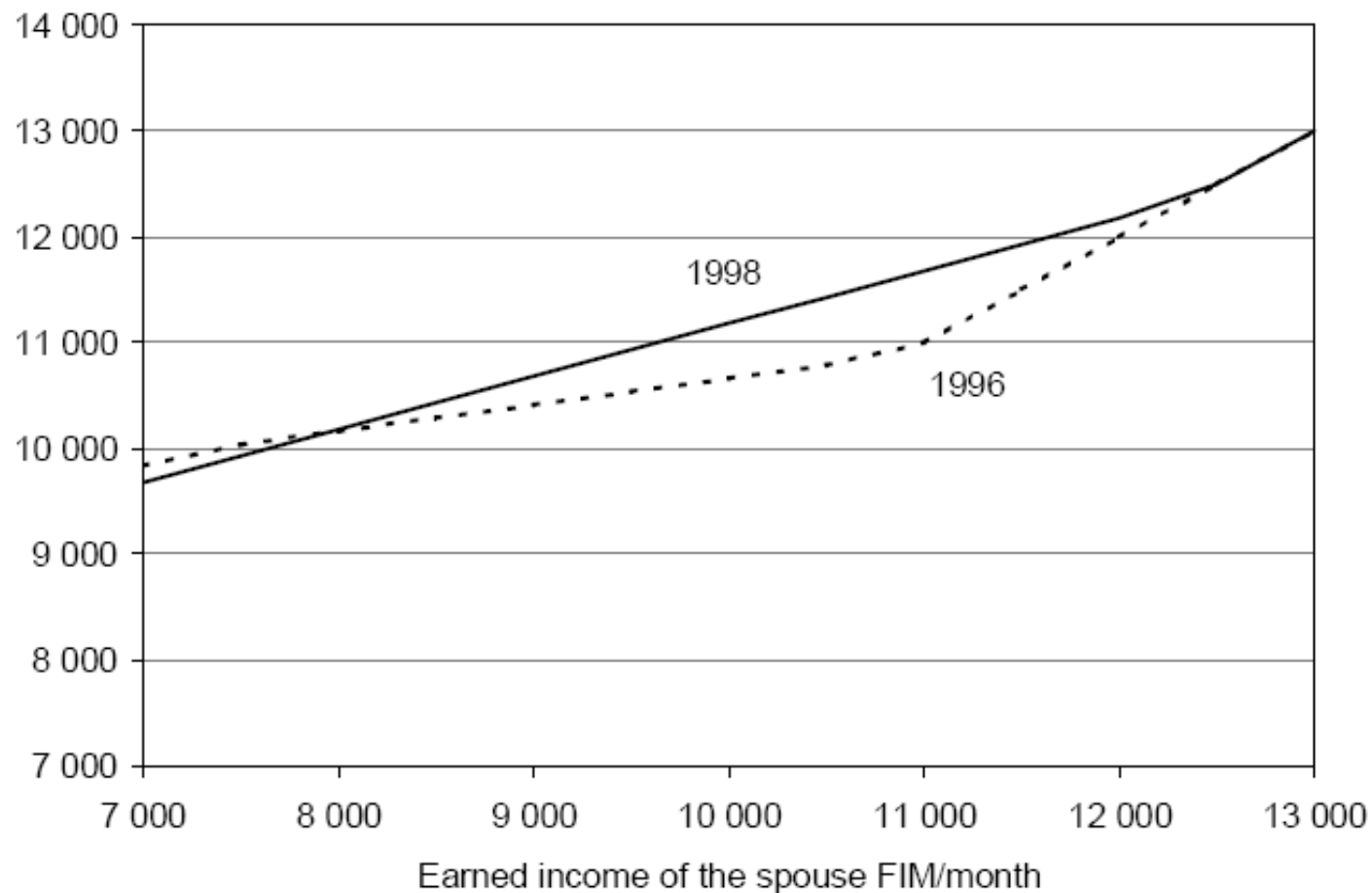
Child home care supplement



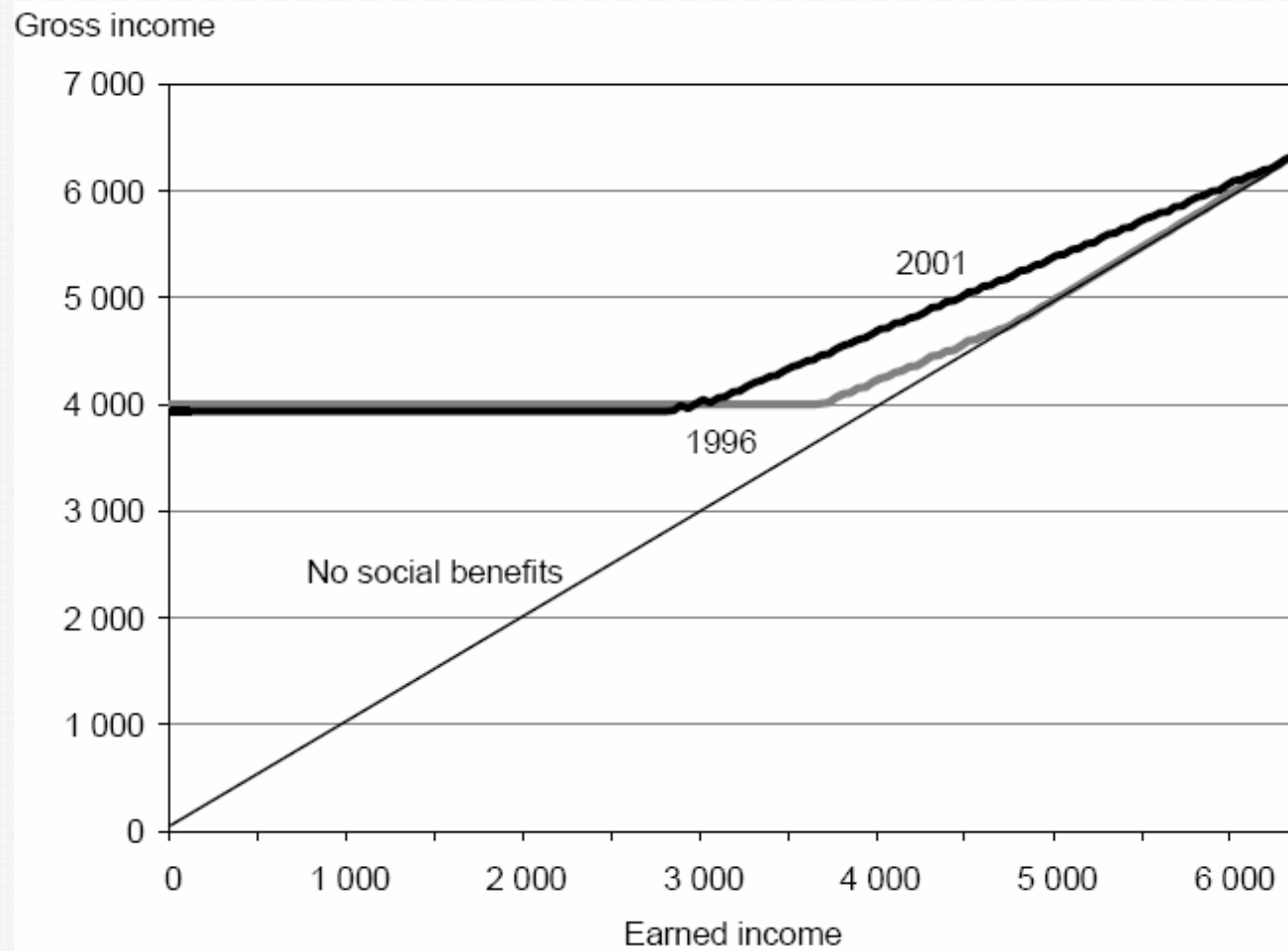
Source: VATT.

Household income: family with one parent working, the other on labour market support, two children

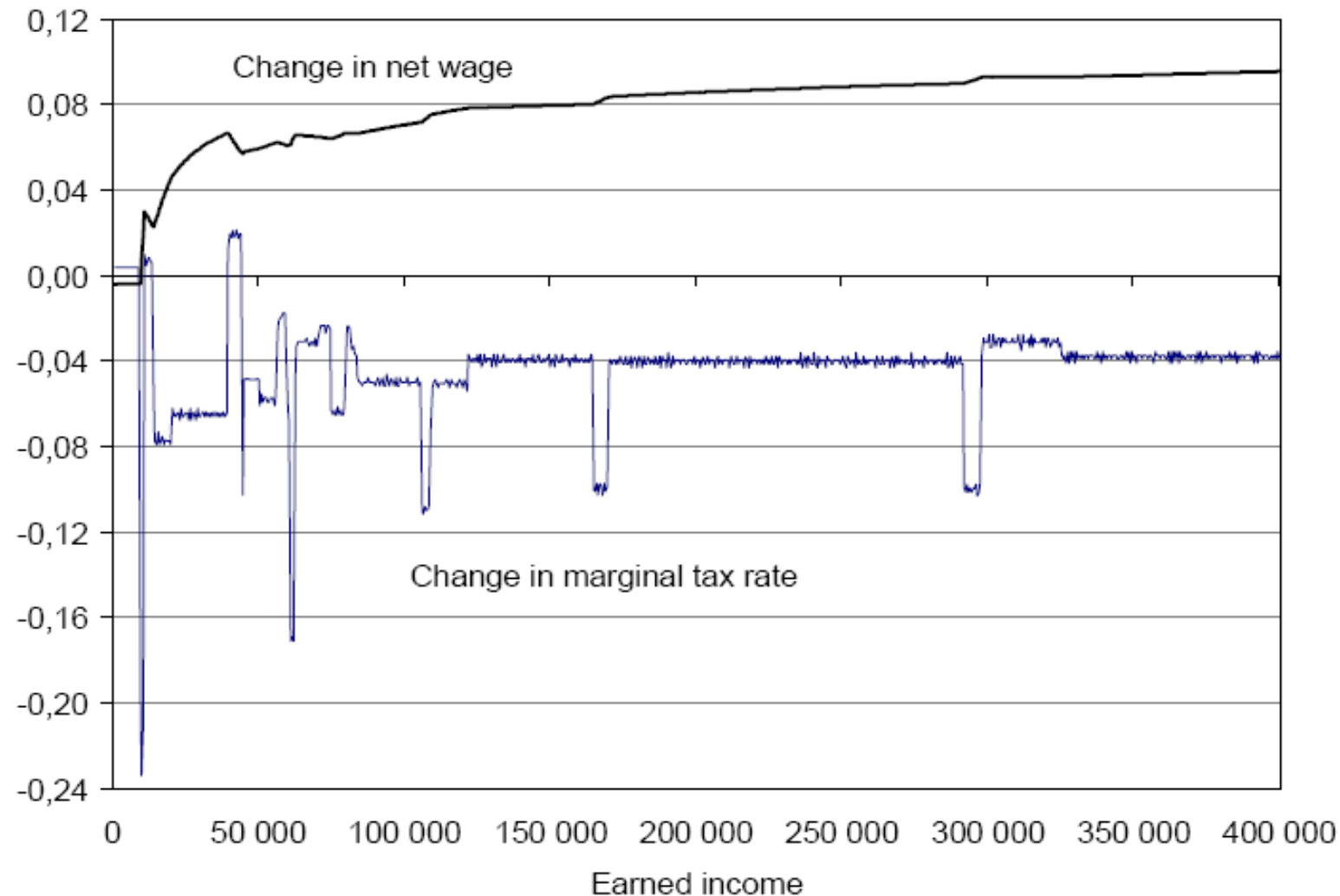
Earned income of the spouse + labour market support



Effect of the co-ordination of social assistance and housing allowance



The effects of the changes in the income tax system 1996–2001

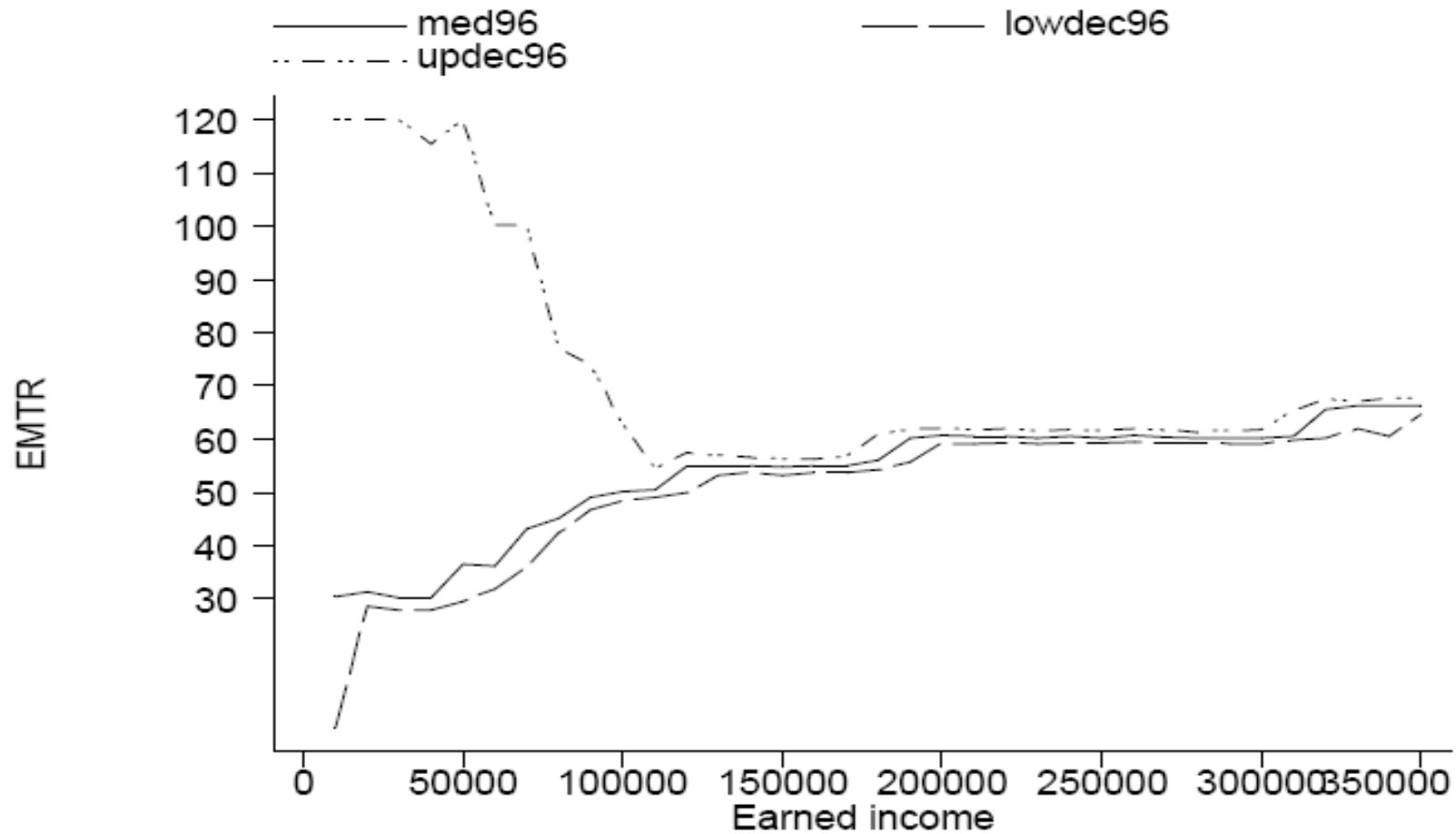


Effective marginal tax rates

$$\text{EMTR} = 100 * \left(1 - \frac{\text{change in disposable income}}{\text{change in earnings}} \right)$$

- Large variation in tax rates between individuals at lower income levels.
- Low-income households are likely to face the severest incentive problems.

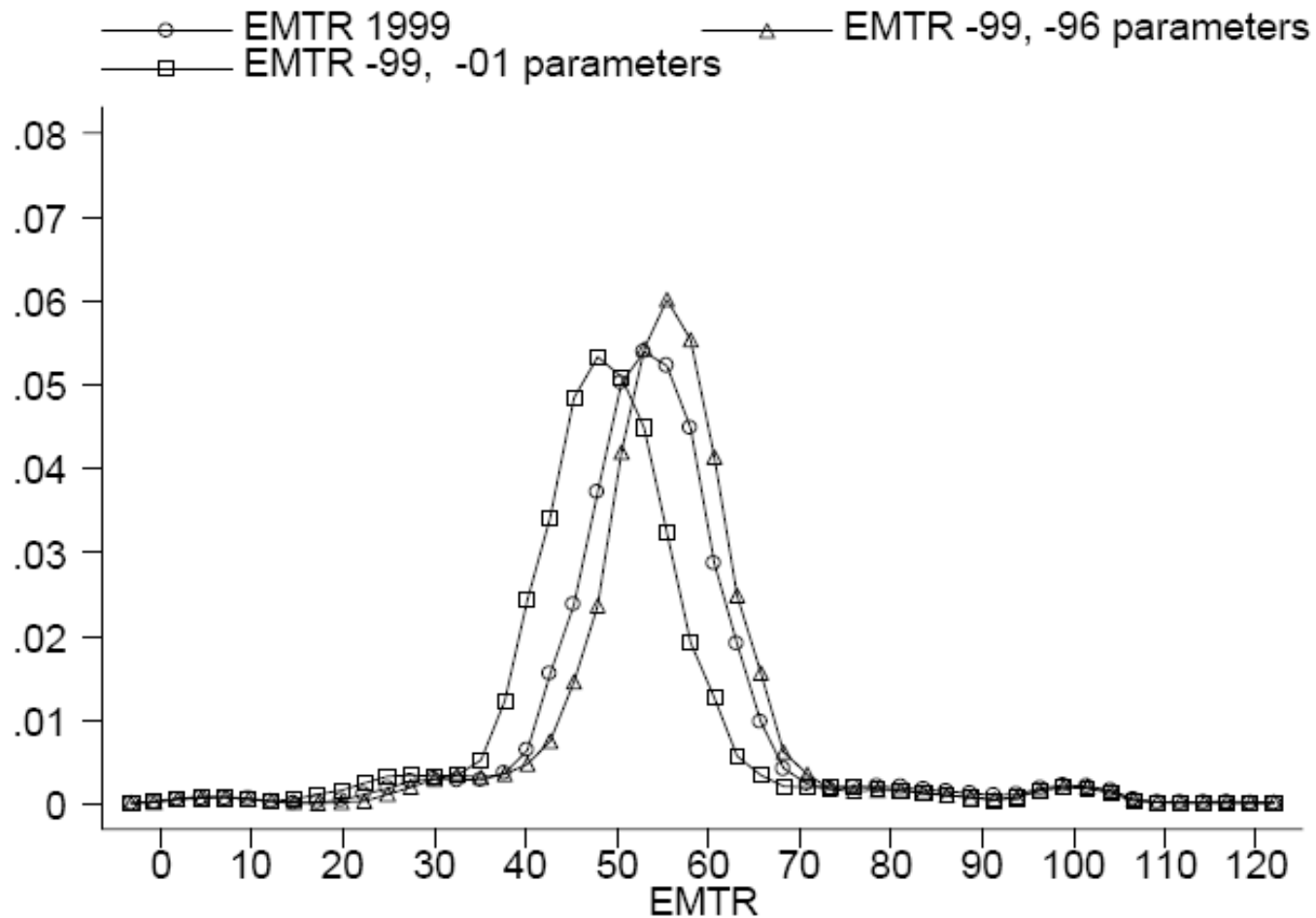
Median, 10th and 90th (updec96) percentile of EMTRs in 1996



EMTRs

- The worst affected groups:
 - single mothers
 - the unemployed
 - couples with one spouse working and the other one on labour market support
 - families with children in municipal day care
 - entrepreneurs
- High EMTRs were predominantly caused by two or more means-tested benefits overlapping

The distribution of EMTRs in 1999 simulated with parameters of 1996, 1999 and 2001



DID-estimation

- Labour supply changes in the "treatment" group vs. the control group are analysed

$$(h_{99}^y - h_{96}^y) - (h_{99}^s - h_{96}^s)$$

- Where h^y and h^s refer to the labour supply of the treatment group and control group respectively

./..

- The following function was estimated

$$h = \alpha + \beta_1 D_{99} + \beta_2 D_p + \beta_3 D_{px99}$$

- D_{99} is an indicator variable for observations in 1999
- D_p is an indicator variable for the treatment group
- D_{px99} is their interaction
- By estimating the coefficient β_3 , exactly the same results are obtained as by the simple DID -method shown above
- Both participation and months in work were analysed



-
- The DID method was used to estimate the labour supply effects of two parts of the reform
 1. Child home care supplement:
 - T: Parents of small children C: parents of older children.
 2. Means testing of labour market supply
 - T: Persons whose spouses are on labour market support C: Persons whose spouses are on other UE benefits.

DID estimation results

- Both participation (-4%) and months in work (-0.5) decreased for mothers with small children using mothers of older children as a comparison group.
- Both participation (4.3%) and months in work (1.0) increased for persons whose spouses were on labour market support, using persons whose spouses received non means-tested unemployment benefits as a comparison group.



-
- The DID estimation is valid if
 1. Compositions of the groups stay constant
 2. Other factors influencing the labour supply of the two groups did not change differently over time.
 - Especially the second condition is problematic since the "treatment" group is likely to differ from the control group in both cases.

Labour supply estimates for the whole population

- A labour supply function was estimated using a modification of a group-wise estimation strategy by Blundell et. al. (1998).
- The sample was split to 90 cells based on sex, level of education, age, and the age of children.
- Net monthly wage was calculated for the employed individuals in each cell.



-
- Average monthly benefits were calculated by adding up:
 - unemployment benefits
 - sickness benefits
 - student support
 - home care support
 - pensions
 - The sum was divided by the number of months in non-employment

./..

- The following function was estimated

$$\bar{h} = \alpha + \beta \overline{w(1-t)} + \gamma \bar{y} + D_{99} + \lambda D_{cell} + \bar{\varepsilon}$$

- h , $w(1-t)$ and y are the labour supply, marginal wage and virtual income.
- The estimates of net wages and average benefits are used to calculate the difference of labour income and benefit level in each cell.
- This difference was called the marginal wage.
- Virtual income was calculated similarly.



- Estimation results from a previous study (Laine & uusitalo , 2001) were used for the years 1996-1998.
- In both estimations only the marginal wage for females statistically significant.
- The results imply that females respond more to changes in the marginal wage than males.
- A study published in March 2007 (Jäntti et al.) used a similar estimation approach. The estimation results were of approximately the same magnitude.

Estimation results for the period 1996-1998

	<i>(1) All (months employed)</i>	<i>(2) Men (months employed)</i>	<i>(3) Women (months employed)</i>
Marginal wage /1000	0.253 (1.60)	0.094 (0.52)	0.532* (1.71)
Other income /1000	-0.005 (0.44)	-0.005 (0.37)	-0.010 (0.51)
Year 1998	-0.072 (0.49)	0.141 (0.74)	-0.273 (1.20)
Constant	5.153** (3.05)	5.596** (2.84)	9.088** (2.85)
Cells	122	66	56
R ²	0.95	0.95	0.95

Estimation results for the period 1998-2001

	<i>(1) All (months employed)</i>	<i>(2) Men (months employed)</i>	<i>(3) Women (months employed)</i>
Marginal wage /1000	0.582 (2.67)*	0.087 (0.43)	0.867 (2.30)*
Other income /1000	0.004 (0.34)	-0.011 (1.29)	0.034 (1.18)
Year 1999	-0.349 (1.37)	0.374 (1.50)	-0.862 (2.06)
Constant	5.049 (3.37)**	8.398 (7.03)**	0.465 (0.17)
Cells	84	45	39
R ²	0.88	0.93	0.86



- The estimated labour supply parameters were used to simulate the aggregate effects of the reform.
- Between 1996 and 1998 the average effect was assessed as 0.11 months a year or as 1.2 % at the level of the whole working aged population.
- Between 1998 and 2001: 0.01 months a year or 0.1 %.
- Both the increase in participation and the increase in labour supply of those already participating is included in this assessment.