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EVALUATING TAX AND BENEFIT REFORMS IN 1996–2001*

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Abstract: This report evaluates the tax-benefit reforms in 1996–2001. The Government appointed a working group in 1995 to plan the tax-benefit reforms. The proposals of the group were first implemented in 1997 and all the measures were carried out by 1998. After 1998 the focus has shifted to improve the incentives of the income tax system. Another cause for concern was the low retirement age in Finland. Measures were carried out in order to lessen the burden of the ageing population. Most of the tax-benefit measures had a positive impact on labour supply. The measures targeted at preventing early retirement seem also to have been effective. The average retirement age has risen slightly. However, the number of part-time pensioners has increased. There are also more recipients of unemployment pension than before, while recipients of disability pension are decreasing.

Key words: Labour supply, work incentives, income taxation, social insurance, pensions.

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Tiivistelmä: Raportissa arvioidaan vuosina 1996–2001 tapahtuneita vero-, sosiaaliturva- ja eläkejärjestelmän uudistuksia. Hallitus asetti vuonna 1995 ns. kannustinloukkutyöryhmän, jonka verotuksen ja sosiaaliturvan uudistus-ehdotuksia toteutettiin vuosina 1996–1998. Tämän jälkeen uudistuksia on tehty lähinnä tuloverojärjestelmässä. Myös suomalaisten varhainen eläköityminen on ollut 1990-luvulla huolen aiheena. Uudistuksia toteutettiin etenkin ikääntyvän väestön aiheuttaman eläkerasituksen vähentämiseksi. Suurimmalla osalla vero- ja sosiaaliturvajärjestelmän uudistuksista oli positiivinen vaikutus työn tarjontaan. Eläkejärjestelmän uudistuksilla näyttäisi olleen positiivinen vaikutus. Osa-aikaeläkeläisten määrä on kuitenkin samaan aikaan noussut voimakkaasti. Myös työttömyyseläkkeellä olevien määrä on noussut, mutta työkyvyttömyys-eläkeläisten määrä on kuitenkin vähentynyt.

Asiasanat: Työn tarjonta, kannustimet, verotus, sosiaaliturva, eläkkeet.

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Contents

1. Introduction **1**

2. Policy developments **3**

2.1 Support system for the care of small children 3
2.2 Labour market support 4
2.3 Income taxation 4
2.4 Co-ordination of the housing allowance and social assistance systems 6
2.5 Early retirement 7

3. Assessment of performance **9**

3.1 Families with small children 10
3.2 Incentives of the unemployed 12
3.3 Income taxation 15
3.4 Co-ordination of housing allowance and social assistance 17
3.5 Early retirement 18

4. Impact evaluation **21**

4.1 Work incentives for parents with small children 22
4.2 Spouses of the unemployed 25
4.3 Labour supply estimates for the whole population 26
4.4 Early retirement 29

5. Conclusion **31**

References **32**

Appendix 1 **34**

1. Introduction

The problems related to work incentives created a lively debate in the mid-1990s in Finland. Both the media and several interest groups argued that, as a joint effect of high income taxes and means-tested benefits, social security often provided almost as high a level of income as employment. The problem was shown to be severest for families with small children who faced a number of different overlapping benefit systems. For these families, a rise in earned income led to increases in taxes, reductions in housing benefits, and increases in day-care fees. It was not difficult to find examples of families for whom the effective tax rate of additional income exceeded 100 percent. Also in some less extreme cases the financial incentives to work were not sufficiently high to encourage the unemployed to search actively or even to accept a job offered by the employment agency.

The mid-1990s was also a period of a record high unemployment. The unemployment rate reached 17 percent as a result of the recession in the early 1990s. With improving economic situation after 1994 unemployment rate started to fall, but painfully slowly. By 1995 a general consensus was that unemployment was largely a structural problem not likely to be solved without structural changes.

The government reacted to these incentive problems by appointing a special high-level working group with a task of proposing changes in the tax-benefit system. The system was to be reformed so that taxes, benefits and charges for public services would always encourage work instead of living on the benefits.

The working group came up with proposals that increased tax deductions on low earnings, changed the way day care fees were determined, and lessened the degree of means-testing of labour market support. Efforts to co-ordinate the housing allowance and social support systems were also made. The government accepted the proposals in 1996 and the reform was fully implemented by 1998.

The deferment of the effective retirement age is also considered to be a key factor from the standpoint of increasing the employment rate. The effective retirement age is rather low in Finland. The average retirement age was already low in the late 1980s, and the unemployment problems of the 1990s brought great pressure on the use of the early retirement as a solution to the situation in the labour market. The low effective retirement age, together with longer life expectancy and ageing population, implies long pension spells and heavy burdens for the public sector finances. Accordingly, public pension spending and pension contributions are clearly going to rise in the coming years and decades.

This is background for the reforms of the Finnish pension system that have taken place in recent years. One important motivation for these reforms was the aim to make the pension system sustainable in the future when the baby-boom generation retires. Many of these reforms have also dealt with the various early retirement schemes, and these reforms and their effects are considered in this work.

I proceed as follows. Chapter 2 is devoted to the description of the reforms analysed in this paper. There the so-called incentive-trap reforms and then the main reforms related to early retirement are first presented. Chapter 3 describes the performance: e.g. the effective marginal tax rates and changes in the effective retirement age are considered. The impacts of the reform package are evaluated in Chapter 4. Chapter 5 concludes.

2. Policy developments

2.1 Support system for the care of small children

First the reforms related to care of small children are described. They were considered to be an important part of the incentive trap reform package. The incentive problems were severe for many families with small children due to the overlapping benefits they receive.

Day care fees

All children under school age are entitled to municipal day care and the parents pay fees that depend on the income of the family. Before the reform the day care fees were based on income brackets that were adjusted to account for the number of children and the cost of living category of the municipality. If the family had more than one child in day care, the fee for the oldest child was to be paid according to the income brackets and the fee for the next oldest child was set according to the following lower income bracket. If, for instance, the fee of the oldest day care aged child was set according to the lowest income bracket, no day care fees were charged for the younger siblings. This kind of system is likely to cause problems in cases where a small increase in the income of the family implies large changes in the fees paid.

Since 1997 the day care fees have been determined as a percentage of family income. When the size of the family is not bigger than 2 persons the day care fees are at most 11.5 % of the monthly income exceeding FIM 5,150, for a 3 (4) person family the fees were respectively at most 9.4 % (7.9 %) of the income exceeding FIM 6,350 (FIM 7,540). At most two children in day care age were included in setting the fees. For each older child, the base income determining the fees was reduced by FIM 500.

Child home care allowance

Another change that affected the incentives for families with small children concerned the child home care allowance. The families that do not use municipal day care and whose youngest child is less than three years old are entitled to this allowance. Child home care allowance is typically granted immediately upon the end of the parental allowance period.

In 1996, the allowance consisted of a basic part, a sibling supplement and a means tested supplement. The means-tested allowance was granted only if one of the parents stayed home taking care of the child. The family income exceeding FIM 4 617 reduced the full amount (FIM 1,200) by 15 %. After the reform in

1997, the means tested supplement was determined by family size and by income. A two-person family had the full amount (FIM 1,000) reduced by 11.5 % if the family income exceeded FIM 6890. The income limit for a three person (four +) family was FIM 8480 (FIM 10,070) and the reduction of the full supplement was 9.4 % (7.9 %) of family income exceeding the limit.

2.2 Labour market support

There are three kinds of unemployment allowances: earnings-related unemployment allowance, basic unemployment allowance and labour market support. The unemployed who have been employed for at least ten months during the last two years prior to the incidence of unemployment are entitled to an earnings related unemployment allowance or a basic unemployment allowance for a maximum of 500 days. To be entitled to an earnings related allowance the person has had to be a member of an unemployment insurance fund and paid his membership contributions for at least 10 months.

Labour market support is a means-tested benefit meant for the long-term unemployed and for young persons coming for the first time to the labour market. The support carries an obligation for the young to participate in work, training or other measures to promote employment. Accordingly to be eligible for labour market support, unskilled persons between 17 and 24 may not decline a job or training offer or choose not to apply for vocational training. Own income and the income of the spouse exceeding a given lower limit is taken into account in the means-testing of labour market support. In 1996, labour market support was reduced by 75 percent of the income exceeding FIM 5,540. In 1997 the full labour market support was paid if the combined monthly income of the recipient and his or her spouse was less than FIM 5,040. Any income exceeding this limit reduced the benefit with 50 % of the excess being deducted from the benefit.

2.3 Income taxation

The main changes in the income tax system were an increase of earned income deduction and a decrease in the marginal tax rates of the normal tax schedule. The earned income tax deduction reduces the taxable income in municipal taxation. In 1996 (2001) the maximum deduction was FIM 2,000 (FIM 9,800). The deduction was 5 % (20 %) of the earned income exceeding FIM 20,000 (FIM 15,000). The deduction was reduced by 5 % (2 %) of the earned income exceeding FIM 60,000 (FIM 43,000). In 1997 the broad earned income definition entitling to the deduction was tightened to include only wage and salary earnings.

Adjustments in marginal tax rates and income brackets were also made during the evaluation period. Marginal tax rates were reduced at all income levels in the

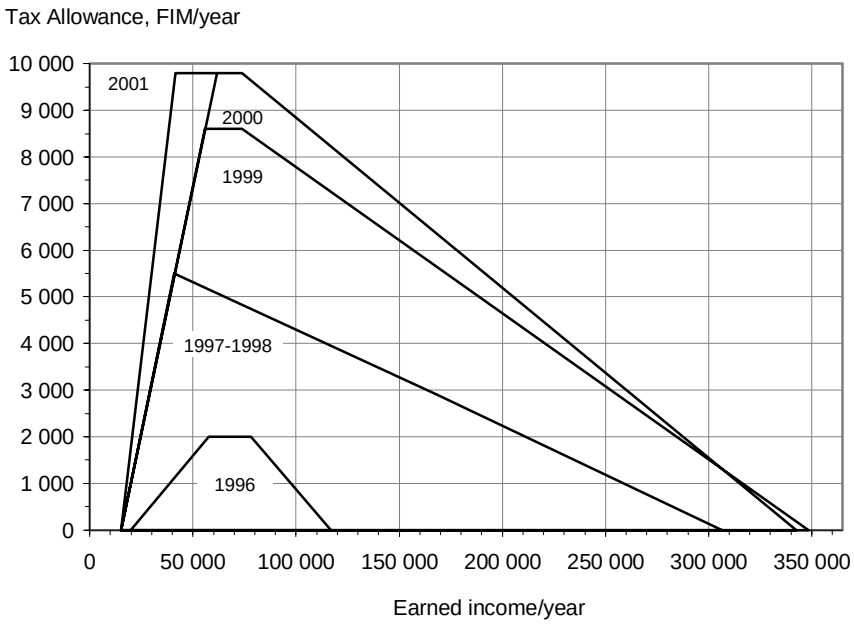
tax years 1997, 1999, 2000 and 2001. Also inflation adjustments were made to the income brackets of the tax schedule.

Table 1. State income tax brackets in 1996 and 2001

Taxable earned income (Finnish marks)	*Tax on the lower boundary*	*Tax rate on the income exceeding the lower boundary*
1996	*FIM*	*%*
43 000 – 59 000	50	7
59 000 – 73 000	1 170	17
73 000 – 104 000	3 550	21
104 000 – 163 000	10 060	27
163 000 – 290 000	25 990	33
290 000 –	67 900	39
2001	*FIM*	*%*
66 000 – 85 000	50	14
85 000 – 117 000	2 710	18
117 000 – 184 000	8 470	24
184 000 – 325 000	24 550	30
325 000 –	66 850	37

Source: Verolait (1996) and (2001).

Figure 1. Changes in the earned income tax deduction in 1996–2001



Source: VATT.

Figure 1 shows that the earned income deduction was not only increased but was also extended to considerably larger incomes in 2001 compared to the year 1996. The increase in the deduction should encourage labour force participation. Figure 5 may, however, give an overstated impression of the effect.[1] In 2001, the deduction reaches it's maximum when the earned income is FIM 43,000. This is below the lower income limit of the state income taxes, where only municipal taxes and social security payments are paid. These total on average 20 %. An increase in the tax deduction between 1996–2001 reduces taxes at FIM 43,000 income by FIM 1,730 per year i.e. increases after tax income by less than FIM 150 per month.

The increase in the earned income deduction between 1996 and 2001 reduces the marginal tax rate at the income levels between FIM 15,000 and FIM 43,000. The marginal tax rates increase for the income between FIM 43,000 and FIM 60,000, because the new earned income tax deduction stays flat while in the old system the deduction still increases. For the income between FIM 60,000 and FIM 75,000 no changes in marginal tax rates occur as both deductions stay flat. Between FIM 75,000 and FIM 80,000 the new deduction starts phasing out while the old one still stays flat, which increases marginal tax rates and finally at the income level between 75,000 and FIM 120,000 the new deduction phases out slower than in the old system, which decreases the marginal tax rates. The upper income limit of the earned income tax deduction was FIM 120,000 in 1996. Above this income level the new earned income tax deduction increases the marginal tax rates, since the phase out region is extended to FIM 355,000.

2.4 Co-ordination of the housing allowance and social assistance systems

The general housing allowance is subject to means-testing. The allowance is granted in relation to household income, assets, occupation density and housing costs. Originally general housing allowance was meant to be a form of social support for families. As a result of the depression in the early 1990s, most recipients of the allowance are nowadays unemployed and nearly half of the recipients live alone (Ministry of Social Affairs and Health (2000)).

Social assistance is granted in relation to household income, assets, housing costs and medical costs. Social assistance is being means-tested fully i.e. the assistance decreases as much as other incomes increase.

[1] The deduction is quite modest compared to the US Earned Income Tax Credit or the UK Working Family Tax Credit. Although these tax credits seem to have encouraged labour force participation, the steeper phase-out region has induced a reduction of labour supply of those already participating, partially offsetting the positive effects. See Scholtz (1996).

The general housing allowance was increased in 1998 but at the same time a 7 per cent responsibility for own housing costs was imposed on the recipients of social allowance.

2.5 Early retirement

The Finnish NAPs have also included the goal of promoting ageing workers to remain in employment in order to raise overall employment. This highlights the National Programme on Ageing Workers (FNPAW), 1998–2002, that was approved by the government in 1997. The programme in turn reflected the aim to achieve a major increase in the level of employment among ageing workers by encouraging them to stay at work and by finding new jobs for them.

The National Programme on Ageing Workers includes many different kinds of measures in order to achieve this aim. Changes have been made in working life, in activities designed to maintain working capacity, in training policy and in the pension and social security systems. The changes in pension and social security systems are reviewed here.

In Finland there are several channels for early retirement in addition to disability pension: early old age pension, individual early retirement pension, part-time pension and unemployment pension. The 1990s witnessed many modifications related to these schemes. The focus here is on the changes made in 1998–2001.

In 1998 the lower age limit for part-time pension was lowered from 58 to 56 years to increase incentives for older workers to remain at least partly in unemployment. This reduction was initially temporary, and meant to last for two years only. In 2000 the reduction was continued for two years.

In addition the 2000 pension reform consisted also of the following parts:

1) New pensioner will no longer accumulate pension rights for unemployment pensions from the time they receive an unemployment pension until the general retirement age of 65. This lowers the unemployment pension benefit by 7 per cent.[2]

2) The financial disincentive for large employers to use the unemployment pension scheme has been raised. Large employers have to pre-fund a large part of the unemployment pension of an older employee who becomes unemployed. The financial disincentive for larger employers to use the

[2] In 1996 the accrual of pension rights during the years in early retirement till the official retirement age of 65 was reduced. The annual accrual rate for retirement pensions for those in disability, individual early retirement and unemployment pensions was reduced from 1.5 to 1.2 percentage points for those aged 50 to 59 and from 1.5 to 0.8 percentage points for those aged 60 to 64.

disability pension scheme was aligned with that of the unemployment pension scheme.[3]

3) The age limit of the individual early retirement pension was increased from 58 to 60 years for those born in 1994 and after. This measure starts then to bite only in 2002 and after.

[3] In 1997 the unemployment "pipeline to retirement" was shortened. The unemployment "pipeline" consists of the unemployment pension (60–64 years) and (the extended period) on unemployment benefits prior to the unemployment pension. In 1997 the number of years of extension of the standard unemployment benefit period for older workers was reduced from 5 to 3 years, shortening the "pipeline" eligibility by two years (from 53–59 to 55–59 year olds).

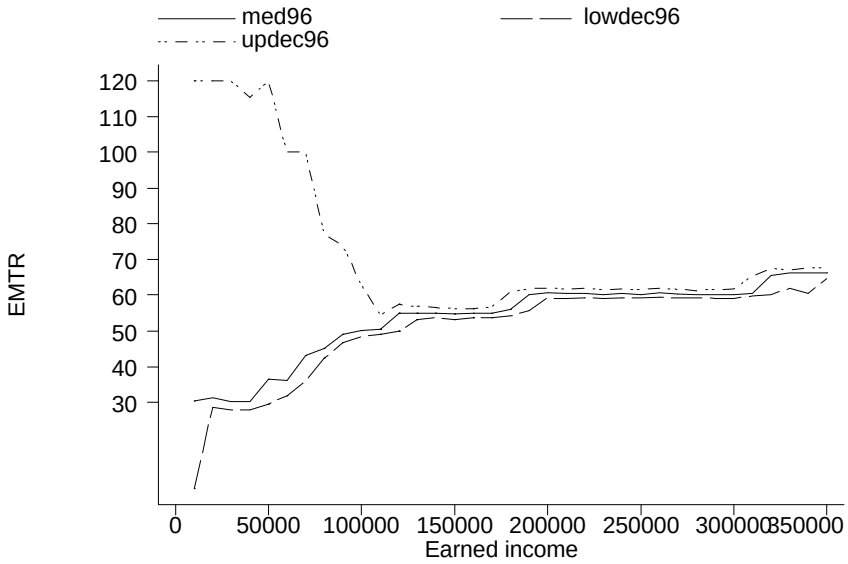
3. Assessment of performance

To analyse the effects of the tax and benefit measures on effective marginal tax rates a tax-benefit calculation program and data from the Income Distribution Survey (IDS) of 1996 is used. The calculator combines IDS data on income, household structure and housing arrangements with the parameters of the tax and social security system[4], a diagram of the EMTR calculations is shown in Appendix 1 of this report. To obtain the effective marginal tax rates (EMTR) first the benefits, fees and taxes were calculated to establish the disposable income for each household. Then the monthly earnings of the households reference person and his/her spouse were raised by FIM 300 and the calculation programs were run again. Finally, the change in earnings were compared to the change in disposable income to obtain the effective marginal tax rates which are defined as:

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

Figure 2 depicts the median and the 10th and 90th percentiles of the effective marginal rates in relation with earned income. The figure shows that there is a massive amount of variation in tax rates between individuals at lower income levels.

Figure 2. Median (med96), 10th (lowdec96) and 90th (updec96) percentile of EMTRs in 1996



Source: VATT.

[4] For a detailed description of the tax-benefit calculator see Laine and Uusitalo (2001).

Eligibility to different benefits varies across households depending on the number and ages of the children and on whether the household lives in an own or rental apartment. For the annual income levels exceeding FIM 100,000 (close to median income) the variation across households is much smaller. Most of these households are not eligible for means-tested benefits, and the effective tax rates reflect only income taxes.

The calculation also demonstrates that low-income households are likely to face the severest incentive problems. The worst affected groups were single mothers, the unemployed, couples with one spouse working and the other one on labour market support, families with children in municipal day care and entrepeneurs.[5] The incentive problems were predominantly caused by two or more means-tested benefits overlapping.

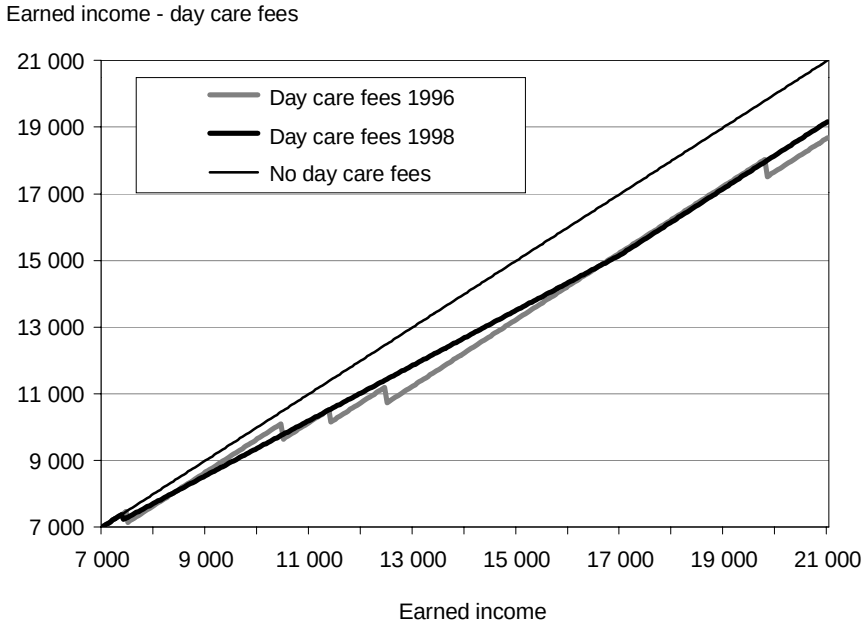
According to Parpo´s (2001) simulation results with 1997 IDS data over one fifth of low income households (disposable income less than FIM 50,000 per year) were facing EMTRs of at least 100 percent and over 40 per cent were facing EMTRs of at least 80 per cent. Low-income families were also the target groups for the tax benefit reform. Below the effect of tax and benefit measures on work incentives among these low-income households will be described in detail.

3.1 Families with small children

Figure 3 aims at describing the effect of the reform dealing with the day care fees. There the earned income with day care fees deducted at different levels of income is presented. The figure shows that the day care fee reform had no significant effect on family disposable income, although ”income trap situations”, that occurred at the borders of the income brackets, were completely eliminated.

[5] According to Parpo (2001) also students were amongst those most affected by high EMTRs.

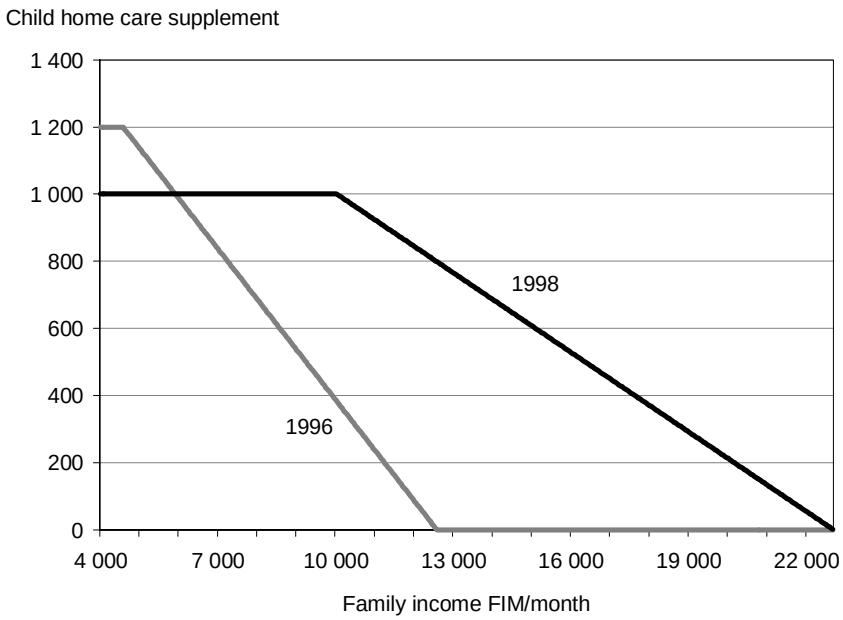
Figure 3. Effect of municipal day care fees on family income 1996–1998. One adult and two children in municipal day care



Source: VATT.

The effect of the changes in the child home care allowance on labour supply depends on whether the reform encourages one of the parents (usually the mother) to stay home. The most noticeable part of this reform was related to the determination of the means-tested part of this allowance. For most families the support received for staying home increased after the reform which should diminish the incentives to participate in the labour market. Only at the lowest income levels (below FIM 6,000 per month) the support decreased and, therefore, encouraged participation.

Figure 4. *Effect of family income on the child home care allowance supplement. A two-adult - two-child family. Both children are under 3 years old*

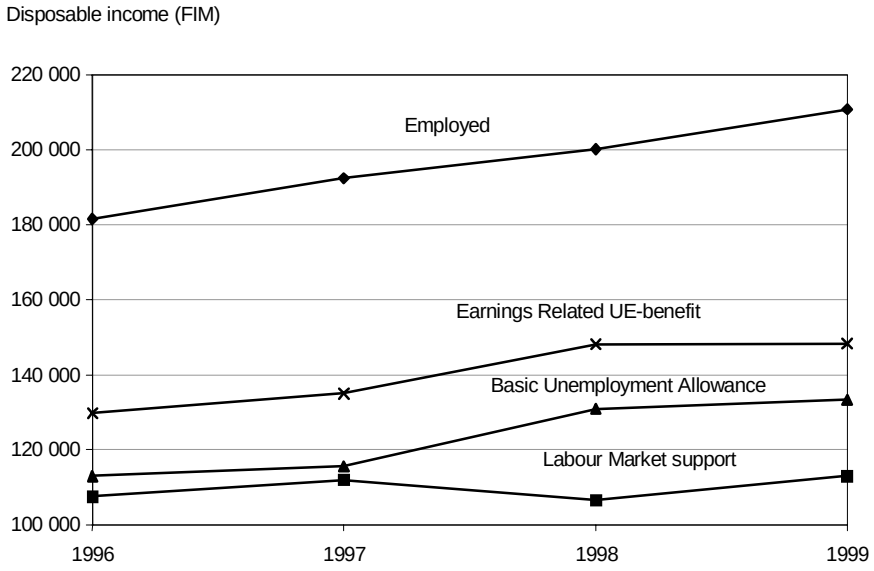


Source: VATT.

3.2 Incentives of the unemployed

Figure 5 shows the trends in nominal disposable income of the employed, the unemployed on basic unemployment allowance and the unemployed on earnings related insurance benefit. The series are calculated using sample weights and IDS data. As the disposable income of the employed has risen more than the disposable income of the unemployed, the incentives to participate in the labour force have increased. The disposable income of those receiving labour market support has not increased, making living on labour market support less lucrative.

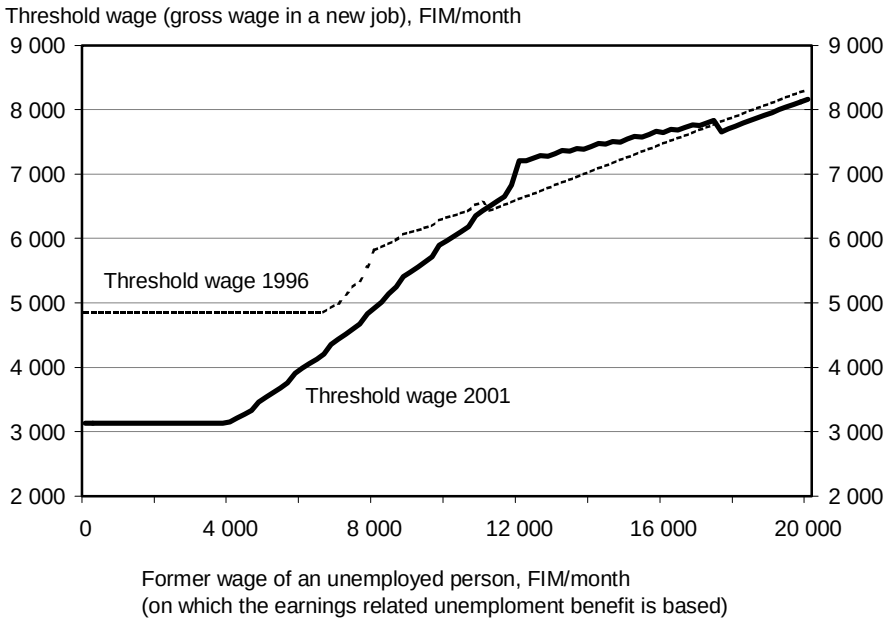
Figure 5. Trends in nominal disposable income of the unemployed vs. the employed



Source: Own calculations based on Statistics Finland, IDS data.

The development of threshold is also analysed wages to show the changes in incentives for those receiving earnings-related unemployment benefit. The threshold wage depicts the wage rate a person on earnings-related unemployment benefit should earn when working to obtain the same disposable income as when unemployed. Figure 6 shows that the threshold wage of a single person has fallen, especially at low income levels (near eligibility to social support). The decrease in the threshold wage was caused by the above described changes in the tax system and in the means tested benefits.

Figure 6. The threshold wage of a single person in 1996 and 2001



Source: VATT.

The raising of the age limit to 25 years regarding the obligations to eligibility for labour market support in 1997 seemed to temporarily decrease labour market support applications although the number of eligibilities for the support increased sharply after 1997 as seen in Table 2. Participation in active labour policy measures increased also temporarily: participation in practical training increased until 1998 and participation in labour market training increased until 1997. Young people found their way to vocational institutions, which started to accept more students just when the preconditions for labour market support were made stricter.

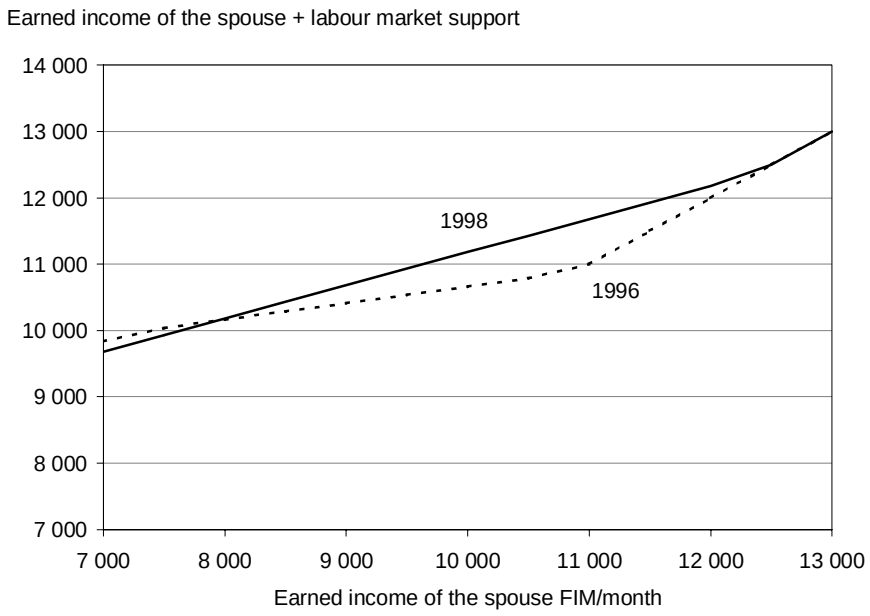
Table 2. Young persons (under 25 years) entitled to labour market support

Year	*New entitlements to labour market support*	*New participations in practical training*	*New participations in labour market training*
1996	59 620	25 360	11 859
1997	51 663	26 193	12 551
1998	76 965	27 320	11 097
1999	90 638	26 902	10 819
2000	76 827	21 863	8 914

Source: Ministry of Labour.

In Figure 7 the effect of lessening the degree of means-testing is demonstrated using as an example a family of two children and two adults, where one of the adults is working and the other one is receiving labour market support. The moderation of means-testing lowered the effective marginal tax rates of the working spouse at the income level of FIM 7,000–11,000 per month. Thus the reform had a substitution effect that increased incentives of the spouse to work at this income level. The household income increased due to the reform at the income level of FIM 8,000–12,500, thus producing a negative income effect on hours worked by the spouse. At the income level of 11,000–12,500 the reform caused effective marginal tax rates to rise. Even the substitution effect declined incentives to work in this income bracket.

Figure 7. Household income in 1996 and 1998 in a family with a working spouse, a spouse on labour market support and two children



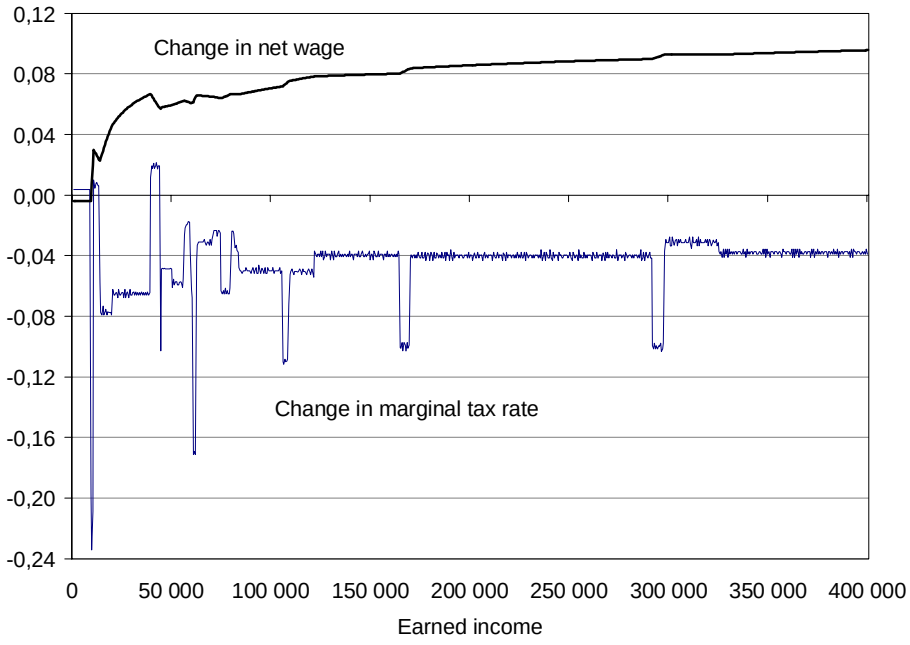
Source: VATT.

3.3 Income taxation

The changes in marginal tax rates and in net wages due to the reform between 1996 and 2001 are shown in Figure 8. The tax-benefit calculator is used to simulate the effect of the changes in the income tax system. The tax parameters of the years 1996 and 2001 are also analysed and the marginal tax rates for hypothetical taxpayers are calculated using intervals of FIM 500 in annual earned income. Inflation adjustments are made to the calculations using Statistics Finland's Consumer Price Index.

Combined with the other changes in the tax system the increase in the earned income tax deduction reduces the marginal tax rates for most individuals. The changes in the after tax wage are rather evenly distributed. After tax earnings increase between 6 and 10 percent for anyone with earnings over FIM 50,000. Overall, the changes in the tax system decreased taxes and increased incentives to work.

Figure 8. The effects of the changes in the income tax system 1996–2001



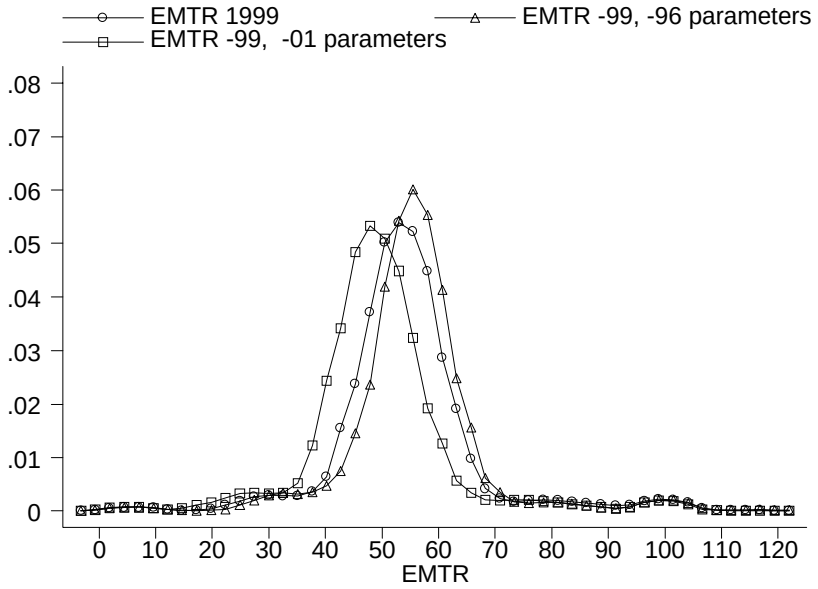
Source: VATT.

Combining taxes with means-tested benefits yields EMTRs which can be much higher than marginal tax rates caused solely by taxation. The change in the distributions of the EMTRs is shown in Figure 9. Most persons in the sample had EMTRs between 40 and 70 per cent. The spike at 100 per cent is caused predominantly by social assistance. The aggregate effect of the reform can now be depicted by comparing the EMTRs before and after the reform. Because changes in household structure and income affect EMTRs, the EMTRs are calculated using 1999 Income Distribution Survey data with the tax-benefit rules of 1996, 1999 and 2001. The difference in the distributions thus illustrates the hypothetical effect of the reform, when no changes in household income or other factors occur[6]. Figure 9 shows that the distributions of 2001 shifted to the left at EMTRs between 35 and 70 per cent. Otherwise the distributions are nearly

[6] As household earned income has risen under the evaluation period, the hypothetical effect is likely to be overestimated, since a rise in earned income increases marginal tax rates.

overlapping. In particular the size of the bump at 100 percent tax rate is not reduced.

Figure 9. The distribution of effective marginal tax rates in 1999 simulated with the tax-benefit parameters of 1996, 1999 and 2001[7]



Source: VATT.

3.4 Co-ordination of housing allowance and social assistance

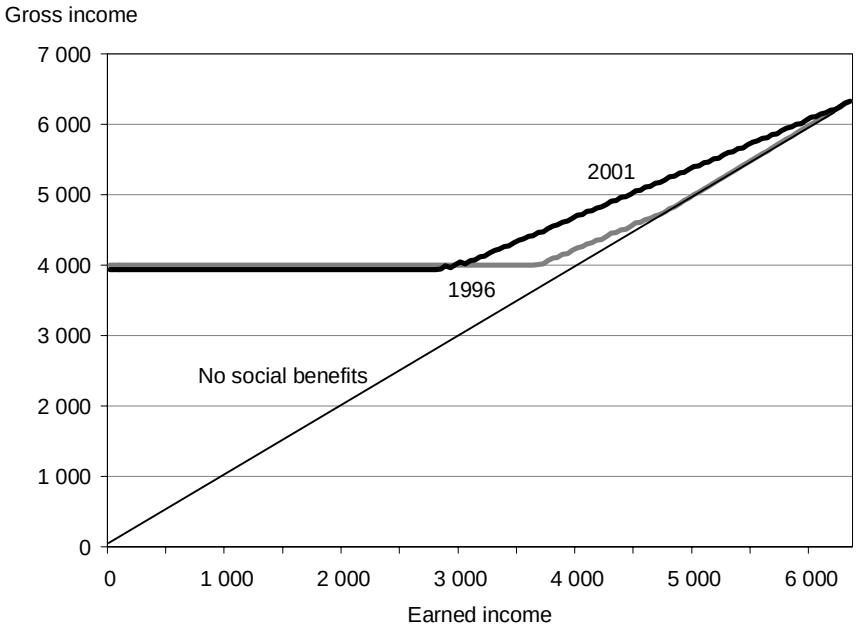
A person who is granted social assistance has no incentive to participate in the labour market at all if the earnings do not exceed the income limit of social assistance, because the assistance is reduced by the same amount as the earnings increase. In this income area the budget constraint of the household is horizontal and the effective marginal tax rate equals 100 per cent.

In Figure 10 a single person living in the Helsinki metropolitan area is depicted. She had in 1996 no incentive to participate in the labour market if she earned FIM 3,700 or less. This threshold wage level was reduced to FIM 2,825 i.e. the person had incentives to participate in the labour market on significantly lower earnings than before. The budget line rose at the income level of FIM 2,900 – FIM 6,300, which at this income level makes employment more attractive compared with living on social benefits.

[7] Figure 9 shows the kernel-estimates of the density function of the distribution of effective marginal tax rates. The estimates are calculated using sample weights.

The phase out level of the housing allowance was extended to FIM 6,300 from FIM 4,900 in 1996. This caused an increase in the effective marginal tax rates at this income level.

Figure 10. Effect of the co-ordination of social assistance and general housing allowance on a single person household living in the Helsinki metropolitan area (30 m^2 apartment, rent FIM 2,500 per month)[8]



Source: VATT.

3.5 Early retirement

Here the changes in the employment rate of older workers, changes in the average retirement age and also the changes in the use of various early retirement channels are described. The goals of the National Programme on Ageing Workers are related to these measurable quantities.

[8] The social assistance is calculated according to the "norm" which was FIM 3,000 per month 1996 when the recipient has no other income or assets. In 2001 this calculated norm is FIM 2,825 (FIM 3,000 – 7 % responsibility in housing costs). The person is not assumed to obtain any other income except earned income, housing allowance and social assistance.

Table 3. *Employment rates*

Year	*55–59*	*60–64*	*15–64*
1997	49.8	19.5	62.9
1998	51.2	19.6	64.1
1999	55.2	21.6	66.0
2000	59.3	23.4	66.9

Source: Labour Force Survey, Statistics Finland.

The employment rates of older age groups have clearly risen in recent years in line with the overall employment development. For instance, in 2000 the employment rate for the age group 55–59 was almost ten percentage points higher than three years earlier. This increase is larger than the overall increase among the working age population. The higher employment rate among older workers seems to result from declining outflow rates from employment rather than better employment prospects for the unemployed among the old age groups (FNPAW, Follow-up report 2001). The positive development in employment rates is also reflected in the average retirement age. It has been on a steady rise in recent years. In 2000 the average retirement age was 59.1 years.

Table 4. *Average retirement age 1995–2000*

Year	*Age*
1995	58.1
1996	58.2
1997	58.5
1998	58.8
1999	59.0
2000	59.1

Source: FNPAW, Follow-up report 2001.

In 1995 only about 5,000 persons were on part-time pension. In 1998 the age limit for part-time pension was lowered temporarily by two years to 56. The number of part-time pensioners has risen rapidly, so that there are currently over 20,000 persons on that pension. At the same time the number of persons on

disability pension has steadily been on the decline, while the number of persons on unemployment pension has increased.

Table 5. *Recipients of unemployment pension, disability pension and part-time pension*

Year	*Unemployment Pension*	*Disability Pension*	*Part-time Pension*
1995	39 147	309 504	5 437
1996	41 411	301 788	6 104
1997	44 862	294 951	6 932
1998	49 389	288 047	10 924
1999	52 240	282 039	18 284
2000	54 291	276 269	24 533

Source: The Central Pension Security Institute, Statistics on Pension Recipients.

4. Impact evaluation

It is not straightforward to evaluate the quantitative impact of the reforms where minor modifications are made to existing schemes. The complications rise due to the changes in economic activity, various lags and reforms superimposed one upon another. First an approach that enables to use control group techniques is chosen here.

First the labour force participation changes in families with small children (1–3 years old) compared to families with school-age children are shown. Then the changes in labour supply of the spouses of the unemployed on labour market support are compared to the changes in labour supply of spouses of the other unemployed. Thereafter estimates of a labour supply function using a grouping estimator and simulation are presented. In the end of this section the effects the pension reforms had on employment are described.

The evaluation of the incentive effects is started with a simple difference-in-differences comparison. A simple estimate of the effect of the labour supply effect of the reform is now

$$(h_{98}^{y} - h_{96}^{y}) - (h_{98}^{s} - h_{96}^{s})$$

where h^y and h^s refer to the labour supply of the parents of small and school-aged children respectively. If the labour supply of the parents of small children grew more than the labour supply of the parents of school-age children, then it can be inferred that the reform had positive effects on the labour supply. Two variables are used to quantify changes in labour supply: months in employment and participation rate.

The above comparison is a valid estimate for the impact of the reform if 1) the compositions of the groups stays constant and 2) the other factors influencing the labour supply of the two groups did not change differently over time. Since a short time period of three years is examined, the first of these conditions is likely to hold. The second is more problematic, since our comparison group is in some respects different from the “treatment group”. For example, the parents of school-age children are, on average, older and have higher earnings than the parents of small children.

A similar difference-in-differences analysis for the spouses of those unemployed receiving means tested labour market support is performed. A natural comparison group is now more difficult to define. Nevertheless the spouses of all unemployed and the spouses of unemployed receiving other unemployment benefits are experimented as comparison groups.

4.1 Work incentives for parents with small children

Table 6 shows the average months in employment, participation rate and the average earnings of men with small children compared to men with school-age children and men without children, before and after the tax-benefit reform. Table 7 presents the same figures for women. To make the comparison group more similar to the treatment group, the sample is restricted to those between 20 and 44 years of age.

According to Table 6 the average months in employment of men with small children increased by 0.4 months from 10.2 to 10.6 months. At the same time the average months in employment of men with older children increased by 0.5 months. The participation rate of fathers with small children increased by one percentage point while the participation rate of fathers with older children grew by 3 percentage points. The difference-in-difference estimate on labour supply and months in employment showed small negative but statistically insignificant results.

For the women the changes were more drastic. As seen in the Table 7 the average months in employment and the participation rate stayed virtually flat among women with small children but increased among women with school-age children and with no children. The difference-in-differences estimate using mothers of school-age children as a comparison group is a 0.5 months decrease in average months in employment (t-value -1.74), and a 4 percentage points decrease in the participation rate (z-value -1.78)[9].

The critical assumption in the above comparisons is that the other factors did not influence the employment situation of the two groups differently. As the parents of small children are different from parents of older children in many respects, one may suspect that the difference in employment response partly reflects these other factors.

[9] The t- and z-values are obtained by estimating the function $h = \alpha + \beta_1 D_{99'} + \beta_2 D_p + \beta_3 D_{p\times 99}$, using ordinary least squares and probit. D_{99} is an indicator variable for observations in 1999, D_p is an indicator variable for parents with children 1–3 years old and D_{px99} is their interaction. By estimating the coefficient β_3 exactly the same results are obtained as by the simple difference-in differences method shown above.

Table 6. Average months in employment, participation rate and the average earnings of men between 20 and 44 years of age.

MEN		*Youngest child 1–3 years old*	*Youngest child 4–18 years old*	*No children*
Months in employment	1996	10.2 (528)	10.2 (1593)	7.6 (2486)
	1999	10.6 (524)	10.7 (1440)	8.2 (2362)
Participation rate %	1996	94 (528)	93 (1593)	80 (2486)
	1999	95 (524)	95 (1440)	82 (2362)
Yearly earnings	1996	126 678 (528)	136 743 (1593)	91 157 (2486)
	1999	147 008 (524)	167 377 (1440)	102 525 (2362)

Source: IDS of 1996 and 1999. The figures are group means adjusted by sample weights. The number of observations in each group in parentheses.

Table 7. Average months in employment, participation rate and the average earnings of women between 20 and 44 years of age.

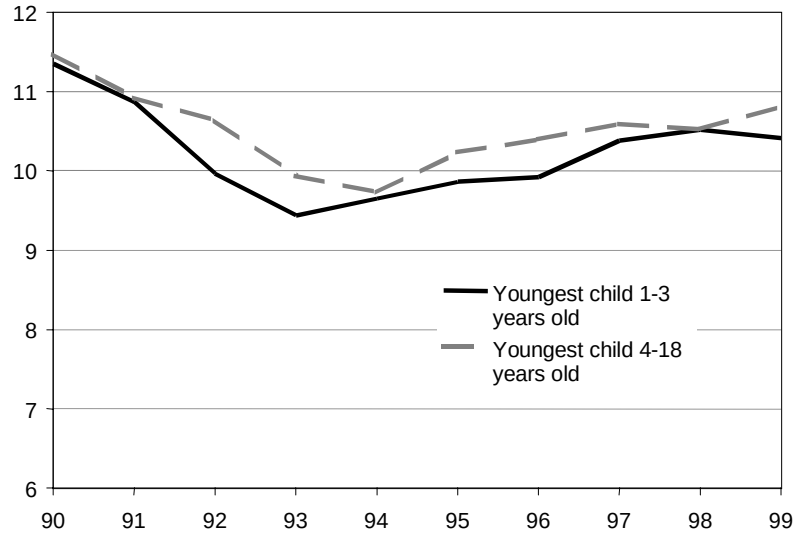
WOMEN		*Youngest child 1–3 years old*	*Youngest child 4–18 years old*	*No children*
Months in employment	1996	4.5 (560)	9.0 (1988)	7.3 (1579)
	1999	4.6 (560)	9.4 (1856)	7.8 (1456)
Participation rate %	1996	57 (560)	86 (1988)	80 (1582)
	1999	57 (560)	89 (1856)	83 (1456)
Yearly earnings	1996	70 708 (560)	96 881 (1988)	76 749 (1579)
	1999	75 190 (560)	106 443 (1856)	84 848 (1456)

Source: IDS of 1996 and 1999. The figures are group means adjusted by sample weights. The number of observations in each group in parentheses.

Figures 11 and 12 depict the differences in employment. The figures show the average working months of fathers and in 1990–1999. The figures are drawn using Income Distribution Survey data. Both groups were affected by the depression in the beginning of the 1990s, although the average working months of fathers of smaller children decreased more steeply than the average working months of fathers of older children. From 1996 to 1998 the working months of the former group grew rather strongly. From 1998 to 1999 this trend was reversed.

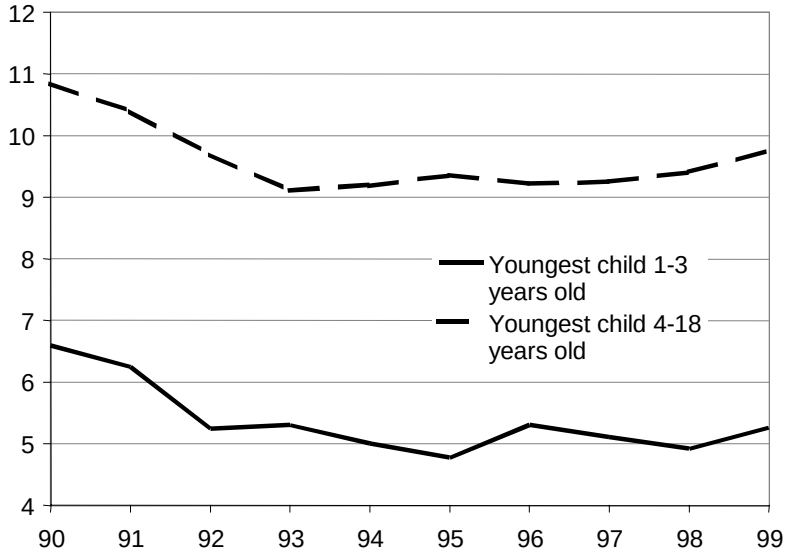
The average working months of mothers were relatively similar in both groups until 1996. From 1996 to 1998 the working months of the mothers of younger children decreased (perhaps due to the reform), while the working months of other mothers were increasing slowly. After 1998 the working months increased in both groups.

Figure 11. Average working months of the fathers. Youngest child 1–3 vs. 4–18 years old



Source: Own calculation based on Statistics Finland, IDS data.

Figure 12. Average working months of the mothers. Youngest child 1–3 vs. 4–18 years old



Source: Own calculation based on Statistics Finland, IDS data.

4.2 Spouses of the unemployed

A similar analysis is made for the spouses of the unemployed who receive means-tested unemployment benefits. As labour market support depends on the incomes of both the unemployed person and his or her spouse, the system creates very high effective tax rates for the working spouse. Decreasing the degree of means-testing should therefore improve work incentives for the spouses of the unemployed receiving labour market support. This is examined by comparing the changes in employment between persons whose unemployed spouse receives means-tested benefits to the otherwise similar persons whose spouse receives other unemployment benefits .

According to the results in table 8, employment of persons whose spouse received labour market support grew significantly more than employment of those whose spouse received non means-tested unemployment benefits. Average months in employment of persons whose spouses received labour market support grew by 1.0 months while the employment growth of those whose spouse received other unemployment benefits grew by 0.4 months. Similar changes can be detected for the participation rate that grew more for persons whose spouse received labour market support than for other groups. The difference-in-differences estimate using persons whose spouses received non means-tested unemployment benefits as a comparison group is a 1.0 months increase in

average months in employment (t-value 3.31), and a 4.3 percentage points increase in the participation rate (z-value 1.79). The results seem to support the conclusion that the labour market support had positive labour supply effects.

Table 8. The average months in employment, participation rate and average earnings of a person, whose spouse is either on labour market support, or on other unemployment benefit, or employed

		Spouse		
		Labour market support	*Other UE-benefit*	*Employed (months > 0)*
Months in employment	1996	5.3 (443)	7.5 (1647)	8.7 (9893)
	1999	6.3 (483)	7.9 (1295)	9.0 (10 482)
Participation rate %	1996	61 (443)	76 (1647)	84 (9893)
	1999	66 (483)	79 (1295)	85 (10 482)
Yearly earnings	1996	63 515 (443)	95 145 (1647)	109 879 (9893)
	1999	81 267 (483)	113 739 (1295)	122 503 (10 482)

4.3 Labour supply estimates for the whole population

The main problem faced in evaluating the changes of both taxes and benefits is that individuals can only be observed either working with a certain wage, or out of work with a certain level of benefits, but never both. While the expected wages of non-workers using the data on workers could be predicted, the level of benefits that the workers would be entitled to if they would leave employment would also have to be calculated. For different individuals the available non-labour income varies considerably, and the relevant counterfactual outcome depends on the individual. For the youngest workers the relevant benefit level could be student support, for mothers home care allowance, for older workers pensions, and for most others maybe unemployment insurance. However, for many individuals a clear-cut choice of a relevant comparison would not be available.

To cope with this problem a labour supply functions is estimated using a modification of a group-wise estimation strategy by Blundell et. al. (1998)

introduced in Laine & Uusitalo (2001). The sample is split to 90 cells based on sex, level of education, age, and the age of children. Then the tax-benefit simulation program is used to calculate the average net monthly wage for the employed individuals in each cell. Similarly, the average monthly benefits are calculated by adding up the unemployment benefits, sickness benefits, student support, home care support and pensions, and the sum is divided by the number of months in non-employment. A cell average of the monthly benefits provides an estimate of the benefits that an individual would be entitled to. The estimate of available benefits is now a weighted average of the benefits that individuals with same sex, education level, age and the number of children actually receive in the data.

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 will be called the marginal wage. For the analysis where the number of months in employment is used as the dependent variable, the estimates of the marginal wage and average earnings are also used to calculate the virtual income. Finally, the labour supply function is estimated with pre- and post- reform data using the following equation

$$\bar{h} = \alpha + \beta \overline{w(1-t)} + \gamma \bar{y} + \varphi D_{98} + \lambda D_{cell} + \bar{\varepsilon},$$

where $\bar{h}$, $\overline{w(1-t)}$ and $\bar{y}$ are the cell averages of labour supply, marginal wage and virtual income. To capture the time invariant between-cell differences dummy variables are added for each cell, and to capture the changes in the economic environment (such as an increase in labour demand), a dummy for the year 1999. Table 9 shows the results of Laine & Uusitalo (2001) for the years 1996–1998, Table 10 shows the estimation results for the years 1998–2001

Table 9. Estimation results of the labour supply equation, period 1996–1998

	(1) All (months employed)	*(2) Men (months employed)*	*(3) Women (months employed)*
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

Source Laine and Uusitalo (2001). The figures are OLS-estimates of the cell data. The dependent variable is the average months in employment in each cell. The dependent variable is weighted with the sum of the sample weights in each cell. The absolute values of the t-values in parentheses. * statistically significant at 10 % level. ** statistically significant at 5 % level.

Table 10. Estimation results of the labour supply equation, period 1998–2001

	(1) All (months employed)	*(2) Men (months employed)*	*(3) Women (months employed)*
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 figures are OLS-estimates of the cell data. The dependent variable is the average months in employment in each cell. The dependent variable is weighted with the sum of the sample weights in each cell. The absolute values of the t-values in parentheses. * statistically significant at 10 % level. ** statistically significant at 5 % level.

The estimated labour supply parameters are used to simulate the aggregate effects of the incentive reform. The labour supply parameters show how the average months in employment change when marginal wages and other income changes. Thus the effect of the tax-benefit changes on the average marginal wages and other income has to be calculated in order to assess the overall effects of the incentive reform. The aggregate effect of the incentive measures on labour supply is calculated by multiplying the labour supply parameters with the changes in marginal wages and other income and by summing up the cell-wise results.

The changes in marginal wages and other income is calculated using the tax-benefit calculator. First the cell-wise marginal wages and other income are calculated using Income Distribution data from 1996. Then the calculation is repeated using 1998 tax-benefit parameters and 1996 IDS data. Thus a difference in marginal wages is obtained that only reflects the changes in the tax-benefit system during the time period 1996-1998. This same procedure is repeated for the years 1998 and 2001 using 1998 IDS data.

The average effect of the changes in the income tax and social security systems between 1996 and 1998 is assessed as 0.11 months a year or as 1.2 % at the level of the whole working aged population and between 1998 and 2001 as 0.01 months a year or as 0.1 %. Thus the overall labour supply effects of the tax and benefit measures is assessed as 1.3 %. Consequently both the increase in participation and the increase in labour supply of those already participating is included in this assessment.

4.4 Early retirement

Employment rate of older workers has clearly risen in recent years. The rise in the employment rate is clearly connected to the strong economic growth and demand for labour. In addition to that the various reforms in early retirement schemes are likely to have played a role in this development.

Early retirement has been made less attractive both to the individual and to the employer. The reforms implemented in recent years offer examples of changes in both individual and firm incentives. New pensioners will no longer accumulate pension rights for unemployment pension from the time they receive unemployment pension until the general retirement age of 65. This lowers unemployment pension. The evidence given by micro-econometric analysis with panel data indicates that this kind of incentive reforms are likely to play a role (Hakola 2001). If the economic incentives are defined as a simple replacement ratio, the incentives matter most for those who move into the unemployment pension. The incentives matter only a little for those going to the disability pensions, as this channel is rather strongly affected by health, and even less in the

case of the old-age pension. Nevertheless, it seems justified to say that also fine-tuning the incentive structures (both the labour demand and supply sides) has somewhat helped in achieving the target of higher effective retirement age.

Also the age limits of early retirement have been checked. The age limit for individual early retirement has been raised and the age limit of part-time pension has been lowered. The number of part-time pensioners grew by 11,000 persons from 1997 to 1999 when it grew by only 1,500 from 1995 to 1997. At the same time the number of persons on individual early retirement and on other disability pensions has decreased. The overall effect of the increase in the number of part-time pensioners is difficult to evaluate. Without this option some part-time pensioners would have fully retired. On the other hand, some of them were in full-time work.

Unemployment insurance was reformed by shortening the ’unemployment pension pipe line’ in 1997. Earlier those who became unemployed at the age of 53 could receive earnings-related unemployment benefit until the age of 60 at which age they started to receive unemployment pension. In 1997 the duration of these so-called extra days was shortened from 5 to 3 years. This meant that at the present situation unemployment pension pipe line can start at the age of 55, at the earliest. An analysis performed using the job-flow model suggests that this reform had a positive effect on the employment rates of the ageing (Rantala 2002). The evidence seems then to indicate that at least during the period of strong economic growth and labour demand the reforms concerning the quantity restrictions (the changes in the age limits) have a positive effect on the employment level of older workers.

5. Conclusion

The purpose of this paper was to evaluate how the tax-benefit reforms of 1996–2001 have affected work incentives. The unemployment rate reached 17 percent in the mid 90s as a result of the recession in the early 90s. Improvement of the economic situation after 1994 lowered unemployment, but the decrease in unemployment rate was painfully slow. By 1995 a general consensus view was that unemployment was largely a structural problem that was not likely to be solved without structural changes.

The government reacted to these incentive problems by appointing a special high-level working group with a task of proposing changes in the tax-benefit system. Accordingly, several so-called incentive trap reforms were carried out in 1996–1998. Reforms were also made to various early retirement schemes. This report deals with those reforms.

The evaluation in Chapters 4.1 and 4.2 finds that reforms concerning parents of small children had negative effects on the labour supply of mothers with small (1–3 year old) children. On the other hand, the effects on the labour supply of fathers with small children were not found. The lessening of means-testing of labour market support with regard to the earnings of the spouse seemed to have a positive labour supply effect.

In Chapter 4.3 the aggregate effect of the tax-benefit reforms (excluding the pension reforms) are simulated. At the level of the whole working aged population the reforms were found to increased labour supply by 1.2 per cent in 1996–1998 and by 0.1 per cent in 1998–2001. Thus the overall labour supply effects of the tax and benefit measures were assessed as 1.3 per cent.

Employment rate of older workers has clearly risen in recent years. The rise in the employment rate is clearly connected to the strong economic growth and demand for labour. In addition to that, the various reforms in early retirement schemes are likely to have played a role in this development.

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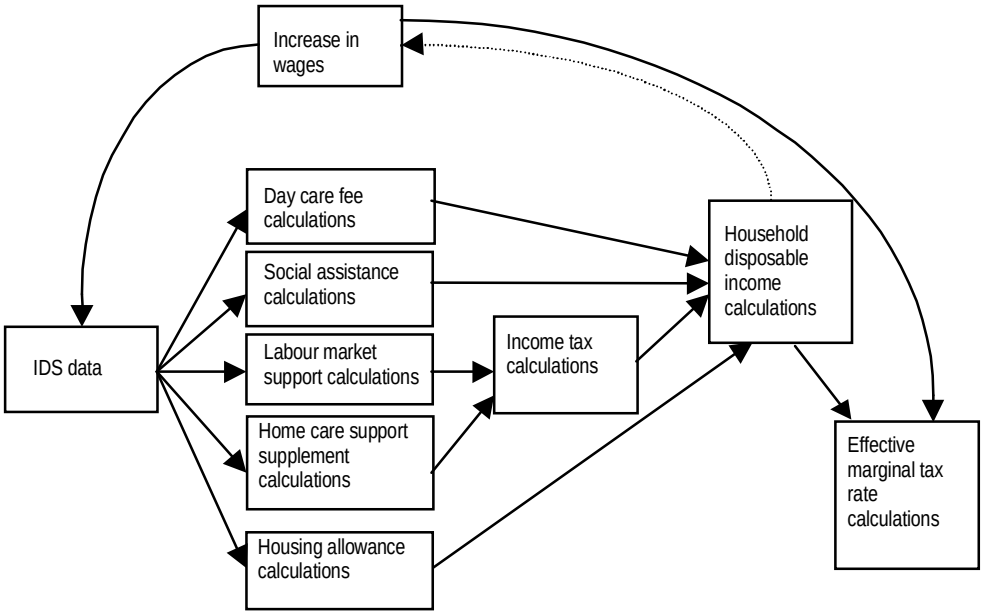
Appendix 1.

Diagram of EMTR calculations using IDS data and the tax-benefit calculator.



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