

VATT-KESKUSTELUALOITTEITA
VATT-DISCUSSION PAPERS

273

LABOUR TAX
REFORMS AND
LABOUR
DEMAND IN
FINLAND
1997-2001

Pekka Sinko*

ISBN 951-561-403-1

ISSN 0788-5016

Valtion taloudellinen tutkimuskeskus

Government Institute for Economic Research

Hämeentie 3, 00530 Helsinki, Finland

Email: etunimi.sukunimi@vatt.fi

Oy Nord Print Ab

Helsinki, April 2002

SINKO PEKKA: LABOUR TAX REFORMS AND LABOUR DEMAND IN FINLAND 1997-2001. Helsinki, VATT, Valtion taloudellinen tutkimuskeskus, Government Institute for Economic Research, 2001, (C, ISSN 0788-5016, No 273). ISBN 951-561-403-1.

Abstract: The report describes the development of labour taxation in Finland since the launching of the Employment Guidelines (EG) in 1997. The taxes considered include state and municipal taxes on earned income as well as social security payments of employees and employers. We find that the Finnish tax policies have been broadly in line with the EG goals of “making the taxation more employment friendly” and targeting tax cuts to the low-paid workers. The size of the tax cuts has nevertheless been relatively modest and are unlikely to have any remarkable effects on labour demand. According to our illustrative calculations, the reduction in income taxes and social security payments could account for some 10 per cent of the overall improvement in employment since 1997. Also, the tax cuts seem to have favoured wage earners with relatively high annual income. At the aggregate level, the average effective tax burden on labour still lies clearly above the EU-average.

Key words: Labour taxation, Labour Demand, Employment Guidelines

SINKO PEKKA: LABOUR TAX REFORMS AND LABOUR DEMAND IN FINLAND 1997-2001. Helsinki, VATT, Valtion taloudellinen tutkimuskeskus, Government Institute for Economic Research, 2001, (C, ISSN 0788-5016, No 273). ISBN-951-561-403-1

Tiivistelmä: Tässä raportissa tarkastellaan työn verotuksen kehitystä Suomessa EU:n Työllisyysuuntaviivojen käyttöönoton jälkeen. Tarkastelu kattaa välittömästi työhön kohdistuvat verot eli valtion ja kunnan ansiotuloverot sekä työntekijöiden ja työnantajien sosiaaliturvamaksut. Suomessa harjoitettu veropolitiikka on pääpiirteissään ollut sopusoinnussa Työllisyysuuntaviivojen tavoitteiden kanssa, jotka pyrkivät muokkaamaan verojärjestelmää työntekoa suosivaksi ja kohdistamaan verokevennykset erityisesti pienituloisille palkansaajille. Tarkastelujakson aikana tehdyt verokevennykset ovat kuitenkin määrällisesti melko pieniä. Esimerkinomaisten laskelmiemme valossa tuloverojen ja sosiaaliturvamaksujen kevennykset voisivat selittää noin 10 prosenttia työllisyyden kasvusta vuoden 1997 jälkeen. Näyttäisi myös siltä, että verokevennykset ovat suosineet eniten melko hyvätuloisia palkansaajia. Keskimääräisellä efektiivisellä veroasteella mitattuna työn verotus on Suomessa kevennysten jälkeenkin selvästi EU:n keskitason yläpuolella.

Asiasanat: työn verotus, työvoiman kysyntä, EU:n työllisyysuuntaviivat

*This report is related to the National evaluation of the Employment Guidelines financed by EU commission. Comments to earlier versions by Jaakko Kiander, Seija Ilmakunnas, Veli Laine, Antti Romppanen and Roope Uusitalo are gratefully acknowledged. Important part of the report relies on the data and calculations provided by Teemu Lyytikäinen, Esko Mustonen and Heikki Viitamäki. The report has also benefited from the comments and suggestions received in the seminars and reviews organised by the Finnish Ministry of Labour. This version was read through and helpfully commented by Kari Hämäläinen and Juha Kilponen and Heikki Räisänen.

Contents

1. Introduction	1
2. Measures taken to mitigate labour taxation	3
2.1 Main changes in the tax code	3
2.2 Consistency of the policy measures with Employment Guidelines	8
3. Recent development in the average tax burden on labour	11
3.1 Development in the aggregate tax burden on labour	11
3.2 Tax burden at different levels of income	16
4. Effect of tax changes on wages and labour demand	20
4.1 The method of calculations	20
4.2 The effects of the income tax	21
4.3 The effects of employer's social security payments	22
4.4 Effects at different levels of income	23
5. Concluding remarks	25

1. Introduction

By international standards, the tax burden on labour has been relatively high in Finland. This trend became particularly clear during the first half of the 1990's when Finland was struggling with a severe economic down turn. In 1997 revenues from personal income tax and social security contributions totalled to 27 per cent of the GDP, which was among the highest in Europe and clearly above the EU average of 23 per cent. The effective average tax rate on labour, measured by the method suggested by OECD, was at the same time 45 per cent in Finland against an EU average of roughly 37 per cent (Lyytikäinen, 2002).

Improved employment rate and reduced overall tax-to-GDP ratio have been among the main goals of the present government and its predecessor. The 1999 government program included a plan to cut earned income tax and social security payments by EUR 1,7-1,8 billion. The government aim was to switch the emphasis from labour taxation to taxation of capital income, real estate wealth and environmental taxes. The cuts in the taxation of labour were to be targeted especially to low- and medium-income households. These goals are broadly in accordance with the EU Employment Guidelines launched for the first time in 1997 and updated thereafter annually.

According to the Ministry of Finance calculations, cuts in labour related taxes amounting to EUR 600 million were carried out during the fiscal year 2000. Further cuts of total value of EUR 1,1 billion were projected for the fiscal years of 2001 and 2002. These included reductions in the earned income tax brackets as well as unemployment insurance contributions of both employees and employers. Also, the earned income deduction in municipal taxation will be further increased.

In Finland, the direct tax burden on labour and other earned income mainly consists of state income tax, municipal tax and social security payments. In terms of revenues collected, the most important of these is social security payments. In 1999 revenues from employees' and employers' payments totalled to EUR 15 billion. At the same time, revenue from municipal tax on earned income made up EUR 10 billion and state income tax on earned income approximately EUR 7 billion.¹

Social security payments are principally proportional to earnings, but in some cases the rates of employer's contributions differ according to characteristics such as annual total payroll and age structure and number of personnel (e.g. pension and unemployment insurance). Municipal taxation is also based on proportional rate, but several deductions make the average tax rate lower for the low-income earners. State tax on earned income is progressive with both average and marginal rates increasing with income.

¹ We have included sickness insurance premium in the social security payments. In addition, a church tax on income levied on members only (roughly 90 per cent of the population) raised revenue of EUR 0,5 billion.

The purpose of this paper is to consider the developments in the labour taxation in Finland since the launching of the Employment Guidelines in 1997. We describe the main changes in the tax code for both income taxes and social security payments. We then proceed to analyse the effect of policy changes on actual tax burden with the help of various measures of average effective tax rates. Finally, we present some simplified calculations to pin down the magnitude of the employment effects implied by the tax policies.

We find that while the measures taken seem to have reduced the tax burden at the earnings level of the average worker, the aggregate tax rate shows little or no signs of relief. Measured by the OECD average effective tax rate, Finland still lies clearly above the EU average. These at the first sight contradictory findings may be explained by a strong shift in the income distribution towards the highest income brackets. Combined with the progressive income tax system, such a shift may increase the aggregate tax burden even if the great majority of wage earners pay less tax than before.

The structure of the paper is as follows. Section 2 describes the main changes in the tax code including income tax rates, key deductions and social security payments. The consistency of the policy measures with Employment Guidelines is also discussed. Section 3 considers the development in average tax burden on labour using alternative indicators. Section 4 presents some calculations with the aim to estimate the magnitude of the potential employment effects of tax policy changes. Section 5 concludes and suggests some issues for future research.

2. Measures taken to mitigate labour taxation

2.1 Main changes in the tax code

State Tax on Earned Income

A central measure in cutting the tax burden on labour has been adjustments in the *tax brackets of the state tax on earned income*. The Finnish state tax on earned income is legally based on a schedule defining up to five brackets of taxable annual income, amount of tax at the lower limit of each bracket and the tax percentage for the income exceeding the lower limit. Tax brackets and percentages for fiscal years of 1997 and 2001 are shown in Table 1.

The highest income bracket is open from above. The lower limit of the lowest bracket defines the maximum of annual earned income exempted from the state tax, which is currently EUR 11 100. The tax percentage for the income exceeding the lower limit of each bracket is increasing with income starting from 14 per cent for the lowest bracket and ending up to 37 per cent for the highest bracket. The increasing tax percentage together with the non-taxable part of income makes the state tax on earned income progressive in the sense that both average and marginal tax rates are increasing in taxable income. Unless the bracket limits are adjusted to inflation, average tax burden tends to increase over time. Therefore, it has been a common practice to annually increase the bracket limits on the basis of the projected rate of inflation.

1997 Taxable income, EUR	Tax on the lower limit, EUR	Tax percentage on income exceeding the lower limit
7 600 – 10 300	8	6
10 300 – 12 800	170	16
12 800 – 18 200	574	20
18 200 – 28 600	1650	26
28 600 – 50 500	4361	32
50 500 –	11 358	38

2001 Taxable income, EUR	Tax on the lower limit, EUR	Tax percentage on income exceeding the lower limit
11 100 – 14 300	8	14
14 300 – 19 700	456	18
19 700 – 30 900	1425	24
30 900 – 54 700	4129	30
54 700–	11 243	37

Table 1. State tax on earned income for the fiscal years 1997 and 2001

The government measures for tax cuts have involved increases in the bracket limits and reductions in the corresponding tax percentages. The evaluation period of 1998-2000 witnessed repeated, but relatively modest measures. In 1998, the bracket limits were increased by 2 per cent. In 1999 the bracket limits were increased by 2 per cent and tax percentages were reduced by half a percentage point for each bracket except the highest. In 2000 the bracket limits were increased by 1 per cent. Except for the reduction of tax percentages in 1999, these measures can be regarded as standard adjustments to inflation.

However, the changes in the state tax on earned income for year 2001 are more substantial. They include elimination of the lowest income bracket, in other words, an increase in the tax exemption from EUR 8000 to EUR 11 100. In addition, the bracket limits were increased by 1 per cent and tax percentages were reduced by 1 percentage point for each bracket except the highest, where the reduction was half a percentage point. The projected changes for the fiscal year 2002 involve a slight increase in the tax exemption to EUR 11 500 and a reduction in the tax percentages by 1 percentage point for each bracket. It is noteworthy that the increase in the exemption tends to make the overall tax system more progressive.

Earned Income Deduction

Another key instrument in cutting the labour taxation has been *earned income deduction* in municipal taxation. This deduction, targeted especially to low-income wage earners and self-employed, was introduced in its current form in 1997 and has been repeatedly augmented thereafter. Figure 1 shows the amount of deduction as a function of earned income and the gradual increases in deduction since 1996.

The deduction is legally defined by five parameters: lower income limit for eligibility (EUR 2500 in 2001), the rate of increase and the maximum amount of deduction, the upper income limit after which the deduction starts to reduce and the corresponding rate of reduction. Depicted in income-deduction space, the deduction thus forms a “triangle with a flat top” as depicted in Figure 1. The deduction increases with income until the maximum amount is reached. Thereafter the amount of deduction stays constant until the upper income limit after which it starts to reduce at the given rate of reduction. The 2001 tax code implies that the annual earnings up to EUR 60 000 are eligible for some deduction.

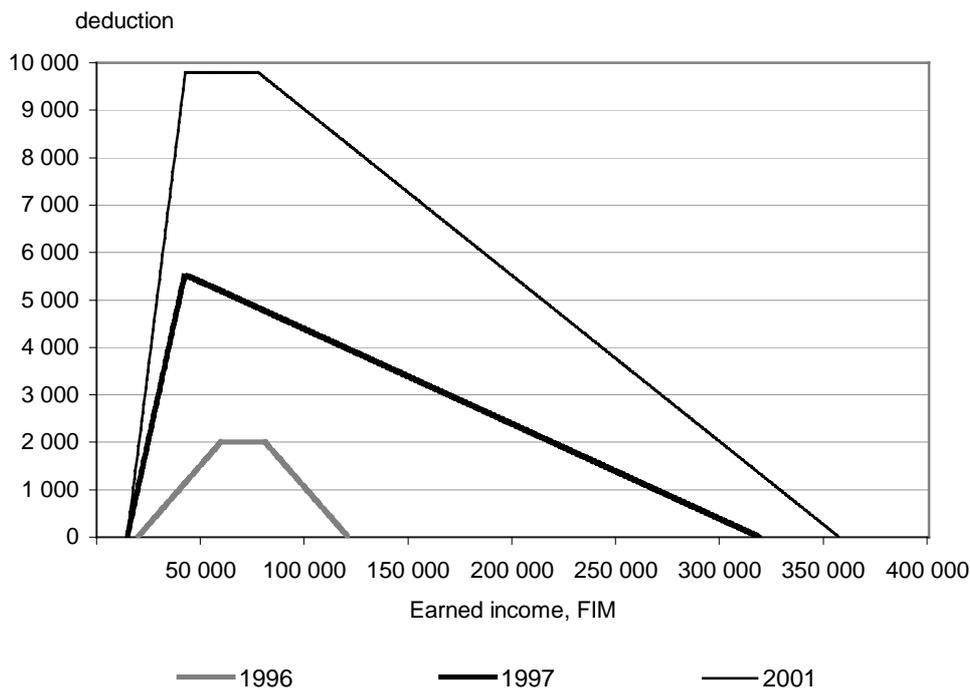


Figure 1. Earned income deduction in municipal taxation 1996, 1997 and 2001. Source: VATT

The essential purpose of the deduction is to encourage labour supply of low-income wage earners by providing them with higher take-home earnings and lower marginal tax rates. The income types eligible for the deduction include wages and wage-alike earnings of the self-employed. Social security benefits are not included. Thus the deduction clearly shares some characteristics of the so-called in work benefits.

The obvious problem with the deduction is that reduction in the amount of deduction inevitably causes increased effective marginal tax rates among those whose earnings lie in the declining part of the deduction i.e. middle income earners. To mitigate this problem, the deduction was made to reduce less rapidly causing the “right tail” of the deduction became longer. This meant that negative marginal effects became smaller at the individual level, but at the same time, the number of adversely affected wage earners increased.

Another possible problem is related to the functioning of fiscal federalism in Finland, where municipalities set the proportional rate of municipal tax on earned income. While the decisions of augmenting the earned income deduction have been made by the central government, it has been the municipalities that have borne the consequences in terms of lower revenues. Together with other financial problems this has probably contributed to pressures to increase proportional tax rates in several municipalities (HS, 2001). The average statutory rate in municipal taxation has indeed been slightly increasing during the evaluation period as depicted in Figure 2. Since the widening of earned income deduction mainly benefits low- and middle-income wage earners, the simultaneous increase in the proportional tax rate tends to increase the municipal taxes paid at the higher levels of income. The result has been an increase in the implicit progression of the municipal taxation.

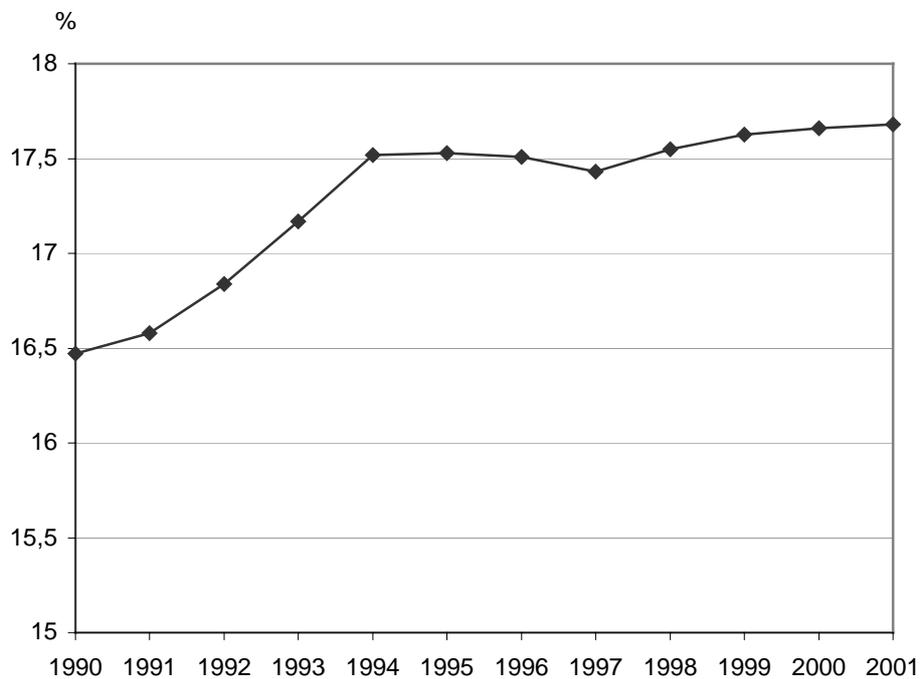


Figure 2. Average statutory tax rate in municipal taxation 1990-2001. Source: Statistics Finland.

Other Tax Deductions

The evaluation period has witnessed widening of some of the work related deductions. The maximum amount of *travelling expenses* deductible in both state and municipal taxation has been gradually increased from EUR 2 700 (16 000 FIM) in 1997 to EUR 4 700 (28 000 FIM) in 2000. Travelling cost between residence and work are eligible to the extent that they exceed EUR 500 (FIM 3 000).

At the same time, the maximum amount of *basic deduction on wage income* allowed to all wage-earners up to 3 per cent of the wage income has been increased from EUR 300 (1800 FIM) in 1997 to EUR 400 (2400 FIM) in 2000. More remarkably, in 2001 the 3 per cent rule was abolished and the amount of deduction was set to EUR 450 (2 700 FIM) irrespective of earnings². Elimination of the 3 per cent rule meant remarkable increases in deductions to low-income wage earners. As an annual wage income of EUR 10 000 yielded a deduction of EUR 300 before, the same income level entitled to a deduction of EUR 450 in 2001.

Social Security Payments

Employees' *sickness insurance premium* was dropped in 1998 from 1,9 per cent to the current 1,5 per cent of earned income. Employee's *pension premium* was increased from 4,5 per cent in 1997 to 4,7 per cent in 1998-2000. In 2001 the rate is again back to 4,5 per cent of earned income. *Unemployment insurance premium* has been gradually decreasing since 1997. Starting from 1,5 per cent the rate went down to 1 per cent in 2000. In 2001 the rate was further lowered to 0,7 per cent. The total rate of the three employee's social security payments went down from 7,9 per cent in 1997 to 7,2 in 2000 and further to 6,7 in 2001. The total rate is projected to stay unchanged in 2002 (VM, 2001c).

The development of employers' social security payments has been even more modest. One of the few remarkable changes during the evaluation period was the drop in *unemployment insurance payment*, that has a two-tier system with a higher rate after certain threshold level (EUR 850 000) of total payroll of a company. In 1998, the lower rate was dropped from 1 to 0,9 per cent and the higher rate from 4 to 3,9 per cent. In 2000 the higher rate was reduced further to 3,45 per cent. Other rates have either increased slightly (*employment pension premium, accident & life insurance*) or stayed practically unchanged (*national pension premium, sickness insurance*)³. The total rate of employers' payments of roughly 26 per cent virtually remained stable during the evaluation period. The projected changes for years 2001 and 2002 will reduce the total rate somewhat, to around 25 per cent (VM, 2001c).

² The amount of deduction cannot exceed the annual earnings, however.

³ Employers' pension premiums are differentiated according to company size as well as age and gender of the employees. National pension and sickness insurance premiums are differentiated according to company size and labour intensity in the private sector whereas constant rates apply in the public sector. However, there is no differentiation of rates according to wage level in employers' payments.

	1997	2000
Employee total	7,9	7,2
Pension premium	4,5	4,7
Sickness insurance	1,9	1,5
Unemployment insurance	1,5	1,0
Employer total	25,88	25,73
Employment pension	16,7	16,8
National pension	3,17	3,11
Unemployment insurance	2,91	2,52
Sickness insurance	1,6	1,6
Accident & life insurance	1,5	1,7

Table 2. Employees' and employers' social security payment rates as per cent of wages in 1997 and 2000. Employers' contribution rates are payroll-weighted averages of the differentiated rates. Source: VATT

2.2 Consistency of the policy measures with Employment Guidelines

The 1998-2000 Employment Guidelines aim at “making the taxation system more employment friendly and reversing the long-term trend towards higher taxes and charges

on labour”. The Guidelines suggest a target of gradually reducing the overall tax burden as well as fiscal pressure on labour and non-wage labour costs. When appropriate, the measures should be targeted especially to relatively unskilled and low-paid labour. According to the Guidelines, cuts in labour taxation could be complemented by increased taxes on energy or pollutant emissions. Also, reduction of VAT rates on labour-intensive services should be examined (EU,1998-2000).

As for the labour taxation, the policies conducted by the Finnish government have been broadly in line with the guideline suggestions. Whereas the cuts in income taxation have been relatively modest on average, the increased deductions have clearly put emphasis on the low-income wage earners. To what extent these “supply side” measures are reflected in the price of low-paid labour is discussed in more detail below, in section 4. A worrying feature in this respect is the modest and partly adverse development in employers’ non-wage costs that directly affect the total labour cost.

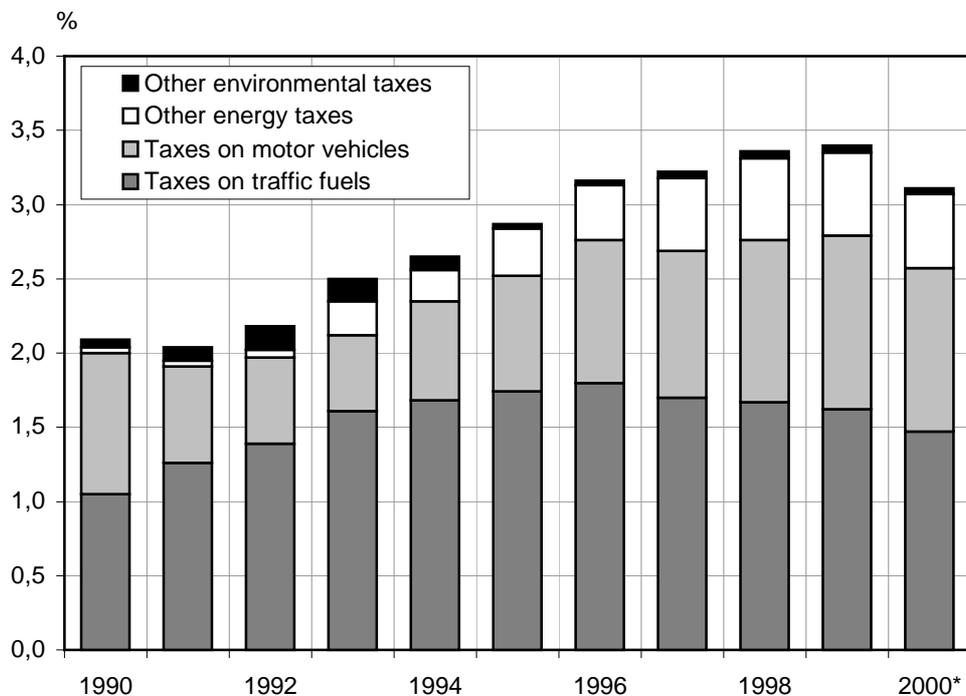


Figure 3. Revenues from energy and other environmentally related taxes relative to GDP in 1990-2000. Source: Statistics Finland, VATT

In the field of energy and environmentally related taxation there was a tendency in the late 90’s to introduce new taxes and increase the rates of those already in place. The actual policy changes were often relatively modest, but combined with general economic recovery they led to an increase in tax revenues relative to GDP from energy related taxes as shown in Figure 3. The upward trend seems to have turned in year 2000, however. The structure of energy taxation involved a major reform in 1998, when,

among others, tax on electricity consumption was introduced. In revenue terms the most important of these taxes are those related traffic fuels and motor vehicles (PMO, 2000).

The Finnish government decided not to participate in the EU pilot project of lower VAT rates for selected services, though a positive stance was taken in the early NAPs (NAP 1998,1999). No national actions for reducing VAT on labour-intensive services have been taken either.⁴ However, in 1997 a regional pilot project on special tax treatment of certain household services was launched. It allows households to deduct from state income tax part of their expenditure on household services such as health and childcare as well as home renovation. Only labour costs are eligible for the deduction, which can cover either the employer's social security payments of an employed worker or 40 per cent of the total labour costs of a company providing the service. The maximum annual deduction is EUR 900. Starting in 2001 this *household deduction* will become available in the whole country.

⁴ The Finnish VAT already has lower rates (8 per cent) for e.g. person transport, accommodation and physical exercise services as well as medicine and books. Another concessionary rate (17 per cent) is applied to foodstuff and feed.

3. Recent development in the average tax burden on labour

3.1 Development in the aggregate tax burden on labour

In this section we assess the development in the tax burden on labour during the evaluation period of 1997-2001. We mainly rely on measures that relate actual revenues from taxes and social security payments to the relevant tax bases. In so doing we in fact adopt the method of *effective average tax rates* (OECD, 2000), which we believe is to a large extent decisive from the labour demand point of view. The development in the individual marginal rates, mainly affecting labour supply decisions, is not considered.⁵

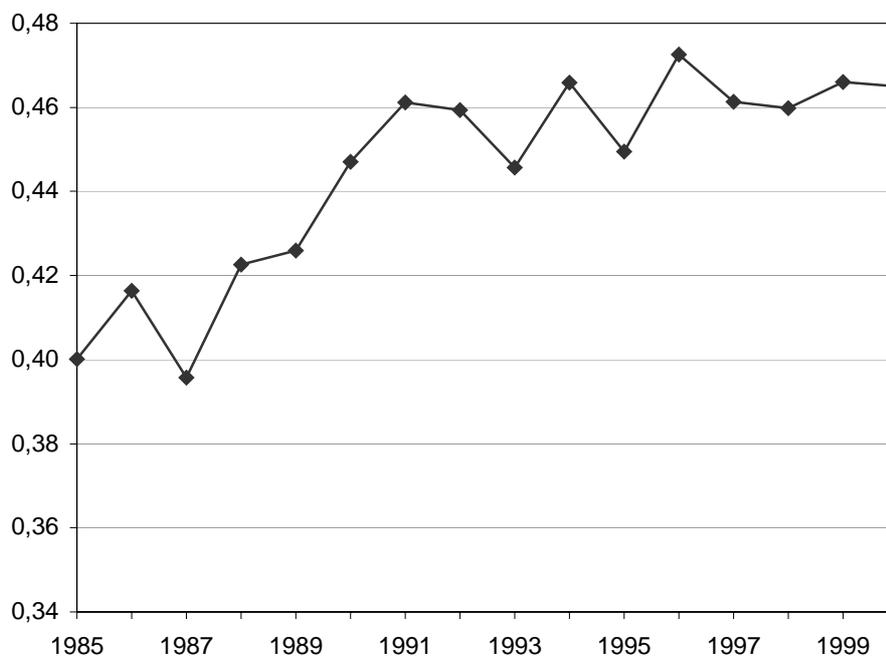


Figure 4. Total tax revenue relative to GDP 1985-2000. The value for year 2000 is a Ministry of Finance forecast. Source: OECD, VM 2001b

Total tax revenue relative to GDP rose sharply in Finland at the beginning of the 1990's. Ever since the total tax rate has fluctuated around in the range of 45 to 47 per cent (see

⁵ For a detailed analysis of tax policies on labour supply decisions during the same period see Ilmakunnas et al (2002).

Figure 4) which is clearly above the EU average of 42,6 in 1999. The projected rate for year 2000 in Finland is above 46 per cent (VM, 2001b). A major part of the tax revenues are collected by labour related taxes, in particular state and municipal tax on earned income as well as social security payments levied on both employees and employers.

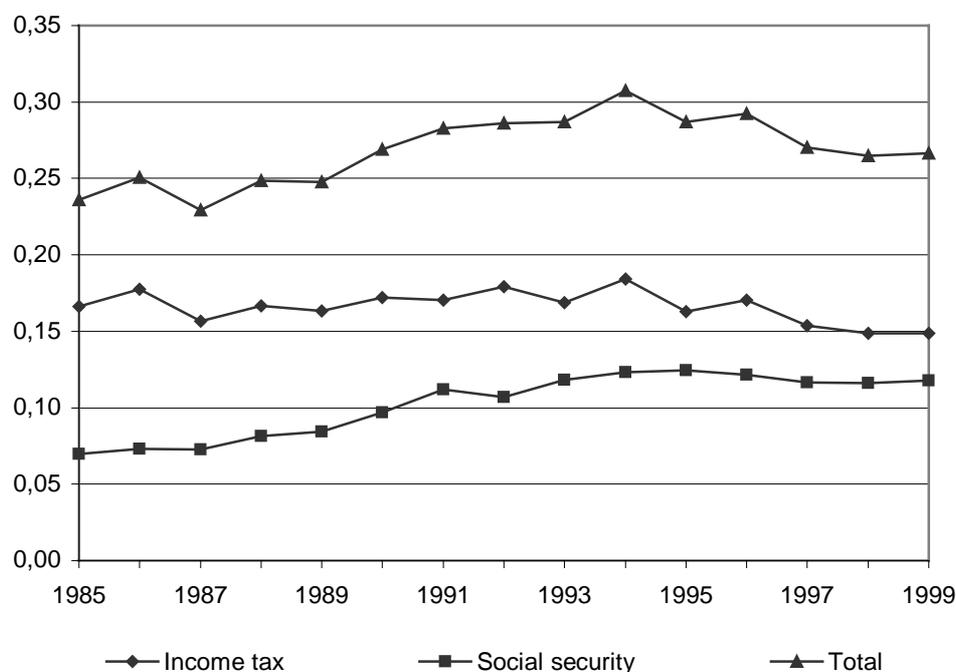


Figure 5. Social security and personal income taxes relative to GDP, 1985-1999. Income tax is defined according to the OECD standard (1110 in Revenue Statistics) and includes e.g. National health insurance and pension payments. Source OECD

It can be seen from figure 5 that the combined revenues from personal income tax and social security payments also increased their share in GDP in the early 1990's, but contrary to the overall tax rate, this measure shows a declining trend since the peak in 1994. This slowdown can be attributed in particular to income tax, whereas the ratio of social security payments to GDP has remained relatively stable. The downward trend in the income tax series is most probably explained by the increase in the share of capital income since the economic recession. No remarkable changes in either of these measures are visible in the evaluation period of 1997-1999.

The obvious problem with the measures of tax burden presented in figure 5 is that they include the tax payments on capital income of the individuals. Since capital income is

taxed separately from earned income in Finland the indicators that include capital income may give a faulty picture of the development of the tax burden on labour income. To focus more precisely on labour income we used the Finnish Tax Administration data to calculate the average tax burden on earned income in 1994-1999. The results, presented by the lower line in figure 6, show a clear difference to those of figure 5: when looking at earned income alone, there is hardly any change in the tax burden⁶ during the latter half of the 90's. This observation is not altered much if the social security payments are included in the measure as depicted by the upper line in figure 6.

Focusing at the taxes on earned income still does not offer completely accurate view of the tax burden on labour income. At least three noteworthy problems remain: First, labour income is on average higher than other earned income such as pensions and benefits. Combined with the progressive state tax this fact tends to make the tax burden on earned income lower than on pure labour income. Second, widening of the earned income deduction discussed above has in principle lowered the tax burden on labour income, but not on other earned income. Third, since the social security payments are levied mainly on labour income, their changes are not fully reflected in the tax burden on earned income.

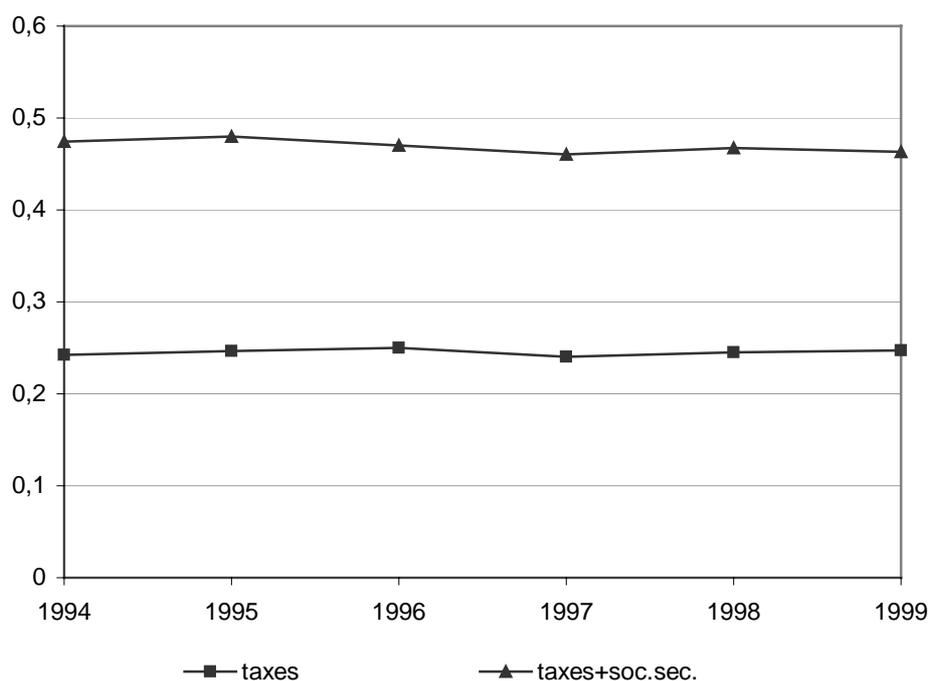


Figure 6. Tax burden on earned income in 1994-1999 in Finland. Data source: Tax Administration (2001), OECD

⁶ State, municipal and church taxes are included in the measure of figure 6 that relates tax revenues to individual earned income.

Figure 7 shows the developments in social security payments of employees and employers relative to total wages and salaries. The total share of payments has almost doubled in the period 1985-1995 and has remained relatively stable at the level of 23 per cent thereafter. Since the mid 1990's, approximately one sixth of the social security contributions are collected from the employees.

According to Figure 7, the employer's payments show no signs of reduction during the evaluation period of 1997-1999. On the contrary, their share of gross wages seems to be slightly increasing. There are two things that deserve a comment in this matter. First, since 1999 a fraction of the employers' (as well as employees') payments have been collected to the so-called buffer funds, which means that the payments have been somewhat higher than otherwise. As these funds are now filled, some cuts in the social security payment rates can be expected. Second, as mentioned above, some of the payment rates are higher for larger companies. This means that when companies grow, employer payments relative to wages may increase in the aggregate even if no changes to the rates were made.

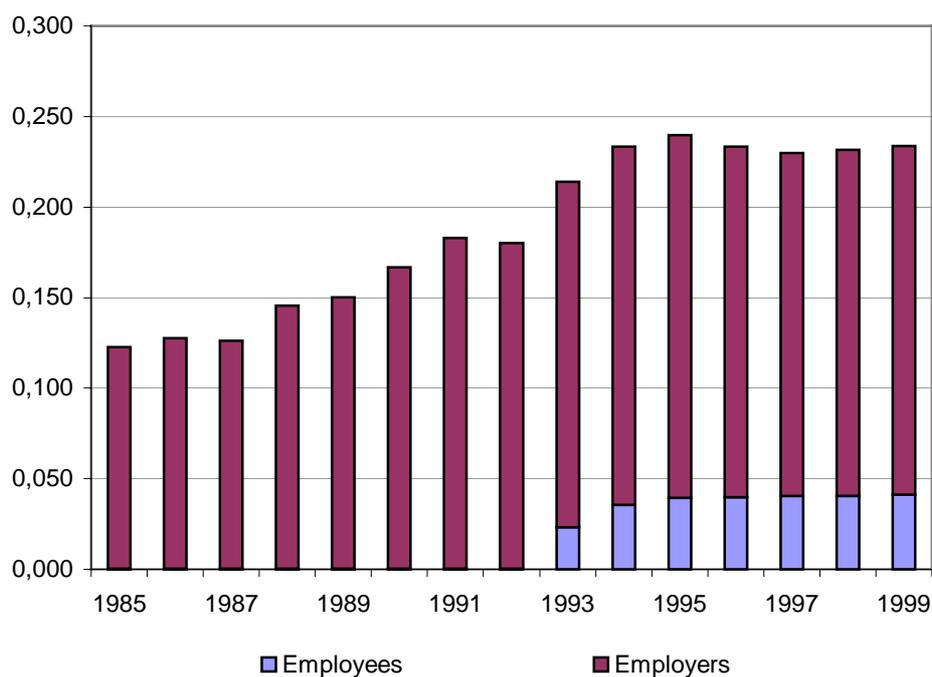


Figure 7. Social security payments relative to gross wages and salaries, 1985-1999. Data source: OECD

These conjectures find some support from figure 8 which shows the development in employer social security payments relative to total labour costs in Finland and in EU countries on average. The latest observation for Finland indeed shows a downward ten-

dency in the tax burden due to employer payments. However, the effective rate still lies clearly above the EU-average.

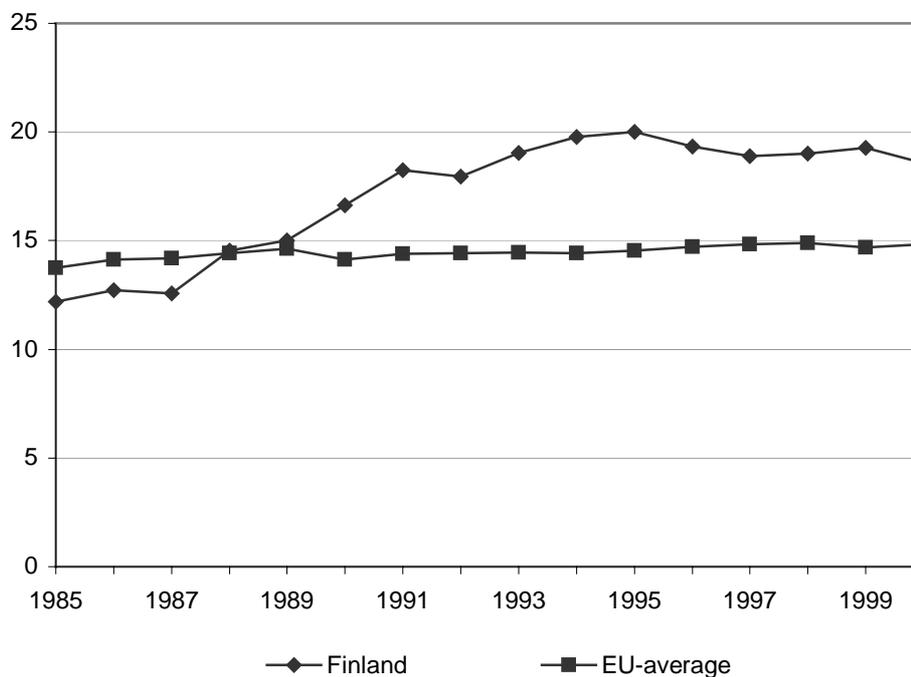


Figure 8. Employer social security payments relative to total labour cost in Finland and in EU on average 1985-2000. The EU-average consists of the current members except for Denmark and Luxembourg. Data source: OECD Revenue Statistics

To get an idea of the development on the total tax burden on labour in Finland relative to the rest of the EU, we calculated the effective tax rate on labour according to method suggested by Carey and Tchilinguirian (2000). The purpose of this method is to provide a straightforward measure of average effective tax burden on labour income in a single country as well as to facilitate international comparison between countries. Though some inevitable shortcomings, the method should provide a useful measure for the development of tax burden on labour in broad terms. The effective tax rate on labour for Finland and for the EU on average is presented in Figure 9. It shows that the effective rate in Finland diverged from that of the average in EU-countries in the early 90's and reached a peak in 1994. Despite of some recovery, a clear gap to the EU-average remains in 2000.⁷ The development in this measure during the evaluation period has been very modest.

⁷ One reason for the high effective rate for Finland is the fact that since early 1990's social security benefits are to large extent taxable income in the Finnish system. This makes the rate higher compared to countries where similar income transfers are not taxed, but rather granted in "net terms".

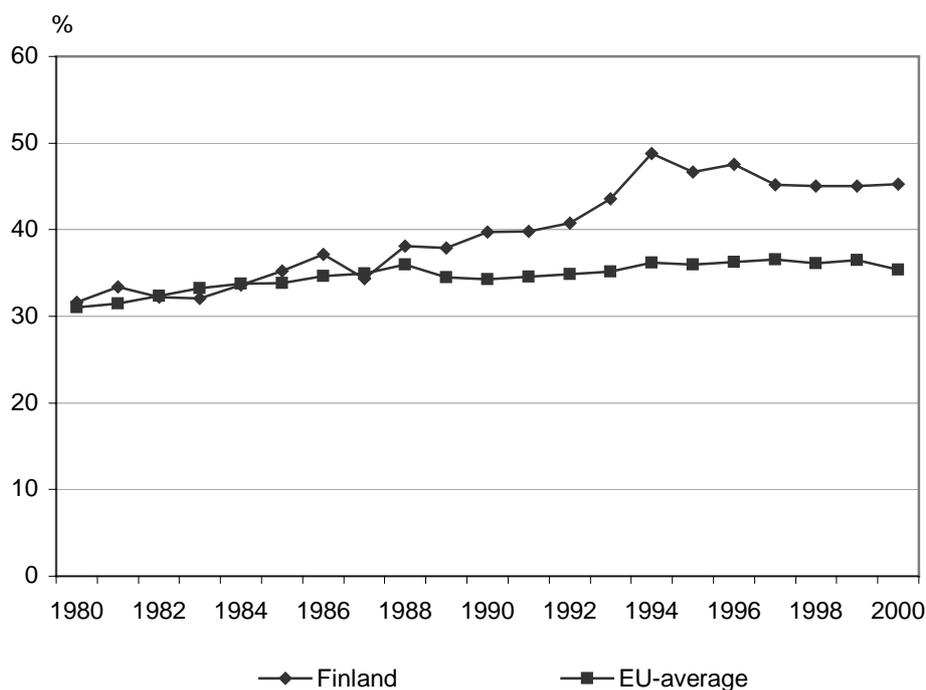


Figure 9. *Effective labour tax rates in Finland and EU-15 on average 1980-2000.*
 Source: Lyytikäinen (2002)

3.2 Tax burden at different levels of income

So far we have been looking at the tax on labour in aggregate terms. Since the EGs as well as some of policy actions taken in Finland clearly put emphasis on low-income wage earners, it is of interest to see whether the development of the tax burden has differed across income or wage groups. Figure 10 sheds some light on this issue by depicting the development in the average tax burden by monthly income between the years 1997 and 2001.⁸

⁸ The measure of tax burden used in figure 10 includes state, municipal and church tax as well as employees' social security payments.

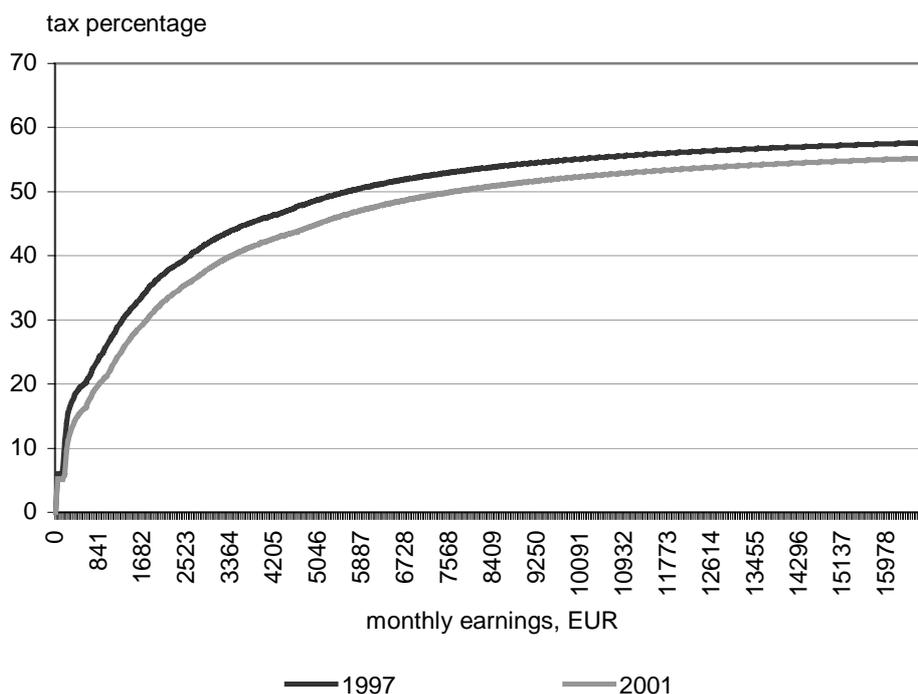


Figure 10. Average tax burden by income 1997/2001. Source: VATT

It is clear from figure 10 that since 1997 the total tax burden has dropped for each level of monthly income. The interpretation here is that a person earning, say EUR 2 000 a month, paid more taxes in 1997 than a person making EUR 2 000 in 2001. As this goes for every possible monthly income, one might be tempted to state that tax burden has been reduced. Of course, this is not the whole story: Since income levels have increased, it may well be that wage earners actually spent higher share of their income to taxes in 2001 than four years before. In other words, the income distribution has shifted to the right.⁹ If this shift is large enough, the aggregate tax burden on labour income can increase or stay unchanged even if the tax rates decline for any fixed income. This is exactly what our findings in the previous section suggest.

Another observation from figure 10 is that the drop in total tax burden seems to be somewhat higher in the lower end of the income range. This is in line with the fact that the widening of the earned income deduction should have had a stronger effect for the low-income earners. Also, the cuts in the state tax brackets have been slightly bigger for lower annual incomes. Figure 10 also shows that at higher income levels the tax rate asymptotically reaches the maximum of roughly 55 per cent in 2001.

To elaborate these findings in more detail, we consider the so-called tax wedge indicators for alternative earnings levels. Figure 11 depicts the development of total tax bur-

⁹ For example, in the share of earned income falling into the two highest state tax brackets increased from 23 per cent in 1997 to 26 per cent in 1999, Tax Administration (2001). One reason behind the shift is increased income from stock options that is taxed as earned income.

den of gross earnings¹⁰ of the average production worker (APW) from 1990 to 2001. By allowing for annual increases in earnings, this measure in a way combines the information of figure 10 and the shift of the earnings distribution. Figure 11 shows that there has been a clear downward trend in the tax burden at the income level of average production worker since the mid 90's. In 2001 the total tax burden was 46.7 per cent, 4.5 percentage points less than the peak of 51.2 per cent in 1995. However, remarkable drops in the measure seem to have taken place in 1996 and 1997, just before the evaluation period of this report.

Figure 11 also shows that the drop in the total tax burden can be mainly attributed to the reduction of taxes and employee's contributions to social security. Since 1996, the ratio of employer's contributions to total labour cost has stayed unchanged or even increased temporarily. The first remarkable reduction of 0.5 percentage points in employer's contributions is projected for year 2001.

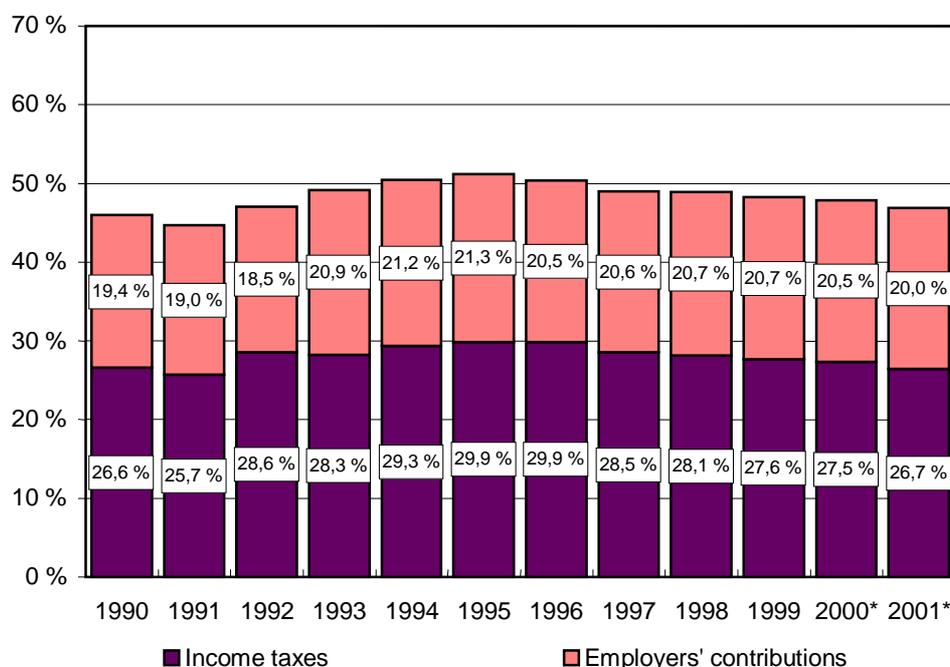


Figure 11. Tax burden of average production worker (APW) 1990-2001. Source: Viitamäki (2000)

To take a closer look at the development of the tax burden across different levels of labour income, we calculated the tax wedge measures for half of the APW earnings (0.5APW) and double of the APW earnings (2APW). The figures presented in Annex 1

¹⁰ Figure 11 shows the total of state, municipal and church taxes as well as employees' social security payments ("Income taxes") and employers' social security payments ("Employer contributions") as a percentage of total labour cost. The mandatory deductions e.g. earned income deduction are allowed for. In 2001 the monthly APW earnings was EUR 2140 gross of income tax and employees social security payments.

show that the drop in the average income tax rate has been most substantial at the lowest income level with the total tax burden dropping from the peak of 42.8 per cent in 1995 to 36.8 in 2001. In the highest income group the total tax burden has reduced from 58.7 in 1995 to 54.3 in 2001.¹¹ The development of the employers' contributions is independent of the earnings level.

¹¹ It is noteworthy that the 2AWP income level is quite high in Finland with relatively compressed income distribution. In 1997 approximately 100 000 individuals' earned income exceeded that level (Tax Administration, 2001).

4. Effect of tax changes on wages and labour demand

4.1 The method of calculations

As was noted in the previous sections, the direct tax burden on labour consists of state and municipal income taxes, employees' social security payments and employers' social security payments each of which has experienced some changes during the evaluation period, 1997-2001. According to the economic theory, changes in these labour related taxes are transmitted to the price of labour perceived by employees and employers, respectively. The final incidence of a tax change depends, among others, on the relative elasticity of supply and demand in the labour market as well as the prevailing wage formation mechanism.

In what follows we deliberately concentrate on the labour demand effects and are therefore interested in the response of the total labour cost, i.e. the price perceived by the employer, to the tax changes. It has proved fruitful to decompose the effects on total labour cost of a tax hike (or a cut) into direct and indirect effect. The latter comes about through changes in the net wage, which depends on wage formation. Thus, an increase in employers' social security payment tends to increase the labour cost for given net wage. However, higher employers' payments are also likely to put downward pressure on net wages, which tends to mitigate the direct effect on total labour cost. As for the income taxes and employees social security payments, there is only an indirect effect through net wages, which is usually found to be positive.¹²

Empirical assessment of the causal links from the changes in labour taxation to employment is a relatively complicated task and would probably necessitate a large scale econometric exercise that is outside the scope of this report. The problems and complications involved are well summarised by Hamermesh (1993). However, with the help of existing econometric studies and some straightforward calculations, it is possible to pin down the magnitude of the employment effects attributable to the tax policy changes identified above.

The method adopted here is as follows: We first use the observations of the previous section to determine the changes in the two components of tax burden on labour income at particular levels of earnings during the evaluation period. We then calculate the implied relative change in the labour cost with the help of the relevant elasticities concerning the shifting of tax changes to net wages. Finally, we apply the estimated own price elasticity of labour to determine the projected effect on employment.

¹² The effects on wages of income taxes and employees' social security payments may differ e.g. if the link to benefits is more clearly observable for the latter (see e.g. Sinko, 2001). Here we abstract from such considerations and assume that income tax and employee's payments can be treated equally.

The elasticity values used are those derived in a recent study by Honkapohja, Koskela and Uusitalo (1999), which estimates wage and labour demand equations from Finnish industry and firm level data. Using industry level data they find that the employment weighted average elasticity of wages with respect to one plus employers social security payment (1+s) is -0.21 . The average elasticity of wages with respect to one minus the income tax rate (1-t) is found to be -0.56 . As for the own price elasticity of labour demand they derive two separate estimates depending whether industry or firm level data is used. In this report we solely rely on their “consensus estimate” of -0.3 (see Honkapohja et al, 1999 for details).¹³

4.2 The effects of the income tax

It was noted in the previous section that for the average production worker (APW), the share of income tax plus employees’ payments of gross earnings was 28.5 per cent in 1997 and correspondingly 26.7 per cent in 2001 (see Figure 11). To make these numbers employable in the calculations we convert them to percentages of net earnings and calculate the implied change in the term (1-t) where t is the tax rate on net earnings.

Applying the estimated elasticity of -0.56 gives the implied decrease of 2.2 per cent in the cost of labour. Finally, applying the estimated elasticity of labour demand with respect to labour cost gives the projected increase in labour demand by some 0.7 per cent. The steps of the calculation are presented in Table 2.

	1997	2001
Tax of gross wage	28,5	26,7
Tax of net wage t	35,9	33,4
Change in (1-t) %		3,9
Change in labour cost %		-2,2
Change in employment %		0,7

Table 3. Effects on labour cost and employment of the drop in the income tax burden from 1997 to 2001 at the APW level of earnings. The elasticities used are $d\log w/d\log(1-t) = -0.56$ and $d\log L/d\log w(1+s) = -0.3$ (Honkapohja et al, 1999)

¹³ Elasticities of similar magnitude has been reported in earlier empirical studies of the Finnish labour market (see e.g. Kiander, 1998 and Pehkonen, 1998).

4.3 The effects of employer's social security payments

It was noted in the previous section (see Figure 11) that for the average production worker, the share of employers social security payments income tax of gross earnings was 20.6 per cent in 1997 and correspondingly 20.0 per cent in 2001. Again, we convert these to percentages of net earnings and calculate the implied change in the term $(1+s)$ where s is the rate of employer contributions of net earnings. Since employer contributions have both direct and indirect effect on the labour cost, we apply one plus the estimated wage elasticity of -0.21 to get the implied decrease of 0.6 per cent in the cost of labour. Applying the estimated elasticity of labour demand with respect to labour cost gives the projected increase in labour demand by some 0,2 per cent. The steps of the calculation are presented in Table 3.

	1997	2001
Payment of gross wage	20,6	20,0
payment of net wage, s	25,9	25,0
change in $(1+s)$, %		-0,8
change in labour cost %		-0,6
change in empl.%		0,2

Table 4. Effects on labour cost and employment of the drop in the employers' social security payments from 1997 to 2001 at the APW level of earnings. The elasticities used are $d\log w/d\log(1+s) = -0.21$ and $d\log L/d\log w(1+s) = -0.3$ (Honkapohja et al, 1999)

Adding up the separate effects of the two components of the tax burden, income tax and employers social security payments yields the total positive effect on employment of one per cent. Assuming that both the reduction in the components of the tax burden and the elasticities used are representative for all workers, this figure can be used to approximate the effect of tax policy changes on aggregate employment. Noticing that the improvement in the private sector aggregate employment since 1997 amounts to some 10 per cent¹⁴, we can conjecture that approximately one tenth of this improvement is attributable to the reduction in labour taxes.

There are a number of reservations to this result that would call for a more detailed analysis. For example, it was noted in the previous section, the aggregate tax burden on labour has hardly changed at all. Therefore the tax burden must have increased at least for some high-income earners. Accordingly, demand for their labour should have declined reducing the overall positive effect. On the

¹⁴ In 2001 total employment was at the level of 2340 million up from 2170 in 1997. At the same time public sector employment remained stable at the level of 560 million (VATT, 2002).

other hand, number of such high-income earners may be low and their share of the total labour force thus becomes insignificant. We shed some more light to this issue in the next section by considering earnings levels both below and above the APW-level.

4.4 Effects at different levels of income

As noted in the previous section, the cuts in the income tax rates have not been equally large across earnings levels. Instead, as our observations with three representative earnings levels suggests, the average tax rates have been reduced relatively more in the lower end of the income distribution. The relative reductions in the tax rates since 1997 in the three alternative earnings levels are presented in Figure 12.

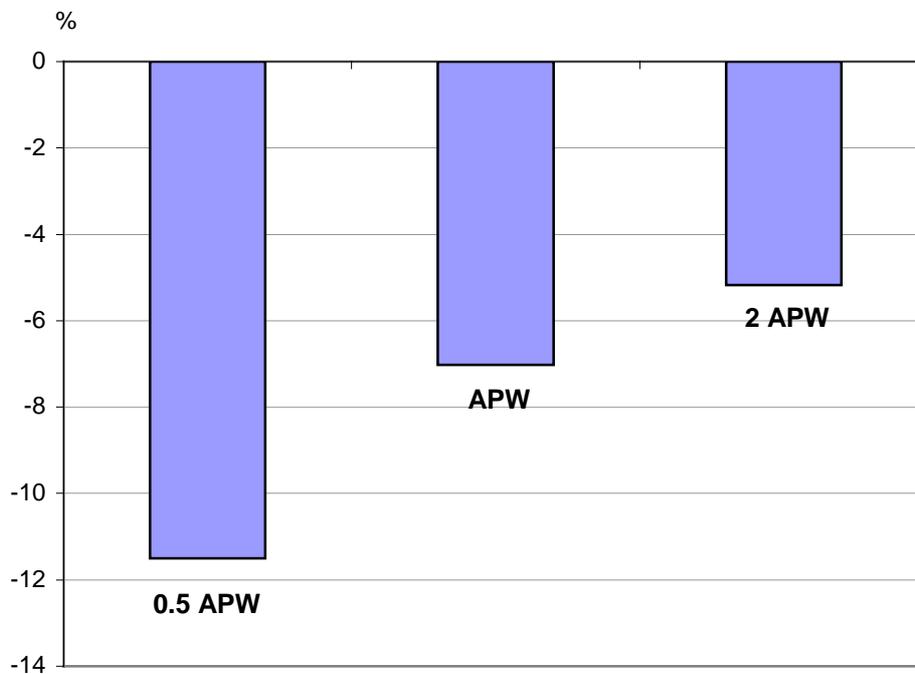


Figure 12. Relative change in the average income tax rate from 1997 to 2001 by earnings level

Repeating the impact analysis presented above for the earnings level below (0.5APW) and above the APW level (2APW) reveals that the preferential treatment of low-income (and possibly low skilled) labour does not necessarily carry over to the induced changes in labour demand. The reason is that according to our theoretical framework, it is the relative change in ratio of after tax income to before tax income ($1-t$) that determines the

magnitude of the effect of tax cuts on wages. Taking this viewpoint, the actual tax cuts have been much less favourable to low-income earners. In fact, it turns out that the relative increase in the ratio of after tax income to before tax income is rather evenly distributed across earnings levels. This implies that using the estimated uniform elasticities, the induced change in the labour demand is not much different at the three alternative earnings levels. As depicted in the Figure 13, our calculations suggest that the effect on labour demand of the tax cuts would actually be somewhat higher in the highest income level (2APW).

This conjecture is, of course, sensitive to the assumption of a uniform wage and labour demand elasticity at various earnings or skill levels. It has been suggested by some empirical studies (e.g. Tuomiari, 2001) that the elasticity of labour demand would be higher for less skilled, low-income workers. In a competitive labour market this would imply relatively modest response of their wages to certain reduction in the income tax rate. However, since the Finnish labour market is to large extent unionised, the wage responses are by far determined in centralised negotiations. Because of this feature, the assumption of uniform wage elasticity with respect to taxes may not be that bad approximation. This leaves us with the fact that if labour demand elasticity is indeed decreasing with earnings, our simple analysis is likely to underestimate the employment effects for low-income earners and likewise overestimate them for the high-income earners.



Figure 13. Relative change in the labour demand induced by income tax cuts since 1997 by earnings level

5. Concluding remarks

This report has described and assessed the development of labour taxation in Finland since the launching of the European Union's Employment Guidelines in 1997. We argue that the policies adopted by the Finnish government have broadly been in line with the Guidelines. The government has taken actions to reduce the tax burden on labour income with special emphasis on low-paid wage earners. The main measures have involved repeated adjustments to the state tax brackets on earned income as well as widening of earned income deduction in the municipal taxation. In particular the latter has been designed to direct a tax relief at low-income wage earners.

At the same time, the development of the non-wage labour costs, in particular the employers social security payments, has been less satisfactory. The average rate of employer payments has practically stayed unchanged between 1997 and 2000. In 2001 the average rate is expected to drop by half a percentage point. During the evaluation period Finland has deliberately increased the tax burden on energy, but has not taken actions to reduce the VAT rates on labour-intensive services as suggested by the Employment Guidelines.

Since the emphasis of this report is on the demand side of the labour market, we chose to use the average effective tax rates to indicate the potential changes in the tax burden on labour. Despite the measures taken, the tax burden on labour shows hardly any signs of relief at the aggregate level. Revenues from labour income taxation, as well as employer social security payments, relative to wages show no visible signs of a downward trend, but seem to have stabilised at a level clearly above the average in the European Union. These findings may partly be explained by the strong shift of the income distribution combined with the progressive income tax system: As a larger share of individuals reach the top tax bracket, the aggregate tax rate tends to increase even if the statutory tax rates were slightly reduced in all brackets.

At the lower end of the income distribution, some reduction in the actual tax burden can be recorded. The tax wedge calculations suggests that at the earnings level of an average production worker, the income tax share of total labour cost has dropped by some 2 percentage points since 1997. At the same time, the share of non-wage labour costs has decreased by half a percentage point.

To analyse the impact of the recorded tax cuts on labour demand, we conducted some straightforward calculations that utilise the existing empirical findings of the wage and labour demand responses to policy shocks in the Finnish labour market. We found that the reductions in the tax rates since 1997 have potentially increased labour demand by roughly one per cent at the APW level of earnings. If this finding is taken as representative for the whole economy, we can conjecture that approximately 10 per cent of the total improvement in employment since 1997 is attributable to the reduced tax burden.

Our experimental calculations with some alternative income levels suggest that while cuts in the tax rates have been more substantial for the low-income earners, the induced increase in labour demand is likely to be rather evenly distributed or even slightly in

favour of wage earners with relatively high annual income. This finding reflects the fact that cutting income taxes is not that efficient way to reduce the price of labour for those paying relatively little taxes already.

Finally, it is noteworthy that the tax policies conducted are likely to increase the degree of progression in the income tax system. This effect comes about from increased lower limit of taxable income in state and municipal taxation. Whether this is a deliberate goal of the tax policies or rather an unavoidable by-product of the reforms, is not clear. Nevertheless, this aspect has gone pretty much unnoticed in the discussion and could be an interesting subject for future research.

Reference

Carey, D. and H. Tchilinguirian (2000): Average Effective Tax Rates on Capital, Labour and Consumption, OECD Economics Department Working Paper No. 258, October 2000.

EU (1998): The 1998 Employment Guidelines Council resolution of 15 December 1997.

EU (1999): Council Resolution of the 1999 Employment Guidelines.

EU (2000): Employment policy guidelines 2000.

Hamermesh, D.S. (1993): Labor Demand, Princeton University Press.

Honkapohja, S., Koskela, E. and Uusitalo, R. (1999): Employment, labour taxation and public deficit, the Ministry of Finance publications. (in Finnish)

HS (2001): More than 100 municipality to increase their tax rates, newspaper article in Helsingin Sanomat 6.9.2001. (in Finnish)

Ilmakunnas, S., Laine, V. and Uusitalo, R. (2002): Evaluating the Finnish Tax and Benefit Reforms in 1996-2001, Government Institute for Economic Research Discussion Papers (Forthcoming).

Kiander, J. (1998): Labour Demand and Price Setting by Firms (Työvoiman kysyntä ja yritysten hinnanasetanta) in Pohjola, M. (ed.): Finnish Unemployment, Yliopistopaino (in Finnish).

Lyytikäinen, T (2002): Calculation of Effective Tax Rates (Työn keskimääräisen efektiivisen veroasteen laskeminen OECD:n menetelmällä), mimeo No. 54, Government Institute for Economic Research (in Finnish).

NAP (1998-2001): Finland's National Action Plan for Employment.

OECD (1999): Effective Tax Rates: First Quantitative Results, DAFFE/CFA, Wp(2) 99(4) April, 1999.

OECD (2000): Tax Burdens: Alternative Measures, OECD Tax Policy Studies No. 2.

Pehkonen, J. (1998): Wage Setting and Unemployment (Palkanasetanta ja työttömyys) in Pohjola, M. (ed.): Finnish Unemployment, Yliopistopaino (in Finnish).

PMO (2000): Environmental and Energy Taxation in Finland – Preparing for the Kyoto Challenge, Prime Minister's Office Publication Series 2000/4.

Sinko, P. (2001): Subsidising Unemployment Insurance in the Monopoly Union Model, conference paper, XVIII Jyväskylä Summer Conference.

Tuomiario, M. (2001): Internationalisation of Firms and Labour Demand, Etna B 175 Series, Helsinki (in Finnish with English Abstract).

VATT (1998): Taxation, Employment, Investment and Total Production, Task Force Report, VATT Discussion Papers 164 (in Finnish with English Abstract).

VATT (2002): Economic Structures (Talouden rakenteet) (in Finnish), Government Institute for Economic Research, internet resource, www.vatt.fi.

Tax Administration (2001): Income and Wealth Taxes 1999 (Tulojen ja varallisuuden perusteella maksuunpannut verot vuodelta 1999) (in Finnish).

Tax Laws (2001): Tax Laws in Finland 2001 (Verolait 2001) (in Finnish).

Viitamäki, H (2000): Tax Wedge in the Finnish Labour Market 1990-2000 (Työmarkkinoiden verokiila vuosina 1990-2000), Government Institute for Economic Research, mimeo No. 49 (in Finnish).

VM (2001a): Tax Statistics of 1999 (Tilastotietoja veroista vuodelta 1999), Ministry of Finance, Tax Department, (in Finnish).

VM (2001b): Challenges for the Economic Policy (Talouspolitiikan lähivuosien haasteita), Ministry of Finance Economic Survey 3/2001 (in Finnish).

VM (2001c): Economic Survey, September 2001 (Taloudellinen katsaus, syyskuu 2001), Ministry of Finance (in Finnish).

Annex 1: Labour tax burden at the 0.5APW and 2APW earnings level

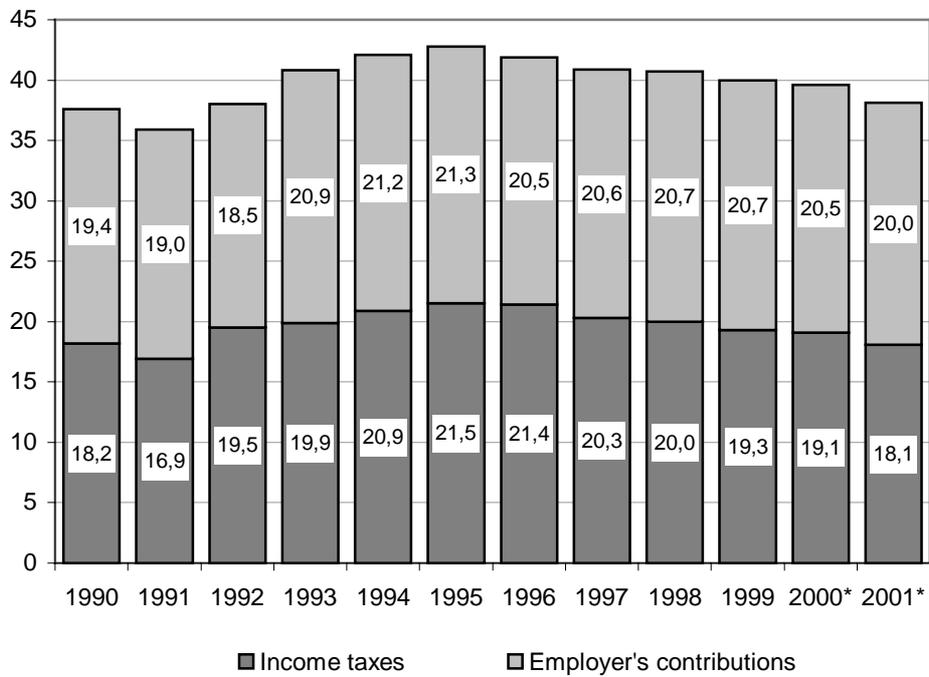


Figure A1. Tax burden at the earnings level of half of that of an average production worker (0.5APW) 1990-2001. Source: Viitamäki (2000)

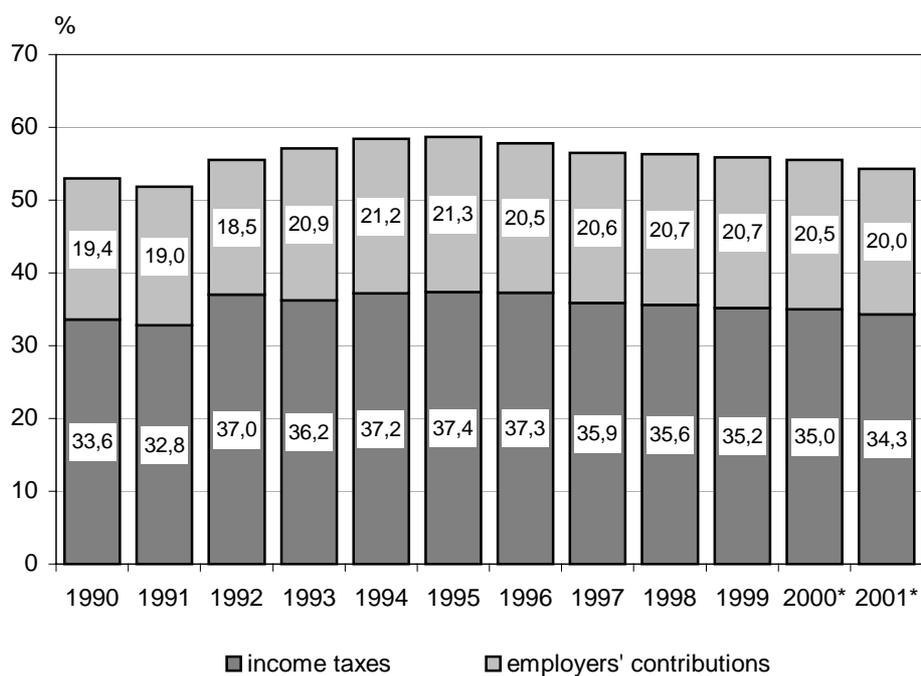


Figure A2. Tax burden at the earnings level of twice as high as that of an average production worker (2APW) 1990-2001. Source: Viitamäki (2000)

**VATT-KESKUSTELUALOITTEITA / DISCUSSION PAPERS ISSN 0788-5016
- SARJASSA ILMESTYNEITÄ**

214. Ilmakunnas Seija: Yet Another Fiscal Indicator. Helsinki 2000.
215. Kauppila Jari: Hanhiauran seuraajasta johtajaksi – Japanin teollisuuspolitiikka 1860-1940 sekä jatkumo nykypäivään. Helsinki 2000.
216. Glazer Amihai – Niskanen Esko: Which Consumers Benefit from Congestion Tolls? Helsinki 2000.
217. Aronen Kauko: Kaupunkipoliittinen näkökulma alueiden väliseen tasaukseen. Helsinki 2000.
218. Luoma Kalevi – Järviö Maija-Liisa: Productivity Changes in Finnish Health Centres in 1988-1995: A Malmquist Index Approach. Helsinki 2000.
219. Kilponen Juha: On the Efficiency of Job and Income Protection in the Dynamic Labour Markets. Helsinki 2000.
220. Venetoklis Takis: Impact of Business Subsidies on Growth of Firms - Preliminary Evidence from Finnish Panel Data. Helsinki 2000.
221. Laakso Seppo: Asuntomarkkinoiden alueellinen kehitys Suomessa 1980- ja 1990-luvulla. Helsinki 2000.
222. Perrels Adriaan (ed.): Greenhouse Gas Policy Questions and Socio-Economic Research Implications for Finland in a National and International Context. Helsinki 2000.
223. Moilanen Paavo: Assessing the Effectiveness of Marginal Cost Pricing in Transport - the Helsinki Case. Helsinki 2000.
224. Hakola Tuulia: Navigating Through the Finnish Pension System. Helsinki 2000.
225. Tuomala Juha: Työttömien työmarkkinasiirtymät vuonna 1998. Helsinki 2000.
226. Korkeamäki Ossi – Kyyrä Tomi: Integrated Panel of Finnish Companies and Workers. Helsinki 2000.
227. Häkkinen Iida – Kirjavainen Tanja – Uusitalo Roope: School Resources and Student Achievement Revisited: New Evidence Using Panel Data. Helsinki 2000.
228. Perrels Adriaan – Weber Christoph: Modelling Impacts of Lifestyle on Energy Demand and Related Emissions. Helsinki 2000.
229. Hietala Harri: Suorien sijoitusten verorasituksen mittaamisesta. Helsinki 2000.
230. Virén Matti: How Sensitive is the Public Budget Balance to Cyclical Fluctuations in the EU? Helsinki 2000.
231. Ilmakunnas Seija – Kiander Jaakko – Parkkinen Pekka – Romppanen Antti: Globalisaatio ja työn loppu? Talous ja työllisyys vuoteen 2030. Helsinki 2000.
232. Mustonen Esko – Sinko Pekka: Hiilidioksidiveron vaikutus kotitalouksien tulonjakoon. Helsinki 2000.
233. Holm Pasi – Pankka Kari – Toivonen Seppo – Tykkyläinen Yrjö – Virén Matti: PK-yritysten turvallisuuskysely. Helsinki 2000.

234. Kiander Jaakko – Virén Matti: Do Automatic Stabilisers Take Care of Asymmetric Shocks in the Euro Area? Helsinki 2000.
235. Kiander Jaakko – Kilponen Juha – Vilmunen Jouko: Taxes, Growth and Unemployment in the OECD Countries - does Collective Bargaining Matter? Helsinki 2000.
236. Venetoklis Takis: Methods Applied in Evaluating Business Subsidy Programs: A Survey. Helsinki 2000.
237. Siivonen Erkki: Pohjoinen ulottuvuus: Investointien rahoitukseen liittyviä näkökohtia. Helsinki 2000.
238. Kemppi Heikki – Pohjola Johanna: Hiilidioksidipäästöjen rajoittamisen kustannusten arvioinnissa käytetyt käsitteet ja mittarit. Helsinki 2000.
239. Virén Matti: Cross-Country Evidence on a Nonlinear Okun Curve. Helsinki 2000.
240. Pollari Johanna: Yhteistoteutuksen merkitys Suomen ilmastopolitiikassa. Helsinki 2000.
241. Coenen Heide: Network Effects in Telecommunications: when Entrants are Welcome. Helsinki 2000.
242. Moisio Antti: Spend and Tax or Tax and Spend? Panel Data Evidence from Finnish Municipalities during 1985 - 1999. Helsinki 2000.
243. Coenen Heide – Holler Manfred J.– Niskanen Esko (eds.): 5th Helsinki Workshop in Standardization and Networks 13-14 August, 2000. Helsinki 2000.
244. Virén Matti: Modelling Crime and Punishment. Helsinki 2000.
245. Nash Chris – Niskanen Esko (eds.): Helsinki Workshop on Infrastructure Charging on Railways 31 July - 1 August, 2000. Helsinki 2000.
246. Parkkinen Pekka: Terveystieteidenhuolto- ja sosiaalipalvelumenot vuoteen 2030. Helsinki 2001.
247. Riihelä Marja – Sullström Risto – Tuomala Matti: What Lies Behind the Unprecedented Increase in Income Inequality in Finland During the 1990's. Helsinki 2001.
248. Kangasharju Aki – Pekkala Sari: Regional Economic Repercussions of an Economic Crisis: A Sectoral Analysis. Helsinki 2001.
249. Kiander Jaakko – Luoma Kalevi – Lönnqvist Henrik: Julkisten menojen rakenne ja kehitys: Suomi kansainvälisessä vertailussa. Helsinki 2001.
250. Kilponen Juha – Sinko Pekka: Taxation and the Degree of Centralisation in a Trade Union Model with Endogenous Labour Supply. Helsinki 2001.
251. Vaittinen Risto: WTO:n kauppaneuvottelujen merkitys EU:n maataloudelle. Helsinki 2001.
252. Bjerstedt Katja: Työssä jaksamisesta ja työmarkkinoiden muutoksesta. Helsinki 2001.
253. Sinko Pekka: Unemployment Insurance with Limited Duration and Variable Replacement Ratio – Effects on Optimal Search. Helsinki 2001.

254. Rauhanen Timo: Arvonlisäverotus EU:n jäsenmaissa – voiko vientiä verottaa? Helsinki 2001.
255. Korkeamäki Ossi: Työttömyysriskiin vaikuttavat yksilö- ja yrityskohtaiset tekijät Suomessa 1990-1996. Helsinki 2001.
256. Kyyrä Tomi: Estimating Equilibrium Search Models from Finnish Data. Helsinki 2001.
257. Moisio Antti: On Local Government Spending and Taxation Behaviour – effect of population size and economic condition. Helsinki 2001.
258. Kari Seppo – Ylä-Liedenpohja Jouko: Klassillinen osakeyhtiövero kansainvälisen veroharmonisoinnin muotona. Helsinki 2001.
259. Kiander Jaakko – Vaittinen Risto: EU:n itälaajenemisen vaikutuksista: laskelmia tasapainomallilla. Helsinki 2001.
260. Hakola Tuulia – Uusitalo Roope: Let's Make a Deal – the Impact of Social Security Provisions and Firm Liabilities on Early Retirement. Helsinki 2001.
261. Hjerppe Reino – Kari Seppo – Lönnqvist Henrik (toim.): Verokilpailu ja verotuksen kehittämistarpeet. Helsinki 2001.
262. Hakola Tuulia – Lindeboom Maarten: Retirement Round-about: Early Exit Channels and Disability Applications. Helsinki 2001.
263. Kilponen Juha – Romppanen Antti: Julkinen talous ja väestön ikääntyminen pitkällä aikavälillä – katsaus kirjallisuuteen ja simulointeja sukupolvimallilla. Helsinki 2001.
264. Riihelä Marja – Sullström Risto – Tuomala Matti: On Economic Poverty in Finland in the 1990s. Helsinki 2001.
265. Parkkinen Pekka: Suomen ja muiden unionimaiden väestön ikärakenne vuoteen 2050. Helsinki 2002.
266. Kari Seppo – Ylä-Liedenpohja Jouko: Classical Corporation Tax as a Global Means of Tax Harmonization. Helsinki 2002.
267. Kallioinen Johanna: Pyöräilyn institutionaalinen asema liikennesuunnittelussa. Helsinki 2002.
268. Kangasharju Aki and Venetoklis Takis: Business Subsidies and Employment of Firms: Overall Evaluation and Regional Extensions. Helsinki 2002.
269. Moisio Antti: Determinants of Expenditure Variation in Finnish Municipalities. Helsinki 2002.
270. Riihelä Marja – Sullström Risto: Käytettävissä olevien tulojen liikkuvuus vuosina 1990-1999. Helsinki 2002.
271. Kari Seppo – Kröger Outi – With Hanna: Saksan verouudistus 2001. Helsinki 2002.
272. Kari Seppo: Norjan ja Suomen tuloverojärjestelmän vertailua. Helsinki 2002.