NET SOCIAL PROTECTION BENEFITS IN ESTONIA 2005:

RESULTS FROM A PILOT STUDY

The EC Grant project. The ESSPROS module "Net Benefits"

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Contents

1. Introduction

The existing ESSPROS data collection covers gross expenditure on social protection benefits provided by governments to individuals and households. In some cases the benefits paid to recipients are reduced by direct taxation, whilst in others they are not. This means that a comparison between countries or over time of gross benefit expenditure can be misleading and show important differences that may be reduced or eliminated if the effects of taxation are taken into account.[1]

This report presents the first estimates of "net social protection benefits" in Estonia for 2005. Net social protection benefits are defined as the value of social protection benefits excluding taxes and social contributions paid by the benefits recipients complemented by the value of "fiscal benefits".

In Estonia, there are a few benefits taxed by income tax. They are mainly contribution based benefits, such as pensions, health insurance benefits, unemployment insurance benefits, maternity and parental benefits. Universal benefits, for example, family benefits, disability benefits, are not taxed. Some benefits are also taxed by social tax, but the tax is always paid from the state budget or by a respective insurance fund and this is not an obligation of benefit recipients. A few benefits that are essentially wage compensation, such as redundancy benefits and benefits in case of the insolvency of an employer, are also reduced by contributions to the funded pension scheme if benefit recipients have joined the scheme.

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As described in the grant proposal the study provides the following data for the module “Net Benefits”:

1) list of benefits that are subject to income taxation and/or social contributions indicating their classification in ESSPROS category and scheme,
2) list of fiscal benefits for social protection including a short description,
3) calculation of the tax rates for each social function benefit and different categories of pensions: old-age pensions (includes anticipated old age pension, early retirement pensions, national pensions, special occupational pensions), disability pensions and survivors’ pensions,
4) calculation of net pension expenditures.

Which subcategories of gross and net pension expenditures are presented depend on the availability of the income tax data. Different approaches allow different level of detail.

To calculate net benefits and average tax rates, three alternative approaches are tested:

a) aggregate approach – division of withhold taxes and gross benefits as recorded by the institutions paying out the benefits,
b) individual based microdata approach for pensions – using micro data from the pension register of the Estonian National Social Insurance Board and the tax

[1] ESSPROS Net Social protection benefits: Coverage and definitions. European Commission. Eurostat. Directorate F: Social statistics and information society. Unit F-3: Living conditions and social protection. Doc. NET/2008/05

rules applied to the pensions we simulate tax contributions for each individual and calculated simulated withhold tax rates and average tax rates. This approach was meant as a back-up in case the first aggregate approach would not give information in necessary subcategories.

c) household based microdata approach – using tax-benefit micro-simulation model ALAN by PRAXIS (authors Alari Paulus, University of Essex, and Andres Võrk) we calculate after-declaration tax contributions. The model relies on Estonian Household Budget Survey data and allows taking into account the impact of joint declarations and additional tax relief on pensions and eligible deductible expenditures.

The remaining part of the report has the following structure. Section 2 describes briefly the main characteristics of the Estonian tax system, focusing on income tax and social tax. Then we give an overview of the social benefits that are taxed by income tax in Estonia. After that we discuss possible approaches to estimate "net social expenditures" in Estonia. Section 3 gives the estimates of income tax and social contributions on benefits and resulting average tax rates and net benefits. Section 4 concludes with the discussion of the feasibility of the different approaches for the future.

We thank all the institutions who provided us with the necessary data. Special thanks go to Ella Viikmann and Andres Roostalu (Sotsiaalkindlustusamet), Anne Lauringson (Eesti Töötukassa), Reet Jõesoo (Eesti Haigekassa), Aili Soomuste (Riigikogu Kantselei) and Mai Piirmets (Presidendi Kantselei).

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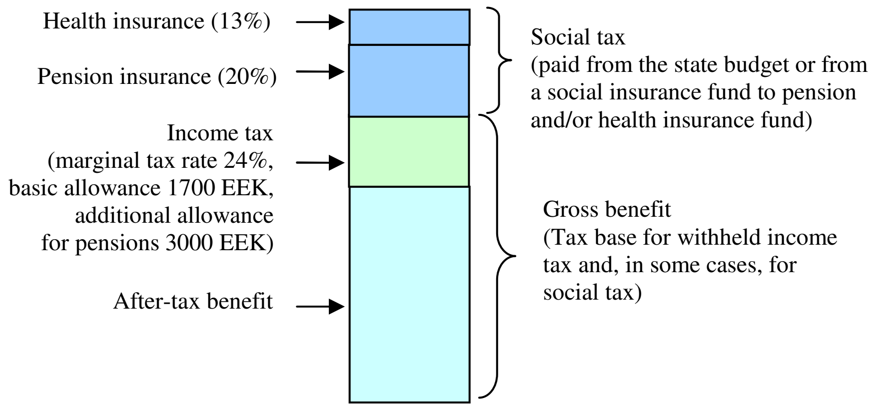
2. Taxation of benefits in Estonia

2.1. Estonian tax system in brief in 2005[2]

- The tax system is largely a unified, national system consisting of income tax, value added tax, excise taxes, social tax and social insurance contributions. There are a few taxes set by local governments, such as land tax, motor vehicle tax, sales tax, but the share of these taxes in overall taxation is negligible.
- The benefit system is also a unified, national system. Municipalities provide a few local benefits, such as additional family and child benefits, and additional social assistance benefits, but the share of these benefits in overall social expenditures is small and these benefits are not taxable. Social benefits and pensions are usually assessed and delivered on a monthly basis and amounts are referred to in monthly terms.
- The fiscal year is 1 January - 31 December. The tax system generally changes in 1 January each year. Main benefit changes happen at the same time, but may also be implemented in April (indexation of state pensions takes place in 1 April each year), or other times in year, e.g family benefits have been changed in July and September.
- The income tax system is an individual system, but a married couple may also file a joint tax report if they wish (beneficial if one has unused tax allowances or deductions which the other one could claim for). There are some income sources on which income tax is immediately withheld when they are paid out, but final tax liability is based on the tax report after the tax year has ended (taking into account tax already withheld).
- Liability of income tax is based on annual income and allowances are referred to in annual terms, although 1/12 of the annual basic, pension and sickness allowances can be applied monthly to calculate withholding income tax. In order to make use of the other allowances and deductions these have to be declared in the following year (by 31st March) when filing the tax report. Overall, there are a few allowances and deductions in the system. Different income sources are taxed uniformly, except pensions which have a specific tax allowance.
- Social tax is a payroll tax and is paid by employers, although all tax payments are linked to individuals when calculating future pensions, sickness benefits or maternity benefits. Additionally employers pay a part of unemployment insurance contributions. There are also a few social contributions paid by employees: a part of the unemployment insurance contributions and contributions to the mandatory pension scheme (II pillar). State pays social tax on certain social benefits or on the behalf of certain socio-economic groups, which grants the beneficiaries access to health care or gives them pension rights.

[2] This section relies heavily on Lüpsik, S., Paulus, A., Võrk, A. (2008) Estonia 2005 Tax-Benefit System. EUROMOD Country Report, University of Essex.
http://www.iser.essex.ac.uk/msu/emod/documentation/countries/estonia/CR_EE2005_v1.pdf

Figure 1. Schematic composition of taxation of benefits, in 2005



Social tax (*sotsiaalmaks*)

Social tax is a financial obligation imposed on employers and self-employed to obtain revenue required for supplying state pension insurance and health insurance in the country. For certain inactive groups of people (e.g. parents on maternity leave, unemployed, military service, etc.) the state pays the social tax (see Table 1).

Tax rate is 33% and the tax base is "gross wage". The 13% of social tax base is transferred into the Estonian Health Insurance Fund and 20% is transferred into pension insurance schemes. In case of benefits the tax base is either the size of the gross benefits or the basis of the minimum social tax base. For some benefits only the health insurance part (13%) is paid, and for other benefits all 33% is paid. Not all benefits are taxed with social tax.

In addition, the state pays additional contributions to the funded pension scheme (second pillar) on parental benefits, the size is 1% of the gross benefits for each child (i.e. in case of twins the rate is 2%, etc).

The minimum monthly base for social tax calculation was set by the *State Budget Act (Riigieelarve seadus)* and it was 700 EEK in 2005, which made the minimum social tax obligation 231 EEK (= 700 x 33%) per month. There is no upper ceiling, except for self-employed.

As social tax is an obligation by the state or the agency paying the benefits, it does not influence the size of gross benefits recorded in the ESSPROS system, but only the rerouted social contributions between the schemes.

Table 1. Social tax paid by the state (transferred to health insurance fund and state pension fund) on behalf of beneficiaries

Group	Basis	Rate	Who pays
Recipients of unemployment insurance benefit (*töötuskindlustushüvitis*)	Gross benefit	13% (health)	Unemployment Insurance Fund
Recipients of redundancy benefits, benefits in case of insolvency of employer (*kollektiivse koondamise hüvitis, hüvitis tööandja maksejõuetuse korral*)	Gross benefit	33%	Unemployment Insurance Fund
Recipients of unemployment assistance benefit (*töötu abiraha/töötu toetus*)	Monthly minimum	13% (health)	State budget
Recipient of parental benefit (*vanemahüvitis*)	Monthly minimum	33%	State budget
Recipients of childcare allowance (*lapsehooldustasu*)	Monthly minimum	33%	State budget
Recipients of benefit for parents of families with seven and more children (*seitsme- ja enamalapselise pere vanema toetus*)	Monthly minimum	33%	State budget
Persons who are paid caregiver's allowance pursuant to the *Social Benefits for Disabled Persons Act* until the persons attain pensionable age	Monthly minimum	33%	State budget
Estonian citizens or persons of Estonian nationality who have settled in Estonia from a foreign country and receive social benefits under the *Social Welfare Act (Sotsiaalhoolekande seadus)*, and their spouses, children and parents	Monthly minimum	13% (health)	State budget
Employees with loss of capacity for work of 40% or more in certain cases	Monthly minimum	33%	State budget
To funded pension scheme (II pillar): Parental Benefit (*vanemahüvitis*)	Gross benefit	1% for each related child	State budget

Personal Income Tax (tulumaks)

Estonia applies a flat rate system to the personal income tax. Different income sources are taxed uniformly. The single tax rate is applied on all labour income, personal capital income (capital gains, royalties etc) and social benefits, if taxable. But note that there is a separate additional allowance applicable only to pensions, resulting different effective tax rates for pensions and other income.

The personal income tax system is an individual system, but a married couple may also file a joint tax report if they wish (beneficial if one has unused tax allowances which the other one could claim for).

In 2005, the tax rate was 24% and the annual basic allowance was 20 400 EEK or 1 700 EEK per month.

If a resident person receives a pension paid by the Estonian state pension scheme or a mandatory funded pension scheme, an additional allowance can be deducted from the income of the person in the amount of those pensions but not more than 36 000 EEK a year or 3 000 EEK per month. This allowance is usually applied monthly.

Table 2. Main income tax parameters 2003-2008

	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Income tax rate	0.26	0.26	0.24	0.23	0.22	0.21
Basic allowance per month (EEK)	1000	1400	1700	2000	2000	2250
Additional allowances per month per children starting from … child	3rd	3rd	3rd	2nd	2nd	1st
Pension allowance per month (EEK)	3000	3000	3000	3000	3000	3000

Withholding income tax

Companies or social insurance funds have to withhold income tax when paying out the wages and salaries or benefits. Incomes subject to withholding income tax can be grouped into two:

1) incomes for which the basic allowance is usually not taken into account: sickness benefit and maternity benefit (paid by the Estonian Health Insurance Fund), redundancy benefits (paid by the Unemployment Insurance Fund), royalties.

2) incomes for which the basic allowance is usually taken into account:

- employment income,
- disability pension,
- old-age pension,
- survivors' pension,
- parental benefit,
- unemployment insurance benefit.

In case of pensions, also additional pension allowance is taken into account. If a person receives simultaneously income from various sources (e.g. parental benefit and employment income, or pension and employment income), then when calculating withholding income tax the person has to choose beforehand to which income source the basic allowance applies.

Table 3. Application of allowances to withholding income tax

Taxable benefit	Basic allowance	Pension allowance
Old-age pension (incl national pension, anticipated old-age pension, special pensions) (*vanaduspension, rahvapension, eripensionid, …*)	Yes	Yes
Disability pension (*töövõimetuspension*)	Yes	Yes
Survivor's pension (*toitjakaotuspension*)	Yes	Yes
Sickness benefit (*haigushüvitis*)	No	No
Care benefit (*hooldushüvitis*)	No	No
Maternity benefit (*sünnitushüvitis*)	No	No
Parental benefit (*vanemahüvitis*)	Yes	No
Unemployment insurance benefit (*töötuskindlustushüvitis*)	Yes	No
Redundancy benefit (*töölepingu kollektiivse ülesütlemise hüvitis*)	No	No
Benefits upon insolvency of employer (*tööandja maksejõuetuse hüvitis*)	No	No

Employee contributions to compulsory unemployment insurance and funded pension schemes are also subtracted from employment income, when calculating withholding income tax. Social benefits are not subject to any contributions by recipients, except for redundancy benefits and benefits in case of the insolvency of employer, which are essentially compensation for employment income.

Final income tax

Compared to withholding income tax, final (after declaration) income tax takes into account several additional aspects:

1) tax base includes income from self-employment, and other irregular income sources,
2) married couples may submit a joint declaration,
3) there is an additional allowance for families with 3 or more children per child starting from the third in 2005 (less the taxable income of the children),
4) there are deductible expenditures (education expenses, mortgage interest payments, contributions to the voluntary pension funds, certain donations and membership fees, alimonies).

Hence, there is difference between taxes withheld and taxes paid after filing a tax report. Usually, most people get refund due to additional tax deductions and allowances.

Taxable income from self-employment is equal to income from self-employment less related costs minus special allowances for the agricultural income, and minus social insurance contributions, except contributions to the funded pension scheme. The latter can be deducted from other source of incomes. Taxable business income is derived on individual basis.

Note that not all people need to submit the income tax declaration. If the income is less than the annual basic allowance, or if the person has received only income from wages or pensions on which income tax is already withhold, he/she does not need to submit the declaration. But in most cases it is beneficial to submit it to make use of additional allowances or deductions. An overview of relevant exemptions for the personal income tax is presented in Table 4.

Of those deductions and allowances some can be potentially considered as **fiscal benefits** for social protection:

a) pension allowance – as this is usually taken into account already when calculating withholding income tax, to avoid double-counting it should not be included;
b) allowance for families with 3 or more children per child starting from the third in 2005 - this instrument has been treated in political debates as a measure to reduce poverty among children; when calculating withholding income tax, it might be added as a fiscal benefit.

We discuss the latter in more detail in section 3.1.4.

There are also reduced value-added tax rates for several goods and services which are of a social nature (for example, medicines, heating), but they are beyond the scope of the ESSPROS and are not presented in this study.

Table 4. Allowances and deductions from personal income tax

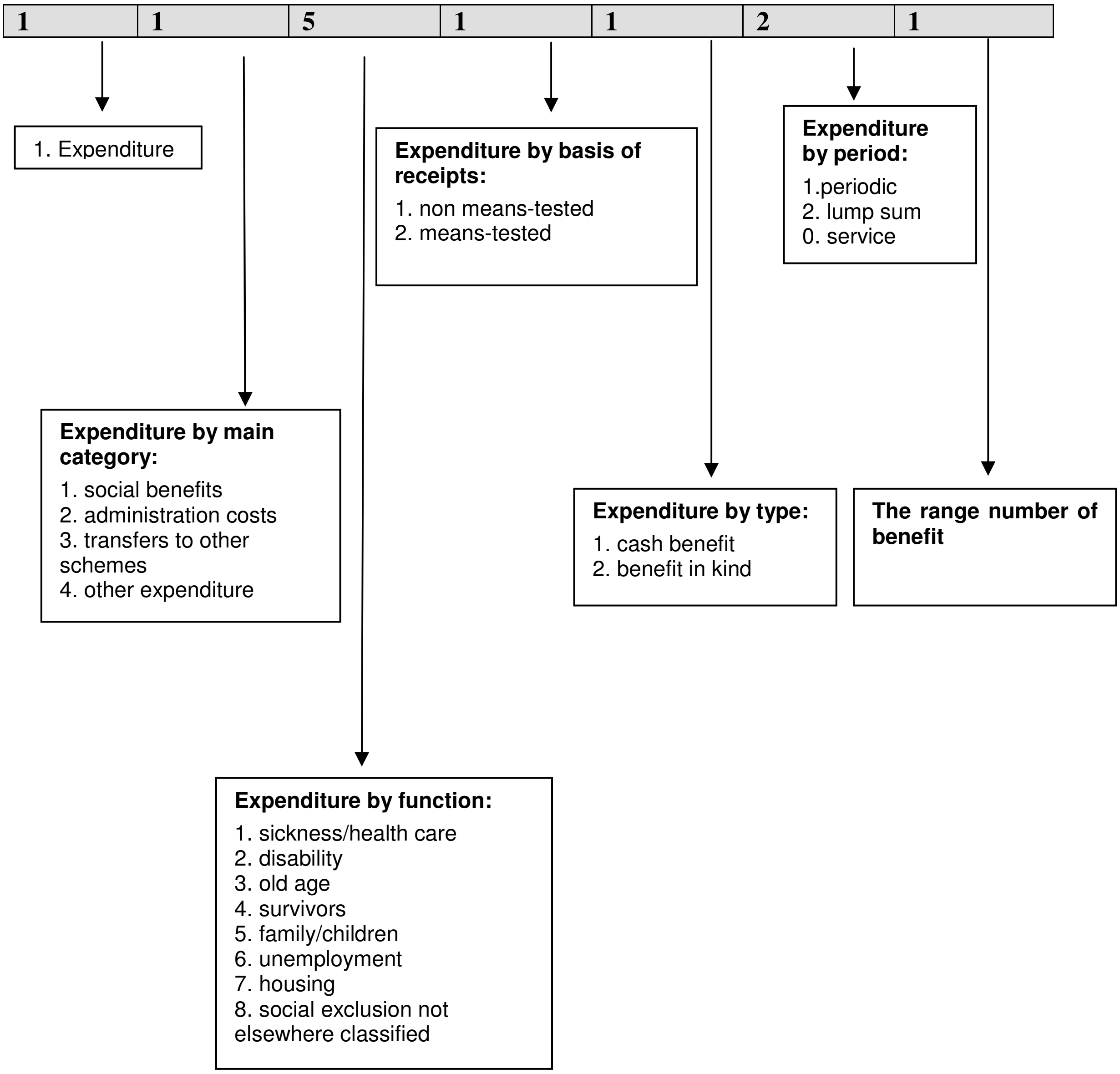
Allowance/deduction	%, sum, or limit in a year	Description
Basic allowance	20,400 EEK in 2005	
Allowance in case of children	In amount by which taxable income of the child is lower than the basic allowance	If 3 or more children, for 3rd and each subsequent child under the age of 17. Applicable for one parent.
Pension allowance	Pension amount, but max 36,000EEK	Pensions (state or mandatory funded) not taxable up to this level.
Sickness allowance	Compensation amount, but max 12,000 EEK	Compensation for an accident at work or an occupational disease (not insurance) deducted from the taxable income
Alimony or maintenance support paid	100%	Only if income tax paid by the recipient.
Housing loan or lease interest payments	100%	Only interest payments for the main house or apartment
Training expenses	100%	One under 26 years old person's schooling/training expenses in registered educational establishment
Gifts, donations and trade union entrance and membership fees	100%; entrance & membership fees max 2% of taxable income less economic activity related costs in case of self-employed, maintenance, housing loan interest and training expenditure deductions and basic allowances; general limit for gifts, donations and fees is 5% of the aforementioned sum	Payments etc to certain private and all public institutions. Entrance and membership fees.
Insurance premiums and acquisition of pension fund units	100%, max 15% of taxable sum, less economic activity related costs in case of self-employed	Payments to voluntary pension scheme
Unemployment insurance contribution	100%	All payments to unemployment insurance fund
Contributions to mandatory funded pension	100%	The compulsory payments to pension fund
Additional child birth allowance by employer	Max 5/12 of the basic allowance rate (i.e. 8,500 EEK in 2005)	Birth allowance is paid voluntarily by employer

The income tax deductions provided for housing loan interests, gifts-donations and training costs are altogether limited to 50,000 EEK per taxpayer during a period of taxation, and not more than 50% of the taxpayer's income of the same period of taxation, less economic activity related costs in case of self-employed.

If a resident taxpayer has received income from abroad during a period of taxation, all income derived from abroad is included in the taxable income of the person and income tax paid or withheld on such income abroad is deducted from the income tax to be paid. Income tax is calculated separately for income derived in Estonia and for income derived in each foreign country. Income tax paid in a foreign country on income which is not subject to tax in Estonia is not taken into account.

2.2. Taxable benefits in the ESSPROS system

In this section we list the benefits taxable by income tax as they are recorded in the ESSPROS system. ESSPROS uses a 7-digit code for classifying social benefits expenditure. The code has its fixed structure. The next figure explains its content.



In Estonia social benefit expenditures are made through 7 institutions called schemes in ESSPROS (Table 1). Of these institutions the health insurance fund, the social insurance board, the unemployment insurance fund and state budget are involved in paying benefits that are taxed with income tax.

Table 5. Social benefit schemes

Scheme number	Institution
1	Health Insurance Fund (*Haigekassa*)
2	Social Insurance Board (*Sotsiaalkindlustusamet*)
3	Labour Market Board (*Tööturuamet*)
4	Unemployment Insurance Fund (*Töötukassa*)
5	Ministry of Social Affairs (*Sotsiaalministeerium*)
6	Local Government Budget (*Kohaliku omavalitsuse eelarve*)
7	State Budget (*Riigieelarve*)

Next we describe the benefits which are taxable in Estonia with income tax by function and schemes. If they are also taxed by social tax this is also indicated, although social tax is not an obligation of the recipient but a payer.

SICKNESS/ HEALTH CARE

S1111111_NMT_Paid_sick_leave

Scheme 1 (Health Insurance Fund)

Sickness benefit is financial compensation paid for temporary incapacity for work by the health insurance fund to an insured person on the basis of a certificate of incapacity for work.

Sickness benefit is payable to employed persons, self-employed persons, children and seniors. It is normally 80% of average income per calendar day and it is paid usually not longer than 182 days. In case of work accident it is paid 100% of average income per calendar day. Sickness benefit is taxed by income tax.

In Estonian: *Haigushüvitis*

(Health Insurance Act, RT I 2002, 62, 377)

S1111112_NMT_Other_cash_periodic_benefits

Scheme 1 (Health Insurance Fund)

Care allowances are paid to insured persons on the basis of a certificate of incapacity for work for taking care of sick family member. For caring sick family member under 12 years old at home, it is paid 100% of average income per calendar day for 14 days. By hospitalisation the rate is 80%. For caring other family members and disabled children under 16 years it is paid 80% of average income per calendar day for 7 days.

Care allowances are taxed by income tax.

In Estonian: *Hooldushüvitis*

(Health Insurance Act, RT I 2002, 62, 377)

DISABILITY
D1121111_NMT_Disability_pension
Scheme 2 (Social Insurance Board)
The right to receive a pension for incapacity for work have persons between the age of 16 and the pensionable age who are declared permanently incapacitated for work with 40 to 100 per cent loss of the capacity for work and who have earned the pension qualifying period required for grant of a pension for incapacity for work provided.
Pension qualifying period required for grant of pension for incapacity for work depend on age.

Age	Required pension qualifying period
16–20 years	No requirement
21–23 years	1 year
24–26 years	2 years
27–29 years	3 years
30–32 years	4 years
33–35 years	5 years
36–38 years	6 years
39–41 years	7 years
42–44 years	8 years
45–47 years	9 years
48–50 years	10 years
51–53 years	11 years
54–56 years	12 years
57–59 years	13 years
60–62 years	14 years

There is no requirement for length of service, if the reason for the permanent incapacity for work is a work injury or occupational disease. A pension for incapacity for work is granted for the period of permanent incapacity for work.
Disability pension is taxed by income tax.
In Estonian: *Töövõimetuspension*
(State Pension Insurance Act, RT I 2001, 100, 648)

OLD AGE
O1131111_NMT_Old_age_pension
Scheme 2 (Social Insurance Board)
The right to receive old-age pension have permanent residents of Estonia, and aliens, living in Estonia with a terminal residence permit, who have attained pension age and have 15 years of pensionable service or accumulated period. Pension age is 63 years for men and is increasing gradually for women reaching 63 by 2016.

year of birth	pension age for women
1946	59 years 6 months
1947	60 years
1948	60 years 6 months
1949	61 years
1950	61 years 6 months
1951	62 years

1952	62 years 6 months
1953 and later	63 years

The old age pension is calculated according to a formula, which consists of three additive elements:

- a flat-rate element;
- a length-of-service element (this applies only to pensionable service through 31 December 1998);
- an insurance element applying to periods after 1 January 1999.

There are special pensions for certain officials (for police officials, judges, prosecutors, legal chancellor, and others).

Deferred old-age pension is a subcategory of state old-age pension. It is granted at a later age than the pensionable age and it is granted for life. A deferred old-age pension is calculated pursuant to the general procedure for calculation of old-age pension by increasing the pension by 0,9 percent for every month which has passed after the person has attained the pensionable age.

Until 2002, state pensions constituted non-taxable income. Since then, pensions have been treated as a taxable income, but a higher non-taxable allowance applies. As the overwhelming majority of state pensions remained below this threshold in 2005, they are effectively not taxed.
In Estonian: *Vanaduspension, edasilükatud vanaduspension*
(State Pension Insurance Act, RT I 2001, 100, 648)

Scheme 7 (State budget)
Presidents, members of parliament and government get special pension from state budget. The amount of president pension is 75% of valid official salary. The pension of members of parliament and government depends on length of service. The amounts of members of parliament: at least 4 years — 40%, at least 8 years — 60%, at least 12 years — 75%. The amounts of members of government: at least 2 years — 40%, at least 4 years — 60%, at least 8 years — 75%.
These pensions are taxed by income tax.
In Estonian: *Eripension*

O1131112_NMT_Anticipated_old_age_pension
Scheme 2 (Social Insurance Board)
A person who has earned the pension qualifying period required for grant of an old-age pension has the right to receive an early-retirement pension up to three years before attaining the pensionable age. For every month the person retires earlier than the pensionable age his/her pension will be reduced by 0,4 per cent. Early-retirement pensions are granted for life.

Persons who have earned the pension qualifying period required for the grant of an old-age pension have the right to receive an old-age pension under favourable conditions as follows: (step)parent, guardian or caregiver who for at least eight years has raised:

1) a child under 18 years of age with a moderate, severe or profound disability or five or more children can retire 5 years earlier,
2) four children can retire 3 years earlier,
3) three children can retire 1 year earlier.

Persons suffering from pituitary dwarfism, can retire at the age of 45.
Old-age pensions under favourable conditions are granted for life.
Early-retirement pension and old-age pension under favourable conditions are taxed by income tax.
In Estonian: *Ennetähtaegne vanaduspension*, *soodustingimustel vanaduspension*
(State Pension Insurance Act, RT I 2001, 100, 648)

O1131115_NMT_Other_cash_periodic_benefits
Scheme 2 (Social Insurance Board)
National pension is granted to persons who do not have the right to receive an old-age pension, pension for incapacity for work or survivor's pension because they have not completed a sufficient number of years of pensionable service or their accumulation period is insufficient.

The right to receive national pension have
1) persons who have attained 63 years of age and who do not have the right to receive old-age pension and who have been permanent residents of Estonia or have resided in Estonia on the basis of a temporary residence permit or temporary right of residence for at least five years immediately before making a pension claim;
2) persons who are declared permanently incapacitated for work, the percentage of whose loss of capacity for work is at least 40 per cent, who have not earned a pension qualifying period required for the grant of a pension for incapacity for work and who have been permanent residents of Estonia or have resided in Estonia on the basis of a temporary residence permit or temporary right of residence for at least one year immediately before making a pension claim;
3) persons right to receive survivor's pension who, in connection with the insufficient pension qualifying period of their provider, do not have the right to receive a survivor's pension, if the provider was a permanent resident of Estonia or had resided in Estonia on the basis of a temporary residence permit or temporary right of residence for at least one year before his or her death;
4) persons who have attained a pensionable age who are paid the national pension on the basis of incapacity for work until the persons attain a pensionable age.

National pension is taxed by income tax.
In Estonian: *Rahvapension*
(State Pension Insurance Act, RT I 2001, 100, 648)

SURVIVORS
V1141111_NMT_Survivors_pension
Scheme 2 (Social Insurance Board)
The right to receive the survivor's pension have family members — permanent inhabitants of Estonia and aliens, living in Estonia with a terminal residence permit — upon the death of a provider. The right of the provider's children, parents and the

widow or widower to receive a survivor's pension does not depend on whether they were maintained by the provider or not.
Survivor's pension is granted if the provider has by the date of his or her death earned the pension qualifying period which would have been necessary for the grant of a pension for incapacity for work or an old-age pension.
Survivor's pension is calculated at the following rates:
1) to one family member, 50 per cent;
2) to two family members, 80 per cent;
3) to three or more family members, 100 per cent of the value of the provider's pension.
Survivors pension is taxed by income tax.
In Estonian: *Toitjakaotuspension*
(State Pension Insurance Act, RT I 2001, 100, 648)

FAMILY/ CHILDREN
F1151111_NMT_Income_maintenance_in_the_event_of_childbirth
Scheme 1 (Social Insurance Board)
Maternity benefit is paid only to insured person upon of the pregnancy and maternity. The amount of maternity benefit is 100% of the average income of the insured person. Maternity benefit is usually paid for 140 days, but in case of the birth of multiple children and complications it is paid for 154 days.
Maternity benefit is taxed by income tax.
In Estonian: *Rasedus- ja sünnitushüvitis*
(Health Insurance Act, RT I 2002, 62, 377)

Scheme 2 (Social Insurance Board)
Parental benefits aim is to compensate during the first life year of a child the income that was not received as the result of taking care of the child. The amount of the benefit per calendar month is 100 % of the average income per calendar month in preceding calendar year subject to social tax. If an applicant for the benefit does not receive income subject to social tax during previous calendar year (e.g. non-working students), the amount of the benefit per calendar month is equal to the benefit rate. Parental benefit rate in 2005 was 2200 Estonian kroons. If the average income of an applicant for benefit per calendar month is equal or less than the minimum monthly wage (in 2005 it was 2690 Estonian kroons), the amount of the benefit per calendar month is equal to the minimum monthly wage.
Maximum monthly amount of benefit is three times the average income subject to social tax per calendar month in previous year. In 2005 the maximum benefit was 17472 Estonian kroons.
In 2005 the period of parental benefit was 11 months for those who did not receive maternity benefit and up to 365 days including the period of maternity benefits. It is taxed by income tax and state also pays social tax.
In Estonian: *Vanemahüvitis*
(State Family Benefits Act, RT I 2001, 95, 587)

UNEMPLOYMENT
U1161111_NMT_Full_unemployment_benefit
Scheme 4 (Unemployment Insurance Fund)

Unemployment insurance benefit is paid by Unemployment Insurance Fund only to registered unemployed to provide partial compensation for the lost income for the time of the search for work. Unemployment insurance benefit period varies up to 360 days depending on the length of previous employments. If unemployment insurance benefit is assigned to insured person, the unemployment insurance period starts from beginning. First 100 days will be paid 50% and then for the period of 101 to 360 days 40% of last year's average income.
Unemployment insurance benefit is taxed by income tax and the fund pays health insurance part of the social tax (13%).
In Estonian: *Töötuskindlustushüvitis*
(Unemployment Insurance Act, RT I 2001, 59, 359)

U1161122_NMT_Redundancy_compensation
Scheme 4 (Unemployment Insurance Fund)
Collective termination of employment contracts is the termination, at the initiative of the employer, of the employment or service relationships of employees or public servants within the period of thirty days.
Upon collective termination of employment contracts, an employee has the right to receive a redundancy benefit from the unemployment fund as follows:
- in the amount of one month's average wages of the employee, if the employee has been continuously employed by or in the service of the employer for up to 5 years;
- in the amount of 1,5 times one month's average wages of the employee, if the employee has been continuously employed by or in the service of the employer for 5 to 10 years;
- in the amount of two months' average wages of the employee, if the employee has been continuously employed by or in the service of the employer for over 10 years.

This benefit is taxed by income tax and the fund also pays social tax. If the person has joined the funded pension scheme (II pillar), also these contributions are withhold from the benefits.
In Estonian: *Töölepingute kollektiivne ülesütlemise hüvitis*
(Unemployment Insurance Act, RT I 2001, 59, 359)

U1161123_NMT_Other_cash_lump_sum_benefits
Scheme 4 (Unemployment Insurance Fund)
The right on benefits upon insolvency of employer occurs if a court has declared bankruptcy or terminated the bankruptcy proceedings. Employee will be paid unreceived wages, unreceived holiday pay and other unreceived benefits prescribed by the Employment Contracts Act.
The benefit is taxed by income tax and the fund pays also social tax. If the person has joined the funded pension scheme (II pillar), also these contributions are withhold from the benefits.
In Estonian: *Tööandja maksejõuetuse hüvitis*
(Unemployment Insurance Act, RT I 2001, 59, 359)

As social tax is an obligation by the state or the agency paying the benefits, it does not influence the size of gross benefits recorded in the ESSPROS system nor the net benefits, but only the rerouted social contributions between the schemes.

2.3. Possible approaches to calculate net benefits in Estonia

Ideally one should calculated net benefits in Estonia based on final income tax liabilities, i.e. tax liabilities after people have submitted tax declaration after the tax year has ended. In principle this could be done using individual level data from the Estonian Tax and Customs Board and combining them with data from social insurance funds (Health Insurance Fund, Unemployment Insurance Fund, Social Insurance Board, etc.). That would allow us to calculate for each individual the gross benefits and final income tax liabilities resulting average itemised tax rates (AITR). Unfortunately at the moment, neither the Statistics Estonia nor any other institutions has the access to this combined data source. Hopefully this will change in 2009 or 2010, when the Statistics Estonia acquires rights to use merged database and also has necessary infrastructure for this kind of exercise.

In this pilot study we use the following approaches to estimate the value of income tax and resulting net benefits:

1) withholding income tax based on aggregate approach – division of withheld taxes and gross benefits as recorded by the institutions paying out the benefits,
2) individual based microdata approach for pensions – using micro data from the pension register of the Estonian National Social Insurance Board and the tax rules applied to the pensions we simulate tax contributions for each individual and calculated simulated withhold tax rates and average tax rates. This approach is meant as a back-up in case the first aggregate approach would not give information in necessary subcategories.
3) household based microdata approach – using tax-benefit micro-simulation model ALAN by PRAXIS we calculate after-declaration tax contributions. The model relies on Estonian Household Budget Survey data and allows taking into account the impact of joint declarations and additional tax relief on pensions and eligible deductible expenditures. Unfortunately, due to small sample size the precision of these calculations is small.

3. Net social expenditures in Estonia

3.1. Withholding income tax

3.1.1. Pensions

According to the ESSPROS categories, there are disability pensions, anticipated old-age pensions, old-age pensions, and survivors' pensions in Estonia. There are no early retirement benefits due to reduced capacity to work, partial pensions or early retirement pensions for labour market reasons in Estonia.

Pensions are paid out monthly and pension allowance is applied to them. In case a pensioner does not work regularly, usually the basic allowance is also applied to the pension amount. Withholding income taxes from pensions can be received from the Estonian National Social Insurance Board (*Sotsiaalkindlustusamet*) and for some categories also from the Chancellery of the Parliament (Riigikogu) and the Chancellery of the President.

Unfortunately, the categories used in the accounting system of Social Insurance Board do not match exactly the categories of the ESSPROS statistics. Therefore it is not possible to separate the taxes on old-age pensions and anticipated old age pension.

Table 6. Withholding income tax from pensions in 2005 (thousand EEK)

Pension type (*in Estonian*)	Withholding income tax	ESSPROS category
Vanaduspension (*old-age pension*)	16703	Old-age pension (O1131111_NMT_Old_age_pension, scheme 2) and anticipated old age pension (O1131112_NMT_Anticiped_old_age_pension)
Vanaduspension ennetähtaegne (*early retirement pension*)	99	Anticipated old age pension (O1131112_NMT_Anticiped_old_age_pension)
Töövõimetuspension (*disability pension*)	638	Disability pension (D1121111_NMT_Disability_pension)
Toitjakaotuspension (*survivor's pension*)	167	Survivors' pension (V1141111_NMT_Survivors_pension)
Väljateenitud aastate pensioned (*superannuated pension)*	90	Anticipated old age pension (O1131112_NMT_Anticiped_old_age_pension)
Pensionilisad staaži alusel (*pension additions for tenure*)	1288	Old-age pension (O1131111_NMT_Old_age_pension, scheme 2)
Rahvapension kokku (*national pension*)	91	O1131115_NMT_Other_cash_periodic_benefits
Rahvapension toitjakaotuse alusel (*survivors*)	71	
Rahvapension töövõimetuse alusel (*disability*)	10	
Rahvapension (*old-age*)	9	
Eripensionid SKA aruandest kokku (*Special pensions from Social Insurance Board data*)	9632	Old-age pension (O1131111_NMT_Old_age_pension, scheme 2)
Vanaduspensioni avaliku teenistuse lisa (*public servants*)	1054	
Riigikontrolli pension (*auditor general*)	287	
Kohtuniku pensionisuurendus (*judges*)	1623	

Pension type (*in Estonian*)	Withholding income tax	ESSPROS category
Prokuröri pensionisuurendus (*prosecutors*)	436	
Õiguskantsleri pensionisuurendus (*chancellor of justice*)	66	
Politseiametniku pension (*police officers*)	5048	
Kaitseväe pension (*defence forces*)	1119	
Eripensionid riigieelarve täitmise aruandest (*Special pensions from state budget data*: *Presidents, members of parliament and government*)	5408	Old-age pension (O1131111_NMT_Old_age_pension, scheme 7)

Source: Estonian National Social Insurance Board (Sotsiaalkindlustusamet), received 8.02.2008, prepared by the financial department, contact Ella Viikmann; except the last row, which is from Chancellery of the Parliament (contact Aili Soomuste) and the Chancellery of the President (contact Mai Piirmets).

Note for the future: The Social Insurance Board estimates that it takes about a couple of hours to calculate the figures, partly by hand, from different data sources. To get the respective gross figures it would take considerably more time. We take the gross figures from the ESSPROS data.

Applying the withholding income taxes on the gross pension expenditures average tax rate is 0.33%. It is so low because in 2005 the majority of pensions were not effectively taxed because of the relatively large basic allowance and pension-specific allowance, which together were larger than pension size. Only special pensions were higher and therefore taxed.

Table 7. Average withholding income tax on pensions in 2005 (mln EEK)

	Gross benefits (from ESSPROS statistics)	Withholding income taxes	Net benefits	Average tax rate
Old-age pension and anticipated old age pension (*vanaduspension, eripensionid, edasilükatud vanaduspension, ennetähtaegne vanaduspension, väljateenitud aastate pension, soodustingimustel vanaduspension)*	9032.02	33.22	8998.80	0.37%
Special pensions from the scheme 7 (State Budget)	27.05	5.41	21.64	20.00%
Special pensions from the scheme 2 (Social Insurance Board)	101.87	9.63	92.24	9.45%
Early retirement pensions (*ennetähtaegne vanaduspension*)	243.54	0.10	243.44	0.04%
Superannuated pension (*väljateenitud aastate pension*)	67.63	0.09	67.54	0.13%
Other cash periodic benefits, i.e. national pension (*rahvapension)*	110.21	0.09	110.12	0.08%
Disability pension (*töövõimetuspension*)	1127.02	0.64	1126.38	0.06%
Survivors' pension (*toitjakaotuspension*)	147.56	0.17	147.39	0.11%
Total pensions	**10416.81**	**34.12**	**10382.10**	**0.33%**

Next we present the results on taxation of pensions using microdata analysis (Table 8). We use individual level data from Estonian National Social Insurance Board on all pensioners who have received pension in 2005. It does not include special pensions for presidents, members of the parliament and the government. It allows more detailed representation of the subcategories, but some additional assumptions are made, for example, that all people apply pension allowance to their pensions.

The overall results on taxation of old-age pensions are exactly the same – 0.37% (see Table 9 for comparison). Special pensions have higher average tax rates - about 12%, other categories have lower rates. Surprisingly, simulation results indicate no effective taxation in case of national pensions, disability pensions and survivor's pensions. Overall average tax rate on pensions is 0.31%, which is slightly lower than 0.33% according to administrative data. The comparison suggests that if really necessary to get estimates on tax rates for certain subgroups of old-age pension such microdata analysis may be one solution.

Table 8. Simulated withholding income tax on pensions in 2005 (mln EEK)

	Gross benefits (from registry micro data)	Withholding income taxes	Net benefits	Average tax rate
Old-age pension and anticipated old age pension (*vanaduspension, eripensionid, edasilükatud vanaduspension, ennetähtaegne vanaduspension, väljateenitud aastate pension, soodustingimustel vanaduspension,*	8844.49	32.29	8 812.64	0.37%
Old-age pensions	7066.85	27.95	7038.90	0.40%
Old-age pensions (*vanaduspension*)	6954.87	15.73	6939.14	0.23%
Deferred old-age pensions (*edasilükatud vanaduspension*)	9.38	0.12	9.25	1.32%
Special pensions (scheme 2 only) (*eripensionid*)	102.60	12.10	90.50	11.80%
Anticipated old-age pensions	1777.64	4.33	1773.31	0.24%
Early retirement pensions (*ennetähtaegne pension*)	241.70	0.05	241.65	0.02%
Pension under favourable conditions (*soodustingimustel pension*)	1481.09	4.20	1476.88	0.28%
Superannuated pension (*väljateenitud aastate pension*)	54.86	0.08	54.78	0.15%
Other cash periodic benefits *(rahvapension)*	101.02	0.00	101.02	0.00%
Disability pension (*töövõimetuspension*)	1 095.42	0.01	1 095.40	0.00%
Survivors' pension (*toitjakaotuspension*)	142.04	0.00	147.39	0.00%
Total pensions	**10182.96**	**31.87**	**10 151.09**	**0.31%**

Table 9. Comparison of withholding income tax rates based on administrative and simulated registry data in 2005

	Average tax rate based on actual withholding income tax	Average income tax rate simulated from registry microdata
Old-age pension and anticipated old age pension	**0.37%**	**0.37%**
Old-age pensions	*NA*	0.40%
Old-age pensions (*vanaduspension*)	*NA (imputed 0.21%)**	0.23%
Deferred old-age pensions (*edasilükatud vanaduspension*)	*NA (imputed 0.21%)**	1.32%
Special pensions (scheme 2 only) (*eripensionid*)	9.45%	11.80%
Anticipated old-age pensions	*NA*	0.24%
Early retirement pensions (*ennetähtaegne pension*)	0.04%	0.02%
Pension under favourable conditions (*soodustingimustel pension*)	*NA (imputed 0.21%)**	0.28%
Superannuated pension (*väljateenitud aastate pension*)	0.13%	0.15%
Other cash periodic benefits, i.e. national pension *(rahvapension)*	0.08%	0.00%
Disability pension (*töövõimetuspension*)	0.06%	0.00%
Survivors' pension (*toitjakaotuspension*)	0.11%	0.00%
Total pensions	**0.33%**	**0.31%**

** - this value is used in "Net questionnaire EE 2005" to calculate AITRs for different schemes.*

At the end we still decide to use tax rates based on actual withholding income tax. In order to fill in the Excel template file "Net questionnaire EE 2005_31122008.xls", we need to impute some of the missing values for subgroups of old-age pensions and anticipated old-age pensions. We set all the missing tax rates equal to each other (0.21%), so that the sum of income tax in subgroups matches total income tax.

3.1.2. Unemployment benefits

Unemployment insurance benefits are paid out monthly and therefore the basic allowance is taken into account when withholding income tax. Average income tax rate is therefore considerably lower than the marginal tax rate (24%). In 2005, the average tax rate is 9.1%.

On the other hand redundancy benefits and benefits in case of insolvency of the employer are a wage substitute, but without the possibility to take into account the basic allowance. Also the benefits are subject to contributions to the funded pension funds in case the recipients have joined the scheme. The average tax rate on these benefits is therefore combined effect of marginal income tax rate (24%) applied to gross benefits less contributions to the funded pension scheme.

Therefore we apply the following formula to derive the net benefits:

*Net benefits = (Gross benefits * (1 –AISCR)) * (1 – AITR)*

Unemployment assistant benefits (U1161111_NMT_Full_unemployment_benefit) and vocational training allowances (U1161114_NMT_Vocational_training_allowance) are not subject to income tax, therefore the gross benefits are equal to net benefits.

Table 10. Unemployment benefits before and after income tax 2003-2007 (mln EEK)

	(1)	(2)	(3)	(4)= (1)-(2)-(3)	(5)	(6)	(7) = (3)/[(1)-(2)]	(8)= (2)/(1)	(9) = (3)/(1)
	Gross benefit	Withhold II pillar contributions	Withhold income tax	Net benefits	Recipients	Social tax on benefits	**AITR** (income tax/ gross)	**AISCR**	**AITR'**
Unemployment insurance benefit (U1161111_NMT_Full_unemployment_benefit, Scheme 4)									
2007	90.44		8.79	81.64	8011	11.76	9.72%		
2006	87.24		7.57	79.67	8990	11.34	8.68%		
2005	107.77		9.79	97.98	12238	14.01	9.08%		
2004	127.44		14.38	113.06	14888	16.57	11.28%		
2003	69.57		9.54	60.03	8651	9.04	13.71%		
Redundancy benefits (U1161122_NMT_Redundancy_compensation)									
2007	29.24	0.34	6.36	22.54	2448	9.65	22.01%	1.16%	21.75%
2006	15.08	0.13	3.44	11.51	1593	4.98	23.01%	0.86%	22.81%
2005	19.88	0.16	4.73	14.99	2462	6.56	23.99%	0.80%	23.79%
2004	33.41	0.25	8.62	24.54	3983	11.03	26.00%	0.75%	25.80%
2003	28.57	0.14	7.39	21.04	3735	9.43	25.99%	0.49%	25.87%
Benefits in case of insolvency of employer (U1161123_NMT_Other_cash_lump_sum_benefits)									
2007	23.10	0.29	5.02	17.79	1158	7.62	22.01%	1.26%	21.73%
2006	14.94	0.19	3.39	11.36	1256	4.93	22.98%	1.27%	22.69%
2005	27.21	0.27	6.48	20.47	2203	8.98	24.05%	0.99%	23.81%
2004	34.12	0.32	8.79	25.02	2843	11.26	26.01%	0.94%	25.76%
2003	22.85	0.12	5.91	16.82	2045	7.54	26.00%	0.53%	25.86%

Source: Estonian Unemployment Insurance Fund, personal data exchange on 20.05.2008
Note: The data on withhold income tax from the unemployment insurance fund can be received about one month after the end of the reporting period.

As the Excel template file “Net questionnaire EE 2005_31122008.xls” sheet “Net” uses the formula *Net benefits = Gross benefits * (1 –AISCR – AITR)* to calculate net benefits, and not the formula from above, which is consistent with Estonian laws, we need to redefine AITR rate as the tax base is different. AITR consistent with the formula above is presented in the last column of table 10.

3.1.3. Health insurance and family benefits

Estonian Health Insurance Fund pays sick leave benefits, care allowances and maternity benefits. The latter one belongs to family benefits category in ESSPROS, but it is not possible to separate the withhold income tax between these three categories. The only option is to use the average tax rate for all subcategories. As the basic allowance is not taken into account when withholding income tax from health insurance benefits, the average tax rate is equal to the marginal tax rate (24%).

In case of parental benefits, basic allowance is taken into account and therefore average income tax is only 14%.

Table 11. Gross and net health insurance and family benefits 2005 (mln EEK)

	Gross benefit	Withhold income tax	Net benefits	Average tax rate
Paid sick leave (*Haigushüvitis ja töötrauma hüvitis kokku*) (S1111111_NMT_Paid_sick_leave)	840.54			
Care allowances (*Hooldushüvitis*) (S1111112_NMT_Other_cash_periodic_benefits)	127.11			
Maternity benefit (*Rasedus- ja sünnitushüvitis*) F1151111_NMT_Income_maintenance _in_the_event_of_childbirth, Scheme 1	297.41			
Total benefits paid by Health Insurance Fund	1265.06	302.60	962.46	23.92%
Parental benefits (*Vanemahüvitis*) (F1151111_NMT_Income_maintenance _in_the_event_of_childbirth, Scheme 2)	552.56	77.59	474.97	14.04%

Sources:
Withhold income tax on benefits paid out by Health Insurance Fund is received from the Health Insurance Fund on 4 June 2008, contact person Reet Jõesoo.
Withhold income tax on parental benefits is received from Estonian National Social Insurance Board on 14 October 2008, contact person Ella Viikmann..

3.1.4. Additional fiscal benefits

There are few explicit additional fiscal benefits (see Section 2.1 for a short overview). One possible candidate is increased basic allowance in case of children.

Increased basic allowance in case of children is applicable in case of three or more children in family in 2005. One resident parent (or guardian of a child or other person) who maintains three or more underage children may deduct additional basic allowance from his or her income in the period of taxation for each child of up to 17 years of age.

The allowance is applicable for the third and each subsequent child in the amount exceeding the taxable income of the child.

The allowance can be used from the year in which the child is born, a guardian is appointed for him/her or the maintenance obligation arises until the year in which the child attains 17 years of age (inclusive). This means that in the tax period, where the child gets 18, the additional allowance is not applicable. The eligibility condition does not set that the parent has to be married, however only one parent can make use of such allowance. (Or the parents can submit a joint declaration). The allowance has been extended to the second child in 2006 and to the first child in 2008. Note that the allowance applies to whatever income source.

We can estimate the value of the benefits by multiplying the applicable tax allowances with the income tax rate. By applicable tax allowance we mean that there is enough income to apply this allowance. In 2004 and 2005 all declared allowances could be applied, but in 2006, when the allowance was extend to the second child, not all allowances could be used.

Table 12. Additional tax allowance in case of children 2004-2006 (mln EEK)

	2004	2005	2006
Declared tax allowances in total	271	341	1791
Applicable tax allowances (i.e. there is enough income to make use of them)	271	341	1465
Effective benefit to families with children (tax rate times the applicable tax allowance)	70	82	337

Source: Estonian Tax and Customs Board, own calculations

Note that when calculating net benefits using final income tax (as in the next section), the tax allowances are already taken into account and should not be added (to avoid double counting). But when using withheld income tax these allowances could be added to total social expenditures.

3.2. After-declaration income tax using a microsimulation model

Next we present the results from microsimulation model ALAN. It is a static tax-benefit model that has been used in Estonia to calculate the impact of various tax-benefit reforms on redistribution, labour supply incentives and budget. The model uses Estonian Household Budget Survey data from the period 2000-2007. From the net income in the data, the model simulates gross income and all direct taxes (income tax, social contributions). Given the estimates of the gross benefits and direct taxes of all the individuals in the data, the average itemised tax rate can be calculated.

For the most recent description of the model see Võrk, Paulus, Poltimäe (2008)[3]. As the ALAN model is almost identical to the Estonian module in the European tax-benefit model EUROMOD one could also use the description of the module in EUROMOD, see Lüpsik, Paulus, Võrk (2008).[4] The latter also includes an analysis of the model quality (data coverage, validation of simulations, etc).

The structure of the income in the HBS survey determines which taxable benefits can be analysed (see Table 13). There are three types of pensions recorded in the HBS data: old-age pensions, survivor's pensions and disability pensions. In addition, we can analyse parental benefits, unemployment insurance benefits, sick pay and maternity benefit (both are health insurance benefits). In 2005, there are about 3400 households in the simulation model. For some benefits the sample is unfortunately too small, for example, in case of survivor's pensions there are less than 100 observations.

The main advantage of using the microsimulation model is that we can use after-declaration income tax concept, which is more appropriate for our purposes. The model allows taking into account the impact of other taxable income, joint declarations, additional tax reliefs and eligible deductible expenditures. On the other hand, the model relies on monthly income and expenditures in the data. It means that the role of temporary income sources may be larger.

Table 13. List of social benefits in the Estonian Household Budget Survey and microsimulation model ALAN

Name	**In Estonian**	**Taxable**
Sickness benefit	Haigusraha	Yes
Maternity benefit	Raseduspuhkuse raha	Yes
Child care benefit	Lapse ülalpidamistasu (lapsehooldustasu)	No
Child benefit (incl. school supprt)	Lapsetoetus, koolitoetus	No
Lone parent benefit	Üksikvanema lapse toetus	No
Parental benefit	Vanemapalk	Yes
Unemployment assistance benefit (includes unemployment insurance benefit in 2003-2006)	Töötu abiraha (töötuskindlustushüvitis)	UI part
Unemployment training benefit	Töötu ümberõppe stipendium	No
Unemployment insurance benefit (since 2007)	Töötuskindlustushüvitis	Yes
Old age pension	Vanaduspension	Yes
Invalidity pension	Invaliidsuspension	Yes
Survivors pension	Toitjakaotuspension	Yes
Subsistence benefits (incl. housing benefit)	Toimetulekutoetus (s.h. eluasemetoetus)	No
Other support from central or local government	Muu riikliku või kohaliku omavalitsuse toetus	No
Cash support from a company, church or charity	Rah. sotsiaalabi ettevõttelt, kirikult või heategevusorg-lt	No
Foreign pension	Välisriigi pension	Assumed that

[3] Võrk, A., Paulus, A., Poltimäe, H. (2008) Maksupoliitika mõju leibkondade maksukoormuse jaotusele. PRAXISe Toimetised 42/2008
[4] Lüpsik, S., Paulus, A., Võrk, A. (2008) Estonia 2005 Tax-Benefit System. EUROMOD Country Report, University of Essex. http://www.iser.essex.ac.uk/msu/emod/documentation/countries/estonia/CR_EE2005_v1.pdf

Foreign child benefit	Välisriigi lapsetoetused	taxed
Foreign maternity pay	Välisriigi vanemapalk	abroad

We use two approaches to calculate AITR. In the first approach we assume that uniform tax rate is applied to all taxable income items in a household and we calculate it as total income tax divided by total gross taxable income.

Second, we allow pensions to have different tax rate as there is a pension-specific pension allowance (3000 EEK per month), which cannot be used for other purposes. We calculate the remaining part of taxable pensions after subtracting pension-specific tax allowance.

$$Taxable\ pensions_i = Gross\ pensions - pensionspecific\ tax\ allowance$$

Then the income tax paid by the individual is distributed proportionally between the pensions and other taxable income according to the following formula (similar to the first approach):

$$IncomeTax\ pensions_{i,pension} =$$

$$= Total\ income\ tax_i \times \frac{Taxable\ pensions_i}{(Taxable\ pensions_i + other\ taxable\ income)}$$

AITR is then calculated as the income tax on pensions divided by the sum of gross pensions.

$$AITR_{pension,tyoe\ j} = \frac{\sum_{i \in j} income\ tax\ pensions_i}{\sum_{i \in j} Gross\ pensions_i}$$

Similarly we calculate AITR on other benefits. The results for 2005 and 2006 are presented below.

As expected the results show that applying pension specific allowance only to pensions reduces AITR on pensions, and marginally increases AITR on other benefits. Note that the tax rate on survivors' pensions seems to be unrealistically high in 2005, compared to other pensions. This is most likely due to small sample size (only 86 observations in the 2005 sample) and a few large values in the data.

Table 14. Average itemised tax rates in 2005-2006, based on microsimulation model ALAN

	2005		2006	
	Uniform income tax rate across income types	Pension-specific income tax rate allowed	Uniform income tax rate across income types	Pension-specific income tax rate allowed
Pensions total	1.80%	0.17%	1.69%	0.13%
Old-age pensions	1.50%	0.08%	1.53%	0.13%

Disability pensions	2.54%	0.07%	2.59%	0.11%
Survivor's pensions	*9.02%	*4.52%	2.22%	0.02%
Parental benefits	15.49%	15.54%	11.62%	11.63%
Sick pay (health insurance benefits)	14.38%	14.59%	12.82%	13.24%
Maternity benefit (health insurance benefits)	17.75%	17.75%	19.93%	19.93%
Unemployment insurance benefits	3.02%	3.90%	7.82%	8.18%

*Notes: * - the number is based on only 86 observations in the Household Budget Survey data in 2005*

3.3. Comparison of results

Next we compare the results from three different approaches (see Table 15). The results are expected to be somewhat different, because microsimulation model uses after-declaration income tax concept and survey data with monthly income that are annualized. The other two approaches, on the other hand, use withholding income tax concept and annual register data. The latter two are precise, but most likely overestimate actual final income tax paid on benefits. The former is more correct in terms of applied tax rules, but small sample size and monthly data make it less useful for regular statistical purposes.

When we compare the results of different approaches, then we see that in case of pensions the overall AITR values are close to each other in absolute terms, as the overall taxation of pensions is very small. We also see that in general the results from microsimulation model that use income tax after declaration are lower as expected, because we apply additional deductions and allowances to gross income.

Table 15. Average itemised tax rates in 2005-2006, based on microsimulation analysis

	After-declaration income tax using micro-simulation model ALAN	Withholding income tax from institutions	Simulated withholding income tax
Pensions total	0.17%	0.33%	0.31%
Old-age pensions	0.08%	0.37%	0.37%
Disability pensions	0.07%	0.06%	0.00%
Survivor's pensions	4.52%	0.11%	0.00%
Parental benefits	15.54%	14.04%	
Sick pay (health insurance benefits)	14.59%	23.92%	

Maternity benefit (health insurance benefits)	17.75%	23.92%
Unemployment insurance benefits	3.39%	9.08%

Note: National pension (rahvapension) is not a separate category in ALAN.

4. Net social expenditures and conclusions on feasibility

The pilot study has illustrated different approaches to calculate net benefits in Estonia. At the present state, there are two possibilities. First, it is possible to use withholding income tax concept and ask tax information from respective institutions. This will most likely overestimate the real tax burden (after the declaration is submitted), especially for those benefits where basic allowance is not taken into account (sickness benefits). For pensions, the results should be close to real tax burden as pension allowance and basic allowance make the effective tax rate on pensions very small. The comparison suggests that if really necessary to get estimates on tax rates for certain subgroups of old-age pension also simulation based on register microdata may be one solution.

A possibility is also to use a microsimulation model based on the survey data, which can take into account various additional aspects of the tax system, such as deductions, additional allowances and joint declarations. Unfortunately, the small sample size does not allow very precise results. The microsimulation model used in this study, ALAN, uses Estonian Household Budget Survey (EHBS) data, which has monthly data on income. In the future, alternatively Estonian Social Survey (the national version of the EU-SILC) could be used. It is foreseen that EUROMOD, which currently also uses EHBS data for Estonia will switch to EU-SILC during next few years. Also Estonian national model will be accommodated with SILC data and hopefully this yields more reliable results.

The most promising approach would be to use final income tax liabilities from the registry data. In principle this could be done using individual level data from the Estonian Tax and Customs Board and combining them with data from social insurance funds (Health Insurance Fund, Unemployment Insurance Fund, Social Insurance Board, etc.). That would allow calculating for each individual the gross benefits and final income tax liabilities resulting average itemised tax rates (AITR). Unfortunately at the moment, neither the Statistics Estonia nor any other institutions has the access to this combined data source. Hopefully this will change in 2009 or 2010, when the Statistics Estonia acquires rights to use merged database and also has necessary infrastructure for this kind of exercise. Then most precise measurements of AITR can be done.

Until then we propose that we use withhold income tax approach to estimate net benefits in Estonia and add additional income tax allowance that depend on the number of children as a fiscal benefit. The pilot study showed that it is feasible, it is relatively cheap, it does not take more than one work-day for each institution, once the system is implemented. For pensions the results should be close to actual values, for other irregular benefits we know that it will overestimate the actual tax burden.

Using the proposed approach we find that net social expenditures for 2005 are about 354 million EEK less than gross benefits or 1.63% lower (Table 16). Of this 436 million EEK is a reduction of benefits due to income tax and social insurance contributions, and 82 million EEK is a increase due to additional income tax allowance in case of children.

Table 16. Net social expenditures in Estonia in 2005 (mln EEK)

	Gross benefits	Net benefits	Change in benefits
Pensions total	10416.81	10382.10	-34.71
Old-age pension and anticipated old age pension *(O1131111_NMT_Old_age_pension, O1131112_NMT_Anticiped_old_age_pension)*	9032.02	8998.80	-33.22
Other cash periodic benefits *(O1131115_NMT_Other_cash_periodic_benefits)*	110.21	110.12	-0.09
Disability pension *(D1121111_NMT_Disability_pension)*	1127.02	1126.38	-0.64
Survivors' pension *(V1141111_NMT_Survivors_pension)*	147.56	147.39	-0.17
Paid sick leave *(S1111111_NMT_Paid_sick_leave)*	840.54	639.48	-201.06
Care allowances *(S1111112_NMT_Other_cash_periodic_benefits)*	127.11	96.71	-30.40
Maternity benefit *(F1151111_NMT_Income_maintenance _in_the_event_of_childbirth, Scheme 1)*	297.41	226.27	-71.14
Parental benefits *(F1151111_NMT_Income_maintenance _in_the_event_of_childbirth, Scheme 2)*	552.56	474.97	-77.59
Unemployment insurance benefit *(U1161111_NMT_Full_unemployment_benefit, Scheme 4)*	107.77	97.98	-9.79
Redundancy benefits *(U1161122_NMT_Redundancy_compensation)*	19.88	14.99	-4.89
Benefits in case of insolvency of employer *(U1161123_NMT_Other_cash_lump_sum_benefits)*	27.21	20.47	-6.74
Fiscal benefits			
Increased basic income tax allowance in case of children		81.84	81.84
Social protection benefits total	**21645.65**	**21291.76**	**-353.89**

Whether the difference between gross and net expenditures is growing during the following years (2006 and onwards), is not absolutely clear. On the one hand, pensions have increased rapidly, but pension-specific income tax allowance has not changed and is still 3000 EEK per month. Also, the share of taxable benefits, such as parental benefits or unemployment insurance benefits, in overall expenditures has risen in recent years. On the other hand, income tax rate has declined and overall income tax basic allowance has increased, also tax allowance in case of children has expanded. We would expect that tax burden on pensions will increase, but taxation of other benefits will decrease.