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**ESTONIA AND FINLAND
- A RETROSPECTIVE
SOCIOECONOMIC COMPARISON**

Edited by

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ABSTRACT: This book consists of articles written by Finnish and Estonian researchers together. The purpose is to compare the economic and social development of the centrally planned Estonia with that of a market economy, Finland. First a description of the land and natural resources in Estonia and Finland is given. The central features of the demographical development are compared. The structure of the economy by the main branches as well as rapid industrialization is described. The structure of consumption was similar before the war, but the quality and availability of goods in Estonia thereafter makes comparisons difficult. The different economic systems have led to different social security systems, which are described. The standard of living, which was quite similar before the Second World War, has risen faster in Finland than in Estonia though the differences of income are not relatively large. In the post-war era the number of dwellings and amount of equipment per capita do not differ much, but differences exist in the quality of the housing stock. The working time of Estonian women was longer at the end of the 1980s. Comparisons of the time-use patterns are made using diurnal budgets.

KEY WORDS: Estonia and Finland, economic development, economic structure, social development.

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TIIVISTELMÄ: Kirja koostuu virolaisten ja suomalaisten tutkijoiden yhdessä kirjoittamista artikkeleista, joissa vertaillaan Suomen ja Viron taloudellista ja sosiaalista kehitystä toisen maailmansodan jälkeisenä aikana. Aluksi kuvaillaan kummankin maan alueellisia piirteitä ja luonnonvaroja. Seuraavaksi vertaillaan maiden väestönkehitystä ja esitellään siinä olevia eroja. Tuotannollista sektoria tarkastellaan toimialoittain ja myös ulkomaankaupan rakenteita esitellään. Kulutuksen rakennetta on voitu vertailla erilaisia hyödykeryhmittelyitä käyttämällä. Monenlaiset tietojen luotettavuutteen liittyvät ongelmat, muunmuassa hyödykkeiden laatuksymykset ja saatavuus vaikeuttavat vertailua. Sosiaaliturvajärjestelmiä ja julkisia palveluja verrataan lähinnä koulutuksen ja terveydenhoidon osalta. Vertailtaessa tuloja todetaan, että tuloerot ovat samaa luokkaa kummassakin maassa, mutta ostovoimatarkastelujen perusteella elintaso Suomessa on huomattavasti korkeampi kuin Virossa. Asuntoja Virossa on suhteellisesti yhtä paljon kuin Suomessa, mutta niiden varustelutaso on heikompi. Virossa erityisesti naisten työaika on pitempi kuin Suomessa.

ASIASANAT: Viro ja Suomi, taloudellinen kehitys, talouden rakenne, sosiaalinen kehitys.

YHTEENVETO

Tämän kirja antaa kuvauksen Suomen ja Viron elintasoista vertailemalla niitä erilaisten indikaattoreiden avulla. Tulokset perustuvat useampivuotiseen tutkimusprojektiin, jonka puitteissa on pyritty laatimaan vertailukelpoisia tilastoja. Tuloksia on aiemmin esitelty useissa seminaareissa ja julkaistu tutkimukseen osallistuneiden laitosten julkaisusarjoissa.

Viron tiedeakatemian taloustieteen laitos (TAMI) on vastannut virolaisesta tutkimuspanoksesta. Suomalaiset osapuolet ovat olleet Elinkeinoelämän Tutkimuslaitos (ETLA), Helsingin yliopisto sekä Valtion taloudellinen tutkimuskeskus (VATT). Tutkimusta ja kirjan julkaisua varten perustettiin erillinen toimitusneuvosto. Eri aiheita tutkivat työryhmät, joissa oli sekä virolaisia että suomalaisia tutkijoita, ja jotka suorittivat yhteistyötä mm. tekemällä toistensa laitoksiin tutkijavierailuja.

Elintaso Suomessa ja Virossa oli jokseenkin samalla tasolla ennen sotia. Viron joutuminen osaksi keskusjohtoista talousjärjestelmää aiheutti suuria muutoksia maan sosioekonomiseen kehitykseen kun taas Suomi pystyi palautumaan suhteellisen nopeasti sotataloudesta sitä edeltäneeseen järjestelmään.

Erot taloudellisissa instituutioissa maiden välillä antavat aiheita useille mielenkiintoisille kysymyksille: Kuinka talouksien rakenteet ovat muuttuneet? Onko taloudellisessa kehityksessä havaittavissa merkittäviä eroja ja missä määrin nämä on selitettävissä erilaisilla talouden instituutioilla? Millaiset ovat tuloerot ja taloudellisen hyvinvoinnin jakautuminen?

Näitä kysymyksiä tarkastellaan kirjan eri luvuissa. Painopiste on sotien jälkeisessä ajassa, kuitenkin niin, ettei 90-luvun alkua kummassakaan maassa käsitellä huolimatta siitä, että se on ollut molemmissa maissa myrskyisä.

Tutkimuksen aikana tilastoaineistojen vertailtavuus osoittautui ongelmaksi ja tämän johdosta erityisesti virolaiset tutkijat ovat suorittaneet mittavaa muokkaustyötä. Vertailuihin liittyviä ongelmia esitellään tarkemmin erikseen kussakin luvussa.

Johdantoluvun jälkeen esitellään lyhyesti Viron ja Suomen alueet vesistöineen ja luonnonvaroineen. Metsien rooli on keskeinen kummassakin maassa ja Viron öljyluskekenttä on maailman suurimpia. Noin 40 prosenttia Viron järvistä on

huonossa kunnossa, kun taas 80 prosenttia Suomen järvistä on hyvässä tai erittäin hyvässä kunnossa.

Kolmannessa luvussa vertaillaan väestönkehitystä. Sodan jälkeen väkiluvun kasvu perustui Suomessa paljolti lapsikuolleisuuden alenemiseen, kun taas Virossa keskeisenä tekijänä oli maahanmuutto.

Luvussa neljä vertaillaan laajasti keskeisiä talouden toimialoja. Tämä luku oli erityisen vaikea johtuen pääasiassa erilaisista kansantalouden tilinpidon järjestelmistä. On ilmeistä, että kummankin kansantalouden suhteellisen samanlaiset kasvuluvut eivät ole sopusoinnussa niissä havaittavien elintasoerojen kanssa. Osittain johtopäätöksiä vaikeuttavat määrittelykysymykset sekä mittausvirheet.

Viidennessä luvussa on tarkasteltu yksityisen kulutuksen rakennetta ja kehitystä. Näyttäisi siltä, että se oli jokseenkin samanlainen kummassakin maassa juuri ennen sotia. Sotien jälkeen yhteisenä piirteenä on ollut elintarvikkeiden osuuden pieneneminen ja kestokulutushyödykkeiden osuuden kasvu kotitalouksien kulutusmenoista. Laadulliset kysymykset ja saatavuus vaikeuttavat tässäkin vertailuja.

Erilainen talousjärjestelmä on johtanut erilaisiin sosiaaliturvajärjestelmiin. Kuudennessa luvussa vertaillaan näitä järjestelmiä sekä julkisten palvelujen rakennetta ja tavoitteita.

Seitsemännessä luvussa vertaillaan tuloja ja niiden rakennetta käyttämällä eri vaihtokursseja ja ostovoimatarkastelua. Tuloerot ovat suhteellisen pieniä kummassakin maassa. Elintaso, joka oli likimain samalla tasolla enne sotia, on noussut huomattavasti nopeammin Suomessa.

Kahdeksannen luvun mukaan asuinolot olivat ennen sotia melko samanlaiset kummassakin maassa. Tämän jälkeen asuntojen suhteellisissa määrissä ei ole tapahtunut suuria muutoksia. Asuntojen laadullisissa tekijöissä, kuten varustelutalouksessa, erot ovat kuitenkin merkittävät.

Viimeisessä kappaleessa on vertailtu työaikoja ja ajankäyttöä kummassakin maassa. Johtopäätös on, että työaikaerot ennen sotia eivät olleet suuria. Tultaessa 80-luvun lopulle oli työaika jonkin verran pitempi Virossa kuin Suomessa. Tämä koskee erityisesti Virolaisia naisia.

ESTONIA AND FINLAND - A RETROSPECTIVE SOCIOECONOMIC COMPARISON

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1. INTRODUCTION

Estonia and Finland are two neighbouring countries, which before the Second World War had close relations. One reason for the traditionally close ties is that in both countries the major language belongs to the Finno-Ugric language group. Of course, the short distance over the Gulf of Finland has historically been a major reason for contacts.

After Estonia's annexation by the Soviet Union in 1940, the short geological distance of roughly 80 kilometers between the capitals of the Estonia and Finland, Tallinn and Helsinki, did not correspond at all to the political distance between the countries. The post-war period brought radical changes to the Estonian economy. Incorporation into the Soviet central planning system led to new allocation of labour and capital, to state ownership and to collectivization of agriculture. These and many related institutional changes had a great effect on the socio-economic development of Estonia and on the standard of living of the Estonian people. On the other hand, Finland returned from the war economy to pre-war institutions relatively quickly.

Since the late 1980's the contacts have again grown and many kinds of comparisons between the countries have received increasing attention among researchers as well as among the general public on both sides of the Gulf of Finland. In this study we try to present a systematic comparison of indicators related to the standard of living in these two countries.

It is a common, if not a very well documented idea, that the standards of living in Estonia and Finland were roughly on the same level in the inter-war period. The very divergent institutional development since then raises many interesting questions: How have the structures of these economies changed? Have there been considerable differences in the performance of the economies, and to which extent these can be explained by the institutional differences? How is income distributed in these societies? Before answering the more ambitious questions related to the effects of institutions on the economic well-being of these nations a lot of work on simple facts is needed.

The main purpose of the project that has led to this study was to provide basic and sometimes also very unreliable data for a comparison of the standards of living in Finland and in Estonia at the end of the socialist experiment. In some chapters the authors also describe the general economic

performance of the two economies in the post-war period and point to the role of institutional factors. However, the recent reforms related to the transformation towards a market economy are not discussed. Nor do we discuss the economic developments of the beginning of the 1990s, which in both countries has been stormy.

The Institute of Economics of the Estonian Academy of Sciences (TAMU) has been responsible for the Estonian part of the study. The Finnish part of the study has been carried out at the Research Institute of the Finnish Economy (ETLA), Government Institute for Economic Research (VATT) and the University of Helsinki. To carry out the comparisons in various fields working groups consisting of members from both countries were formed. Researchers of the same subject have visited each other for periods ranging from one week to several months.

The chapters of the book have been authored as indicated. Preliminary reports of the papers presented in this book were discussed in four seminars. The responsibility for individual papers, of course, rests with the authors. The first seminar was held in Tallinn during May 23-24, 1991. The second seminar was arranged in Helsinki at the Research Institute of the Finnish Economy during October 9-10, 1991 and the third in Tallinn during February 3-4, 1992. The fourth working seminar was held during June 17-18, 1992 in Helsinki.

In the following list of participants in the seminars the numbers after the persons' names refer to the seminars attended. The names of the Estonians are indicated in bold letters.

Heldi Aarma	1	2	3	
Elmar Aedna	1	2	3	
Pasi Ahde	1	2	3	4
Ülo Ennuste			3	
Robert Hagfors	1	2	3	4
Eike Hindov		2		
Maija-Liisa Järviö		2	3	4
Tiit Kallaste			3	
Alfred Kasepalu	1			
Viive Katus	1		3	
Johannes Kaubi	1		3	
Kaarel Kilvits	1	2		
Urpo Kivikari				4
Kalevi Koljonen			3	4
Toivo Kuus	1			
Seija Lainela		2		4
Jüri Laving		2		
Heikki Loikkanen	1	2		4
Juhana Lounela				4
Seppo Leppänen		2		
Olev Lugus	1		3	4
Reet Maldre	1			4
Peeter Marksoo	1		3	
Timo Myllyntaus	1	2		
Hannes Nilgo	1			
Matti Pohjola	1	2		
Teet Rajasalu	1	2	3	4
Antti Ripatti	1	2		
Antti Romppanen		2	3	4
Peter Stenkula (NEF)		2		
Risto Sullström	1	2	3	4
Pear Tang	1		3	
Arno Valma	1	2	3	
Pentti Vartia	1	2	3	4
Urve Venesaar	1	2	3	4
Ellen Veski	1		3	
Mare Viies	1		3	4
Ene Välimaa	1			4
Lars-Erik Öller		2		

During the project the following preliminary research reports have been published in the discussion paper series of the participating institutes:

Aarma, H., Laakso, S. and Loikkanen, H. A. (1993), Housing in Estonia and Finland, Government Institute for Economic Research, Discussion Papers N:o 48, Helsinki.

Aedna, E. and Romppanen, A. (1992), Hours of Work and Time - use of Employed People in Estonia and Finland, Government Institute for Economic Research, Discussion Papers N:o 25, Helsinki.

Ahde, P. and Rajasalu, T. (editors), (1992), On Economic Structure in Estonia and Finland before the 1990's, The Research Institute of the Finnish Economy, Discussion Papers N:o 422, Helsinki.

Hagfors, R. and Kuus, T. (1991), The Structure and Distribution of Income in Estonia and Finland. The Research Institute of the Finnish Economy, Discussion papers N:o 365, Helsinki.

Hindov, E. (1991), On Population in Estonia and Finland. The Research Institute of the Finnish Economy. Discussion papers No. 737, Helsinki.

Järviö, M.-L., Sullström, R. and Venesaar, U. (editors), (1992), Public Services, Government Institute for Economic Research, Discussion Papers N:o 38, Helsinki.

To coordinate the work an informal editorial board was established. Members of the board have been Heikki Loikkanen, VATT, Teet Rajasalu, TAMI, Risto Sullström, University of Helsinki, Urve Venesaar, TAMI, Olev Lugas, TAMI and Pentti Vartia, ETLA. The two last mentioned were appointed co-chairmen of the editorial board and editors of this book. A great part of practical editorial work has been carried out by two editorial secretaries Toivo Kuus, TAMI and Robert Hagfors, ETLA.

As expected, data problems proved to be a major difficulty in the study. Some fairly comparable data could nevertheless be found concerning, for example, consumption. The study has been able to utilize the recent additions to the statistical data of Estonia. Various problems related to reliability and comparability of data are discussed in individual chapters.

After this introduction the papers have been organized as follows. In chapter two, Peeter Marksoo and Alfred Kasepalu give a short description of the land and natural resources both in Estonia and in Finland. The central role of forests in the two economies and the mineral resources are discussed. The Estonian oil-shale field is one of the largest in the world. In the final part of the chapter the central problems regarding environmental protection and

pollution, e.g., acidification, sulphur emissions and the treatment of the sewage water are considered. In Estonia about 40 per cent of lakes are in poor condition, while in Finland some 80 per cent of lakes are in good or very good condition.

The third chapter by Eike Hindov compares demographical developments of the two countries since the inter-war period. The issue is approached using demographic tools like birth rate, fertility, mortality, life expectancy migration, etc. Population growth in Finland in the post-war period is accounted especially to the fall of infant mortality, while in Estonia the main effect came from the immigration of non-Estonians.

Pasi Ahde and Teet Rajasalu have edited chapter four "On the Economic Structure of Estonia and Finland". On the Estonian side the group of authors responsible for this chapter included Johannes Kaubi, Kaarel Kilvits, Ellen Veski, Urve Venesaar, Jüri Laving and Kalev Kukk. The structure of the economy is described by shares in total production of central branches like agriculture, industry, construction and services. Also the foreign trade structures are compared. Economic development, including the rapid industrialization of the two economies since the pre-war period until the end of the 1980s is discussed. An interesting result in this chapter is that the post-war development of production is clearly inconsistent with the differences in the living standards at the end of the 1980's. Different production structures and measurement errors are part of the explanation. Because of different national accounting systems, data problems in this chapter were particularly difficult.

In the fifth chapter private consumption is compared. This is done by Kalevi Koljonen, Risto Sullström, Urve Venesaar and Mare Viies. The structure of consumption and the different categories of consumption in Estonia and Finland is described. Also a characterization of households is made. Consumption of some selected goods and services, like certain foodstuffs and durables are studied. The structure of the consumption was rather similar in both countries just before the war. The common feature since then has been a decrease in the share of food and an increase in the share of durables in consumption expenditures. The questions concerning the quality and availability of some goods in Estonia makes the comparisons difficult.

Chapter six on "Public Services" has been written by Maija-Liisa Järviö and Urve Venesaar. The group of authors responsible for this chapter included Viive Katus, Pear Tang, Tiia Püss and Ene Välismaa from the Estonian side. It gives a detailed description of the Estonian and Finnish social security systems and their development. After some general observations concerning the public expenditure, a more disaggregated comparison is presented on social security, health care, education and some cultural issues. Here again one can find many similarities in the inter-war period. The period under different economic systems led to differences also in the structure and the aims of the public services. The central features of the Estonian and Finnish social security systems are described.

In chapter seven Robert Hagfors and Toivo Kuus compare the structure and income between the two countries. Comparisons are made using different exchange rates and the purchasing power of wages. Also income formation and the structure of taxation in the different economic systems is discussed. It was possible to utilize household specific microlevel data to calculate income inequality measures in both countries. There appears to be only relatively small differences in the income distribution in the countries. The standard of living was more or less equal before the Second World War, but it has subsequently risen much faster in Finland than in Estonia.

Chapter eight by Heldi Aarma, Seppo Laakso and Heikki A. Loikkanen characterizes the determinants of the housing demand and institutions of the housing market. The housing stock in both countries is described. Also some qualitative aspects of the housing stock are given. In the description of the institutional differences the pricing and support mechanisms are discussed. Again the conclusion follows that the housing conditions before the war were rather similar in Estonia and Finland. Measures related to numbers of dwellings and household equipment do not differ markedly during the post war era. A great difference exists, however, in quality of the housing stock.

In the last chapter by Elmar Aedna and Antti Romppanen, the working time and time-use patterns in both countries are compared. Issues like the development of the normal weekly hours in general and by industries are described. Also part-time work, overtime work and annual leaves are compared. The comparisons are also made using so-called diurnal budgets during working days and during holidays. Again the conclusion is that the work time differences between these two countries were small before the

Second World War. The working time was somewhat longer in Estonia at the end of the 1980s. This concerns especially Estonian women. The authors give an explanation for these differences.

We hope that this fact-finding project can contribute to further comparative analysis of Estonia and Finland and more generally to research on effects of social institutions on economic performance. Our preliminary results show that the role of institutions is extremely important: One clear reason for the fact that living standards in Estonia are today lower than in Finland is the institutional constraints set by the Soviet system.

This book would not have been possible without the help and co-operation of a great many people. In the course of the work for the book the contacts both on the institutional and personal level between Estonia and Finland have grown remarkably. This has all happened at the time when Estonia moved from the Soviet period to the new era. It has been a privilege to be a close observer of this development.

The work has naturally demanded several contacts and technical iterations until the research reports have reached their final form. Thanks for this are due to the staff of the Research Institute of the Finnish Economy, the Institute of Economics of the Estonian Academy of Sciences and the Government Institute for Economic Research in Finland.

The figures have been edited by R. Maldre in TAMI and Juha Puonti and Arja Virtanen in ETLA. Some of the text has been translated by M. Kirsspuu in TAMI. The language of the final drafts was checked and improved by John Rogers in ETLA. The word processing was performed skillfully by Tuula Ratapalo in ETLA.

We are grateful to the Nordic Economic Research Council and Estonian Science Foundation, which have financially supported the project.

October 1993

Helsinki and Tallinn

Pentti Vartia

Olev Lugus

2. AREA AND NATURAL RESOURCES

by Peeter Marksoo and Alfred Kasepalu

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2.1. The territory and cultivable land of Estonia

Before World War II the Republic of Estonia comprised an area of 47,549 square kilometers. In accordance with decrees by the Presidium of the Supreme Soviet of the USSR the borders of the Republic of Estonia were unilaterally changed on August 23, 1944 in the County of Petseri, and on November 24, 1944 in the County of Viru. The Presidium of the Estonian Supreme Soviet had to acquiesce in this matter in his decree of January 18, 1945.¹⁾ After giving the territory behind the Narva River over to the Leningrad Oblast of the Russian SFSR and ceding most of the County of Petseri to the district of Pskov, the area of Estonia shrank to 45,223 km² in 1945. Since 1959, after minor modification of the borders, the area of Estonia has been 45,215 km², representing a decrease of 4,9 per cent compared to the pre-war territory. (see Table 1).

The area of Estonia included (as of 1978) 4132 km² of islands (9.2%) and 2760 km² of inland waters (6.1%).²⁾ The Soviet Union has not yet recognized the area of 45,215 km² of the Republic of Estonia. In the atlases published in the Soviet Union the area of Estonia is said to be 45,100 km².

In 1939 agricultural land made up 58.3% of the territory of the Republic of Estonia, cultivable land 24.4% (arable land 22.9%) and forest land 19.2%. Some 92-93 per cent of forest land was covered with forests.

During the war and thereafter, especially after the collectivization, essential changes have taken place in cultivable land. A good deal of arable and agricultural land was used for building settlements and production units, allotted for non-agricultural needs (for founding industries, mines, roads) or allowed to grow over with forests. By 1989 the area of agricultural land had decreased by 47% as compared with the pre-war area. When in 1939 within the present borders of the Republic of Estonia there were 1.112 million hectares of cultivable land, then in 1989 the corresponding figure was only 1.145 million hectares, exceeding the area of pre-war cultivable land only by 2.9%.

- 1) Eesti NSV Teataja nr. 5, Veebruar 10, 1945, Art. 58, 59.
- 2) Nõukogude Eesti, Entsüklopeediline teatmeteos, Tallinn, 1978, p. 5.
- 3) Atlas SSSR, Moscow 1984, pp. 81-82; Atlas geographicheskij spravochny. Moscow, 1986, p. 15.

During the last 30 years the agricultural land has decreased by 27.8%, while forestlands have increased by 31.7%. The area under roads, streets, buildings and yards has also increased, 44.1 % (see Table 1).

In 1989 the agricultural land made up 32.5% and forestlands 42.6% of the territory of the Republic of Estonia (see Figure 1). At the same time 95% of the forest land was covered with forests, which is somewhat more as compared with the pre-war years. The main land users are agricultural and forestry enterprises who used 56.2% and 34.7% respectively of the Estonian territory in 1989.

Cultivable land per inhabitant has decreased from 1.02 hectares in 1939 to 0.73 hectares in 1989 (28.4%) and arable land from 0.96 hectares to 0.62 hectares, i.e. by more than a third (Table 2).

Table 1 . Total area and cultivable land of Estonia, in sq.km.

	1929	1939	1960	1970	1980	1989	1989 as compared with 1960, %
Total area	47549 ¹	47549 ²	45215	45215	45215	45215	0
Agricultural land	26519	27745 ²	20376	16432	15001	14710	-27.8
among this							
cultivable land ⁴	...	11594	9852	10624	11339	11447	+16.2
arable land	10316	10901	8735	9151	9836	9759	+11.7
Forests and other wooded land	9460	9120 ³	14616	17220	19019	19244	+31.7
Built up and related land (excl. farm buildings)	...	...	1003 ⁶	1223	1326	1445	+44.1
Bodies of water	2321	2321	2539 ⁶	2804	2755	2829	+11.4
Other areas	9249	8363	6681 ⁶	7536	7114	6987	+3.6

- 1 Eesti Entsüklopeedia II, Tartu, 1933, pp.521-522, 569-570.
- 2 III Põllumajandusloendus 1939. Book I. Tallinn, 1940, pp. 90, 105.
- 3 Mutt, V. Talumetsad Eestis - Eesti Metsaühingute Liit 1930-1940. Tallinn, 1940, pp. 69-70.
- 4 Since 1960 the area of Estonia has been based on the data of the land balance.
- 5 Cultivable land (field, garden, cultivated pasture) is the land cultivated by agro-technical means.
- 6 Land balance of 1960 didn't contain these data, therefore they have been derived by calculations.

Figure 1. Division of territories of Estonia and Finland by cultivable land

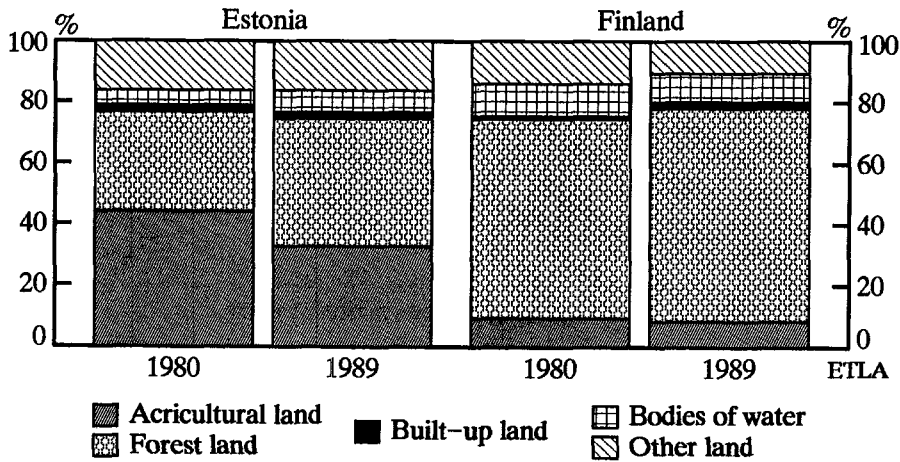


Table 2. Cultivable land per capita in Estonia, in hectares

Year	Agricultural land	Cultivable land	of which	
			arable land	forest land
1929	2.38	..	.92	.85
1939	2.45	1.02	.96	.81
1960	1.69	.82	.73	1.21
1970	1.22	.79	.68	1.28
1980	1.03	.78	.67	1.30
1985	.97	.75	.64	1.26
1989	.94	.73	.62	1.23

2.2. The territory and cultivable land of Finland

Before World War II the Republic of Finland spanned an area of 388,801 sq.km, including 44,852 sq.km or 11.6% of inland waters (without Laadoga 34,324)¹⁾. After the Winter War (Nov. 30, 1939 - March 13, 1940) and the war of 1941-1944 Finland had to cede large areas of its territory in Karelia and around Petsamo to the Soviet Union. As a result the territory of Finland

1) Suomen tilastollinen vuosikirja, Helsinki, 1938, p.1.

decreased from 388,801 sq.km to 337,800 sq.km (as of 1960) - i.e. 13.1%. Agricultural land constituted 9.3%, forest land 66.4% of the Finnish territory in 1960. Some 9.7% of the territory was under water.

During the last thirty years noticeable changes have taken place in the structure of cultivable land. Agricultural land has decreased by 13.5% and arable land by 7.6%. 4.2% (Table 3). Built-up and related land has increased considerably - 164%, while other areas have decreased by 24.5%.

In 1989 from the total area of 338,145 sq.km land constituted 90.1 % (304,592 sq.km) and bodies of water 9.9 % (33,553 sq.km). Agricultural land made up 8.0 %, forest land 69.1 %, built-up land 2.7 % and other areas 10.3 % of the total area of Finland.

Due to the increase in the population and the change in the area of cultivable land, the area per capita has also changed. Agricultural land per capita has decreased from 0.71 hectares in 1960 to 0.55 hectares in 1987 (22.5%) and forest land from 5.05 hectares to 4.70 hectares.¹⁾

Table 3. Total area and cultivable land of Finland in 1960-1989, in sq.km

	1930 ¹	1938 ²	1960	1970	1980	1989 ⁵	1960-1989
Total area	388217	388801	337800	338000	338100	338145	+0.1
Agricultural land	...	...	31400	30300	28770	27174	-13.5
among this							
arable land	22475	26082 ⁴	26540 ⁴	26671 ⁴	24627 ⁴	24531	-7.6
Forests and other wooded land	...	...	224400	234000	233000	233729	+4.2
Built up and related land (excl. farm buildings)	...	...	3400	4580	7730	8975	+164.0
Water	44839	34324 ³	32600	33200	33510	33553	+2.9
Other areas	...	...	46000	35920	35090	34714	-24.5

1 Suomen tilastollinen vuosikirja, 1930, Helsinki, 1930, p.1; 1932, p.84.

2 Suomen tilastollinen vuosikirja 1938, Helsinki 1938, p.1.

3 Excl. sees and Laaladoga.

4 Suomen tilastollinen vuosikirja 1983, p.87.

5 Suomen tilastollinen vuosikirja 1990, Helsinki 1990, p. 32, 108.

1) Calculated on the basis of the statistical collection "Suomen Tilastollinen Vuosikirja 1990", pp. 32 and 38.

2.3. Natural resources

This section presents a brief description of the natural resources and the state of the environment in Finland and Estonia. As the aim of the whole book is to compare the socio-economic development and standard of living in these countries, the natural resources are dealt with mainly as preconditions for economic development and the state of the environment as a factor affecting the quality of life. The area of Finland is 7.5 times larger and population 3.1 times bigger than in Estonia. Therefore, to make better comparison, in addition to absolute figures also relative figures (per capita) are presented.

Natural resources are usually divided into renewable (water, forests, soils, hydro-power, etc.) and non-renewable or mineral resources. Among renewable resources **forests** are without doubt the most important ones both in Finland and Estonia. Forests are especially significant for the Finnish economy.

Forests cover 69% of the whole territory of Finland and 77% of its dry land. In Estonia these figures are 43% and 45% respectively. There is 4.7 hectares of forests per capita in Finland and 1.2 hectares in Estonia. Almost 2/3 of Finnish forests are privately owned. Companies own less than 10% and the state about 1/4 of the forest areas. In Estonia from 1940 till 1990 all land belonged to the state. Of this total land state forestry enterprises used 60%,

Table 4. The volumes of growing stock in Finland (1989) and Estonia (1988).

	Finland		Estonia	
	million m ³	m ³ per capita	million m ³	m ³ per capita
Volume of growing stock among this	1750	354	259	165
pine	778	159	107	68
spruce	647	131	69	44
Non-coniferous	315	64	83	53
Annual growth	75	15	5.3	3.4
Felling drain, total	51	10	3.3	2.1
Felling drain, % of growth	68		62	

agricultural enterprises and private farms 37% and other users 3%. The volumes of growing stock and fellings are presented in table 4.

When comparing Finland and Estonia, we can see that the total volume of growing stock in Finland is almost 7 times bigger than in Estonia and fellings even 15 times bigger. The relative forest resources (per capita) of Finland are also more than 2 times and fellings five times bigger.

It is said that Finland lives on its forest resources. In 1920-1950 the wood products, pulp and paper industries accounted for about 4/5 of Finnish exports. Nowadays, due to the development of other spheres of economy, its share of has declined below 40% and it is competing with engineering and metal processing industries for the first place in Finnish exports. Finland occupies the fourth place after Canada, USA and Sweden as an exporter of forest industry products in the world (for 9 billion dollars in 1987). The forest industries accounts for less than 10% of the Finnish GNP today, but it has still a special importance for the Finnish economy, because it uses mostly domestic resources and therefore generates most of the country's foreign exchange revenue. The needs of forestry have also stimulated the development of machinery and power engineering in Finland. Therefore it can be said that forest resources occupy a special place among other natural resources in Finland and forest husbandry is the engine of the Finnish economy.

Though Estonia can be considered a country well supplied with forest resources as compared with other European states, the forest industry has never had such an important role in Estonian economy as it has in Finland. The wood and wood products, pulp and paper industries account for 9% of the Estonian industrial output and domestic forest resources are responsible for 90% of it.

The second most important renewable resource are **soils**. Agricultural land accounts for 33% of Estonian and 8% of Finnish territory. In Estonia and Finland there are better natural conditions for raising of dairy cattle, but in principle the agricultural land and climate provide the whole population with all of the main output of live stock and crop production. At the same time the Estonian agricultural resources are estimated to be somewhat better, since there are 0.94 hectares of agricultural land per capita in Estonia against Finnish 0.55 hectares and Estonian agroclimatic conditions are also a little

better than in Finland on average. Finland is an independent Nordic country with high standard of living and a higher cost of agricultural production than the world average. Finnish agriculture has needed state subsidies and import restrictions to stay alive. Estonia was a part of the Soviet Union and Estonian agriculture could compete quite successfully on the markets of the USSR, because the cost of its agricultural production was lower than elsewhere in the Soviet Union and the competition from foreign countries was practically absent because of the shortage of hard currency. To sum up it can be said that during the post-war period Finland has not been enriched due to its agricultural resources while in Estonia agriculture has been quite an important part of the economy. The fact that today Finland has to reduce the area of its land devoted to agriculture because of overproduction and Estonia has difficulties in supplying its population with food is a result of different socio-economic situations and natural conditions are not responsible for it.

Finland and Estonia are both well supplied with **water resources**. The quantity of water is not a problem there. Finland is called a "country of a thousand lakes" and this is almost true of Estonia. There are about 56 thousand lakes with a surface area over 1 hectare in Finland and more than 1150 lakes in Estonia. The number of rivers, brooks and main drains is 7378 in Estonia. Water resources of Estonia amount to 6400 million cubic meters a year, including 5840 million cubic meters in rivers and 560 million cubic meters of approved operating reserves of ground water.

Most of Estonian and Finnish settlements and towns are supplied with water from reserves of ground water. But in northern Estonia and southern Finland, where the concentration of the population and industry is the heaviest and the polluting load on water resources highest, there is not enough ground water or its quality is too low and therefore many towns, such as Tallinn, Kohtla-Jarve and Narva in Estonia and Helsinki, Turku, Tampere, Oulu, Kotka and some other towns in Finland must also use surface water.

The main problem, especially in Estonian water management, is the quality of the water. This is nevertheless already a problem of environment protection and will be dealt with in the next part of the paper.

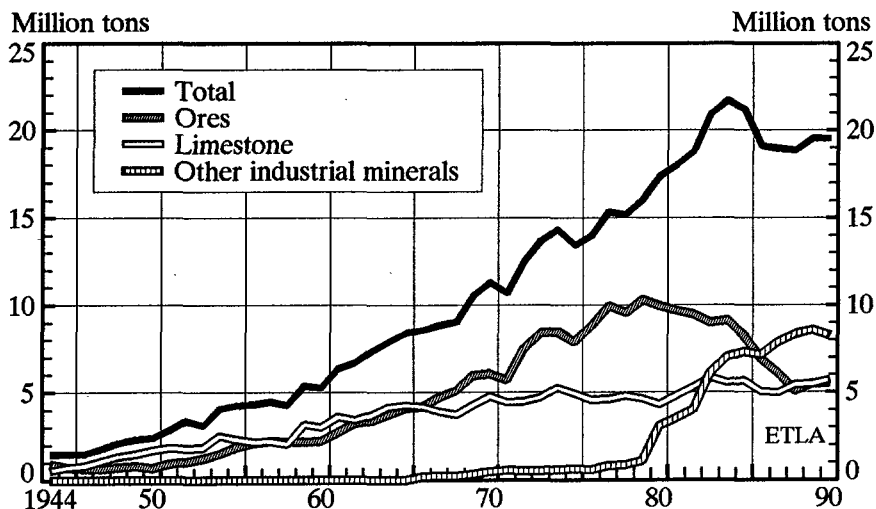
Bodies of water can also be a source of **hydro-electricity**. In Estonia the only river that has economically profitable hydro-energetic potential is the River Narva. Its hydro-electric power is exploited by the Narva Hydro-Elec-

tric Power Plant that belongs to Russia. Therefore it can be noted that Estonia has practically no hydro-electric power. In Finland the rivers have much more hydro-electricity, especially in the northern part of the country. Of the entire energy consumption the hydro-electricity of rivers accounts for about 10%.

Mineral resources of Finland and Estonia are quite different. This is caused by the differences in the geological structure of their territories. Estonia is situated on the north-western part of the East-European Continental Shelf and all its commercial mineral resources have a sedimentary genesis. Finland is a part of the Fenno-Scandian Shield, considered to be one of the oldest parts of the Earth's crust. Therefore in addition to the sedimentary mineral resources there are also metal ores in Finland.

Figure 2 gives an overview of the Finnish mining industry in 1944-1990. The production of industrial minerals in Finland has grown rapidly since the

Figure 2. Production of Finnish mines in 1944-1990, million tonnes.



Source: Yrjö Pekkala, 1989, Non-metallic Minerals in Finland, 2nd World Congress on Non-metallic Minerals, Beijing, China.

late 1970s. In 1983 the combined production of industrial minerals and limestone exceeded the metal ore production. The most important industrial minerals are apatite, talc and wollastonite. Finnish metal ore mining, which grew rapidly up to mid-1970s, has diminished considerably since then. In 1975 the production of Finnish mines satisfied the domestic need for copper, iron, nickel, cobalt and chrome (table 5). In 1988 only production of chromeore was sufficient. The reason is that better deposits are almost exhausted and the currently known sources are not economically exploitable at current world market prices.

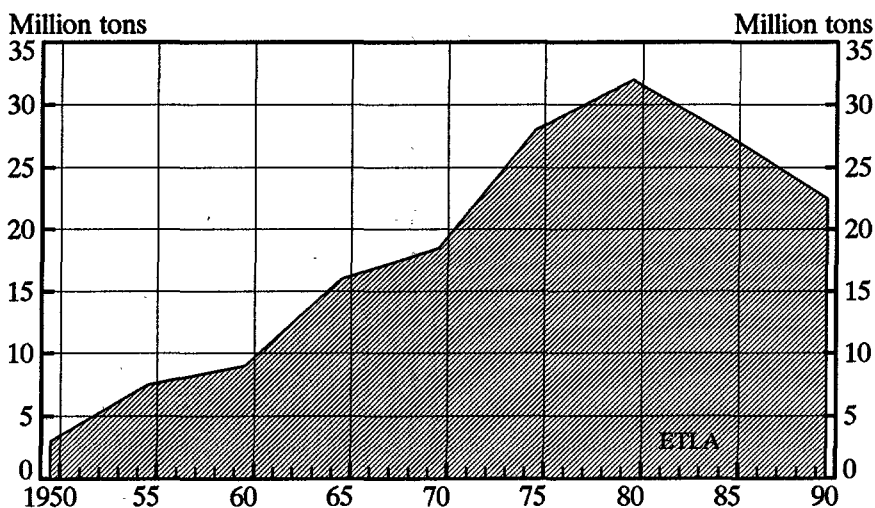
The most valuable mineral resource in Estonia is oil-shale. The Estonian oil-shale field is considered to be the largest commercially exploitable oil-shale deposit in the world. Its explored reserves are 3800 million tons, from which 2500 million tons can be commercially used. Oil-shale production has decreased since 1980 and today seven mines and four open cast pits in North-East Estonia produce 22-23 million tons of oil-shale a year (fig.3). About 90% of this is used in power generation and the rest of it in the oil-shale chemical industry.

Estonias second most important mineral resource is phosphorite. Its reserves are estimated at about 750 million tons, but they can be exploited only when economically profitable and environmentally safe technologies are developed and applied. Therefore only 391 thousand tons of phosphorite was produced in 1990.

Table 5. Share of domestic raw material in Finnish metal production in 1975 and 1988, %

	1975	1988
Copper	84	30
Nickel	88	50
Zinc	48	30
Cobalt	100	-
Chrome	100	100
Iron	80	20

Source: Suomi 1990-2005. Haasteiden ja varautumisen aika, Taloudellinen suunnittelukeskus, Helsinki 1990.

Figure 3. Estonian oil-shale production

In addition to oil-shale and phosphorite, there are also significant deposits of limestone and clays, which together with oil-shale ash have created favourable conditions for the development of the building materials industry. The deposits of peat, sapropoles and curative mud are also worth mentioning in Estonia.

2.4. Environment protection and pollution

Environment protection and pollution has a multifarious effect on the standard of living. If the pollution level exceeds certain limits, it has a direct effect on peoples health. Pollution also affects many renewable natural resources. The growth of trees is impeded by polluting substances discharged into the atmosphere, water and soil. Deterioration of the quality of water resources causes additional costs in water management, diminishes fish catches, etc. The costs of environment protection (pollution abatement investments and pollution charges) also increase the production costs. This in turn diminishes consumption, lowers the relative competitiveness of the production on the world market, thereby reducing the income of the population.

Two main problems in environment protection in Finland and Estonia are protection of atmospheric air and water bodies. In protection of **atmospheric air** the most serious problem in Finland is acidification, caused by sulphur and nitrogen emissions.

The main sources of sulphur emissions are energy production and industry (fig. 4 and 5). Finland has taken major steps to reduce sulphur emissions. In the 1980s sulphur emissions have been cut by almost 60% (fig.6). At the same time nitrogen emissions have increased a little. The reason for this is the rapid growth of traffic, which is the main source of nitrogen emissions. Nitrogen emissions from stationary sources have remained approximately the same. But although Finland has significantly reduced its sulphur emissions, the effect of reducing sulphur deposition has not been so great, because according to estimates only 1/4 of the annually deposited sulphur is emitted in Finland itself. The main part of the deposited sulphur reaches Finland by transboundary air pollution mainly from Russia, East Europe and also from Estonia.

At the same time when Finland and other developed countries have almost solved the problem of eliminating dust and fly ash from fuel gases and are

Figure 4. Emissions of SO₂ and NO_x in 1989, thousand tons

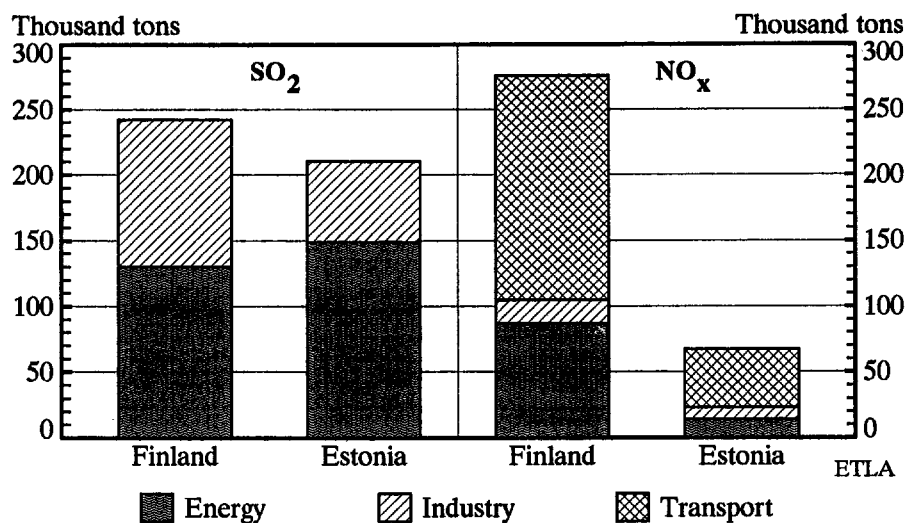


Figure 5. Emissions of SO₂ and NO₂ in 1989, kg per capita

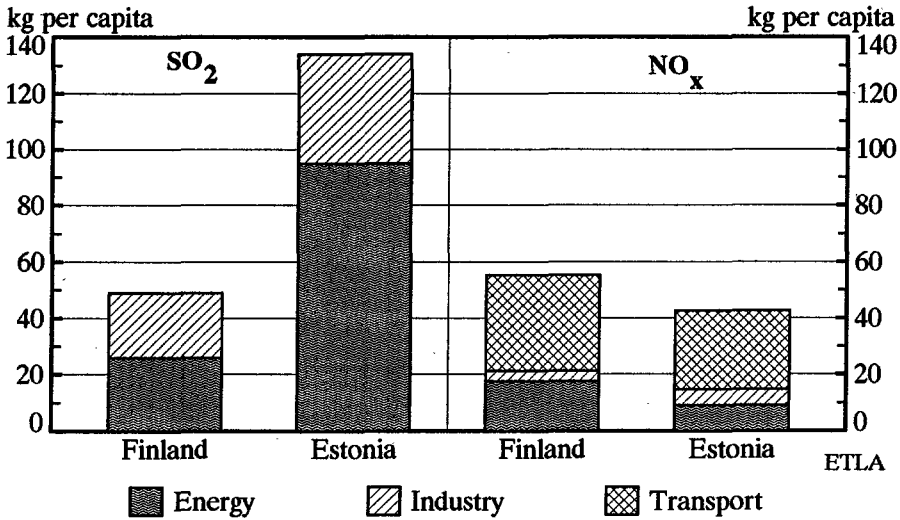
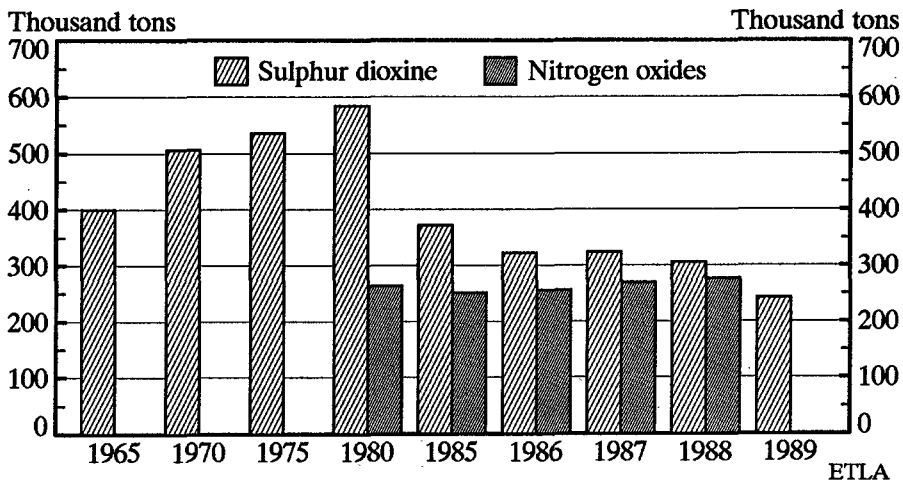
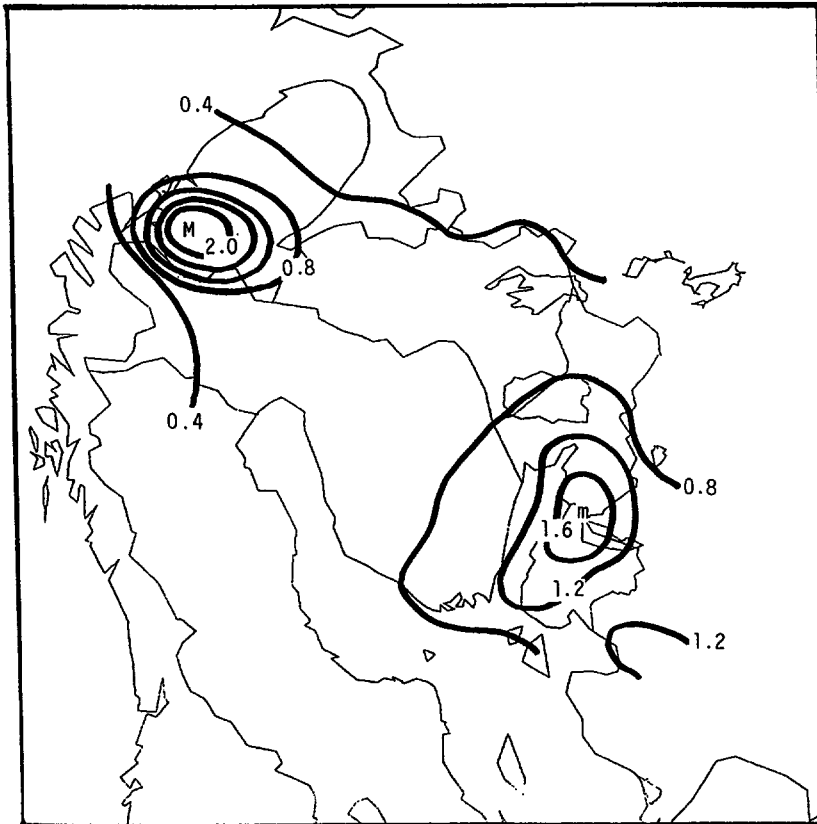


Figure 6. Estimated sulphur and nitrogen emissions in Finland



Source: Statistical Yearbook of Finland, 1990.

Figure 7. Sulphur deposition in Finland and Estonia in 1987, g/m² sulphur a year



Source: J.-P. Tuovinen, Transboundary air pollution between Finland and the Soviet Union, Ilmatieteen laitos, Helsinki 1989.

reducing the emissions of sulphur and nitrogen, Estonia is still dealing with dust and fly ash and the problem of gaseous waste is practically unsolved. The main polluters of the Estonian atmosphere are two large thermal power-plants (Baltic TPP and Estonian TPP), which are situated in north-eastern Estonia and heated with oil-shale. These power plants are considered to be among the biggest point source polluters in Europe and account for about half of Estonians total air pollution. Alongside huge emissions of fly ash, sulphur, nitrogen and carbon oxides, the fuel gases contain heavy metals, harmful to human health.

If we compare sulphur emissions in Finland and Estonia, we see that relative emissions are much higher in Estonia. It is logical to conclude that if in Finland and the other Nordic countries (where the relative emissions and sulphur deposition are much lower) acid rain is the most serious environmental problem, then in Estonia, where the average sulphur deposition is much higher (fig.7), the acidification of the environment is even more serious. But actually this is not so. There are two reasons for this. First, due to the character of Estonian base rock (limestone) the content of free carbonates in surface waters is rather high and therefore their capacity for resistance to acid inputs is relatively good. And secondly, Estonian power-plants emit so much alkaline fly ash that it neutralizes the SO_2 to SO_4 and therefore the average pH of precipitations in Estonia is 5-6.5 and in north-eastern Estonia even 6-9.

Due to the poor pollution eliminating facilities the air quality in north-eastern Estonian big industrial towns and in Tallinn (in other Estonian towns no air quality monitoring is carried out) is not satisfactory. The concentrations of various polluting compounds exceed maximum permissible levels in Kohtla-Jarve, Narva and Tallinn. For example, the annual mean concentration of sulphur dioxide in Tallinn is 5-6 times higher than in Helsinki and in Narva 5-7 times higher than in Tampere.

The poor state of the environment also affects people's health, especially in north-eastern Estonia. Children often suffer from dystrophy of nails and pathological diseases, including skin, neuro-physical, digestive tract and inner secretion system disorders there. In the region of the oil-shale, chemical and power industries the frequency of respiratory, heart and blood-vessel diseases has increased 1.2-1.5 times, chronic forms of these diseases are 1.5-1.9 times more frequent and emergency aid is needed 1.2 times more often etc.

The second important sphere of environment protection is the **protection of waterways**. In Finland most of the waste water discharged into waterways comes from the pulp and paper industry. During the last two decades Finland has made significant progress in diminishing organic pollution by pulp and paper industry. At the same period, while production in this sphere of the economy has increased 1.5-2 times, the organic pollution has decreased about four times. But as the pollution from other sources has also been cut,

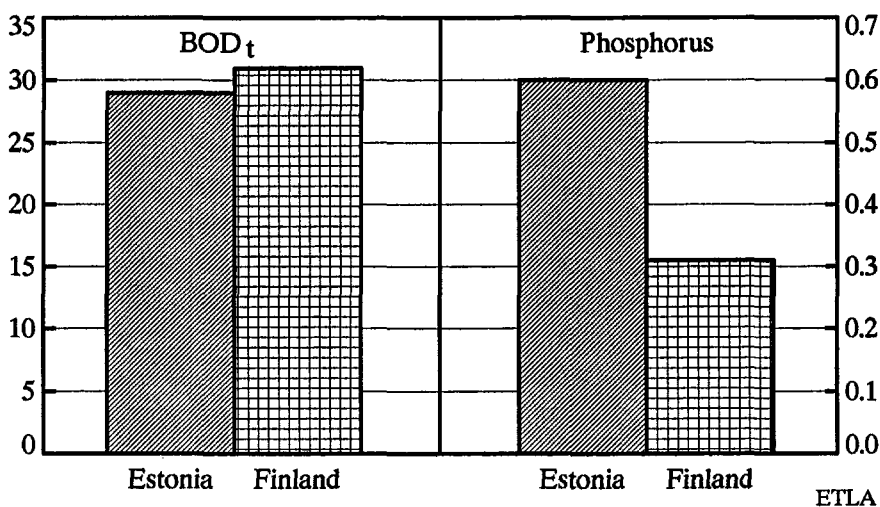
pulp and paper industry still accounts for three quarters of the total point source organic pollution in Finland.

The biggest polluter of Estonian waterways is insufficiently treated or untreated sewage water. Only a quarter of this sewage water is treated biologically. Many towns and settlements either have not got any sewage treatment facilities yet or the inefficiency is insufficient. Therefore many of Estonian rivers are highly polluted. At present Estonia has no biological-chemical water treatment plants which could treat nutrients.

In Finland practically all sewage water that needs it is treated biologically. From domestic waste water about 4/5 of phosphorus is removed by chemical final purification. This is especially important for preventing the eutrophication of waterways as phosphorus is usually the eutrophication limiting element.

In figure 8 the annual relative water pollution load by sewage water in kilograms per capita in Estonia and Finland is presented. We can see that while the organic pollution in Finland is in spite of better waste water treatment due to the huge pulp and paper industry a little bigger than in Estonia, then the phosphorus load is due to the chemical final purification much lower.

Figure 8. Water pollution load by sewage water in Finland and Estonia, kg/capita.



Another essential polluter of Estonian waterways is agriculture. In rural regions animal husbandry farms contribute the major part of point source pollution due to the poor animal waste management. The non-point or diffuse pollution coming from arable lands also has a significant role in water pollution. As a result of both the point and non-point pollution there is going on a rapid eutrophication of waterways in Estonia, especially in lakes. Of some 600 investigated lakes only 20% are in good ecological condition, 40% are still in satisfactory and 40% in bad condition. In Finland the agricultural pollution is also a problem. But in Finland the share of arable land is lower and there are no huge cattle-sheds like the ones in Estonia. Therefore the relative agricultural pollution load is smaller than in Estonia.

In Finland 80% of the lake area is estimated to be in good or very good using suitability.

In Estonia the agricultural pollution and also oil and phenol pollution coming from industry and Soviet Army military bases have affected the groundwater as well. In several regions the concentration of nitrates in upper groundwater layers, from which most of the rural population gets their drinking water, exceeds maximum permissible concentration (MPC) (45 mgNO₃/l). There are several villages in Estonia where the drinking water is transported by cisterns. The growth of nitrate's concentration over permissible levels (in Finland the MPC is 30 mg NO₃/l) is also a problem in some agricultural regions in Finland.

To sum up the role of natural resources and environment pollution as a factor affecting the living standard in Finland and Estonia it can be noted that the most important resources - forest in Finland and oil-shale in Estonia - also cause the most harm to the environment. But in Finland forests have been one of the main sources of wealth and the pollution caused by forestry has decreased remarkably. In Estonia oil-shale mining and chemistry and power generation have spoiled the earth and damaged ground waters and waterways in north-eastern Estonia and polluted the atmosphere in the whole region (also in Finland), but oil-shale has not been a source of high incomes, because the prices of electrical energy in the Soviet Union were lower than the cost of production (an oddity, that was quite common in so-called planned economy). Therefore it can be said that the oil-shale has been more a burden than a blessing for the Estonian people.

Today the treatment of sewage water and eliminating of the pollution of the atmosphere in Finland is one stage higher than in Estonia. There is no credible data about sewage treatment and state of environment for previous decades in Estonia, but it can be estimated that the difference in the state of the environment between Finland and Estonia has remarkably grown since the 1970s.

3. THE DEVELOPMENT OF POPULATION

by Eike Hindov

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3.1. Population development

In Estonia and Finland population development and changes in the structure of population have been quite different. Excess of birth over death was smaller in Estonia already in the 1930s. Since the violent incorporation of Estonia into the Soviet Union the population changes in Estonia have been conditioned by net immigration from the Soviet Union. At the same time post-war population processes of Finland have been characterized by the low fertility, and net emigration to Sweden. Development of mean population is given in Figure 1.

We can see from the Table 1 that the number of the population of Finland was 3124.8 thousand in 1920. At the same time Estonia had 1067.8 thousand inhabitants. In the 1920s and 1930s, due to low fertility, mean population increase in Finland was 0.65 percent a year. Due to the emigration of Germans in 1939 and the falling fertility rate the population increase in

Figure 1. Development of mean population in Finland and in Estonia in 1920-1989

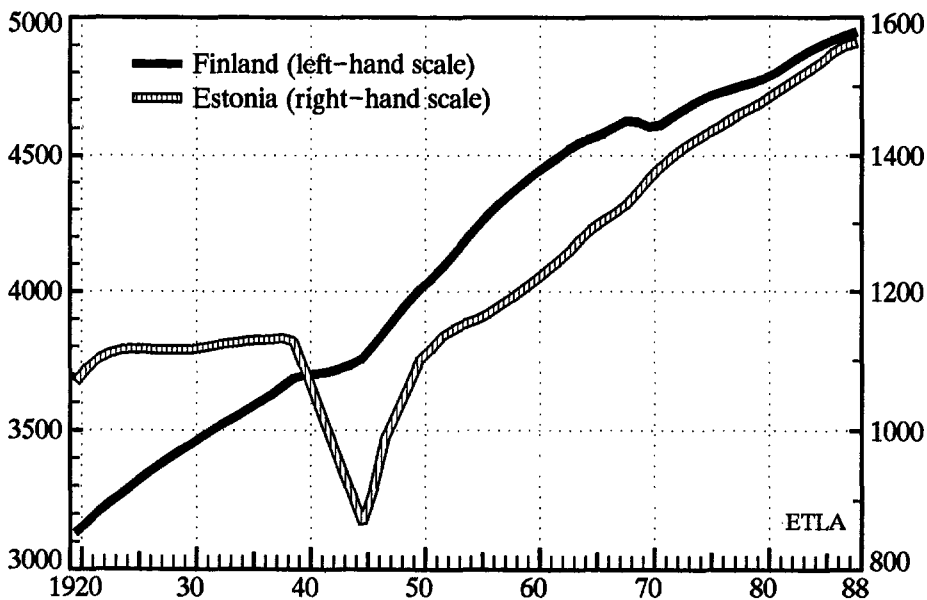


Table 1. Population changes in Finland and Estonia: selected years from 1920 to 1989

	1000 inhabitants		Yearly per 1000 inhabitants			
	Mean population at the end of the period		Excess of births		Migration gain	
			Finland	Estonia	Finland	Estonia
1920	3132.8	1067.8	-	-	-	-
1921-1930	3449.0	1116.0	8.7	2.2	0.2	0.1
1931-1940	3697.9	1122.1*	5.7	1.6	0.0	-0.1
1941-1950	4008.9	1100.4	10.7	1.7**	-1.1	2.7**
1951-1960	4429.6	1215.6	11.4	5.6	-1.5	4.6
1961-1970	4606.3	1365.0	7.2	4.6	-3.9	7.2
1971-1980	4779.5	1479.2	3.9	3.6	-1.2	4.2
1981-1985	4902.2	1535.8	4.0	2.8	1.1	4.3
1986	4918.2	1549.0	2.7	4.0	0.3	4.7
1987	4932.5	1559.2	2.4	4.3	0.1	4.2
1988	4946.9	1563.8	2.2	4.1	0.3	1.8

* 1.01.1940

** Data on the period of World War II are missing, the numbers of excess of births over deaths and yearly net migration are calculated on the basis of 1945-1949

Sources: Population: Structure of Population and Vital Statistics, SYB 1989; Rahvastiku-probleeme Eestis. II rahvaloenduse tulemusi. Vihk IV. Tallinn, 1937, pp. 12-13; Eesti Statistika Kuukiri jaanuar 1940. Tallinn 1940, p. 40; Eesti NSV rahvamajandus 1978. aastal. Statistika aastaraamat. Tallinn, 1979, p. 12; Eesti NSV rahvamajandus 1988. aastal. Tallinn 1989, p. 13.

Estonia had fallen to 0.2 percent a year during the pre-war period. As a result of the above-mentioned population changes there were 3685.9 thousand inhabitants in Finland and 1128.0 thousand in Estonia in 1939. There is no data on mean population of Estonia in the period of World War II. After concluding the treaty between Stalin and Hitler (MRP) on August, 23, 1939 about 21,400 Baltic Germans left Estonia from October, 1939 to January, 1941. During the first years of the Soviet power (June, 1940 - October, 1941) about 60,000 people were arrested, murdered, deported or mobilized to the Soviet Army. By estimates about 4000 people were executed by Germans

and about 10 000 men perished in the German Army. In 1943-1944 about 70,000 people escaped from Estonia to Sweden or Germany, 5000-6000 men ran away from mobilization to the German Army to Finland. We don't exactly know how many of those people came back after the war to Estonia.

The occupation of Estonia by the Soviet Union, the Winter War and World War II caused heavy losses to population in both countries. During the war and by the Peace Treaty of 1944 with the Soviet Union Finland lost about 150 thousand people, i.e. 3.5 percent of the population. The increase in population of Finland was due to perished Finnish men and low fertility rates only 1 percent during the whole period of war. The population of Estonia decreased as much as by 1/4 in that period.

Changes in mean population in 1944 were partly due to diminishing of territories in both countries. Finland and the Soviet Union concluded the Peace Treaty on September 19, 1944. As a result of this treaty Finland lost the city of Viipuri with the isthmus Karelia and the Eastern part of the North-Karelia. The losses in population were small. These areas, except Viipuri and the eastern coast of the Gulf of Finland, had been sparsely inhabited. Almost all the Finns were removed to Finland from the lost territory. Territory of Estonia was also changed in the end of 1944. A part of Põhja- ja Lääne-Eesti was joined to the Pihkova Oblast on August 23 and the territory behind the river Narva to Leningrad Oblast on November 24. Estonia lost 39 000 people -i.e. 4.0 percent of the population. These areas were mostly populated with Russians.

Estonia reached the pre-war number of population at the beginning of the 1950s. In the post-war period the increase of population has been due to the immigration from the Soviet Union. At present there are 1575.5 thousand inhabitants in Estonia. During that period natural increase and migration processes in Estonia have produced an average increase of 1.0 percent per annum. In 1990 Finland had 4995.7 thousand inhabitants. Due to emigration and fall in excess of births over deaths during the post-war period the population increase has been 0.6 percent a year.

The growth of population and evolution of its age structure have been determined by natural increase (fertility and mortality) on the one hand, and migration processes (emigration, immigration, urbanization) on the other hand. These will be dealt with in more detail below.

3.2. Natural increase

Natural increase of population is a difference of crude birth and death rates (or mortality) - i.e., excess of births over deaths or excess of deaths over births (see Figures 2 and 3). The development of mortality and birth rates have, both in Estonia and Finland, followed approximately the well-known model of demographic transition since the 19th century. Both mortality and birth rates have been falling in Finland and Estonia. Due to the rapid fall of birth rates, especially in the 1950s and 1960s, the growth of population has been quite slow over the whole period from 1920 to 1988.

During the 1920s and 1930s the decrease in birth rate was more intensive in Estonia than in Finland. But, at the same time mortality fell more quickly in Finland. As a result of such demographic development the difference between birth rate and death rate was greater in Finland (see also Table 1). It was in the 1930s when the attention was drawn to the problem of depopulation for the first time in both countries.

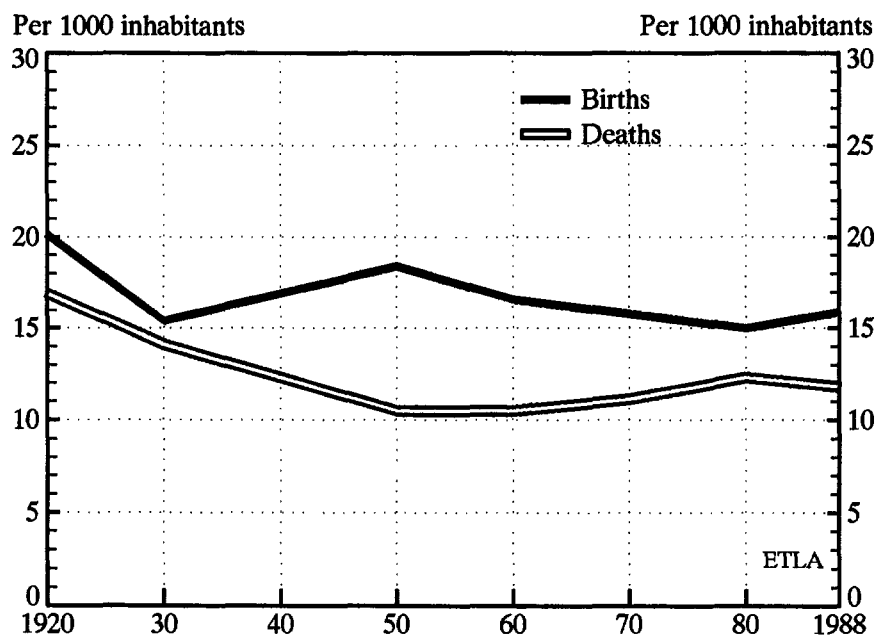
Figure 2. Fertility and mortality in Finland in 1920-1988



Rapid growth of birth rate occurred during the "baby boom" after the war in Finland. At the same time there was an increase in birth rate in Estonia too, but it was not as intensive as in Finland. The last time the birth rate of Finland was higher than that of Estonia was in the 1970s. Since the 1950s death rate of Finland have been lower than in Estonia. Due to above-mentioned changes in birth and death rates natural increase was higher in Finland up to 1986. At the present processes of natural increase are stable in Finland. In 1986, for the first time during the period of 1920-1988 natural increase rose higher in Estonia than in Finland. It was due to the increase in birth rate in 1986-1988 and decrease of mortality since 1986 (see Table 1).

According to population prognoses based on present birth and death rates the number of Finnish population will start to decrease around 2005. Natural increase will not fall in Estonia before 2015, even if we leave out the in-migration from the Soviet Union.

Figure 3. Fertility and mortality in Estonia in 1920-1988



3.3. Crude birth rate and fertility

Crude birth rate (live births per 1000 inhabitants) is one component of natural increase. In Finland and Estonia the industrialization process, rising prosperity and educational level with attendant urbanization brought on a decline in crude birth rate in the first decade of the 20th century. The fall of birth rate was more conspicuous in Estonia than in Finland (see Table 2). The birth rate continued to show a growing tendency until the first half of the 1930s and fluctuated sharply during the World War II (see also Figures 2 and 3).

Besides crude birth rate changes it is very important to discuss fertility rates (1. age-specific fertility rate is the number of births to mothers of certain age groups over the number of women in the respective age group; 2. total

Table 2. Crude birth rate, total fertility rate and percentage of abortions in live births in Finland and in Estonia

Year	Crude birth rate		Total fertility rate		Percentage of abortions of live births	
	Finland	Estonia	Finland	Estonia	Finland	Estonia
1921-1930	23.6	20.1	3.10	2.46	..	..
1931-1940	19.7	15.4	2.39	1.96	..	..
1941-1950	24.3	18.4*	2.98	..	..	..
1951-1960	20.7	16.6	2.88	2.39**	..	..
1961-1970	16.8	15.8	2.34	2.68	..	..
1971-1980	13.3	15.0	1.64	2.52	32.8	187.3
1981-1985	13.4	15.4	1.69	2.52	21.0	155.1
1986	12.3	15.6	2.12	2.53	22.0	145.2
1987	12.2	16.0	1.59	2.60	21.6	139.5
1988	12.1	15.9	1.69	2.68	20.9	119.7

* 1945-1950

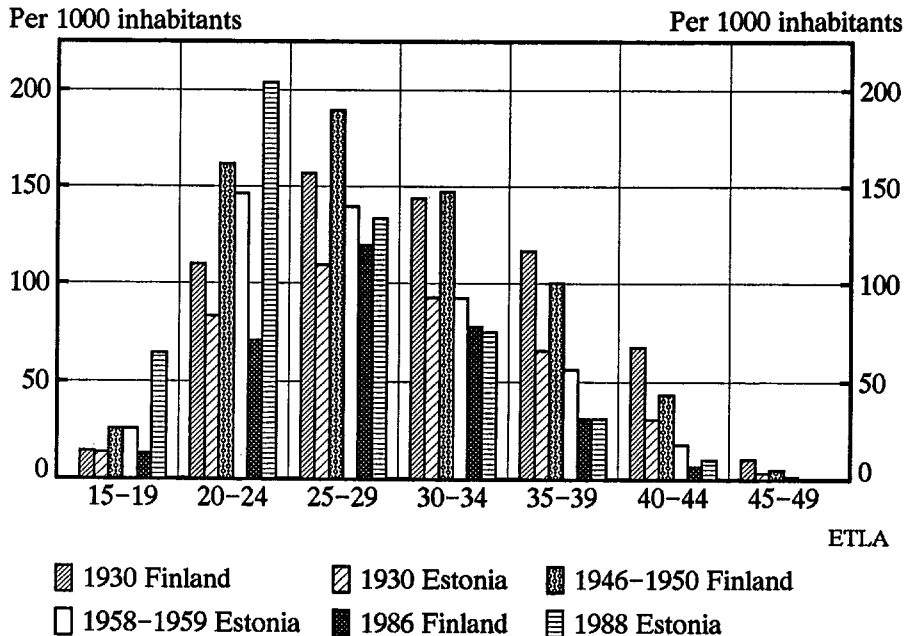
** 1958-1959

Sources: Yearbook of population research in Finland 1989. XXVII. Helsinki, 1989, pp. 79-80; Rahvastikuprobleeme Eestis. II rahvaloenduse tulemusi. Vihk IV. Tallinn, 1937, pp.117; Naselenie SSSR 1988. Moskva, 1989, pp. 54, 343, 413.

fertility rate is calculated by summing up the age-specific fertility rates and multiplying them by 5). At the same time the decline in birth rate have been due to changes in fertility by ages. Both crude birth rate and fertility have been relatively low in the 1920s and 1930s, and are still declining. From the beginning of the 1920s up to the end of the 1930s total fertility rate was a bit higher in Finland than in Estonia (see Table 2). In both countries the age-specific fertility rates were the highest for age groups 25-29 and 30-34 in the 1930s. In both Finland and Estonia the average age of mother at the birth was 30 years (see Figure 4).

In Finland the first post-war years saw the above-mentioned "baby boom". The peak was reached in 1947 with a total fertility rate of 3.47 (see Table 2). At that time the highest age-specific fertility rates were in age groups 20-24 and 25-29 (see Figure 4). The average age of mother at births was 25.

Figure 4. Age-specific fertility rate in Finland and in Estonia



After that a declining trend followed in the birth rate in the 1950s and 1960s. This decline reached such dimension at the beginning of the 1970s Finland ranked among the countries with the lowest birth rate in the world. The low point with total fertility rate of 1.49 in 1973. It was followed by a minor increase in the next three years. The slight increase that followed equalized the levels again in the late seventies.

The "baby boom" was much more pronounced in Finland than in Estonia (see Table 2 and Figure 4). After that the decline in fertility was not as steep in Estonia as in Finland. In Estonia that trend continued until 1960, when the total fertility rate reached its minimum (2.39). However, some ten years later it had risen to 2.68. Since the mid-1970s the total fertility rate has been fluctuating from 2.53 to 2.52. Approximately two-thirds of the total number of live births applies to women aged 20-30.

At the end of 1981 fertility began to rise in Finland and continued on a somewhat higher level during the whole following year and at least during the first half of 1983 as well (see also Table 2). This fertility increase occurred quite unexpectedly and the first estimates told of a considerable augmentation. The final number of children born in 1982 was, however, less than the first estimate; the increase was only six percent.

Age-specific fertility rates, however, show that fertility has increased more or less in all age groups. The increase was relatively biggest among those aged 40-45 - 16 per cent. In the most fertile age groups, i.e. women 25-34 years of age, the increase was 6-7 percent (see Figure 4). The absolute increase in the last-mentioned age groups was, of course, much more important than in the age group of those 40-45 years old. The examination of the increase shows that it was almost fully caused by a rise in fertility rates. Only approximately one-tenth emanated from a change in the age distribution. In 1985-1986 the total fertility rate decreased to the level of the mid-seventies. However, the birth rate is still so low in Finland that it portends a future decrease in the population unless the trend begins to rise again distinctly.

In the 1980s the birth rate grew also in Estonia (see Table 2 and Figure 4). From 1986 to 1988 the increase of the total fertility rate was about 6 percent. The growth of the age-specific fertility rate in Estonia was different from that of Finland. The increase was most obvious in the age-group of women

aged 35-39 - 13 percent. In age groups of 25-29 and 30-34 years old the fertility rates rose by 10-11 percent. Since 1987 the birth rate in Estonia has been falling again. The increase in fertility rates and birth rates in Estonia has been a result of various measures of population policy, only ten percent has been due to the changes in age distribution, just like in Finland.

The limitation of the number of children in a family has been brought about by the use of devices preventing pregnancy or by abortion. Abortion is probably the oldest and most common method of preventing an unwanted birth. The rates of abortions (the number of abortions per 1000 females at the age of 15-49) in the Soviet Union as well as in Estonia are considerably higher than elsewhere. It is probable that if people really want to limit the number of children and they have no reliable contraceptive methods at their disposal, they end up resorting to abortion.

We have data on abortions in Finland and Estonia since 1970 (see Table 2). In the 1970s, due to the above-mentioned reasons, in Estonia there were 5-6 times more abortions to births than in Finland. At present the ratio of abortions in relation to births could be expressed by 1197:1000 in Estonia and 209:1000 in Finland.

3.4. Family, marriage, divorces

A large majority of children are born into a two-parents family. As in Finland, so in Estonia the households gradually began to decrease in size because of industrialization and urbanization. Families got fewer children, and also the number of servants, lodgers and relatives in the household gradually began to decrease. And so, in the 1930s the average size of a Finnish family was 3.1 persons. In Estonia it was a bit larger - 3.2 persons.

In both countries - Finland and Estonia - the most common type of household has been and still is a family with two-parents and children (see Tables 3, 4 and Figure 5). In Finland the share of these families has decreased in the postwar period. This has been caused by the strong increase in the number of men and women living alone. In Estonia the number of families with a single parent and children has diminished during the period between the censuses of 1970 and 1979. In 1975 17.9 percent of Finnish families were

couples without children, 18.4 percent women living alone and 8.5 percent men living alone. By the 1979 census 40.9 percent of all families were married couples without children in Estonia. The percentage of single people in Estonia was 13. Not all couples consist only of the nuclear family. Some households also include one or more relatives. In the 1970-80s in Finland the most common extended family type consisted of a nuclear family and one relative. In 1975, 80 percent of all extended families were of this type. In Estonia the percentage of such kind families was 79 in 1979. According to the 1989 census the average size of an Estonian family was 3.7 persons.

Table 3. Finnish families with children under 18 years of age by type of family and number of children (percent)

Married couples with children*					
	1	2	3	4+	Number
1960	34.4	30.7	17.5	17.4	601 542
1970	40.2	33.9	15.5	10.4	602 076
1980	44.6	41.1	11.1	3.0	588 373
1985	42.4	41.9	15.6(3+)		560 784
1987	41.1	42.3	13.0	3.6	545 698
Mothers with children					
	1	2	3	4+	Number
1960	61.1	23.0	9.2	6.7	67 381
1970	60.7	23.8	9.5	6.0	66 303
1980	67.7	25.3	5.6	1.4	88 896
1985	70.0	24.5	5.5(3+)		87 409
1987	69.0	25.2	4.8	1.0	86 377
Fathers with children					
	1	2	3	4+	Number
1960	56.7	24.8	10.3	8.2	9 123
1970	61.1	24.3	9.0	5.6	8 656
1980	71.1	23.0	4.8	1.1	11 463
1985	74.1	22.0	4.2(3+)		11 677
1987	73.8	22.0	3.7	0.6	11 918

* incl. unmarried couples with children under 18

Source: Yearbook of Population Research in Finland 1989. XXVII. Helsinki, 1989, pp. 81-82.

In 1984 approximately 80 percent of Finnish population were part of a family.

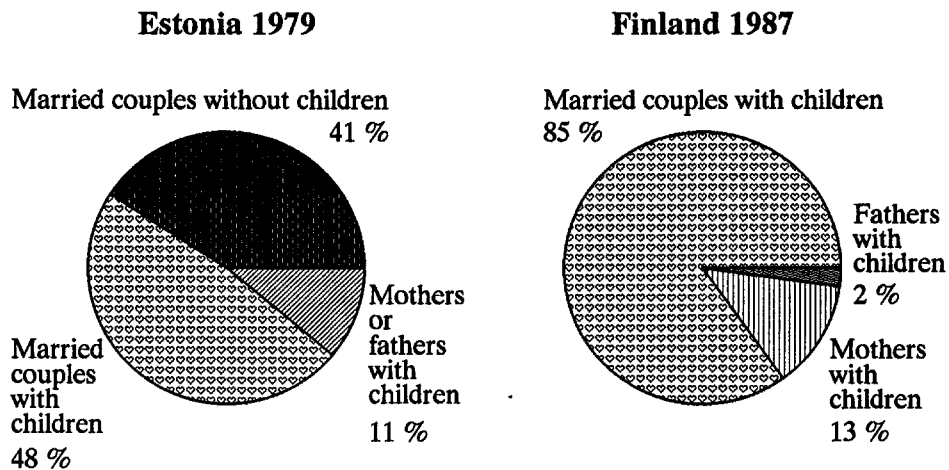
Marriage is still the most important foundation for a family. In Finland the marriage rate was very low during the whole prewar period, even lower than

Table 4. Estonian families with children under 18 years of age by type of family and number of children (percent)

Married couples with children*				
	1	2	3+	Number
1970	50.5	38.7	10.8	198 021
1979	52.8	38.1	9.1	191 548
Mothers or fathers with children				
	1	2	3+	Number
1970	74.0	20.5	5.5	62 581
1979	71.1	23.6	5.3	41 591

Sources: Naselenie Estonskoi SSR. Tallinn, 1974, p. 393; Naselenie Estonskoi SSR (po dannym Vsesojuznoi perepisi naselenija 1979 goda). Part 2. Tallinn, 1982, pp. 114-115.

Figure 5. Structure of families in Finland and in Estonia



in Estonia (see Table 5). This was especially true in towns and for women of Finland. But in 1920, when the marriage rate was at its lowest in Finland, the proportion of those never married among women was only 57 percent in towns and among men 65 percent. In the 1920-30s in Estonia the rate of marriage was higher in towns - 9.2-9.5 in towns and 7.1-7.3 in rural places. The proportions of never-married women and men in Estonia were the same as in Finland. The situation was maybe caused by a social change which weakened economic preconditions for setting up family. This tendency was also strengthened by relatively common employment of young women.

The marriage rate became higher after World War II. This kind of tendency was more noticeable in Estonia than in Finland. The change in marriage rates was connected with economic growth and increase of mobility in both countries. In Estonia the peak of the marriage rate was in 1959, after that it

Table 5. Marriages and divorces in Finland and Estonia

	Per 1000 of mean population			
	Marriages		Divorces	
	Finland	Estonia	Finland	Estonia
1924	6.4	8.5*	..	0.52*
1930	7.2	7.9**	0.03	0.81**
1940	8.3	..	0.04***	..
1950	8.5	9.5	0.80	0.64
1960	7.4	10.0	0.89	2.1
1970	8.8	9.1	1.40	3.2
1980	6.1	8.8	1.98	4.1
1985	5.3	8.4	1.85	3.9
1986	5.2	8.4	1.98	3.9
1987	5.3	8.6	2.07	3.9
1988	5.3	8.2	2.69	3.8

* 1922

** 1934

*** 1933

Sources: SYB 1989; Yearbook of Population Research in Finland 1989. XVII. Helsinki, 1989, pp. 80-81. Rahvastikuprobleeme Eestis. Tallinn 1937, pp. 81, 100. Eesti NSV rahvamajandus 1988. aastal. Tallinn, 1989, p. 23.

began to decrease. In Finland the number of marriages started to decline in 1970.

In 1980 58.6 percent of the Finnish population aged 18 and over was married, 61.7 percent of men and 55.8 percent of women. The proportion of married men grows constantly until retirement age. The majority of retired men are married (80.2 percent). Women around 40 are most frequently married. The same differences between sexes are common also for Estonia. This situation is due to the fact that men generally marry younger women than themselves. After divorce, or the death of one's spouse men remarry more often than women. The longer life span of women as compared with men is also an important reason. By the 1979 census 55.0 percent of women and 67.6 percent of men were married in Estonia. By the same source 5-6 percent of Estonian men and 7-8 percent of women never get married.

In Finland cohabitation has become more frequent. In the 1980 labour survey 200 000 persons reported that they were cohabiting. This is a little less than 7 percent of the adult population. People who cohabit are relatively young. Three out of four are under 35. This is most likely due to the fact that young people start cohabiting well before the possible birth of a child. When a child is born, it is very usual for the couple to get married. Thus, a large number of women giving birth out of wedlock are actually cohabiting.

The average age at first marriage in Estonia is lower than in Finland. For Estonian men it is 24.1 years and for women 22.6 years. The corresponding data for Finnish men is 26.8 and for women 24.9. Since 1970 the average age of first marriage has risen more than two years. It is a result of frequent cohabiting. The tendency of lowering of this age is still common for Estonia.

Marital dissolution by divorce (other classes are: death of one's husband and death of one's wife) became much more common at the start of this century. It was also due to the industrialization and urbanization process. It is clear that the number of divorces does not totally reflect the "true" number of broken marriages in the 1920s and 1930s. But, during this period the rate of divorces rose in Finland and Estonia (see Table 5). And besides, in Estonia more than in Finland. It was due to the fact that in these years divorces were relatively more frequent in urban settlements than in rural areas and by the end of the 1930s the proportion of urban population was higher in Estonia.

The number of divorces began to increase at about the same time that marriages started to become more frequent. In Finland the first culmination was reached just after the World War, when many war-time marriages dissolved (see Table 5). After that, the number of divorces declined. This new level lasted until the end of the 1960s. This period was quite stable. A change occurred at the turn of the seventies, when the number of divorces began to increase. This tendency continued throughout the 1970s. The idea of easing the divorce process, presented in the report of the marriage law committee, was thus based on the real situation, i.e. on the actual prevalence of divorce. The numbers show that the dissolution of marriage (both kinds of dissolution - divorce and death) means living alone or in single parenthood more often for women than men (see Table 3).

During the post-war period the development of divorce rate in Estonia has been different from that in Finland. However, the marriage rate has risen. There were no rise in the number of divorces in Estonia just after the Second World War. The divorce rates grew quite rapidly after the year 1965, when the new marriage and divorce law was introduced. During the next years many earlier broken marriages were divorced, in 1970 1.41 percent of all marriages were divorced. After 1980 the divorce rate has stabilized. In Estonia as well as in the Soviet Union the main reason for divorces is the alcohol consumption by husbands. In some years even four-fifths of divorces proposed by wives were due to it.

3.5. Mortality, infant mortality and life expectancy

Mortality is the other side of natural increase of population besides birth rate. In the 1920s and 30s the development of mortality followed approximately the well-known model of demographic transition both in Finland and Estonia. Simultaneously with the decrease of fertility there was a drop of mortality, in particular among children and young people. The crude mortality rates in all years since 1924 stabilized at the level of 14-15 (see Table 6). Among the countries of Europe Finland and Estonia held a medium position with these rates. In the 1920s a period began for both countries when infant mortality started to fall rapidly to a level characteristic of an economically and socially developed countries. The decline of infant mortality is attributed to the development of possibilities to affect mortality through

improved medical knowledge and organized systems of maternity and child care. For Finland and Estonia the importance of the 1920s in the development of infant mortality is the fact that before that decade the infant mortality had not fallen below the "magical" point of 100 infant deaths per thousand live births (see Table 6 and Figure 6).

The expectation of life at birth is generally considered as an indicator which best summarizes the mortality conditions of population. Due to the decrease of mortality in younger age-groups in the 1920s and 1930s life expectancy increased during this period (see Figures 7 and 8). By the mid-thirties life expectancy had risen to 53 years in Finland and 56 years in Estonia. This difference in life expectancies between Finland and Estonia was due to the slow rise of life expectancy of Finnish men on the one hand and the rapid increase of life expectancy of Estonian women on the other hand (see Figures 7 and 8).

Table 6. Dynamics of crude death rate and infant mortality in Finland and in Estonia

Year	Crude death rate		Infant mortality per 1000 live births	
	Finland	Estonia	Finland	Estonia
1921-1930	14.9	15.9	91.9	113.8
1931-1940	14.0	14.9	72.0	91.1
1941-1950	13.6	10.5*	56.0	80.7*
1951-1960	9.3	10.5	28.6	55.5
1961-1970	9.5	10.8	16.7	24.0
1971-1980	9.4	11.7	11.3	17.4
1981-1985	9.3	12.4	6.3	15.6
1986	9.6	11.6	6.4	16.0
1987	9.7	11.7	..	16.0
1988	9.9	11.8	..	12.4

* 1950

Sources: Yearbook of population research in Finland 1989, Rahvastikuprobleeme Eestis, pp. 135, 142; Estestvennoje i mehanicheskoje dvizhenie naselenia Estonskoi SSR. Tallinn, 1975, pp. 46, 204. Naselenie SSSR 1988, pp. 413, 476.

Before World War II Estonian and Finnish mortalities were alike. After the war they started to differ. In Finland the lowest crude death rate was 9.0. It was so for a longer period, starting from the 1950s till 1984 (see Table 6). Since 1985 the crude death rate has risen. It is due to a growing share of elderly and aged people of 60 and older. Estonia achieved the minimum of the crude death rate in the end of 1950s and in the first half of 1960s, when the intensity of mortality was already relatively low, but the aging level was not yet so deep as in the years to come. At present the crude death rate is stable in Estonia.

The development of infant mortality in Finland and Estonia in the post-war period shows us again how well it reflects changes in economic and social processes. After World War II infant mortality declined rapidly in Finland (see Table 6 and Figure 6). The change in infant mortality was relatively favourable in Finland in the 1970s. The infant mortality rate declined by more than 50 percent -from 13.2 per thousand births in 1970 to 6.4 in 1986

Figure 6. Infant mortality in Finland and in Estonia in 1920-1988

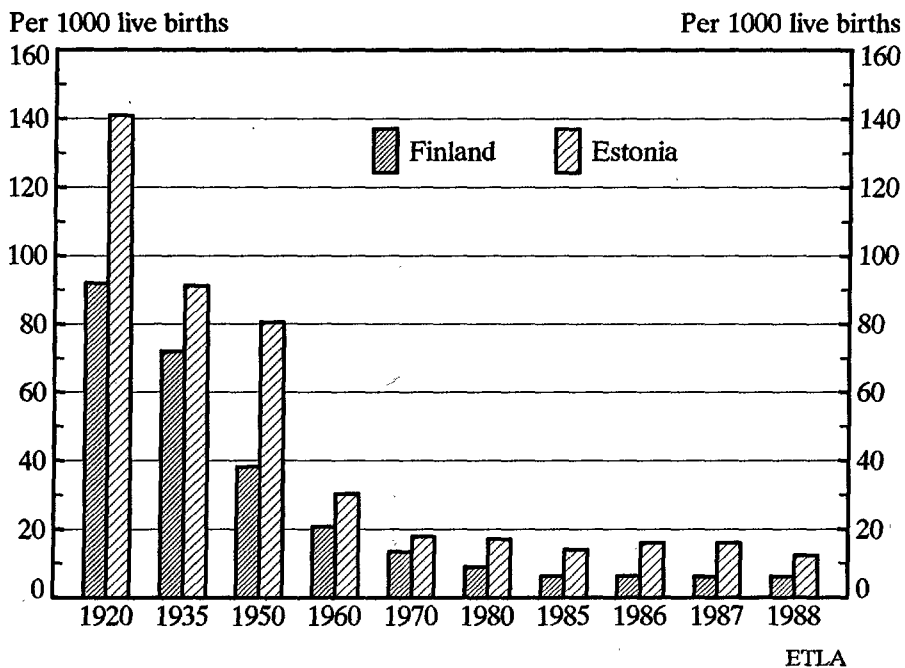


Figure 7. Life expectancy of men and women in Finland

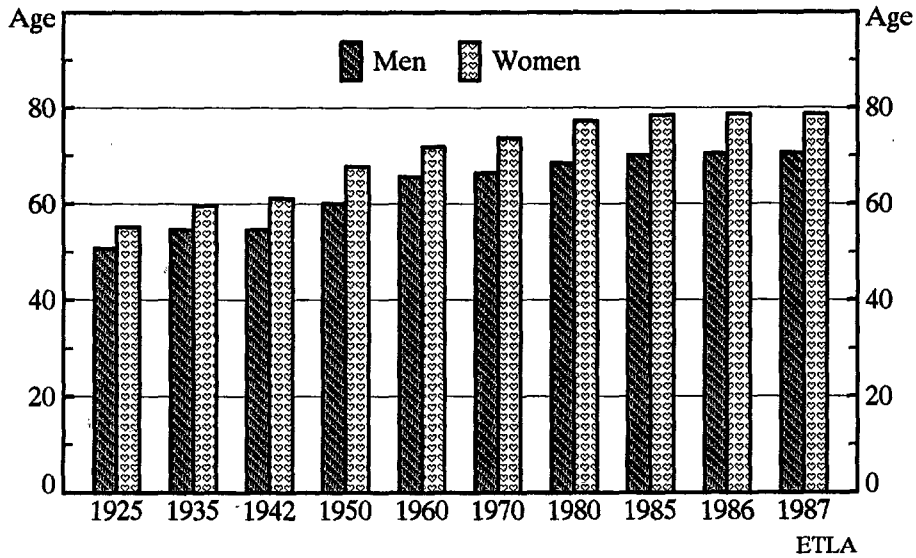
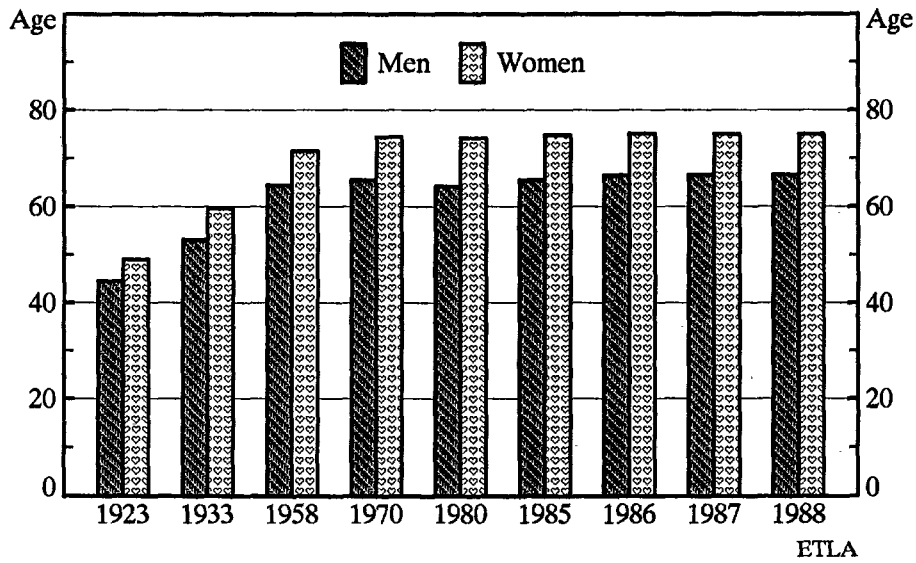


Figure 8. Life expectancy of men and women in Estonia



and it is among the lowest in the world. After the war infant mortality declined in Estonia in the same way as in Finland. Since 1970 there has been considerably less success in Estonia compared to Finland. Estonia reached the lowest level of infant mortality in 1988, but it was still two times higher than in Finland.

During the post-war period the development of life expectancy was in some ways similar to the development of crude mortality rates and infant mortality. Differences in life expectancy between men and women have increased in both countries. It was due to the high mortality rate of men aged 35-60. From 1960 to 1986 there was an increase in life expectancy in Finland - 5.1 years for men and 6.1 years for women (see Figure 7). From 1960 to 1988 it was 2.2 years for men and 3.4 years for women. In Finland the difference of life expectancy between men and women was 8.3 years in 1986. This difference was smaller than the maximum difference of 8.8 years, which was observed in 1977. In Estonia female and male life expectancy differed by 9.4 years in 1988. The maximum difference was 10 years in 1965-1980.

3.6. Causes of death

Total mortality is the sum of trends in mortality from different causes of death (e.g., coronary heart disease, lung cancer and suicide etc.). Due to the different cause-of-death classifications used in Finland and Estonia, it would be quite difficult to compare Finnish and Estonian mortality by causes of death. For that reason we'll study only deaths by the four most general groups of death causes: neoplasms, diseases of the circulatory system, other diseases and accidents.

In Estonia mortality is considerably higher in all main classes of causes of death than in Finland. One of the most puzzling aspects of the development of mortality in industrialized countries has been the irregularity of changes in male mortality since World War II. The increase of total male mortality in Finland and Estonia seem to have been closely connected with changes in mortality from cardiovascular diseases, among which ischemic heart disease is dominant. Cardiovascular diseases together with cerebrovascular diseases belong to the group of diseases of the circulatory system. At present, diseases of the circulatory system are the main causes of death in both

countries (see Figures 9 and 10). In Finland the male mortality from cardiovascular diseases rose rapidly in the 1960s, whereas there was a clear decline during the 1970s. Mortality from cardiovascular diseases began to rise in Estonia also in the 1960s, but there isn't yet a considerable decline in the causes of death of this group at present.

In both countries the second biggest group of causes of death is neoplasms (see Figures 9 and 10). Mortality from cancer of bronchi, trachea, lungs and in Estonia also of stomach constitutes almost half of the cases of this group. Death rates from cancer of trachea, bronchi and lungs have increased in both countries.

The third place is occupied by deaths from accidents, poisonings and violence. Mortality due to accidents and other violent causes of death increased among both sexes in the 1960s in both countries, but declined in the 1970s in Finland and in 1985 in Estonia. The most important factor in this development was the rapid fall in motor vehicle accidents. From 1960 to 1984 mortality from violent causes of death was higher than mortality from neoplasms in Estonia. The rapid fall of alcohol consumption in 1985 determined the decline of mortality from street accidents, alcohol poisoning-suicides. Besides, the crude mortality rate of suicides is in Finland and especially in Estonia much higher than in all Scandinavian countries and even higher than in the Soviet Union.

3.7. Migration

Migration affects all demographic processes as well as the formation of labour force. The geographical mobility of population has taken place not only as internal migration (migration between rural and urban places, intramunicipal movement) but also as international migration.

In the period between the Wars, especially in the 1930s, emigration from Finland was low because of various obstacles (visas, residence and work permits, etc.). It was the period of rapid urbanization in Finland and also in Estonia. Up to 1939 international migration in Estonia was similar to that of Finland. At the end of 1939 about 13 thousand people emigrated from Estonia, mostly to Germany (about 11 thousand people).

Figure 9. Structure of causes of death in Finland in 1987

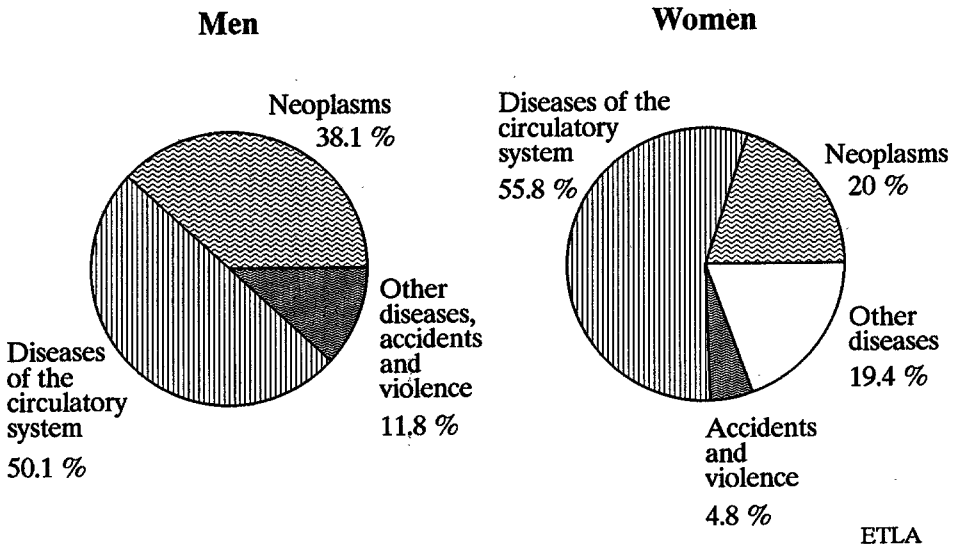
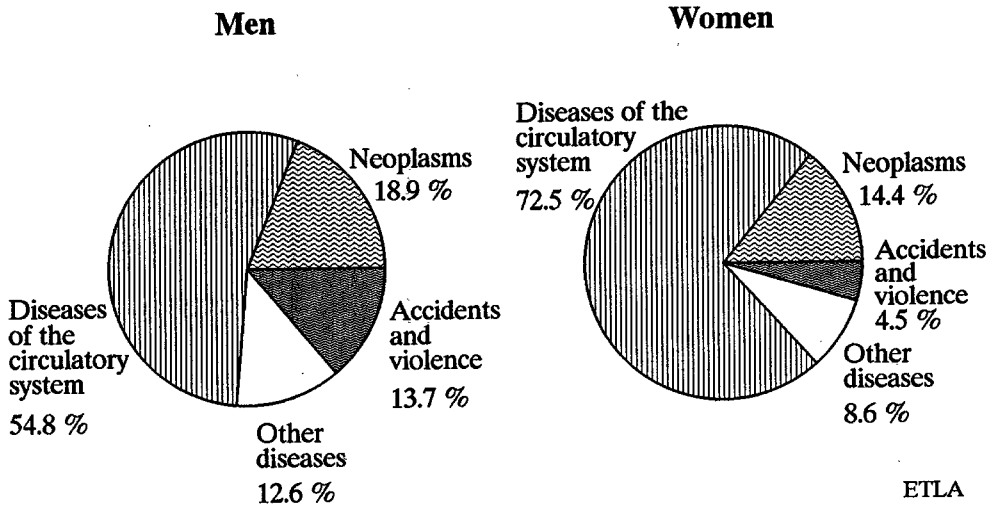


Figure 10. Structure of causes of death in Estonia in 1988



Since the Second World War, more than 600 000 Finns have emigrated (see Table 7), most of them to Sweden (73 percent of Finnish emigrants). Five countries (Sweden, FRG, Canada, USA, Australia) may be singled out as significant destinations for Finnish emigrants since the World War II. Next to Sweden migratory exchange has been the liveliest with the Federal Republic of Germany (11 percent). But most emigrants seem to have stayed there for only short periods (16 percent of return migrants have come back from FRG). Allowing for return migration, the net emigration has been a little over 300 000 persons - 6.3 percent of Finnish current population.

Migration from Finland to Sweden has generally followed economic development in Sweden to the degree that during boom migration has increased, and during recession it has correspondingly decreased. On an individual level, unemployment and better salaries in Sweden have been the dominant motives. Economic factors are also reflected in return migration but they are not of primary importance. The most important motives are: providing for the children's future, homesickness or not liking Sweden, and family, friendship or private life. In the 1980s there was a clear migration

Table 7. External migration in Finland and Estonia

Year	Yearly net migration		Per 1000 of mean population	
	Finland	Estonia	Finland	Estonia
1941-1950	-4100	..	-1.1	..
1951-1960	-7003	3748*	-1.5	3.1*
1961-1970	-17763	6955	-3.9	5.4
1971-1975	1936	6155	0.4	4.4
1976-1980	-7493	5552	-1.6	3.8
1981-1985	5347	6015	1.1	4.0
1986	1658	7237	0.3	4.7
1987	667	6490	0.1	4.2
1988	1718	2794	1.8	1.8

* 1956-1960

Sources: Yearbook of Population Research in Finland 1989. p. 83 K. Katus. Sisseränne Eestisse. "Eesti Ekspress", 17.11.89; K. Katus. Väljaränne Eestist. "Eesti Ekspress", 24.22.89.

gain in Finland from Sweden, mainly due to the return migration. The economic factors affecting the migration to Sweden have disappeared, since the income levels are more or less equal.

Over the period 1945-1988 the migration gain in Estonia was approximately 500 000 (see Table 7). In 1945-1950 out of 241,300 in-migrants about one-third were Estonians returning to their native country. The labour force coming from different regions of the Soviet Union has played an important role in the national economic plan. In 1954-1960 about 28,000 Estonians came back from Siberia. In the period of 1951-1960 about 25,500 and in 1961-1979 about 92,100 mostly non-Estonians came to Estonia, mostly from Leningrad Oblast and Pskov Oblast. Up to the early 1980s the regions of the Soviet Union from where in-migrants came to Estonia widened. People came to Estonia from Central Russia, Siberia, Central Asia, Ukraine. The early 1980s were the years of maximum migration. The migration intensity has fallen since 1987 and migration gain amounted only to 2800 people in 1988. This tendency of migration gain continued in 1989-1990.

Still, in Estonia migration has led to a number of social and economic problems. Numerous migrants came to Estonia not to find a job but in the hope of getting a flat. The labour turnover among the migrants is very high: already during the first year 20-30 percent of the in-migrants leave their first working place. In-migrants from several places of the Soviet Union enjoyed for many years (since World War II to 1989) some advantages in getting hostel accommodation or a flat. During this period nearly a fourth of the flats were given to people who had lived in Tallinn less than 5 years. However, uncontrolled migration made up the bulk of migration, and the in-migrants usually found accommodation at their relatives or friends.

In Finland internal migration increased steadily in the 1950s, remaining quite stable during the 1960s and increasing again in the early 1970s up to the year 1974 (see Table 8). In 1974 a clear decrease in intermunicipal migration was seen. During that period migration between rural areas experienced a marked decrease: in the early 1950s 50 percent of all moves were made from one rural area to another, but by 1979 such moves accounted for only 13 percent. On the other hand, migration between urban areas has increased correspondingly (13% vs. 36%). Migration from rural to urban areas has remained at a rather stable level, while migration from urban to rural areas has increased slightly.

Table 8. Internal migration in Finland and Estonia

Year	Yearly net migration		Per 1000 of mean population	
	Finland	Estonia	Finland	Estonia
1921-1930	79 248	..	2.4	..
1931-1939	136 470	..	3.8	..
1941-1950	132 778	..	3.5	..
1951-1960	172 098	55 406**	4.0	4.6**
1961-1970	219 330	57 230	4.8	4.4
1971-1980	213 569	55 917	4.6	3.9
1981-1985	193 681	50 634	4.0	3.4
1986	186 244	49 155	3.8	3.2
1987	201 448	49 106	4.1	3.1
1988	211 678	43 107	4.3	2.8

* Average in-migration to rural and urban municipalities

** 1956-1960

Sources: Yearbook of Population Research in Finland 1989, p. 84; K. Katus. Sisseränne Eestisse. "Eesti Ekspress", 17.11.89.

As to Tallinn, the importance of internal migration from other areas of Estonia has decreased since 1976. In 1971-1975 the migration gain at the expense of rural areas was 4300, while in 1976-1980 it was 1700. Since 1983 changes have taken place in migration between urban and rural areas. In 1983-1986 the rural population gained 6100 people by migration. In 1987-1989 the growth of rural population has been due to the in-migration of rural settlements.

3.8. Urbanization and population density

Simultaneously with the general growth, the population of urban areas in both countries has continuously increased. As compared with other industrial countries of Europe a process of urbanization in Finland and Estonia was slow in the 1920s and 1930s. The share of urban population in the total population was higher in Estonia than in Finland (see Figure 11 and Table 9).

Table 9. Urban and rural population and the proportion of urban population in Finland and Estonia

Years	Urban population (thousands)		Rural population (thousands)		Share of urban population	
	Finland	Estonia	Finland	Estonia	Finland	Estonia
1920*	507.4	301.6	26040.2	789.2	16.1	27.5
1930**	715.0	349.8	2747.7	767.5	20.6	31.0
1940	991.7	354.1	2703.9	700.3	26.8	33.6
1950	1302.4	516.0	2737.4	581.0	32.3	37.0
1960	1707.0	690.7	2739.2	518.4	38.4	57.1
1970	2340.3	881.2	2258.0	474.9	50.9	65.0
1980	2685.1	1033.1	1922.7	440.7	59.8	70.1
1985	2937.9	1092.7	1972.8	436.8	59.8	71.4
1986	3042.9	1104.2	1882.7	437.8	61.8	71.6
1987	3052.4	1116.6	1886.2	439.4	61.8	71.8
1988	3061.0	1117.0	1893.5	438.0	61.8	72.0

* Data of the Census of 1922

** Data of the Census of 1934

Sources: Yearbook of Population Research in Finland 1989. XXVII. The Population Research Institute, Helsinki, 1989, p.78; Naselenie SSSR 1987. Moskva, 1988, pp. 15, 16; Rahvastikuprobleeme Eestis. II rahvaloenduse tulemusi. Vihk IV. Tallinn, 1937, p. 5.

In the 1920s and 1930s there were not many big cities in Finland and Estonia. In the pre-war period the most of Finnish and Estonian population lived in the countryside, in individual residential spots and in small towns. In both countries the capitals have a significant place. In Finland only Helsinki had more than 100 000 inhabitants in 1920 (see Table 10). In Estonia Tallinn was the only big city at that time (see Table 11). Other towns were much smaller than the capital cities. The other towns had much lower population. In Tartu and Turku there were about 58 thousand people. There were four towns in Finland where population number was more than 20 thousand and two towns in Estonia. Before World War II there were 40 such towns in Finland and 33 in Estonia.

Table 10. Number of inhabitants of big cities (in thousands) in Finland

Year	Mean population of big urban municipalities						
	Helsinki	Turku	Tampere	Viipuri	Oulu	Espoo	Vantaa
1920	197.8	58.4	47.8	30.1	21.3	..	..
1940	320.3	74.8	80.8	73.9*	28.0	..	..
1950	369.4	101.8	101.1	..	37.9	..	..
1960	452.8	124.4	127.3	..	58.2	..	..
1970	510.4	96.6	155.4	..	85.0	152.2	..
1987	490.0	160.5	170.5	..	98.6	164.6	149.1

* Year 1937

Source: SYB 1938 and 1989

Table 11. Number of inhabitants of big cities (in thousands) in Estonia

Year	Mean population of big urban municipalities				
	Tallinn	Tartu	Pärnu	Narva	Kohtla-Järve
1922	122.4	58.9	20.3	23.5	..
1938	146.7	60.6	21.5	24.2	..
1959	281.7	74.3	36.1	27.6	29.2
1970	362.7	90.5	46.3	57.9	68.3
1979	429.7	104.5	51.3	72.8	72.7
1989	482.3	114.0	53.9	81.4	77.1

Sources: Eesti NSV rahvamajandus 1988. aastal. Tallinn, 1989, p.

The industrialization in both countries and collectivization of agriculture in Estonia formed the main reason for the out-migration from rural areas into cities and other urban settlements possible. Due to the immigration from the Soviet Union and migration processes of the Estonian rural population the number of inhabitants of Tallinn rose twofold during the period 1938-1959. Population growth in Helsinki during that period was considerably smaller.

In the 1960s and 1970s the process of urbanization continued in both countries. The urban settlements of Estonia took over four fifth of the net immigration from other republics of the Soviet Union, and since 1964 have been responsible for the whole natural increase. Besides, urban settlements have grown considerably due to internal rural-urban migration. During this period, besides Tallinn, the population growth has been very intensive in such industrial centres as Narva and Kohtla-Järve. The growth of these towns has been only due to immigration of Russian population from Leningrad and Pskov Oblast.

At the beginning of the 1960s economic growth began in Finland. On the one hand, this was the basis for great changes in industrial structure: the proportion of the manufacturing sector, and to an even greater extent, the public services sector, increased rapidly. New work places in expanding industries have largely been concentrated within centres of population. But, on the other hand, between 1946 and 1950 the "baby-boom" cohorts were born - i.e. the exceptionally large groups of people born in the late 1940s entered the labour market. Mainly due to above-mentioned changes the population of Finland decreased in sparsely populated areas and grew in population centres of different size. In this period, besides Helsinki, also the centres of counties like Turku, Tampere and Oulu grew.

At present there are 84 urban municipalities in Finland and 56 urban settlements in Estonia. There are two categories of urban places in Estonia: 1) a town, and 2) an urban type of settlement (in Estonian "alev"). 33 urban places are towns and 23 urban type settlements. Population of 11 towns and 21 urban type settlements is less than 5,000. It is only 7.6 percent of the total urban population of Estonia. 66.1 percent of mean population of Estonia live in urban places bigger than 5,000 inhabitants.

During the period 1970-1987 the population of Helsinki decreased due to out-migration and low natural increase by 20 thousand people. At the same time the population of other towns of the Helsinki metropolitan area - Espoo and Vantaa increased. The process of urbanization stabilized in Finland by 1980. In Estonia in the 1980s Tallinn continued to grow. The growth of smaller towns hasn't been so intensive. In spite of increase of the number of inhabitants in Tallinn, a share of urban population in Estonian population didn't grow. Many urban dwellers have moved from towns of North-East Estonia to Tallinn.

Due to the above-mentioned urbanization and migration processes the population density of Finland and also of Estonia rose in between 1920-1987 (see Table 9). In 1920 there were 8.2 inhabitants per square kilometre in Finland and 22.9 in Estonia. Due to the population growth the population density increased to 9.7 people per square kilometre in Finland by the end of the 1930s and to 23.8 in Estonia.

By 1945 the population density had risen to 11.0 inhabitants per square kilometre in Finland. Due to the population losses during the war 18.9 persons per square kilometre lived in Estonia. By the present time, due to contrary migration trends of Finland and Estonia, the population density in Finland has risen only to 14.6 and in Estonia even to 34.9 people per square kilometre.

In both countries the population is not distributed uniformly. Finnish population is concentrated to the coasts of the Gulf of Finland and the Gulf of Bothnia, where the population density in large areas comes up to 50 people per square kilometre in spots (120 people per square kilometre in Uusimaa). On the other hand, the most northern part of Finland is sparsely inhabited - less than 1 person per square kilometre. There are not so large differences in population density in Estonia. The most inhabited areas are the hinterland of Tallinn and South Estonia, the less inhabited territory is in West-Estonia and the islands.

3.9. Sex and age structures

Mortality, fertility and migration processes have influenced the evolution of the sex-age structure in Finland and Estonia. As in most countries, women were in 1920-1930 and still are in numerical superiority in both countries (see Table 12). In

Estonia the proportion of women was higher than in Finland already in the 1930s. Differences between numbers of men and women become greater with increasing age. Due to the fact that in Finland differences in life expectancy of men and women are not so great as in Estonia, the numerical superiority of aged Finnish women isn't so great as in Estonia.

Figure 11. Share of urban and rural population

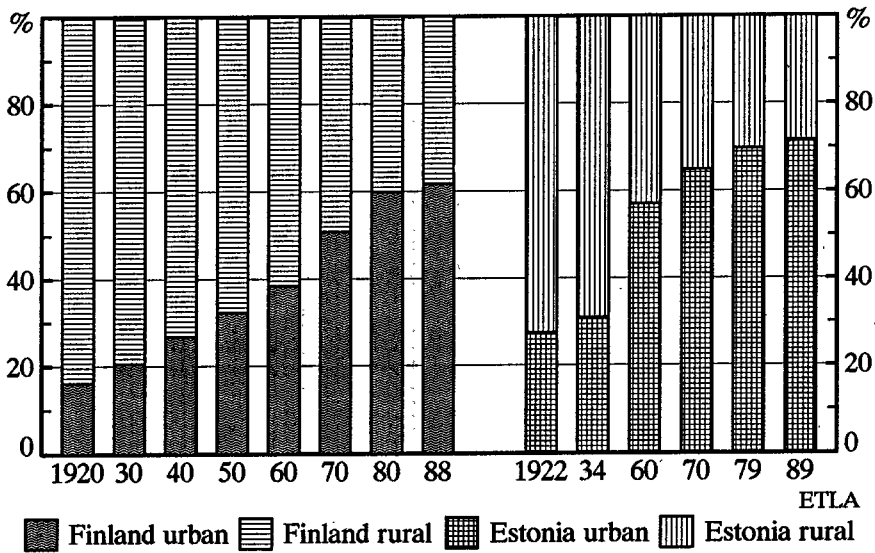


Figure 12. Population pyramid of Finland in 1930

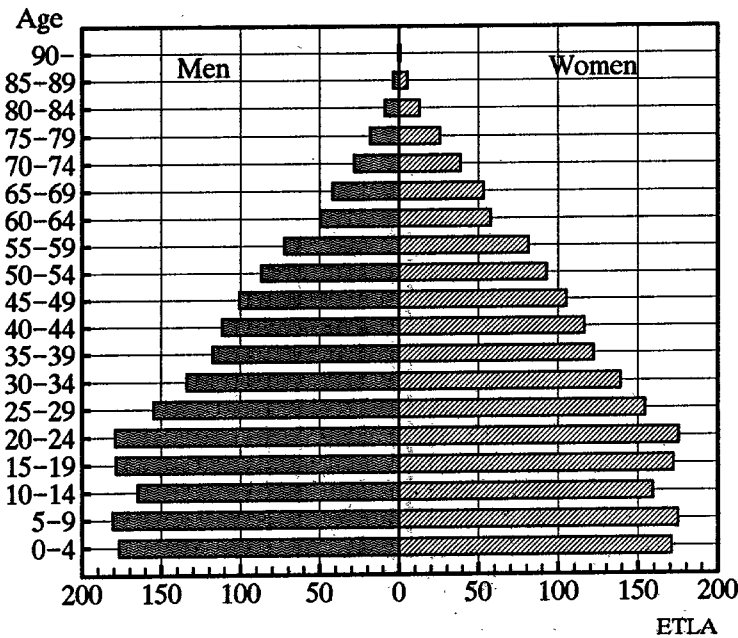


Table 12. Sex ratio in Finland and Estonia

Age	Women per 1000 of mean population			
	1930*		1987**	
	Finland	Estonia	Finland	Estonia
0 - 4	491	492	489	492
5 - 9	492	495	489	490
10 - 14	492	493	488	491
15 - 19	491	500	489	474
20 - 24	495	494	490	487
25 - 29	499	502	488	496
30 - 34	509	525	489	505
35 - 39	510	550	485	510
40 - 44	511	556	488	519
45 - 49	510	555	497	524
50 - 54	516	553	505	537
55 - 59	529	563	520	557
60 - 64	537	575	552	606
65 - 69	559	595	603	661
70 - 74	579	615	634	671
75 - 79	586	627	665	713
80 - 84	595	634	710	745
85 - 89	574	675	751	784
90 -	688	731	789	838
Total population	507	531	515	533

* In Estonia by the 1934 census

** In Estonia by the 1989 census

Calculated on the basis of: OSF, VI a, C Population, Population and Housing Census (CSO); SYB 1938; Rahvastikuprobleeme Eestis. II rahvaloenduse tulemusi, pp. 12-13; Eesti Statistika Aastaraamat 1989. Tallinn, 1991, pp.

There are plenty of children and rather low number of old people in the classic age structure. But, already in the 1930s, the age groups of children were less numerous than the adult people in Finland and in Estonia (see Figures 12 and 13). This was due to the decline of fertility and increase in life expectancy during the pre-war period. Age groups over 65 years were small because life expectancy of that time was less than 60 years in both countries.

Figure 13. Population pyramid of Estonia in 1934

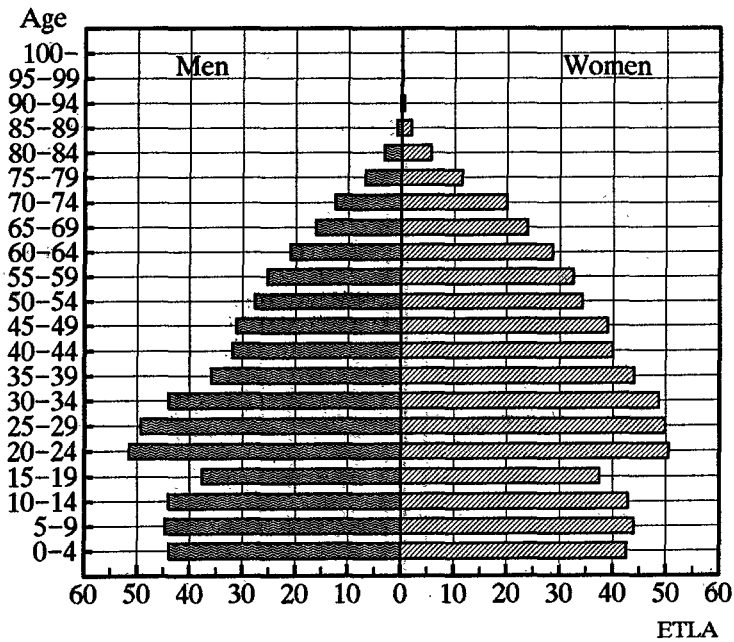
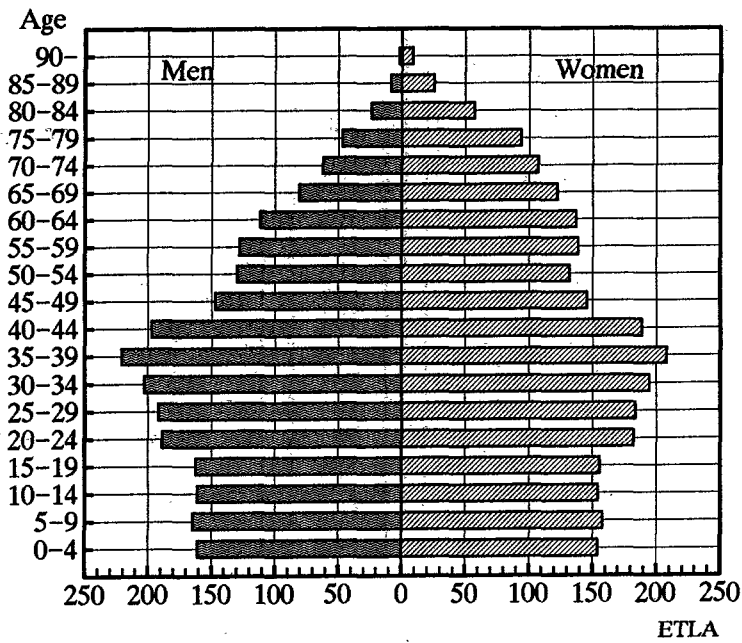


Figure 14. Population pyramid of Finland in 1987



The irregularities of the present age structure of the Finnish population are closely connected with the changes in the annual number of live births in this century (see Figure 14). The variation of sizes of age groups born from 1910-1944 is a result of the rapid decline in fertility until 1933 and the rise in fertility until the end of the decade. The "baby-boom" age groups, born in the late 1940s, were 35-40 years old in 1987 and they can be clearly seen in the current age structure (see Figure 14). The declining fertility after the "baby boom" made the youngest age groups considerably smaller than middle-aged groups. The smallest birth cohort in 1973 can also be seen in the population pyramid.

Both in Estonia and Finland the process of population aging is going on. More than fertility and mortality the migration from several places of the Soviet Union has influenced the Estonian age structure (see Figure 15). On the one hand, in-migrants are young people (15-34 years old), basically in the age of the highest reproductive potentials. On the other hand, the share of elderly people is growing in Estonia. Since 1987 the number of in-migrants has decreased rapidly. It means that the share of elderly people in Estonian age structure grows also due to aging of in-migrants who came to Estonia in their productive age in 1950-1970. At the same time, due to the low fertility rate the number of children has not increase.

Since the 1930s the percentage of elderly population and people in productive age has increased in Finland and Estonia (see Table 13). The share of the population in productive age is internationally high in Finland.* There are 2.1 people in productive age for every person in non-productive age (children and elderly people). In Estonia this number is 2.0. The percentage of children was in the 1920s and 1930s higher in Finland than Estonia. It was due to lower fertility at that time in Estonia. At present the situation is the opposite. It is due to lower fertility in Finland and the influence of in-migrants on Estonian fertility. The growth of elderly population has been more rapid in Finland than in Estonia since the 1920s. A more important factor is a more rapid growth of life expectancy in Finland as compared with Estonia.

* The situation will change very rapidly in the late 1990s and 2000s.

Table 13. Age structure in Finland and Estonia

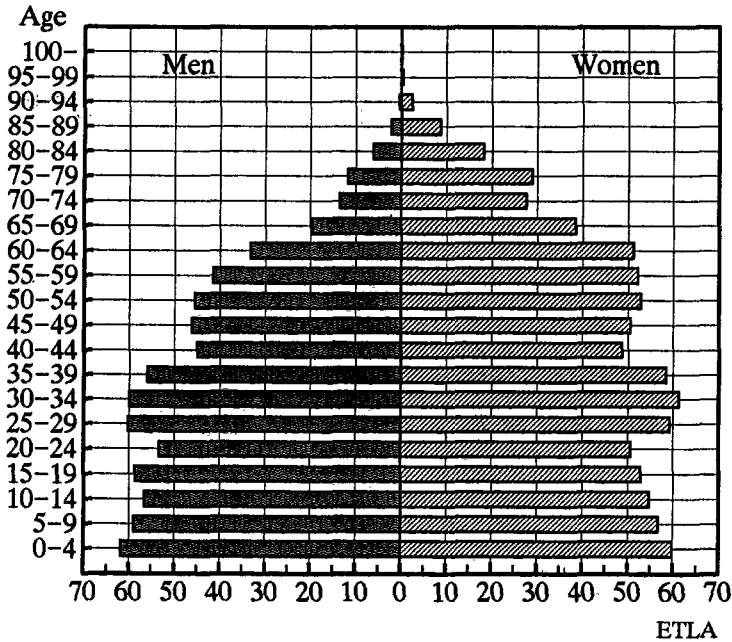
	Finland			Estonia		
	0-14 %	15-64 %	65- %	0-14 %	15-64 %	65- %
Whole population						
1920*	33.4	60.7	5.9	25.5	67.0	7.5
1930**	29.4	64.3	6.3	23.3	67.6	8.3
1940	26.9	66.7	6.4	..	..	..
1950	30.0	63.3	6.7	..	..	..
1960	30.1	62.4	7.4	22.7	66.8	10.5
1970	24.4	66.3	9.3	22.0	66.1	11.9
1980	20.2	67.8	12.0	21.5	65.9	12.6
1985	19.4	68.0	12.6	22.1	66.6	11.3
1986	19.3	67.9	12.8	22.0	66.9	11.1
1987	19.3	67.8	12.9	21.9	66.9	11.2
1988	19.4	67.5	13.1	21.8	66.9	11.3
Men						
1920*	34.8	60.0	5.2	27.4	66.1	6.5
1930**	30.6	64.1	5.3	25.1	67.4	7.5
1940	28.1	66.5	5.3	..	..	..
1950	32.0	62.8	5.2	..	..	..
1960	31.9	62.3	5.7	26.4	66.2	7.4
1970	25.7	67.1	7.2	24.6	67.3	8.1
1980	21.4	69.7	8.9	23.7	67.9	8.4
1985	20.5	70.4	9.1	24.2	68.4	7.4
1986	20.4	70.3	9.3	24.1	68.6	7.3
1987	20.4	70.3	9.4	23.9	68.6	7.3
1988	20.4	70.0	9.5	23.8	69.0	7.2
Women						
1920*	32.0	61.3	6.7	23.9	67.8	8.3
1930**	28.3	64.5	7.2	21.6	67.8	10.6
1940	25.7	66.9	7.4	..	..	..
1950	28.1	63.9	8.0	..	..	..
1960	28.5	62.5	8.9	19.8	67.3	12.9
1970	23.0	65.7	11.3	19.9	65.0	15.1
1980	19.1	66.0	14.9	19.7	64.2	16.1
1985	18.4	65.8	15.8	20.2	65.1	14.7
1986	18.3	65.6	16.1	20.2	65.3	14.6
1987	18.3	65.4	16.3	20.0	65.2	14.8
1988	18.4	65.1	16.5	20.0	65.1	14.9

* In Estonia by the 1922 census

** In Estonia by the 1934 census

Sources: Yearbook of Population Research in Finland 1989. XXVII. p. 78; Rahvastiku-probleeme Eestis. II rahvaloenduse tulemusi. PP. 12-23; Itogi wsesozujnoi perepisi naselenia 1959 goda. Estonskaja SSR. Moskva, 1962, p. 22; Estestvennoje dvizhenije i migratsija naselenia Estonskoi SSR v 1981-1985 gg. Tallinn, 1987, pp. 29-31.

Figure 15. Population pyramid of Estonia in 1989



3.10. Nationalities and language

The ethnic composition of the Finnish population has changed little since 1920. In 1920 the Finnish population consisted of 88.7 percent Finns, 10.98 percent Swedes and less than 1 percent other ethnic groups (see Table 14). By 1987 percentage of Finns had risen to 93.6, percentage of Swedes fallen to 6.0. The share of Russians, Lapps and other small ethnic groups together has not changed, either.

In Estonia the dynamics of the ethnic composition has not been as simple as it has been in Finland. During the 1920s and 1930s there were 88 percent Estonians, about 8 percent Russians and about 1.5 percent Germans in Estonia. There were certain territories in Estonia where Russians lived. These places were a western coast of Lake Peipsi and North-East Estonia. Germans lived mostly in small towns. In these years Estonia had also small ethnic groups of Swedes, Jews, Latvians, Lithuanians and Finns (0.1 percent of the Estonian population).

Table 14. Population of Finland by language

	Percentage of mean population				
	Finnish	Swedish	Russian	Lappish	Other
1920	88.7	11.0	0.15	0.05	0.12
1930	89.4	10.1	0.24	0.06	0.16
1940	90.0	9.6	0.19	0.06	0.13
1950	91.1	8.6	0.12	0.06	0.08
1960	92.4	7.4	0.06	0.03	0.07
1970	93.2	6.6	0.04	0.05	0.08
1980	93.5	6.3	0.03	0.03	0.16
1987	93.6	6.0	0.05	0.03	0.25

Source: Population: Structure of Population and Vital Statistics, SYB 1989.

At the very beginning of the occupation of Estonia and other Baltic States the Soviet Union started to populate these territories with Russians and other ethnic groups whose native language was Russian. The data of the Population Census of 1959 showed already the results of such policies. According to the census four larger ethnic groups in Estonia were: Estonians - 74.6 percent, Russians - 20.1 percent, Finns - 1,4 percent and Ukrainians - 1,3 per cent (see Table 15). The number of Finns had risen due to immigration from Ingeria and Karelia. About 1000 Finns lived in Estonia in the pre-war period. The census of 1959 showed that 16,699 Finns had come to live in Estonia. 60 percent of Finns had the language of their nationality as their native language, 25 percent Estonian and 15 percent Russian. Russian was a native language for these Finns who had come to Estonia from these areas of the Soviet Union where they didn't have the possibility to study in national schools.

There was a net immigration of Russians into all the non-Russian European republics in 1959-1989. In 1970-1979 the rate of Russian immigration was higher to Estonia than to any other non-Russian republic, in 1979-1989 Estonia was the second in this respect. Due to a very intensive immigration there are 61.5 percent Estonians, 30.3 percent Russians, 3.1 percent Ukrainians in Estonia by the Census of 1989 (see Figure 16). Percentage of Finns had decreased to 1.1 due to emigration to Finland.

Table 15. Population by nationalities in Estonia

Nationalities	Percentage of mean population					
	1922	1934	1959	1970	1979	1989
Estonians	87.6	88.2	74.6	68.2	64.7	61.5
Russians	8.6	8.2	20.1	24.7	27.9	30.3
Ukrainians	0.0	0.0	1.3	2.1	2.5	3.1
Byelorussians	0.0	0.0	0.9	1.4	1.6	1.8
Finns	0.1	0.1	1.4	1.4	1.2	1.1
Swedes	0.7	0.7	0.0	0.0	0.0	0.0
Jews	0.4	0.4	0.5	0.4	0.3	0.3
Latvians	0.1	0.5	0.2	0.2	0.3	0.2
Germans	1.7	1.5	0.1	0.6	0.3	0.2
Tatars	..	0.0	0.1	0.1	0.2	0.3
Poles	0.1	0.1	0.2	0.2	0.2	0.2
Lithuanians	0.1	0.1	0.1	0.2	0.2	0.2
Others	0.6	0.2	0.5	0.5	0.6	0.8

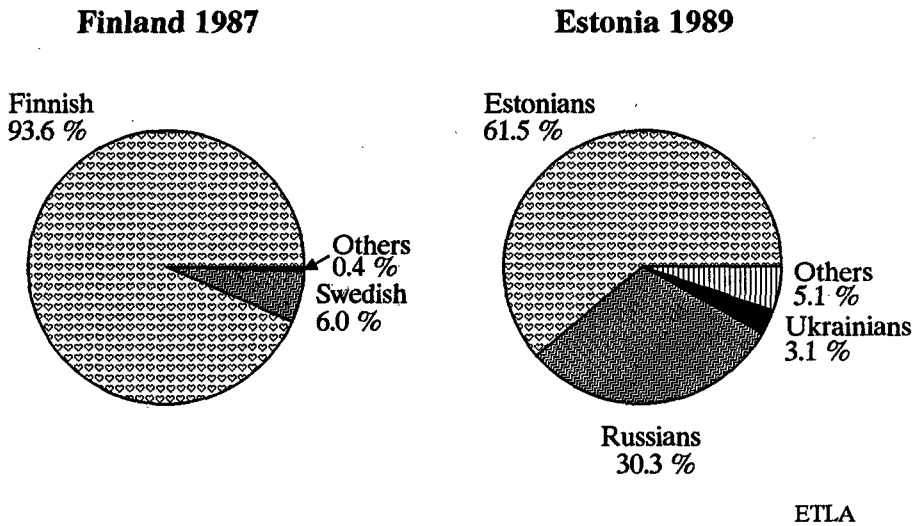
Sources: Rahva demograafiline koosseis ja korteriolud Eestis. 1922.a. Üldrahvalugemise andmed. Vihk I ja II. Tallinn, 1924, p. 31; Rahvastikuprobleeme Eestis. II rahvaloenduse tulemusi. P.24; Naselenie Estonskoi SSR (po dannym Vsesojuznoi perepisi naselenia 1979 goda). Tallinn, 1982, p. 107; Esialgseid andmeid 1989.a. rahvaloenduse pohjal. "Rahva Hääl", 19. sept., 1989.

At the same time Finland has become an even more monoethnic country than before. The percentage of Finns has risen by 5 percent and that of Swedes and Russians decreased (see Figure 16). By the Census of 1989 the number of Estonians has not risen to the pre-war level. In 1934 the number of Estonians was 992.5 thousand. In 1989 there were 963.3 thousand Estonians in Estonia. Taking into consideration the similarity of biological development of population in Finland and in Estonia, there should be 1430.0 thousand Estonians in Estonia by now, had there not been the population catastrophe in the 1940s.

Conclusions

In the 1920s and 1930s population developments were very similar in Finland and Estonia: population growth was due to natural increase, migra-

Figure 16. Ethnic composition in Finland and in Estonia



tion processes were not essential. The postwar period has been very divergent for Estonian and Finnish population. The main features of divergent developments could be summarized shortly in the following way: in Finland the population growth was due to the rise of birth rates at the end of the 1940s and the fall of mortality rates (especially infant mortality); in Estonia the immigration of non-Estonians from the Soviet Union had the great importance.

The future population developments seem to be very different too: in Finland the population will start to decline around 2000-2005 and the immigration is likely to increase quite rapidly. In Estonia, on the other hand, there seems to be the fall of the migration potential and out-migration of non-Estonians may even be possible. The beginning of a population decrease will be at the end of the first decade of the 21st century.

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4. ECONOMIC STRUCTURES

by Pasi Ahde and Teet Rajasalu (editors) *

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4.1. Introduction

4.1.1. Some historical background

Before the socialist era the economic development in Estonia was quite similar to that in Finland. Large enterprises which were established during the time of czarist Russia and oriented toward production for the Russian market became inefficient and faced difficulties. The most important branches of these firms were ship-building and textile manufacturing. When Estonia declared independent in 1918, the trade relations with Russia dropped considerably. Instead the export of foodstuffs to Western Europe became dominating (Figures 36 and 38). Thus there was a reorientation in economic policy towards new markets and new goods.

In Finland the development after the First World War also led to a sharp decline of eastern trade. The trade with Russia had been rather diverse, so the decline led to a more one-sided structure of exports; 85 % of exports were forest industry products.

Estonia weathered the depression of 1932 - 1933 rather well and in 1938 the economy was in quite good shape. The economic development was approximately similar in Estonia and Finland during the inter-war period (see Figures 31, 32 and 35).

In August 1939 a treaty between Germany and the USSR was signed (the so-called Molotov-Ribbentrop pact). Its secret protocol divided the territory of Eastern Europe between the German and the USSR spheres of interest. Estonia and Finland were assigned to the Soviet sphere of interest. Finland fought for its independence during the Winter War. The Estonian government decided that Estonia had insufficient strength to wage war against the Soviet Union. So Estonia was obliged to sign an agreement about the establishment of military bases of the USSR on the Estonian territory. It turned out to be the beginning of an occupation. In 1940 after annexation of its whole territory Estonia was politically incorporated into the USSR.

As a result of these events Estonian economic development was essentially changed. Already in 1940 the private ownership was abolished and private property in the cities nationalized. Many previous owners and experienced managers of enterprises were imprisoned or deported to Russia and Siberia.

The collectivization of agriculture was carried out at the end of the 1940's mainly during one year. It was possible only under the fear of mass deportations taking place at the time. The full control over the Estonian economy went to the all-union organizations and central authorities in Moscow. The ideology of economic development was thoroughly changed and from this time on the Estonian economy cannot be treated as an independent one. In principle, the whole output was all-union property and was allocated and distributed according to the interests of the all-union economy. The aggregate demand and supply of a particular union republic lost its meaning as fulfilling of the centrally fixed plans and gaining of maximum growth rates in material production became the first priority of economic activity. For about 40 years only material production was borne in mind.

In order to attend to these tasks the system of statistics was reorganized. More complex information about the economy was substituted with information about the output of certain goods. As the statistics were to fulfil also propagandistic tasks mainly goods with maximum growth rates were included in it. As soon as some difficulties arose in certain fields of economy these items were excluded from the official statistics.

For Estonia the events of 1940's were crucial. Direct war damages (many industrial enterprises in Tallinn, Narva and Tartu were ruined by the Soviet Army) were accompanied by mass deportations of population in 1940 and 1949. Much of the population emigrated before the return of the Soviet troops in 1944. There were territorial changes, too. As a result of these events the industrial output of Estonia was reported to be only 70 % of pre-war (1940) level in 1945. The agricultural output was only 60 % of the 1940 level in 1945. As a rough estimation it may be pointed out that the Net Material Product¹⁾ of 1945 was approximately 60 % of the 1940 level. There

1) Here and later we are to use Net Material Product (abbreviation NMP) as a general indicator of economic development in Estonia. NMP includes the value added in the field of material production. In Russian and in Estonian a term 'National Income' is used for NMP but it is misleading because the value added in the field of services is not included. Thus adding to NMP the value added in services we gain the sum which is comparable to National Income in the western sense. Adding the depreciation allowances to this NI we get GDP.

was an average annual decline of 9.8 % in the economy during the period of 1941 - 1945.

Intensive investments into fixed capital formation in the second half of 1940's were financed from the all-union budget. It is believed that they were carried out bearing in mind the interests of the USSR mainly and besides economic objectives they had to fulfil other functions as well.

At the beginning of World War II a great deal of the Soviet productive capacities and part of the civil population were moved into the Urals, Siberia and Kazakhstan. After the end of the war the population returned to the European part of the USSR. This created a shortage of labour resources in the eastern part of the USSR. Hence, the USSR had no reason at all to invest into its underpopulated eastern regions which had already excess capacities. The investments were quite naturally concentrated into the western part of the USSR where the war damages were more substantial. Since some capacities had survived, it was possible with less investments to restore the production there and gain faster results. Allocation of investment into western parts of the USSR was also supported by the war reparations, which arrived in the USSR through the seaports of the Baltic Sea and could be technologically more easily fitted in with the existing equipment in the newly incorporated regions (which had, for instance, close contacts with German technology).

As a matter of fact, the production did not belong to the producers any more and so there was no problem of which territories would be the sites for investments. For instance, the purpose of the intensive expansion of oil-shale production in Estonia was to provide Leningrad with electricity and gas.

These overwhelming post-war investments were soundly used as a propagandistic tool for demonstrating the help given to the Baltic republics. In the case of Latvia and Estonia the real economic target was something else. The abundant investments and increase in industrial output were accompanied by an intensive influx of labour resources from Russia and Byelorussia. Management of enterprises and managerial staff of governmental and local levels was substituted by late immigrants. The process ran in parallel to the deportations of the Estonian population to Siberia. Obviously it formed a part in a more general strategy of russification and expanding the control of the central government in Moscow over newly incorporated territories.

In Lithuania this policy did not work so well, since there was abundant supply of labour resources in rural areas and the industrialization was carried out without such intensive immigration.

As a result of the abundant investments the merchandise trade balance with other republics ran in deficit. In the period of 1945 - 1948 the value of imports was 262 million roubles and the value of exports only 149 million roubles (Veimer 1949 p. 55).

In the 1950's the socialist change in the Estonian economy was completed. In agriculture the process of concentration of collective and state farms was launched - instead of 2898 collective farms in 1949 there were only 805 in 1958 (Tnurist 1967 p. 24) and about 300 in the mid-1980's.

In industry the first new enterprises established in post-war years were put into full operation. In the mid-1950's, after the end of the Stalinist period and some increase in the power of local authorities as regards the control over the economy (formation of the Councils of National Economy in the Soviet republics), a new round in the foundation of industrial enterprises followed. The power plants in Kohtla-Järve (1947) and in Ahtme (1951) were followed by the Baltic power plant in Narva. Its construction began in 1957 and the first blocks were put into operation at the beginning of the 1960's. The end of the 1950's was the culmination of industrialization in Estonia. Many enterprises in the field of electrical engineering and machinery were established or formed on the basis of previous workshops, for instance the Kalinin plant for producing mercury rectifiers in Tallinn, electrical engineering plants in Rngu and Puurmani, the Pöögelmann plant for producing radio equipment, a plant for producing gas analyzers in Vru, plant for producing excavators in Tallinn etc. (Renter 1991 pp. 15 - 17). It is a little confusing to confess that the increased control over Estonian economy was used for expanding the industry on the basis of an inflow of labour resources. As a result of the specialization process in industry the enterprises became more and more orientated to the all-union consumers and dependant on the imports from other republics. A long step towards over-industrialization was taken just at the end of 1950's - in the period of relatively high degree of self-management in Estonian economy. The pre-conditions for too high migration from rural to urban settlements as well as from outside Estonia were created.

The trade balance reached its equilibrium in the mid-1950's. The value of imports was 324 million roubles in 1956 and 486 million roubles in 1960. The value of exports reached 322 and 494 million roubles respectively in these years (Eesti NSV majanduslikud sidemed ... 1965 p. 37). This trade included mainly the production exported to other Soviet republics and raw materials, machinery and consumer goods received from the other republics. The share of foreign countries was as low as 15.3 million roubles in imports and 7.7 million roubles in exports (5 % of total imports and 2 % of exports) in 1956.

The 1960's were for Estonia marked by years of reorganization. From 1962 steps were taken towards the reinstallation of the management of economy by branches. The growth rate of NMP decreased sharply at the beginning of the 1960's (from 14-15 % in 1958 -1959 to 7 % in 1961 and only 1.6 % in 1962). In 1965 a new economic policy was launched. The Councils of National Economy were abolished. Enterprises were transmitted into all-union subordination and the management of the economy was organized by branches. At the same time economic interests of enterprises were promoted by the introduction of self-accounting, but the price reform was a very limited one and prices were not liberalized. Thus in many cases the increased interests of producers proved to be in contradiction with the interests of society. Later reforms led to the return of administrative control over economy and to the reduction of importance of self-accounting.

Nevertheless, the first few years of new economic system seemed to be quite successful. The growth rate of GNP reached 12.7 % in 1967. Some interest in the results of production was aroused. The annual growth rate of NMP in the decade was 7.6 %.

The external trade was well in balance. In 1961 the value of imports was 557 and that of exports 553 million roubles, with the share of foreign countries in imports being 65.4 million roubles (12 %) and in exports 40.4 million roubles (7 %) (Eesti NSV majanduslikud sidemed ... 1965 p. 37). In 1966 the external trade balance was still positive. The value of imports was 878 and the value of exports 977 million roubles. The share of foreign countries reached 14 % in imports and 13 % in exports (Ekonomitshes svjazi Estonskoj SSR ... 1969 p. 57, 75). Thus, in the mid-1960's the Estonian economy was in quite good shape. Its external trade balance was in surplus, with the share of foreign countries in trade fairly high. There was consider-

able new production capacity and the problems of technological backwardness, high depreciation of technological equipment, environmental pollution, etc. were not evident yet.

The 1970's witnessed years of continuous minor reforms in the Estonian economy. Since the economic interests of enterprises brought them into contradiction with the interests of the whole society, attempts were made to switch the main economic indicators. For example, there was a campaign for implementing the value added as a most important indicator of economic activity. Later the campaign of self-accounting was launched. There was much talk about the quality of production and efficiency, but these ideas were not introduced into the real economic interests of enterprises. Sound programs for scientific and technological changes in the economy were launched. Nevertheless, the growth rate of NMP declined to 5.2 % in the 1970's. The five year growth of industrial output which was 60 % at the end of 1960's fell to 51 % at the beginning of 1970's and to 41 % in the second half of 1970's (Lugus 1981 p. 17). As a matter of fact, ecological problems began to arise, the environment became polluted and many natural resources became scanty in the USSR.

The external trade became unbalanced. Continuous large investments and an increase in the number of jobs supported permanent influx of labour resources. At the same time the social needs of the population remained unsatisfied, as there were shortages in housing, hospitals, schools etc. Some improvement could be noticed only in Tallinn where in the course of preparations for the Yachting Regatta of the 1980 Olympic Games a few hotels were constructed and the old town was renewed and reconstructed.

In the **1980's** the Estonian population finally became tired of waiting for a growth in the standard of living. More attention was paid to social needs and social stability. Many experiments for improving the economic situation were undertaken. Moscow's plans for constructing an additional third great power plant were resisted successfully. But at the same time a new port in Tallinn was erected which created an additional influx of migrants including construction workers, sailors for the merchandise fleet and harbour personnel.

In the mid-1980's the consciousness of the population about the contradictions between all-Union and local interests increased during the long-lasting

and politically difficult discussions over taking into use the phosphate deposits near Rakvere. All-Union ministries wanted to excavate the resources using economically inefficient and ecologically unacceptable technology, which would have been disastrous for the water resources and environment of Estonia.

The second half of the 1980's began with the fuzzy reforms of Gorbachev. One should remember the struggle for restructuring the economy while simultaneously accelerating its development. The battle against alcoholism was launched which trimmed state budget revenues, all kinds of 'non-labour' incomes were prohibited first, and later all kinds of manipulations were liberalized. In agriculture the campaign for establishing huge agro-industrial complexes was started which ended with disaggregation of agricultural production and rehabilitation of private farming.

The most advantageous of Gorbachev's reforms was 'Glasnost' - liberalization of press and media. It enabled the campaign against the inefficient use of phosphates in Estonia. In 1987 a more radical idea of economic autonomy was put forth. This idea was at first resisted both by local and USSR communist party leaders, but ultimately accepted by the USSR parliament. At the same time many even quite moderate steps towards real economic autonomy were rejected by the USSR government or blocked by the USSR ministries and banks. This led to the substitution of the idea about economic autonomy with the more radical idea of restoring independent Republic of Estonia in February 1990 on the basis of the Tartu peace treaty between Russia and Estonia in 1920. In March 1990 the newly elected Supreme Council of Estonia declared the Soviet power in Estonia illegal and also proclaimed the restoration of the Republic of Estonia together with a transition period which would end with the formation of constitutional organs of state power in the Republic of Estonia.

Thus the 1980's put an end to the socialist period in the Estonian economy that had lasted some 50 years. The steps taken in the field of the economy since 1990 have been carried out with the aim of restoring a normal market controlled economy. Since there is no experience of independent statehood or the transition to market economy these measures may seem quite fuzzy. In any case, the situation in the Estonian economy after 1990 belongs to the beginning of the next historical period.

As was mentioned above, the most important decision setting the different paths of development of the Estonian and Finnish economies during the past half a century was made in the autumn of 1939. The government of Finland chose not to agree to the demands of the Soviet Union.

Although both the human and material losses of Finland were great during the years of war, they were not greater than the losses of Estonia. The peace agreement was hard but Finland could remain independent and keep its own political, legal and economic institutions. Direct consequences of the lost war were limited to foreign policy, domestic affairs were affected only indirectly. The domestic situation was rather tense for many years after the war, but there were no serious attempts to change the prevailing market economy into a socialist one. The term 'market economy' should be used with caution here, because regulations concerning economic activities and even rationing of the most important goods were very widespread for many years after the war.

The direct war damage and the land area extracted from Finland had a large effect on the Finnish economy. In addition to that came the war reparations.

People from the lost land area moved to the remaining part of the country, where they were granted land to start farming. Land had also been promised to those men who fought in the war and had families to support.

Behind this policy of promoting farming there were in addition to the economic and social goals also political ones. Later on the policy had some important effects, all of which were not seen when the policy was introduced. At first the effects were mainly positive. Food production rose and economic activity was encouraged also in less densely populated parts of the country. Also unemployment could be kept down, which lowered the pressures in domestic politics against the prevailing political system.

Later on the negative effects surfaced. A large part of the farms founded in northern and eastern Finland gave only a rather modest income to the farmers and when their children grew up they had no opportunity to find their living in their home district. This led to a massive migration to towns and also abroad, mainly to Sweden.

The policy had also some long run effects on Finnish agriculture. When the law on farm income went into effect, it promised a fair income to every farmer. The producer prices of agricultural products were set so that this goal was achieved. The productivity on small farms in northern and eastern Finland was rather low, thus leading to high prices of agricultural products and later on to large overproduction, which had to be marketed abroad with government support. Now agricultural questions are one of the main obstacles in Finland's way into the European Community.

The war reparations had also an important impact on the Finnish economy. In the beginning they were a heavy burden to the national economy, whereas in the worst years even more than 5 % of GDP went toward war reparations. More difficulties were caused by the fact that the products which were to be delivered were mainly outside the field of Finland's traditional export industry. For instance in the metal industries a great deal of new capacity had to be built and new products had to be designed. Later on this helped to diversify Finnish exports, which before the war had been very heavily dominated by the products of the forest industries.

The bilateral trade between Finland and the Soviet Union can at least partly be credited to the war reparations, although the development of the trade was also supported by political factors. Later on the Soviet trade helped Finland to make its economic development more steady. Soviet trade was based on five-year agreements. The main import article was crude oil, and when oil prices rose in the 1970's and 1980's and the demand for Finnish export goods in western markets suffered from the recession in Western Europe, exports to the Soviet Union could be increased and the impact of the western recession on the employment situation in Finland was not as bad as in many other countries.

The internationalization of the Finnish economy began very cautiously for obvious reasons of a foreign policy origin. Finland could not right away become a member of EFTA but had to begin as an associate member. Also the free trade agreement with the EEC had to be introduced carefully, although this time there were more also domestic opponents to be persuaded behind the agreement. Together with the free trade agreements with western countries Finland has granted the same treatment for goods from the Soviet Union and also from other socialist countries. Except for the trade with the Soviet Union this has not had a larger economic impact.

One important feature in the Finnish economy during the past half century has been the so-called devaluation cycle. Economists do not agree on the cause behind this phenomenon, but the political situation after the war and strong organizations on labour markets might give some kind of explanation. The wage level and prices of domestic raw materials have been repeatedly driven so high that export industries have lost their competitiveness. This has been corrected by devaluating the markka. It is argued that this policy has prevented the structural change of Finnish industry.

The development of the Finnish economy can be described as rather steady until the end of the 1980's. There has been the same upswings and downswings as in the western market economies, though the swings have been softened by the impact of eastern trade. The gap between the standards of living in Finland and in Western Europe has steadily become smaller.

The collapse of the Soviet Union also had a strong effect on the Finnish economy, though the over-heating of financial and real estate markets have likewise played a part in the 1990s' recession, which is the worst in the whole independent history of Finland if measured by GDP growth.

Finland has applied for a full membership of the EC. The membership would set some big challenges on the structural development of the Finnish economy, but it is assumed also to give further growth possibilities. Another important thing concerning the future of Finland will be the development in Russia and other parts of the former Soviet Union. Their peaceful development and fast economic recovery would give a good boost to both of the Finnish and Estonian economies.

4.1.2. Main economic features

Estonian economy has considerably changed during the socialist period (1940-1991). It is not easy to interpret these changes in the classical market economy terms, since together with the economy the statistical accounting system was also changed, so that it does not enable direct comparison with other countries.

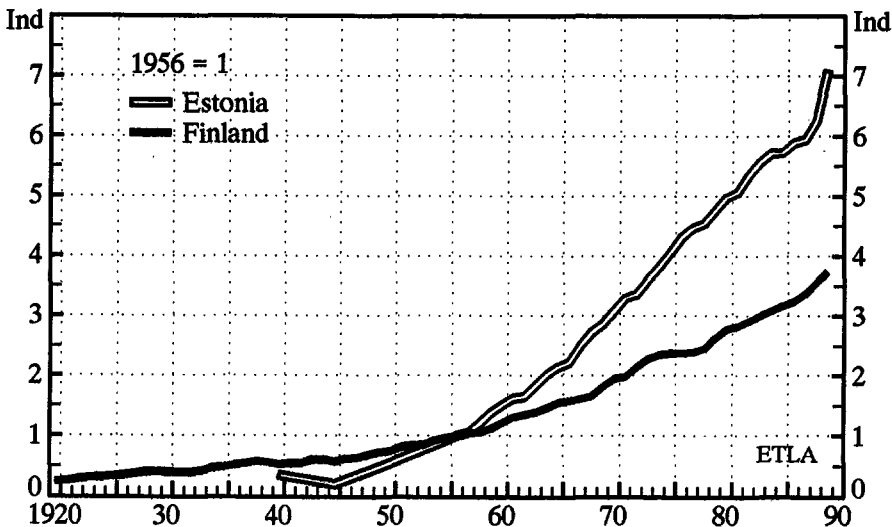
For a long time after World War II information on the Estonian economy was limited only to the volumes of production in individual industries. These

volumes contained multiple accounting in the form of intermediate products. Since 1956 there are also data on net material product, but they are not very reliable either. Namely, the reported volumes in constant prices of both total output by industries and net material product (NMP) contain also the disguised rise in prices. The indices of economic growth calculated on their basis contain therefore, in addition to real growth, also the effect of hidden price increases.

In Finland the most important source of economic data are the National Accounts. These are available since 1948. The conventions used in the Finnish National Accounts are largely based on international recommendations, so their international comparability should be rather good. This applies also to other Finnish statistics. Also the reliability of Finnish data is usually considered satisfactory.

The dynamics of economic growth in Finland and Estonia have been depicted, though not very credibly, in Figure 1. In the case of Estonia the

Figure 1. Index of NMP in Estonia and GDP in Finland



Sources: Eesti Vabariigi rahvamajanduse bilanss 1989, Hjerpe 1988, Statistical Yearbook of Finland and Valovoj obshestvennyj produkt.

NMP has been used. The values of NMP for 1940-1956 have been calculated as approximate estimates on the basis of regression from volumes of production in major industries. There is no reason, however, to believe the resulting high growth rate of the Estonian economy, due to the statistical problems mentioned earlier.

The Finnish data is based on the volume of Gross Domestic Product in basic values. The detailed calculation procedure of the series depicted is explained in the source mentioned.

First post-war data of gross domestic product for Estonia were published in 1990, according to which GDP was 5787.5 million roubles in 1987, 5879.8 million roubles in 1988 and 6358.1 million roubles in 1989 (Eesti rahvama-janduse bilanss 1989 p. 8). As there are various exchange rates for converting rouble into foreign currencies and the real purchasing power of the rouble is not known we cannot draw any essential conclusions. In 1989 GDP per capita was 4042 roubles which, according to the official exchange rate of that time, could be USD 6400, but at the same time it could be USD 200 when calculated according to the unofficial exchange rate. Therefore the GDP per capita in Estonia in 1989 is estimated to be between FIM 800-25000. In Finland it was nearly FIM 100,000 (to be more precise - FIM 99,807 in 1989 according to the Statistical Yearbook of Finland), or from four to ten times higher. However, this type of information should be interpreted with caution: this kind of calculation leave aside many relevant aspects, for example differences in price structures.

There are no official data on the structure of GDP in Estonia. Relying on the input-output tables of 1989 and making necessary recalculations there, we can reveal approximately the structure of GDP in Estonia which can be compared with that of Finland. The Finnish data is based on the Finnish National Accounts, and the figures correspond to value added in basic prices by branch. The results are presented in Table 1.

At the same time it must be observed that the Estonian input-output tables for 1989 are in prices of final consumption which cannot be directly compared with value added in basic prices. According to the input-output tables the value of GDP is 3% lower than in the above-referred official source; and we also know that the input-output tables do not include rental incomes from living in one's own house. Besides, the input-output tables

for 1989 have been compiled on the basis of the so-called cut-down programme and do not claim to be absolutely precise. But still, it produces some kind of picture about the output structures of Estonia in 1989.

Table 1. The structure of GDP in 1989

	Estonia		Finland		
	mill. roubles	%	bill. FIM		%
Agriculture	1319	21.5	13.4	13.4	2.7
Forestry	30	0.5	13.2	13.2	2.7
Fishing and hunting			0.9	0.9	0.2
Mining and quarrying	102	1.7	1.7	1.7	0.3
Manufacturing	2150	35.1	100.2	100.2	20.2
Electricity, gas and water	124	2.0	10.7	10.7	2.2
Construction	566	9.2	42.1	42.1	8.5
Trade, restaurants, hotels	428	7.0	50.5	50.5	10.2
Transport, storage and communication	423	6.9	34.4	34.4	6.9
Financial institutions and insurance			20.1		
Owneroccupied dwellings			25.5		
Real estate and business services			34.1		
Community, social and personal services	968	15.8	19.4	163.9	33.1
Imputed bank service charge			-16.4		
Producers of government services			72.7		
Producers of non-profit services			7.7		
Domestic services of households			0.8		
GDP in basic values	6110	99.8	431.0	431.0	87.0
Commodity taxes	780	12.7	72.1	72.1	14.6
Commodity subsidies	-765	-12.5	-7.7	-7.7	-1.6
GDP in producer prices	6125	100.0	495.4	495.4	100.0

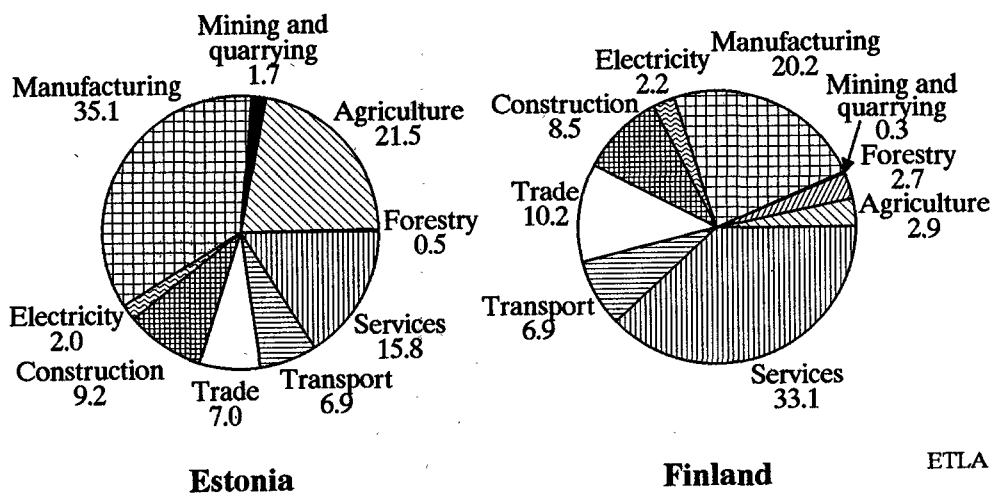
Sources: Eesti Vabariigi rahvamajanduse 1989. aasta toodangu valmistamise ja jaotamise aruandeline maatriksbilanss väärtuselises väljenduses, ESA, Tallinn, 1990, pp. 4 - 17; Statistical Yearbook of Finland, Central Statistical Office of Finland, Helsinki, 1990, p. 315.

The comparison of the structures of GDP of Estonia and Finland in basic prices, i.e. without sales tax and subsidies from the budget is depicted in Figure 2.

The Estonian economy is characterized by a large share of agriculture (22 %). In Finland it is only 3 %, while the share of forestry is almost equal to that of agriculture. In Estonia, however, the share of forestry is only 1 %. There is no data on fishing and hunting in Estonia, but obviously their share is not considerable. The share of the primary sector in the Finnish economy is below 6 %, while in Estonian economy it is above 22 %.

In the secondary sector it must be noticed that manufacturing has a very high share in Estonia (35 %), while in Finland it is only 20 % (in producer prices 23 %). In Finland primary and secondary sectors add up to a bit more than a third, in Estonia more than two-thirds of GDP.

Figure 2. The structure of GDP in current basic prices in 1989, %



Sources: See Table 1.

The tertiary sector of Estonia is characterized above all by a small share of banking and financial services. Transport and communication services have not lagged behind considerably, but there is a more noticeable difference in trade and public catering. In Finnish data the tertiary sector includes the value-added from owner-occupied dwelling, which partly explains the greater size of the Finnish service sector.

There are no data in Estonia concerning the GDP by kind of service industries. It must also be mentioned that GDP created in the sphere of services depends to a large extent on wages. Taking into consideration the proportions of wages prevailing up to lately, it may be said that the low share of the services sector is in a way the result of low wages in this field of activity. After 1989 some changes in the proportions of wages have taken place which should be reflected in the structure of GDP as well.

In the Finnish economy GDP in current market prices exceeds essentially GDP in basic prices (13 %). Indirect taxes increased the value of GDP by more than 72 billion FIM in 1989. In Estonia large sums of money were collected in the form of the turnover tax (nearly 780 million roubles) too, but they were used almost fully for subsidies. In 1990 the system of subsidies was thoroughly changed and direct subsidies to agricultural production were replaced by subsidies to people with low incomes. The mechanism of imposing turnover tax was also changed in 1991. Therefore there is reason to believe that the structure of GDP has somewhat changed since 1989.

The economic structures of Finland and Estonia can also be compared by number of employed persons. In 1989 49.7 % of the inhabitants of Finland were employed, for Estonia the corresponding figure was 51.6 %. Unemployment is characteristic of Finland: according to official statistics there were 89000 unemployed in 1989, and nearly 350000 at the end of 1991. There is no direct information about unemployment in Estonia. On the whole, the shortage of labour was still dominating from 1989 to 1991, though unemployment occurred in some specialities or regions and in connection with changing of jobs. The structure of labour used is presented in Table 2 and Figure 3.

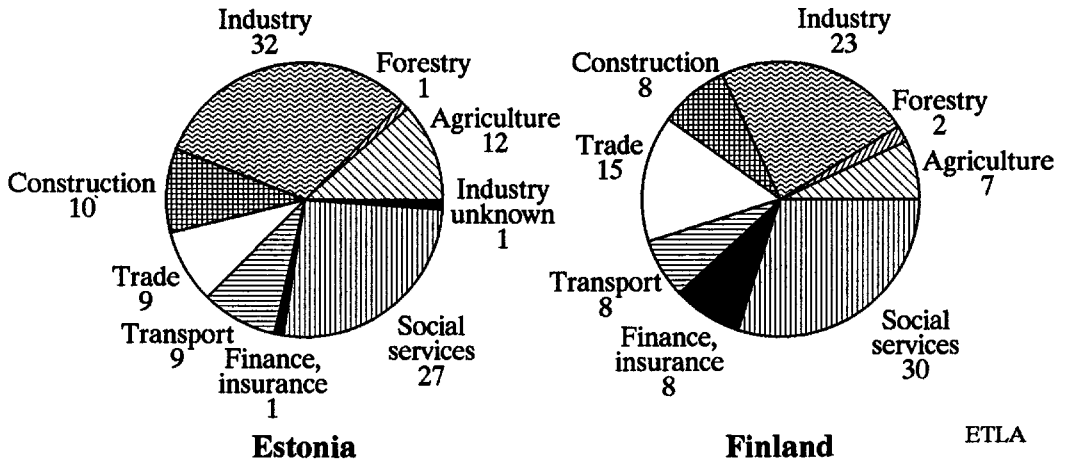
Table 2. Employed persons by industry in 1989

	Estonia		Finland	
	1000 persons	%	1000 persons	%
Agriculture	97.2	12.0	179	7.2
Forestry	7.7	0.9	39	1.6
Industry	259.5	32.0	561	22.7
Construction	80.3	9.9	199	8.1
Trade, restaurants, hotels	72.6	9.0	368	14.9
Transport, storage and communication	67.8	8.4	179	7.2
Financial institutions and insurance	4.1	0.5	194	7.9
Community, social and personal services	215.1	26.5	749	30.3
Industry unknown	6.8	0.8	2	0.1
All industries	811.1	100.0	2470	100.0

Sources: Eesti Statistika Aastaraamat 1990, "Olion", Tallinn 1991, p. 236; Statistical Yearbook of Finland, Central Statistical Office of Finland, Helsinki, 1990, p. 360.

In the distribution of labour Estonia was also characterized by the relatively high share of those employed in agriculture and industry. The share of persons employed in banking and insurance institutions was insignificant - over 10 times lower than in Finland. A relatively small number of persons employed in trade, restaurants and hotels was partly caused by the fact that the employees of hotels were included in the sector of community, social and personal services in the Estonian statistics. But as the share of those employed in this sector was smaller than in Finland too, it is evident that there was considerable backwardness in the whole services sector. At the same time backwardness of the service sector in Estonia by the number of employed persons was smaller than that by GDP, which confirms the above-given statement on the effect of the low level of wages on the structure of GDP.

The employment structure of Finland in 1989 was the result of rather fast changes. Towards the end of the 1980's the service sector, together with the construction sector, had been expanding rather rapidly. The result was that the industrial sector lagged behind and a huge current account deficit

Figure 3. Employed persons by industry in 1989, %

Sources: See Table 2.

emerged. It became evident, that Finland had to either boost its exports and thus the industrial sector, or cut down on imports and the service sector. In a more balanced situation the share of Finnish industrial sector should be larger and the share of the service sector and construction sector smaller than in 1989.

The dynamics of the employment structure is reflected in Table 3 and Figure 4. Unfortunately the incomparability of data for Estonia does not enable us to look back into the more remote past. But even in Figure 4 it is clear that the employment structure of Estonia has lagged behind that of Finland by approximately 10 - 15 years. The employment structure of Estonia in 1989 was similar to that of Finland in 1980, while the number of those employed in finance and insurance was relatively small and on account of that the number of employees in manufacturing was large. Here we should not hurry in drawing conclusions that the employment structure in Estonia was absolutely inappropriate.

Table 3. Employment by industry in 1970-1989, %

ESTONIA	1970	1980	1985	1989
Agriculture and forestry	18.4	13.9	13.3	12.9
Industry	35.2	33.9	33.7	32.2
Construction	9.3	9.1	8.7	9.9
Trade, restaurants, hotels	8.3	9.1	9.2	9.0
Transport, storage and communication	9.2	9.5	9.5	8.4
Financial institutions and insurance		0.5	0.5	0.5
Community, social and personal services	19.7	23.9	25.0	26.5
Industry unknown				.8
FINLAND	1970	1980	1985	1989
Agriculture and forestry	22.6	13.6	11.5	8.8
Industry	26.5	27.0	24.5	22.7
Construction	8.8	7.6	7.3	8.1
Trade, restaurants, hotels	14.7	14.2	14.6	14.9
Transport, storage and communication	7.0	7.9	7.6	7.2
Financial institutions and insurance		5.5	6.4	7.9
Community, social and personal services	20.4	24.2	28.0	30.3
Industry unknown			0.1	0.1

Sources: Shema razvitija i razmeshsenija proizvoditel'nyh sil Estonii na 1985-2000 gody, II tom, Institut ekonomiki AN Estonii, 1983, pp. 9 - 12; Shema razvitija i razmeshsenija proizvoditel'nyh sil Estonii na 1985-2000 gody, II tom, Institut ekonomiki AN Estonii, 1988, p. 34; Eesti Statistika Aastaraamat 1990, 'Olion', Tallinn 1991, p. 236; Suomen Kansantalous, Instituutiot, rakenne ja kehitys, Werner Söderström osakeyhtiö, Porvoo, Helsinki, Juva, 1990, p. 198; Statistical Yearbook of Finland, Central Statistical Office of Finland, Helsinki, 1990, p. 360.

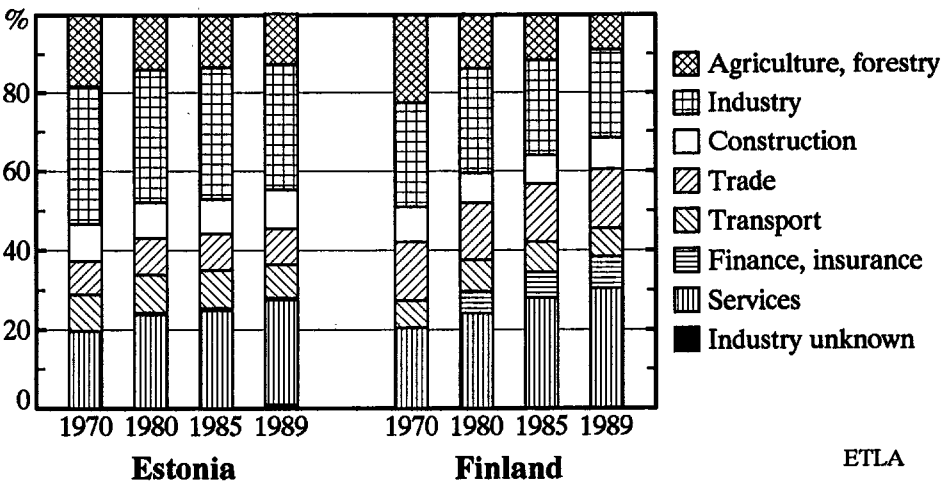
The Estonian economy like the whole socialist economy was characterized by deficits. There was a shortage of commodities and goods to be distributed. In Finland, however, there is continuously a kind of excess supply. The main problem seems to be the marketing of goods, i.e. the sphere of activities for

trade and other services. In socialist Estonia, on the other hand, the key problem was the meeting of essential needs and, in the first place, production of consumer goods. The sphere of distribution was, of course, underdeveloped, but it had not been of primary importance in a socialist economy. In the transition to a market economy the share of the sphere of distribution should be increased, of course, and that should bring about a change in the employment structure as well.

The structure of the economy could be also characterized by the distribution of existing fixed assets. Unfortunately we have no comparable data on the distribution of fixed assets by industries for both countries.

To sum up, we must state that the structure of the Estonian economy was formed according to the needs of a planned economy and especially the needs of the Soviet Union economy. Its irrationality cannot be unilaterally estimated, since this structure to some extent probably satisfied the needs of the economic regulation system under the socialist regime. Of course, such a structure of the economy cannot meet the needs of a state striving toward

Figure 4. Employment structure in Estonia and Finland



Sources: See Table 3.

a market economy and independence. To interpret problems of the Estonian economy during the transition period one must examine more thoroughly the equilibrium of the economy.

In order to characterize the balance of the economy let us compare the structure of aggregate demand and supply in Finland and Estonia. For Estonia we can again use only approximate calculations based on input-output tables of 1989. The results are presented in Table 4.

Table 4. Aggregate supply and demand in 1989

	Estonia		Finland	
	Million roubles	%	Billion FIM	%
GDP at market prices	6144	61.7	496.9	79.8
Imports of goods and services	3818	38.3	126.0	20.2
Aggregate supply	9961	100.0	622.9	100.0
Private consumption	3312	33.2	257.6	41.4
Public consumption expenditure	1154	11.6	97.8	15.7
Gross fixed capital formation	1546	15.5	137.4	22.1
Exports of goods and services	3123	31.4	116.7	18.7
Increase in stocks	827	8.3	13.4	2.2
Aggregate demand	9961	100.0	622.9	100.0

Note: In Finnish data the item 'Increase in stocks' includes also statistical discrepancy.

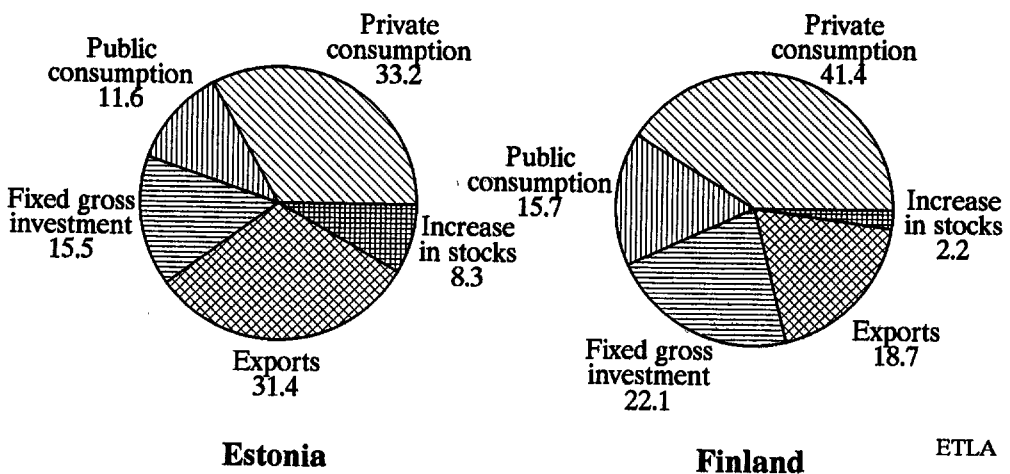
Sources: Eesti Vabariigi rahvamajanduse 1989. aasta toodangu valmistamise ja jaotamise aruandeline maatriksbilanss väärtuselises väljenduses, ESA, Tallinn, 1990, pp. 4-17; National Accounts, Central Statistical Office of Finland, Government Publishing Centre, Helsinki, 1991.

As we can see the Estonian economy was considerably more open than the Finnish economy. While in Finland the share of imports in resources came up to 20 %, in Estonia it was even 38 % (see Figure 5). The share of exports was 19 % in Finland and 31 % in Estonia. While in Finland the foreign trade of goods was almost balanced, in Estonia imports exceeded exports approximately by 600 million roubles. Thus the annual deficit of foreign trade was about 10 % of GDP.

A separate problem was that the external trade volumes were in domestic prices which considerably differed from world market prices. Therefore turnover in domestic prices did not reflect, especially in trade with foreign countries, the actual incomes and expenditures in foreign currency and the state of the balance of payments. Data on economic relations which characterized the trade with other Soviet Union constituent republics were not objective either - in several cases large subsidies distorted the real values of goods. For example, both foodstuffs and electric energy exported from Estonia were included in external trade turnover below their actual value. The same applied to fuels imported to Estonia. Though the prices used in interrepublican trade did not correspond to actual costs or world market prices, it must be said that these were real prices in the sense that Estonian enterprises received payments from or made payments to other Union republics in such prices if we discard the specific nature of taxation with the turnover tax and its division between different budgets.

It must also be mentioned that in Estonia services other than transport have not been taken into account in the external trade. At the same time, for

Figure 5. The structure of aggregate demand in 1989, %



Sources: See Table 4.

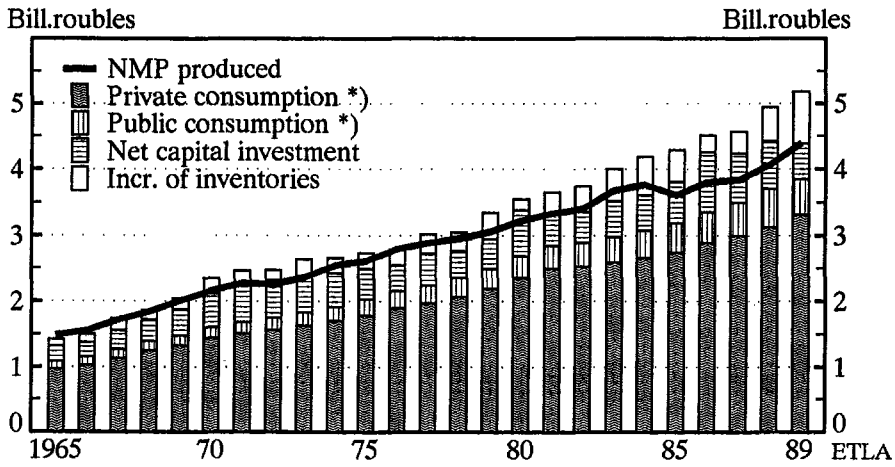
example in the sphere of construction services, there existed foreign relations, but we have no data on their volume.

Nevertheless, the Estonian foreign trade was still in deficit, especially with respect to the trade in convertible currency. The geographical structure of foreign trade was especially unfavourable. The unstable and decaying economy of the Soviet Union held the share of nearly 85 % in imports and 95 % in exports. This inevitably carried Estonia along into the economic decline. Being within the monetary system of the USSR it was practically impossible to avoid the cost-push inflation generated by imports from the Soviet Union. Therefore the inflation of, to a great extent, an exogenous nature has been characteristic of the Estonian economy in the early 1990's.

The decline on the USSR economy has also had its effect on Finland. In the mid-80's the share of the USSR in Finnish foreign trade was one fifth. In the beginning of 1990's it has declined to 5 %. Those branches that had greatest shares in eastern trade experienced difficulties. They had to re-organize their marketing and production for the western markets. This has not always been successful.

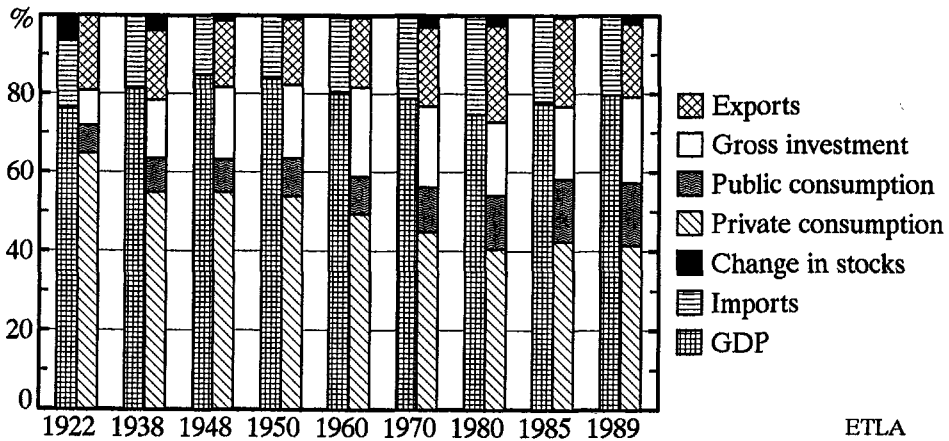
The Soviet trade was very good for the balance of the Finnish economy in the 70's and 80's. Crude oil being the main import good, and the trade being based on bilateral countertrade, Finland could go through the oil crisis both in the 70's and on 80's with only a modest decline in employment. The rise in the value of oil imports could be made up by increasing the volume of eastern exports.

In the Estonian economy the disequilibrium was, of course, increased by the local economic policies. Examining the dynamics of production and consumption of NMP (see Figure 6) we can see that up to the end of the 1970's the production and consumption of NMP were balanced. Decline in economic efficiency gradually increased investments in inventories. The dynamics of the fixed capital formation has also been unstable. Increased investments in inventories could not ensure the undisturbed functioning of economy. Hence, unbalanced investments were the cost of the inefficiency of the economic mechanism. The later attempts at large investments also were supported by the fear of inflation. This increased even more the disequilibrium of the market.

Figure 6. Production and final consumption of NMP in Estonia

*) Consumption of material production.

Sources: Valovoj obshestvennyj produkt. Eesti rahvamajanduse bilanss.

Figure 7. Supply and demand in Finland

Sources: Hjerppe (1988) and Finnish National Accounts.

The equilibrium problems of the Finnish economy in the beginning of the 1990's seem minor when compared to those in Estonia (Figure 7). Liberalisation of financial markets caused an over-heating of the economy in the late 80's. It evidenced itself first in very rapid growth, then in a weakening current account and eventually in an explosion in unemployment when the growthrate of the economy turned into a decline.

4.2. Structure of the economies by branch

4.2.1. Agriculture

In Finland the agrarian reforms of the last 100 - 150 years have not been as extensive as in Estonia. Therefore the development of Finnish agriculture has been rather even and steadfast. In between 1860 - 1890 the total production increased 1.8 % annually, while in 1890 - 1913 the rate fell and the average annual growth was 1.0 %. A favourable period was in 1920 - 1938 when the growth rate was 1.8 % a year. In the post-war period from 1946 to 1960 - the growth rate was 1.7 %, but in 1960 - 1974 only 0.3 %. It increased again to 1.8 % a year in 1974 - 1985.

Politics has played an important role in the development of Finnish agriculture. Already before the Second World War the Finnish agriculture was supported by import restrictions. After the war a large number of new farms were founded with government support, partly to give a living to men coming back from the war, partly due to the wartime experiences when food was rationed.

The post-war policies led to a production structure with a large number of small farms. Later, when farming became more capital intensive and less labour intensive, this turned into a problem. Ineffective use of machinery, due to small farm sizes, led to high prices of agricultural products. Import of agricultural products was restricted, and the excess domestic production was exported with government support.

For political reasons the law on agricultural income tied the income of farmers to the income of industrial workers. This led to further rises in the prices of agricultural products and boosted production despite already large

overproduction. Only after late 1980's has there been a discussion whether government support of agricultural exports should be phased out and another way to secure a reasonable income to farmers found. Some experts say that the number of Finnish farms will decline drastically during 1990's.

The Estonian agriculture developed like other East- and North-European countries in 1920 - 1940. The agrarian reform of 1919 abolished the feudal manor farms, and agricultural small-scale production became dominating. At the technological production level of that time and with the sufficient number of farm labourers the agrarian reform was carried out successfully. In 1920 - 1940 the development of the Estonia agriculture was rather fast, the self-needs for foodstuffs were fully satisfied and large quantities of agricultural products, primarily butter and bacon, were exported. In the 1930's Estonia exported an average of 10000 - 11000 tons of butter and 3000 - 5000 tons of meat, as well as rye, potatoes, flax, raw hides, etc.

Development trends during the next 50 years were determined by the incorporation of the Republic of Estonia into the Soviet Union and the application of the agrarian policy used in this country. The effect of this on the development of agriculture as a whole was unfavourable. Compulsory collectivization was carried out with ideological aims and large-scale production replaced small farms. The collectivization of agriculture took place against a background of mass repressions and in an atmosphere of terror the land and property of the peasantry were expropriated. The production basis of family farming was practically destroyed, but founding the basis for new large-scale production required large expenditures and lasted decades. The number of agricultural workers decreased a lot. In those conditions the volume of agricultural production decreased substantially. In addition the autocratic large-scale production system turned out to be of little efficiency.

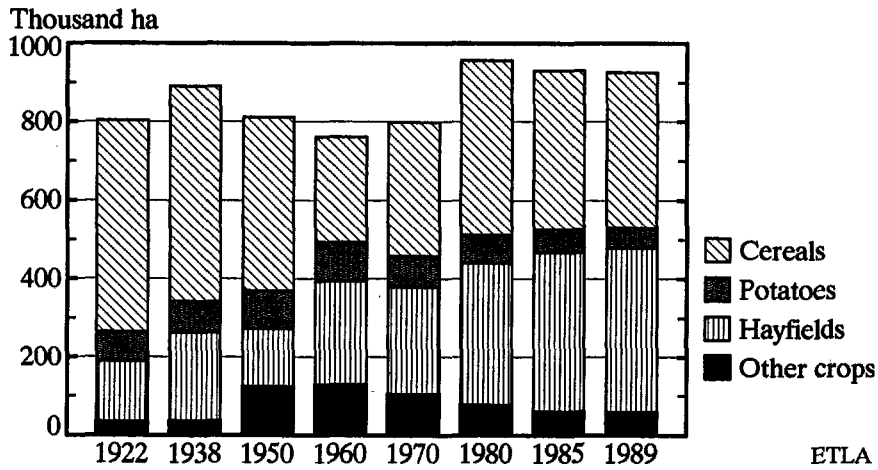
At the same time management conditions obstructing the development were applied to large-scale production: directive centralized planning, restrictions on using the finances, rigid price and vague tax policies, etc. Overestimation of the possibilities for regional division of labour and specialization in the Soviet Union also had an unfavourable effect on the Estonian agriculture. As a result of that a one-sided and irrational production structure was formed - the development of plant-growing was checked, while the livestock product production increased primarily on the basis of imported concentrated fodder.

The development of agriculture is in general lines characterized by the increase in the total output by 20-year periods. In 1920 - 1940 the total output increased by 52 % as compared with the period 1909 - 1913, 40 % of this in crop-production and 69 % in animal production. In the next period, from 1945 to 1965, the total agricultural output increased by 32 % as compared with 1940, marked by increases in crop- and animal production of 28 % and 37 % respectively. During the next 20 years, from 1965 to 1985, the increase was 57 %; crop- and animal production rose 32 % and 71 % respectively. Thus, the most favourable development period during the last 70 years was in 1920 - 1940 when the crop-production increased considerably and animal production, which had been extensive still at the beginning of the century, had become an intensive branch of production. Production outputs of the later periods were rather modest.

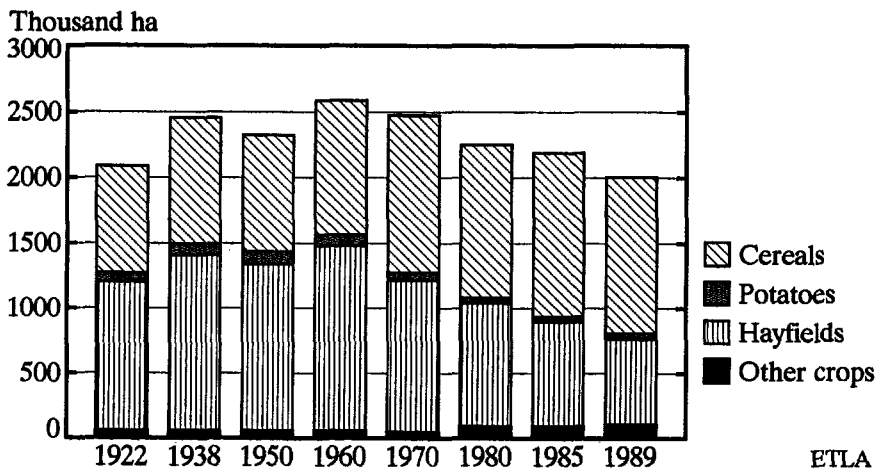
In 1944 233.4 thousand hectares or 4.9 %, among this 3.2 % of cultivable land, of the Estonian territory was cut off and joined to the Russian SFSR. It must be taken into consideration when comparing the volumes of production. The area of the intensively used agricultural land is practically the same as in the 1930's, though it had considerably decreased in the 1940's and 1950's. The area of cultivable land was 1173 thousand hectares in 1938, and 1192 thousand in 1989. Of this the area of arable land has somewhat decreased and that of cultivated pastures increased.

The acreage under cultivation has also been restored on the level of late 1930's, but considerable changes have taken place in its structure. The share of grain was 61.6 % in 1938, but only 35.9 % in 1960, and by 1989 increased again to 42.8 %. But the share of various feed crops has increased from a quarter to a half of the total acreage under cultivation. Of this the share of perennial field grass increased from 21 % in 1938 to 45.3 % in 1989. The acreage for potatoes was 8.8 % in 1938, 13.1 % in 1960, but only 5.6 % in 1989 (see Table 5).

The changes in the production volumes of individual agricultural produce are connected with the changes in the structure of acreage under cultivation. The total yield of the main crops, grain and potatoes, increased considerably in the late 1930's, but decreased again (especially grain) in the post-war period (Table 6). Later on the grain production increased, but still has not reached the level of the neighbouring countries in yielding capacity. The yield of grain per hectare was 940 kg in 1922 and 1220 kg in 1938, and only

Figure 8. Structure of harvested areas in Estonia

Sources: See Table 5.

Figure 9. Structure of harvested areas in Finland

Sources: See Table 5.

Table 5. Harvested areas of main crops in 1922-1989, 1000 ha

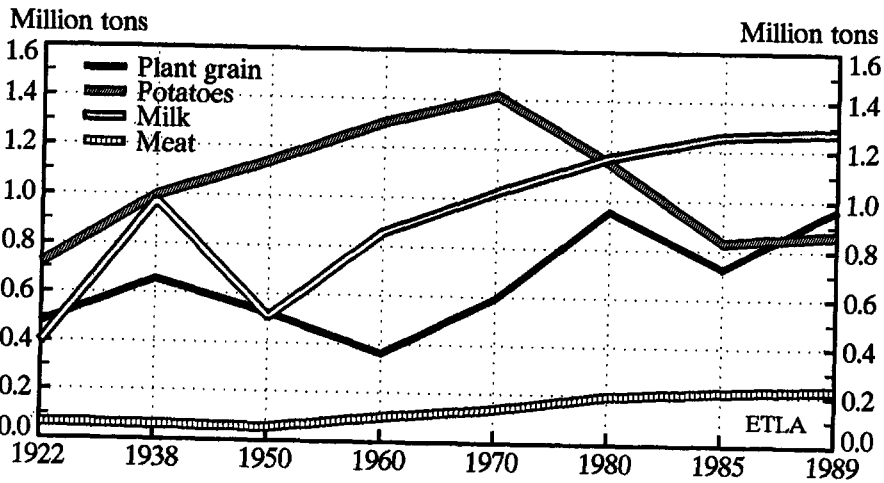
ESTONIA	Cereals	Potatoes	Hay fields	Other crops	Total
1922	539.7	75.5	153.5	34.9	803.6
1938	548.0	78.9	226.3	36.9	889.2
1950	443.9	96.6	147.9	124.1	812.5
1960	269.2	99.5	263.7	129.3	761.7
1970	340.0	79.5	273.6	105.2	798.3
1980	444.3	72.3	362.4	77.9	956.8
1985	403.9	60.9	404.8	61.6	931.2
1989	395.7	52.1	419.1	59.0	925.9
FINLAND					
1922	817.7	67.4	1145.7	55.4	2086.2
1938	9959.6	85.4	1352.2	55.5	2452.7
1950	889.2	95.8	1279.2	59.4	2323.6
1960	1018.8	86.4	1423.8	56.2	2585.4
1970	1196.9	60.1	1170.7	46.9	2474.6
1980	1170.9	40.9	951.4	91.3	2254.5
1985	1254.1	39.4	804.1	92.9	2190.5
1989	1193.8	44.8	656.9	107.4	2002.9

Sources: Eesti 1920-1930, Arvuline ülevaade, Tallinn, 1931, p. 88; XVIII Eesti põllumajanduses, Statistiline aastaraamat 1939, Tallinn, 1940, pp. 22 - 23; Eesti rahvamajandus 1970 aastal, Tallinn, 1971, p. 153; Eesti statistika aastaraamat 1990, Tallinn, 1991, p. 93; Suomen tilastollinen vuosikirja 1925. Helsinki, 1925, p. 74; Suomen tilastollinen vuosikirja 1980. Helsinki, 1981, p. 86; Suomen tilastollinen vuosikirja 1990. Helsinki, 1990, p. 108.

600 - 700 kg in the 1950's. In 1965 the yield of grain was 1780 kg per hectare and the level of 2000 kg was reached only in late the 1970's. In 1989 the yield per hectare was 2440 kg.

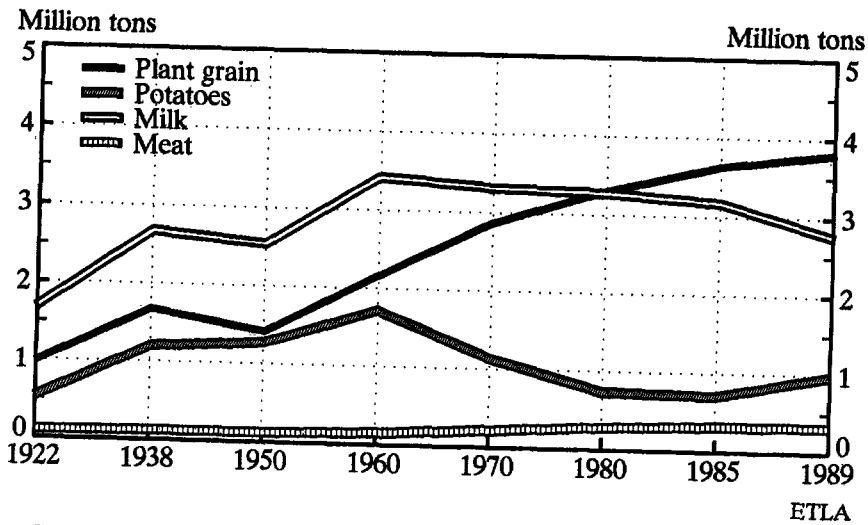
The acreage and production of potatoes were influenced by the difficult war and post-war years when the potato was one of the staple foodstuffs. It was grown extensively in part-time farms and the total acreage of potatoes increased steadily up to 1960. Henceforth it started to diminish. The decrease was especially steep in the 1980's when difficulties cropped up in the mechanizing of production, plant diseases spread and the use of potatoes for

Figure 10. Main products of Estonian agriculture



Sources: See Table 6.

Figure 11. Main products of Finnish agriculture



Sources: See Table 6.

Table 6. Main products of Estonian and Finnish agriculture

ESTONIA	Plant grain total mill.kg	Potatoes mill.kg	Milk Mill.l	Total meat production mill.kg
1922	477.5	718.5	395.2	65.0
1938	658.3	997.6	975.5	60.8
1950	522.2	1139.6	508.0	54.1
1960	362.7	1302.6	856.6	100.3
1970	594.8	1414.3	1024.6	136.0
1980	952.1	1146.4	1169.7	196.4
1985	725.6	832.9	1260.1	216.5
1989	967.4	864.2	1277.2	228.9
FINLAND				
1922	982.4	525.1	1682.0	104.0
1938	1675.3	1197.9	2670.0	121.0
1950	1415.1	1273.4	2535.0	120.0
1960	2163.2	1716.7	3420.0	147.0
1970	2868.5	1135.9	3310.0	213.0
1980	3305.9	736.2	3275.0	283.0
1985	3642.0	707.7	3174.0	319.0
1989	3808.7	981.3	2753.0	322.0

Sources: XVIII Eesti põllumajanduses, Statistiline aastaraamat 1939, Tallinn, 1940, pp. 22 - 23, 35; Eesti 1920 - 1930, Arvuline ülevaade, Tallinn, 1931, p. 88, 94; Eesti rahvamajandus 1970 aastal, Tallinn, 1971, p. 160, 176; Eesti statistika aastaraamat 1990. Tallinn, 1991, p. 97, 124; Suomen tilastollinen vuosikirja 1980, Helsinki, 1981, p. 86, 430; Suomen tilastollinen vuosikirja 1990, Helsinki, 1990, p. 108, 500; Viita, Pentti: Maataloustuotanto Suomessa 1860 - 1960, Suomen Pankin Taloudellisen tutkimuslaitoksen julkaisuja, Kasvututkimuksia I, Helsinki 1965, pp. 59-61.

fodder was restricted. The yields of potato were 12800 kg per hectare in 1938, 13100 kg in 1960, 17800 kg in 1970 and 16600 kg in 1989.

The quantities of hay increased considerably in 1920 - 1940. Hay was the main fodder in animal husbandry. 676 thousand tons of field grass and 954 thousand tons of meadow hay, making 1630 thousand tons in all, were gathered in 1938. With the transition to the large-scale production in the

1950's the gathering of meadow hay decreased, yields of field grass were small. The yield of field grass per hectare was 3630 kg in 1938, during the following decades it remained within the range of 2000 - 2500 kg and only in the last few years has it increased to 4690 kg of hay per hectare in 1989. The use of green fodder for making silage has, of course, considerably increased, but the production of green fodder as a whole is insufficient.

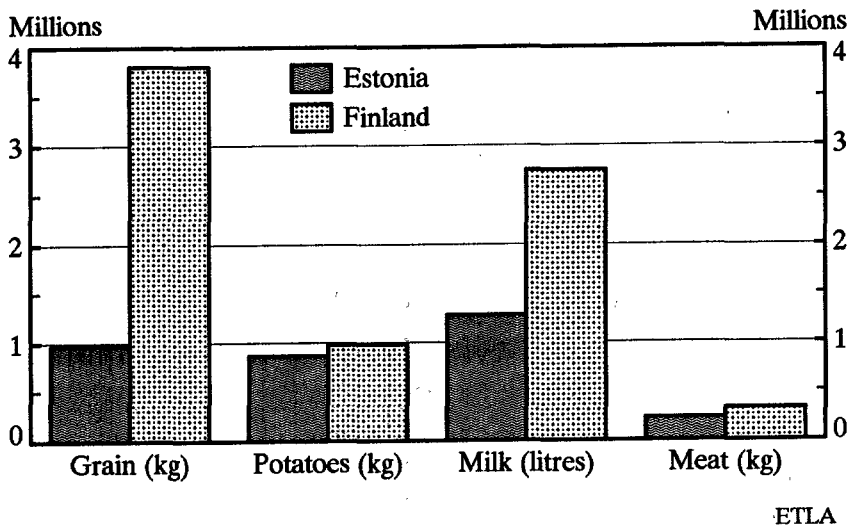
In Finland changes in the acreage under cultivation and its structure have been more or less like in Estonia. The acreage under cultivation was 2453 thousand hectares in 1938. It was smaller in the post-war years mainly due to the area lost in the war, but was restored by 1970. From then on, as the effect of agrarian policy measures limited the volume of production, it has decreased and was 2003 thousand hectares in 1989.

The share of grain in the structure of sown acreage of Finland was 39.2 % in 1938, which is smaller than in Estonia. The share of grain increased gradually in the post-war years and reached 48.4 % in 1970 and 59.6 % in 1985 (Table 5). The share of acreage used for fodder grain (barley, oats) has steadily increased, while that of cereals, especially rye, decreased.

The acreage of potatoes made 3.5 % in Finland in 1938 and 4.1 % in 1950, but has decreased to 2.2 % by now. The structure of sown acreage has changed mainly on account of the decrease in the share of field grass, which made up 55.1 % in 1938 and remained on this level up to 1960. Its share in 1989 was only 32.8 %. At the same time the use of field grass for sown hay has considerably decreased and making of silage increased. Unlike in Estonia the cultivation of sugar beets has gradually increased in Finland. Its share was 0.2 % in 1938, but is 1.4 % now. The cultivation of turnips has rapidly expanded as well.

The total yield of grain has rapidly increased in conformity with the changes in the structure of sown acreage. In 1938 the yield of grain was 1675 thousand tons and the yield per hectare 1746 kg. In the post-war years both the yield of grain and yield per hectare decreased, but by 1960 the level of 2000 kg per hectare and total yield of 2163 thousand tons was restored. In 1989 the yield of grain was 3809 thousand tons, the average yield per hectare being 3190 kg. The yields per hectare considerably exceed those of Estonia, but do not reach the level of Western European countries because of natural conditions.

Figure 12. Main products of Estonian and Finnish agriculture in 1989



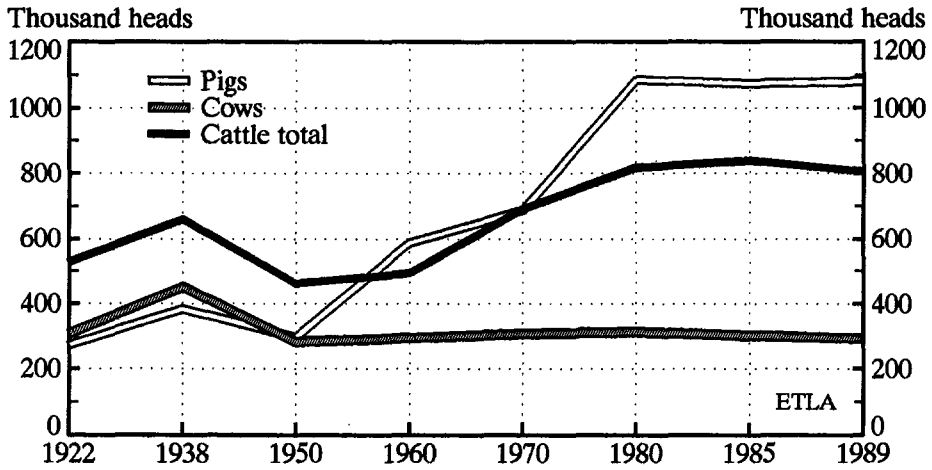
Sources: See Table 6.

The yield of potatoes in Finland was 14032 kg per hectare in 1938, while later it has fluctuated between 14000 - 20000 kg. The total yield of potatoes increased considerably, like in Estonia, in the post-war years, but has dropped due to the decrease in the acreage used for potatoes by now. The yield of field grass per hectare was 3438 kg in 1938 and remained more or less on the same level up to 1975. During the last decade the yield per hectare has been 3800 - 4200 kg.

Natural conditions in Finland favour the development of animal husbandry. Changes in the production level taken place during the last decades have been largely due to the agrarian policies. These policies have not always succeeded in taking the market situation into consideration, which has resulted in over-production problems. Even measures to cut the over-production have often been ineffective.

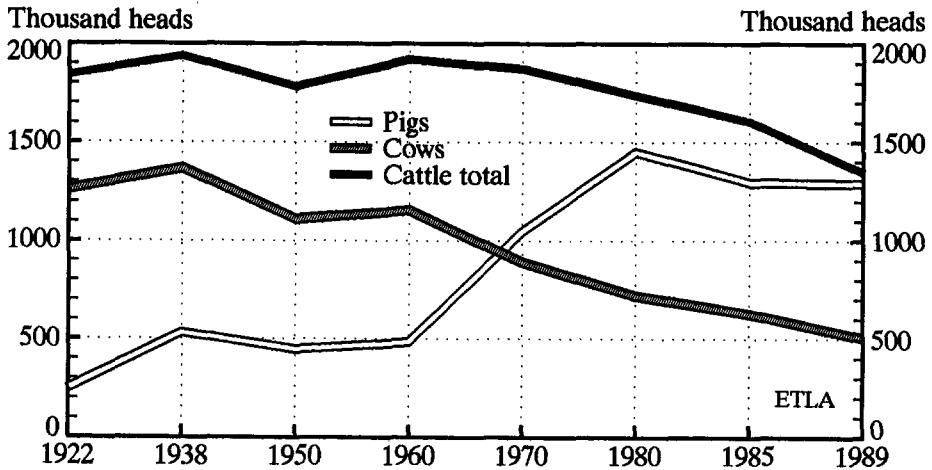
The number of livestock has considerably changed. In 1938 there were 1939.6 thousand cattle in Finland, including 1367.8 thousand cows, which is 70.5 % of the total number of cattle. The number of livestock decreased

Figure 13. Livestock in Estonia



Sources: See Table 7.

Figure 14. Livestock in Finland



Sources: See Table 7.

during the war but was quickly restored. In 1960 there were 1922 thousand cattle, including 1153.1 thousand cows (60 %). Later on the number of cattle, especially that of cows, decreased gradually. In 1989 there were 1346.6 thousand cattle, among this 506.6 thousand cows (37.6 %) (Table 7). This is due to the decrease in demand for dairy products as well as the tendency towards the production of beef. Due to the rise in the milk yield per cow the total yield of milk did not decrease so fast. The milk yield of cows under control was 2847 kg in 1938, 3792 kg in 1960, 4518 kg in 1970, 5580 kg in 1980, and 5919 kg in 1988.

Table 7. Livestock in 1922 - 1989, thousands

ESTONIA	Cattle total	Cows	Pigs	Sheep	Horses
1922	527.4	307.3	272.3	744.9	198.8
1938	660.9	451.7	384.6	649.7	219.0
1950	462.0	283.6	297.0	274.4	163.3
1960	493.8	295.9	587.1	266.9	66.0
1970	692.4	308.7	688.0	165.3	31.0
1980	818.7	314.1	1085.5	153.8	13.8
1985	840.2	302.7	1073.6	147.7	10.7
1989	806.1	293.9	1080.4	140.2	9.6
FINLAND					
1922	1843.5	1259.6	247.9	1300.5	356.7
1938	1939.6	1367.8	530.7	951.1	390.3
1950	1782.5	1110.5	445.6	1219.9	408.9
1960	1921.5	1153.1	482.8	341.3	250.9
1970	1872.9	889.1	1046.5	188.6	89.3
1980	1738.1	719.5	1450.7	106.1	22.4
1985	1608.3	627.7	1295.2	111.7	18.8
1989	1346.6	506.6	1290.7	108.4	14.9

Sources: XVIII Eesti põllumajanduses, Statistiline aastaraamat 1939, Tallinn, 1940, p. 31; Eesti 1920-1930, Arvuline ülevaade, Tallinn, 1931, p. 88, 94; Eesti rahvamajandus 1970 aastal, Tallinn, 1971, p. 176; Eesti statistika aastaraamat 1990, Tallinn, 1991, p.119; Suomen tilastollinen vuosikirja 1925. Helsinki, 1925, p. 80; Suomen tilastollinen vuosikirja 1980. Helsinki, 1981, p. 88; Suomen tilastollinen vuosikirja 1990. Helsinki, 1990, p. 110.

The total number of pigs was 530.7 thousand in 1938. With some in-between falls it persisted on this level up to the mid-1960's. After that the pig-breeding was essentially increased. In 1970 there were 1046.5 thousand pigs and in 1980 1450.7 thousand. During the last decade the production volume decreased again and in 1989 the total number of pigs was 1290.7 thousand only.

The production volumes of main animal products have also fluctuated according to the changes in the market situation and agricultural policies. Finland produced 2670 thousand tons of milk and 121 thousand tons of meat in 1938, and 3724 thousand and 154 thousand respectively as an average of 1961 - 1965. Later on the production decreased. The milk production was only 3275 thousand tons in 1980 and 2753 thousand tons in 1988. But the production of meat increased: it was 283 thousand tons in 1980 and 340 thousand tons in 1987. During the years 1988 and 1989 the production of meat has also decreased.

In Estonia the development of livestock production, being based on the growth of crop production, was quite favourable in 1920 - 1940. The number of all kinds of livestock, and especially the production of milk increased. It was 395 million litres in 1922, but in 1938 already 976 million litres or more than twice as much. An average yield of milk per cow was 1106 kg in 1922, and 2185 kg in 1937/38. In herds under control the average yield was 2893 kg. The production of meat persisted on more or less the same level, fluctuating between 62-65 thousand tons. A noteworthy quantity of bacon was exported.

During the last 50 years the Estonian animal production has to a great extent developed on account of imported concentrated fodder, since the development of the volume of crop production was modest here. The production structure was essentially changed: taking into consideration the needs of the Soviet Union the production of meat was increased in a forced pace and the relative importance of milk production decreased. The production of meat has increased over 3 times as compared with the 1930's, but that of milk only 32 % (Table 6). The introduction of industrial production in agriculture has most influenced the production of eggs and poultry.

Taking into consideration the natural conditions, breeding potential of cattle and production experience as well as changes in the purchasing possibilities

of concentrated fodder the share of meat production should decrease and milk production remain the main branch in the future in Estonia.

4.2.2. Industry

Industry is the most important branch of the economy in Estonia. In 1989 32.9 % of the employed persons and 44 % of productive fixed assets were occupied in industry. Corresponding shares in Finnish economy were 22.0 % and 15.7 %. In Estonia 60.2 % of total output (intermediate product included) and 43.7 % of NMP were created in this branch. In Finland the share of gross output was 37.1 % and the share of value added 26.3 %. Industry's share in the profit of the Estonian economy was 44.7 %, in Finland the share of the operating surplus was 31.9 % of that of the whole economy.

According to the Soviet Union statistics industry includes also power engineering, the fuel-producing industry (in Estonia oil-shale mining and

Table 8. Total value of output of Estonian and Finnish industries in 1989

Industry	Estonia		Finland	
	Output in Wholesale Prices		Value added	
	mill SUR	%	mill FIM	%
Food industry	1605	26.4	11487	11.2
Textile, wearing apparel and leather industries	1519	25.0	4335	4.2
Forest, wood, pulp and paper industries	591	9.7	20384	19.9
Chemical industry	522	8.5	11199	10.9
Building materials industry	309	5.1	5173	5.1
Metal and engineering industry	1103	18.1	38777	37.9
Other industries	434	7.1	10964	10.7
TOTAL INDUSTRY	6082	100.0	102319	100.0

Sources: Estonian data: Calculated on the basis of data from Estonian Statistics Department. Finnish data: National Accounts, Central Statistical Office of Finland.

providing peat for fuel), fishing and fish-farming, and quarrying of raw materials (clay, sand, stone, etc.) for the building materials industry. In the Finnish figures above, fishing and fish-farming are excluded, but this has only a negligible effect on the comparison. In order to compare Estonian and Finnish manufacturing industries we have subtracted the above-mentioned industries from the data of official statistics in the following study. Due to the imperfection of the existing statistics minor mistakes are possible. The structure of the Estonian and Finnish manufacturing industry by the value of total production is described in Table 8.

It would be proper to exclude also the manufacturing with the features of services (repairs of cars, radios, TV sets, household machines, etc.) but this has not been done in the present paper.

The comparison of the Estonian industry with the Finnish industry is also obstructed by the fact that several big enterprises of the munitions industry ('Dvigatel', 'Baltijets', Chemistry-Mechanics Integrated Plant of Sillamäe, etc.) have been left out of the statistical reports. Obtaining data on these enterprises has been extremely complicated or quite impossible up to 1991.

Table 9. Number of persons employed in Estonian and Finnish industries in 1989

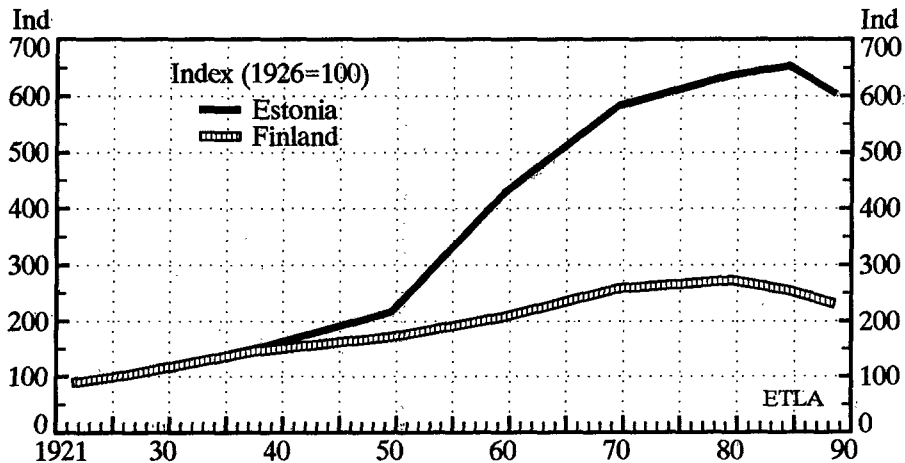
Industry	Estonia		Finland	
	persons	%	persons	%
Food industry	30365	13.7	57400	12.0
Textile, wearing apparel and leather industries	44222	19.9	38600	8.1
Forest, wood, pulp and paper industries	30895	13.9	78400	16.4
Chemical industry	16198	7.3	38100	8.0
Building materials industry	16204	7.3	21000	4.4
Metal and engineering industry	68711	30.9	183800	38.5
Other industries	15843	7.1	60000	12.6
TOTAL INDUSTRY	222438	100.0	477300	100.0

Sources: Eesti Statistika Aastaraamat 1990, Tallinn; Finnish National Accounts, Central Statistical Office of Finland, Helsinki.

Table 10. Labour force in Estonian and Finnish industry

Year	Number of employed		Index	
	Estonia	Finland	Estonia	Finland
1922	32000	184400	87.7	89.4
1926	36500	206200	100.0	100.0
1938	54674	301100	149.8	146.0
1950	78834	353400	216.0	171.4
1960	156224	427500	428.0	207.3
1970	212811	531800	583.0	257.9
1980	232692	562700	637.5	272.9
1985	238334	525100	653.0	254.7
1989	222438	477300	609.4	231.5

Sources: Eesti statistika 1936, Riigi Statistika Keskbüroo, Tallinn, 1936, pp. 84 - 100; Eesti statistika 1938, Riigi Statistika Keskbüroo, Tallinn, 1938, pp. 60, 212, 420, 596; Eesti 1920 - 1930, Arvuline ülevaade, Riigi Statistika Keskbüroo, Tallinn, 1931, pp. 136 - 156; Eesti Statistika Aastaraamat 1950, 1960, ..., 1990, Tallinn; Suomen taloushistoria, osa 3, Finnish National Accounts.

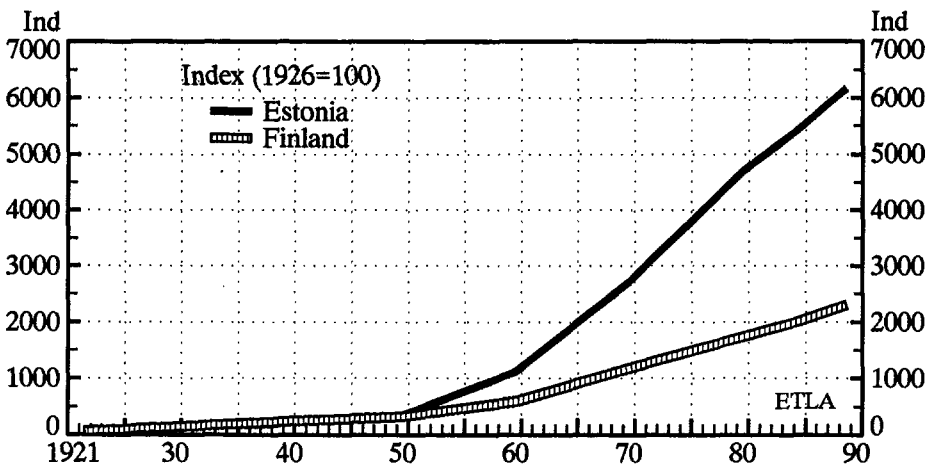
Figure 15. Size of production personnel in manufacturing in Estonia and in Finland in 1922 - 1989

Sources: See Table 10.

The dynamics of the size of personnel of Finnish and Estonian manufacturing industry in 1922 - 1989 has been presented in Figure 15. The number of people employed in the Estonian and Finnish manufacturing industry by branch in 1989 is given in the Table 9. Table 10 presents the amount of industrial employees from 1922 to 1989. The volumes of industrial production of Finland and Estonia have been presented in Figure 16.

The volume of production of manufacturing industry has been recalculated into indices (1926 = 100). As sufficiently accurate information about the exchange rate between the Estonian kroon and the Soviet Union rouble between the years 1938 and 1950 was not available for this study (the rate of kroon and chervonets against the US dollar was 2.4567:1 in 1933; in 1940 the rouble was exchanged at the rate of 1:1) they have been taken as equivalent by their exchange rates in the present paper. The mistake due to the approximate exchange rate and different methods for estimating the

Figure 16. The volumes of industrial production of Estonia and Finland in 1922 - 1989



Sources: See Table 11 in Ahde & Rajasalu (1992).

production volumes might disturb the comparison of Estonian manufacturing before and after the year 1940. After 1950 the characterization of the general development differences of Estonian and Finnish manufacturing industries is more reliable, even though there might be some effect of price changes in the dynamics of the volume of the Estonian manufacturing industry. This would result in too rapid growth in the volume of the Estonian manufacturing industry, especially during the last few years of the period under examination.

It appears from Figures 15 and 16 that the most obvious conclusion when comparing the development of Finnish and Estonian industries is that the post-war development of the Estonian industry has been much faster than that of Finnish industry. The development of labour resources lends support to this view. Therefore it remains unclear why the standard of living in Estonia seems to be much lower than in Finland at the end of 1980's.

One reason might be that the Finnish and Estonian statistics are not comparable and that on the basis of the official statistics of Estonia no correct conclusions can be made. This could be due to several problems in Estonian statistics. It is argued that during the socialist era the statistics were used for propagandistic purposes and were for this reason tendentious. The problem of appropriate accounting for price changes has already been mentioned. This price problem is a common one in the statistics of the former Soviet Union (see Ruoho & Havukainen 1991 pp. 59 - 76). In addition to these problems Estonian statistics might also have the shortcoming of multiple accounting. The used intermediate products are included in the value of output. If the industry diversifies and the use of intermediate products increases over time, this is reflected in the production statistics as excessive growth.

Since in the conditions of the socialist planned economy Estonian industrial enterprises had to fulfil large development plans to a large extent by means of concealed price rises and multiple accounting the official statistics did not correspond to the reality very well. It might even be said that industrial enterprises did not produce products as much as economic indicators. While the rapid growth of the Estonian industry up to 1975 was due to the large capital investments, the further growth of production can be explained mainly by the change in prices.

The physical output of Estonian industry is also sizeable. For example, in 1989 Estonia produced

- 17.6 mill.kWh of electric energy (11.163 kWh per capita);
- 215.3 thousand electric motors with the total capacity of 1509 MWh;
- 214 thousand tons of mineral fertilizers (135.6 kg per capita);
- 1129 thousand tons of cement (715.9 kg per capita);
- 1892 thousand sqm of window glass;
- 187.5 million sqm of cotton cloth (118.8 sqm per capita).

The growth of output of some industrial goods is given in the Table 11 for Estonia and in Table 12 for Finland. Those and many other figures for Estonia not mentioned in this paper are really high as compared with the most developed industrial countries of the world.

Table 11. The production of selected industrial goods in Estonia in 1922 - 1989

Product	Unit	1922	1938	1950	1960	1970	1980	1985	1989
Oil shale	thous.t	42	1473	3543	9246	18902	31334	26406	23331
Electric energy	GWh	8	155	435	1950	11575	18898	17827	17611
Bricks	mill.pcs.	9	14	109	310	337	267	255	253
Cement	thous.t	35	83	91	101	964	1213	1094	1129
Window glass	thous.m ²		792	470	1832	1932	1987	2297	1892
Pulp	thous.t	7	90	45	95	118	87	104	92
Paper	thous.t	26	19	37	87	105	93	90	92
Plywood	thous.m ³		11	11	23	33	30	32	31
Cotton textile	mill.m ²	19	20	21	109	193	178	198	188

Sources: Eesti statistika 1936, Riigi Statistika Keskbüroo, Tallinn, 1936, pp. 84 - 100; Eesti statistika 1938, Riigi Statistika Keskbüroo, Tallinn, 1938, pp. 60, 212, 420, 596; Eesti 1920 - 1930, Arvuline ülevaade, Riigi Statistika Keskbüroo, Tallinn, 1931, pp. 136 - 156; Eesti Statistika Aastaraamat 1950, 1960, ..., 1990, Tallinn; Eesti arvudes 1989, Tallinn, 1990, pp. 60 - 72.

Although we take into consideration all the problems mentioned above, the question of a lower standard of living in Estonia remains unanswered. When we look at the employment statistics and the statistics on physical quantities of goods produced, we must draw the conclusion that the reason for the lower standard of living in Estonia does not lie in the development of the volume of Estonian manufacturing industry.

One reason might be that the share of the means of production (A-group) was 56.2 % and the share of consumer goods (B-group) 43.8 % in the industrial production of Estonia in 1989. A large part of the production is used for the so-called intra-industrial circulation and the outcome is relatively small. Though in Finland the share of consumer goods in industrial production was only about 30 %. The rest of the goods consumed are purchased abroad.

The waste and uneconomic methods used in Estonian manufacturing can be part of the explanation, but their effect should also be visible in the volume of production, except for the effects on the quality of the production.

Table 12. The production of selected industrial goods in Finland in 1922 - 1989

Product	Unit	1922	1938	1950	1960	1970	1980	1985	1989
Crude steel	thous.t	14	73	97	246	1169	2509	2518	2921
Electric energy	GWh	257	2974	4176	8628	21185	38655	48629	53391
Bricks	mill.pcs.	58	144	184	128	126	135	144	137
Cement	thous.t	106	500	473	1257	1875	1787	1695	1693
Window glass	thous.m ²		1097	2553	6441	9984	10771	10789	7520
Pulp	thous.t	525	2110	1912	3693	6471	7440	8031	9068
Paper	thous.t	213	562	629	1432	2889	3887	5339	6500
Sawn wood	thous.m ³	3364	4818	4792	6569	6225	9477	6990	7763
Cotton textile	tons	2177	8710	7154	13535	16806	15122	13043	8310

Note: Some figures concerning the year 1989 are uncertain estimates due to classification change in Finnish Industrial Statistics.

Sources: Statistical Yearbook of Finland, Central Statistical Office of Finland; Yearbook of Industrial Statistics, Central Statistical Office of Finland; Federation of Finnish Metal, Engineering and Electrotechnical Industries.

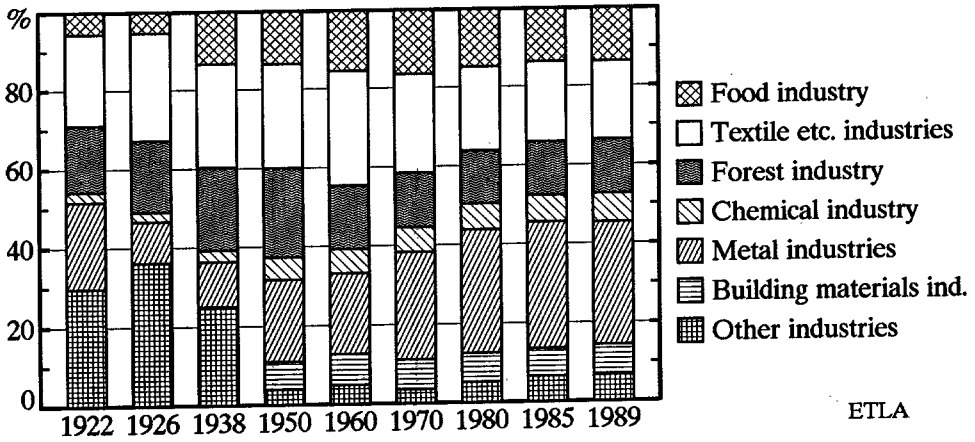
One possible explanation is the structure of the Estonian manufacturing industry. It was not designed to promote the welfare of Estonia, but rather the goals were set on the all-Union level. With large export and import shares and an administrative price setting system the benefits of Estonian industrial production could be easily transported to other, probably more backward areas of the Soviet Union. The result would have been that only a part of the effect of the Estonian industrial production would have been seen in the standard of living in Estonia.

It seems that the Finnish and Estonian industry can be best compared on the basis of indirect indicators, expert opinions or a few more subjective indicators. Aggregate information on the value and volume of industrial production is of limited use. One possible way to compare the structure of industry in the two countries is to use labour force data as in Figures 17 and 18, though changes and differences in classifications seem to be a nuisance even in this approach.

Industry can be characterized also by the supply of electricity. Estonia produced 11163 kWh of electric energy per capita in 1989, Finland produced a bit less - 10731 kWh. But Estonia used only 58.2 % of its electricity itself. The use of electric energy in manufacturing was 30200 kWh per worker in 1989. In Finland the corresponding figure was 97900, which suggests that the technical level of industry and thus also productivity is much higher in Finland.

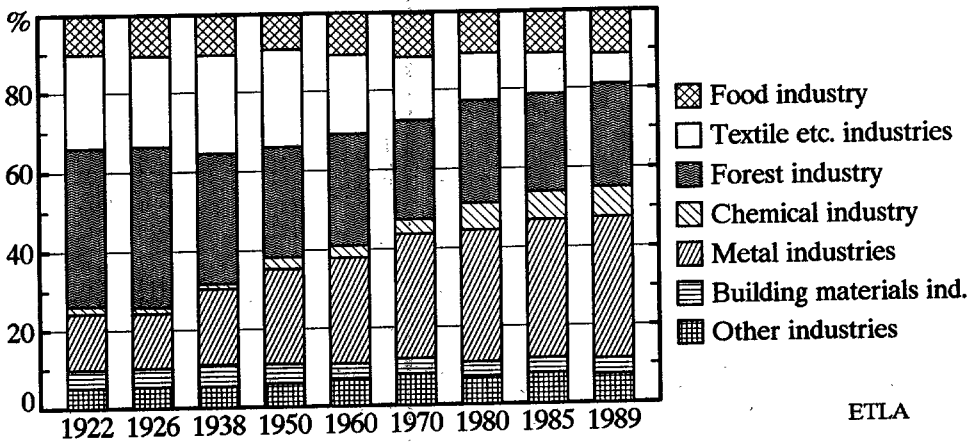
This opinion is confirmed by the fact that the productive fixed assets (see Table 13) in Estonian industry have rapidly grown out of date. Such a tendency is quite logical, since a relatively small number of outdated productive fixed assets are replaced by new ones. The share of new productive fixed assets (percentage of the total cost of fixed assets by the end of the period) in the Estonian industry was 27.8 % in 1976 - 1980, 26.3 % in 1981 - 1985 and 18.2 % in 1986 - 1989. In Finland the fixed capital stock has grown every year except in 1978 during the recession of the late 1970's. In Estonia the share of outdated productive fixed assets fallen out of production was 7.2 % in 1976 - 1980, 7.6 % in 1981 - 1985, 6.9 % in 1986 - 1989. It is also characteristic that in 1989 more than a third of the workers did manual work.

Figure 17. Employment structure in Estonian industry



Sources: Eesti 1920–1930, Eesti statistika, Statistika Aastaraamat.

Figure 18. Employment structure in Finnish industry



Sources: Hjerppe (1988), Finnish National Accounts.

Table 13. Productive fixed assets by industries in Estonia and Finland in 1989

Industry	Estonia		Finland	
	Productive Fixed Assets		Net Fixed Capital Stock	
	mill SUR	%	mrd FIM	%
Food industry	713.6	18.5	22.8	12.9
Textile, wearing apparel and leather industries	450.0	11.6	6.2	3.5
Forest, wood, pulp and paper industries	430.2	11.1	56.8	32.3
Chemical industry	559.9	14.5	25.8	14.7
Building materials industry	394.2	10.2	6.8	3.9
Metal and engineering industry	997.4	25.8	46.4	26.3
Other industries	320.9	8.3	11.1	6.4
TOTAL INDUSTRY	3866.2	100.0	176.1	100.0

Sources: Eesti Statistika Aastaraamat 1990, Tallinn 1990; Central Statistical Office of Finland, Helsinki.

In the paper industry which in Estonia has traditions in the remote past, the superiority of the Finnish industry is especially obvious. By the per capita output of paper Estonia was behind Finland by 22.4 times (60 and 1345 kg respectively) in 1988. However, it must be remembered that in Finland the forest sector has a more central role in the economy than in Estonia. Some 85 % of Finnish paper production is exported.

The analysis of the territorial location of Estonian industry shows that approximately two thirds of production capacities have been concentrated in three North-Estonian towns - Tallinn, Kohtla-Järve and Narva (71.5 % of productive fixed assets, 66.8 % of production personnel and 64.7 % of the total value of production). Therefore the regional structure of Estonian industry is rather uneven. Although a large part of the Finnish industry has also been concentrated in the southern part of Finland, the regional structure of Finnish industry can be considered much more even. This is partly due to the Finnish regional policies, which, though, has not been completely successful in the longer run.

The intensive development of industry in Estonia after World War II was probably conditioned by several intertwined goals, reasons and circumstances.

The foundation of new industrial enterprises and extension of the existing ones enabled creation of new jobs and with that contributed to the political goals of the Soviet Union by means of the organized import of labour. The change in the economic structure and national composition of workers was used to ensure the attachment of Estonia to Russia. This was also one of the reasons why the Estonian economy was integrated into "the unitary national economy complex of the USSR". The development led to a strong dependency between the Estonian economy and the economy of the USSR.

It must be born in mind that the forced development of Estonian industry was not a unique undertaking in the Soviet Union of that time. The industrialization campaign was going on in the whole country. There was a firm faith in the preferential development of the production of means of production (heavy industry). New industrial enterprises were founded and the existing ones extended practically everywhere in the Soviet Union. Therefore the majority of the direct executors of the Soviet Union industrial policy did not need to acknowledge all political and strategical aims and the consequences of their actions.

In Estonia it was possible to make capital investments much more effectively than in most other Soviet Union regions in this period and also later. In Estonia the industry was on a relatively high level and its working class rather educated, there were certain historical traditions, enough foodstuffs for industrial workers and it was possible to use the already existing infrastructure.

A large part of the German war reparations in the form of equipment were transported to the Soviet Union by sea through the Tallinn port. Since transport worked very badly and equipment tended to be heaped in the harbour, it was easier and more expedient to use them in Estonia.

The Finnish industry was also influenced by the consequences of the war. A large part of the war reparations Finland had to pay to Soviet Union were the products of metal industries. Their share in Finnish exports was rather small before the war, so new capacity had to be built and new products had

to be designed. Even after the war reparations had been paid the Soviet trade was important for the Finnish metal industries.

In any case, Finnish industrial policy could be derived mainly from the national interests of Finland. Interweaving of economic and political aspects have sometimes led to economically less satisfactory solutions. Every now and then the government has been forced to support the international competitiveness of Finnish industry with a devaluation of the markka. The diversification and internationalization of Finnish industry has succeeded satisfactorily, but never the less Finnish economy was in the end of 1980's rather weak in light of the competition from the uniting Europe.

The government has supported the development of the Finnish industry also more directly. Some basic industries, like the basic metal and chemical industries have at least partly been in the hands of government. Government has also played a role in forest industries in the more remote parts of Finland. The attempts of government to support the diversification of Finnish industry into the field of electronics have been less successful.

The forests are the most important natural resource of Finland, so the forest sector has a central role in the Finnish industry. Also a large part of the metal and chemical industries produce machinery or chemicals for the forest sector. The diversification of Finnish industry has proven to be rather difficult. Only recently has there been some success in the electronics industry. The metal industry and textile and wearing apparel industries have had large export markets in the former Soviet Union. After the collapse of the Soviet Union those markets have vanished. The metal industry is trying to market its production in the western markets with at least some success. For the textile and especially wearing apparel industries this has proven to be more difficult. The Finnish building materials industry and food industry are mainly home market industries. The intensifying international competition will make the future difficult also for these branches.

Estonia had an important energy resource - oil shale - which was extensively taken into use during the industrialization process. Also the forest resources and a possibility to produce building materials were taken advantage of. The Estonian textile industry was also developed, but at the same time it became very much dependent on raw material supplies from other Union republics.

Extensive capital investments have been made into the Estonian industry during the post-war period (in 1945-1989 over 7.8 billion roubles). A large part of the post-war investments in the Estonian industry were probably covered from reparation payments. Industrialization in Estonia was carried out according to the previous practice of the Soviet Union marked by the destruction of most part of the existing structures and the discontinuation of natural self-regulation in the economy, which was, of course, accompanied by structural changes, social, demographic and ecological consequences.

Investments were made primarily in the branches oriented toward consumers outside the republic (to the Soviet Union market), i.e. fuel (oil shale mining and processing) and the textile industries in the post-war decade. For example, the Estonian oil-shale industry was restored and developed in order to supply the population of Leningrad with oil shale gas and its industry and transport with oil fuel. While the Kohtla-Järve-Leningrad gas main was put into operation already in 1948, the gas main between Kohtla-Järve-Tallinn did not start until 1953.

During the post-war five-year periods oil shale mining (1.9 mill.t in 1940; 3.5 mill.t in 1950; 9.2 mill.t in 1960; 18.9 mill.t in 1970; 31.3 mill.t in 1980) and on the basis of that also power engineering was developed tempestuously (1947 - Kohtla-Järve TPS (56 MW), 1951 - Ahtme TPS (72.5 MW), 1966 - Baltic TPS (1624 MW), 1973 - Estonian TPS (1610 MW). The oil shale based chemical industry grew also considerably in Kohtla-Järve and Kivili.

Functioning as a part of the centrally planned economy of the USSR diminished the importance of Estonia as an economic whole. It became dependent on all other republics by means of specialization, extension of cooperation relations, distribution of production, supply of raw materials, etc. For example, the biggest cotton producer Uzbekistan, where there were a lot of free labour resources, was prevented from extending its cotton industry. Instead the textile industry was extended in Estonia who was suffering from a shortage of labour. Since there were no interrepublican direct contacts at that time, such an industrial policy of the Soviet Union made both republics dependent on the central authorities in Moscow. Uzbekistan could sell its cotton only to Moscow and Estonia could buy cotton only from Moscow. This enabled the Moscow authorities to have full control over the industry of the Union republics.

The whole post-war development carried Estonian industry to the situation that was not very favourable from the point of view of the economically independent Estonia. A large part of the Estonian industrial complex was oriented toward the eastern markets, which became in the beginning of the 1990's at least temporarily not able to buy Estonian products. It might be that these markets will never again emerge so that Estonian industry in its old form could sell its products to them. Estonian industry must compete with the industry of western economies, and it is questionable how much use can be made of the industrial resources built under the socialist era.

4.2.3 Construction

The Republic of Estonia (1920 - 1939) started its economic activity with reorganizing its ruined and technically backward industry. In Finland there was also a need for reconstruction. The development of the production of main building materials is characterized for Estonia in Table 14 and for Finland in Table 15.

When comparing the indices we can see that though the production of the main building materials progressed also in the period of independent statehood of Estonia the production volumes of cement and lime remained even in 1939 substantially smaller from the level attained before World War I. Only the production of window glass surpassed the pre-war level nearly by 5 times, as a result of which 70 % of the output of the Järvikandi glass factory were exported to other countries (Kriminal, Karma, Ligi & Sauks 1979 p. 145). The total output of bricks (clay, silicate, ash) exceeded the pre-war level by 1.3 times. The Finnish data is scarce, but in those building materials about which we have data the pre-war production was well surpassed before 1938. The main features of the Finnish building materials industry in this era were substituting imported building materials with domestic ones and rapid changes in the volume of production.

Total value of buildings was estimated at about 1.5 billion kroons in the last years of the Republic of Estonia, 1939 (20 aastat ehitamist... 1939, p. 3). Of this total there were for approximately 900 million kroons worth of residential buildings, 500 and 400 million kroons respectively in towns and in the countryside (Eesti teatmeteos III osa 1949 p. 122, Eesti Entsüklopeedia täiendusköide I 1940 p. 363). Approximately 26 million kroons were

Table 14. Production of building materials in Estonia

	Output			Growth
	1913 /14	1920 /21	1939	1920/21-39 (times)
Bricks (mill pcs)	50.0	6.0	65.0	10.8
Cement (1000 tn)	202.0	2.7	77.2	28.6
Lime (1000 tn)	96.0	4.5	30.1	6.7
Window glass (1000 m ²)	210.0	35.0	1036.0	29.6

Sources: E.Veski, Ehituskompleksi arengust Eesti NSV-s aastail 1940 - 1990. Tallinn, 1990, p. 8; K.Kala, Tööstuspoliitika ja tööstuse areng Eesti Vabariigis 1930.aastate teisel poolel. - Eesti TA Toim., Ühiskonnateadused, 1991, 40, nr. 2, p. 130.

Table 15. Production of building materials in Finland

	Output			Growth	
	1914	1922	1938	1938 1922 (times)	yearly average %
Bricks (mill pcs)	76	58	144	2.5	5.8
Cement (1000 tn)		106	500	4.7	10.2
Lime (1000 tn)	66	203	1387	6.8	12.8
Window glass (1000 m ²)			1097		

Sources: Suomen taloushistoria, osa III; Finnish Statistical Yearbook, Central Statistical Office of Finland.

invested in new buildings annually, 77 % of which was private capital. In that period the main building material was brick. Architecturally beautiful dwelling have been preserved well up to the present time.

In the 1920's building in Finland was particularly intense in the residential sector and in the countryside. The main building material was wood. Stone became a more common building material in industrial building in the 1930's (Hjerpe 1988 s.124). The recession in the 1930's struck hard particularly on residential building.

Some 45 % of the capacity of Estonian industrial enterprises and 57 % of the housing stock of Estonian towns was destroyed during World War II. The total damage to the national economy of Estonia due to the war was over 1.6 billion roubles (25 aastat Nukogude ... 1965 p. 4).

In Finland, in addition to direct war damages, a large part of residential and other buildings were lost with the land area extracted from Finnish territory as a consequence of the war. The population from those areas was evacuated, so there was a huge shortage of dwellings. Residential building was intense during the first ten years after the war. During the first few years of this era the shortage of building materials was an obstacle to construction.

In Estonia, after World War II, ensuing from the needs of national economic development, the building materials industry was promoted more than other industries. A considerable part of its output was used for industrial construction. During the immediate post-war period (1946 - 1950) 40 % of the capital investments of Estonia were made to develop industry, including the building materials industry, the fast development of which lasted up to 1975. After that the growth of building materials production slowed down or even decreased very much due to the deterioration of productive fixed assets in this industry. And within the last 25 years they have not been modernized

Table 16. Output of building materials in Estonia in 1950 - 1989

	1950	1960	1970	1980	1985	1989
Cement (1000 tn)	91	101	964	1213	1094	1129
Lime (1000 tn)	71	190	196	210	212	167
Bricks (mill. pcs)	109	310	337	267	255	253
Concrete blocks and details (1000 m ³)	-	192	699	937	943	995
Mineral wool and products of it (1000 m ³)	-	97	172	265	293	271
Asbest roofing (mill.stand. boards)	-	-	-	61	58	7272
Window glass (1000 m ²)	470	1832	1932	1987	2297	1892

Sources: Eesti arvudes 1989, Lühike statistika kogumik, Tallinn, 1990, p. 66. Eesti NSV rahvamajandus 1967.aastal, Statistiline kogumik, Tallinn, 1968, p. 79; Eesti NSV rahvamajandus 1985.a, Tallinn, 1986, p. 61.

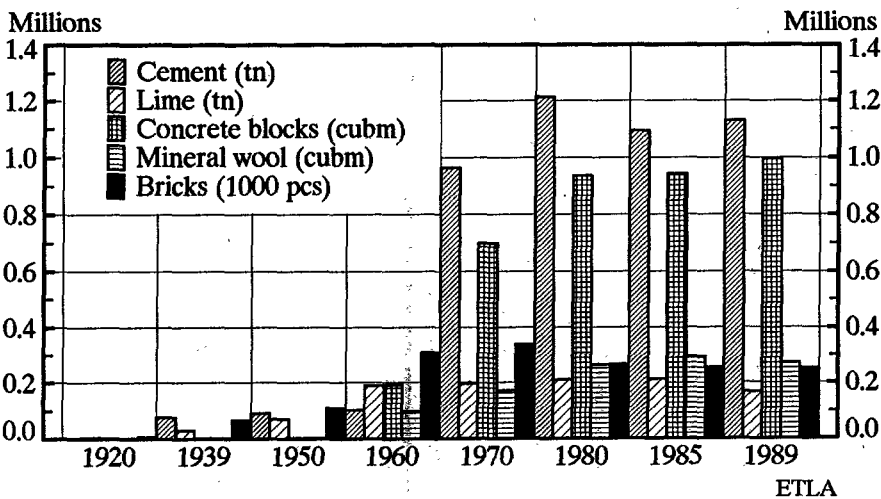
up to the modern standards. Therefore the quality of building materials has also considerably dropped, which in turn has affected the final result of construction.

The output of the main building materials have been presented in Table 16 and Figure 19 for Estonia and in Table 17 and Figure 20 for Finland.

The output of cement in Estonia and Finland are compared in Figure 21. In 1939 Finland produced 7.3 times more cement than Estonia. By 1989 - 1990 this ratio had considerably decreased and was only 1:1.4. The production of cement in Estonia started to increase after 1964 when 2 new production lines were put into operation in the Cement Mills 'Punane Kunda'.

The main export articles in the Estonian building materials industry in 1981 were portland cement (37 % of the output), mineral wool (48 %), dolomite

Figure 19. Output of building materials in Estonia in 1920 - 1989



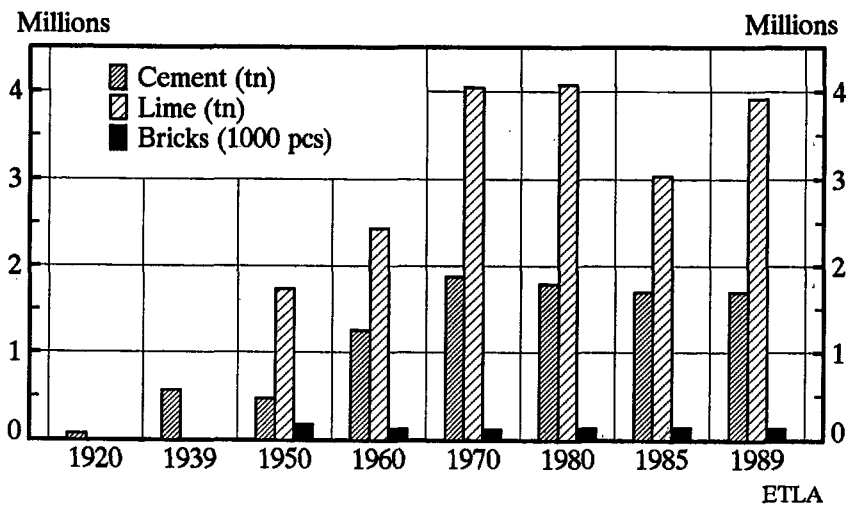
Sources: See Tables 14 and 16.

Table 17. Output of building materials in Finland in 1950 - 1989

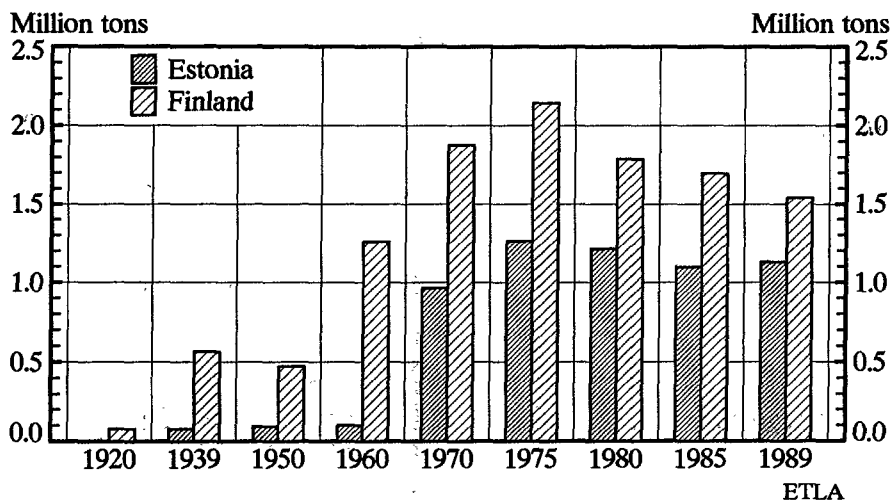
	1950	1960	1970	1980	1985	1989
Cement (1000 tn)	473	1257	1875	1787	1695	1693
Lime (1000 tn)	1731	2439	4042	4074	3037	3914
Bricks (mill. pcs)	184	128	126	135	144	137
Window glass (1000 m ²)	2553	6441	9984	10771	10789	7520

Source: Statistical Yearbook of Finland, Central Statistical Office of Finland.

last touch slabs (96 %) and ceramic wall bricks (63 %). In addition to that window glass (15 %), lime (18 %) and bricks (8 %) were also exported in smaller quantities (Aader 1985 p. 43). These materials were exported to the Soviet Union as well as to other countries. The volume of exports has remained approximately the same up to the end of the 1980's, though the exports of building materials through unofficial channels by way of barter trade has increased, but this is not included in the official statistics.

Figure 20. Output of building materials in Finland in 1920 - 1989

Sources: See Tables 15 and 17.

Figure 21. Output of cement

Sources: See Table 21 in Ahde & Rajasalu (1992).

Table 18. Number of construction enterprises by ownership in Estonia in 1940 - 1989

Year	Number of construction enterprises	of which, %	
		state-owned	cooperative*
1940, Oct.	36	100	-
1955	119	77	23
1960	121	74	26
1970	131	89	11
1980	152	89	11
1985	147	88	12
1989	155	89	11

* construction enterprises of collective farms and of the Estonian Union of Consumers Cooperatives.

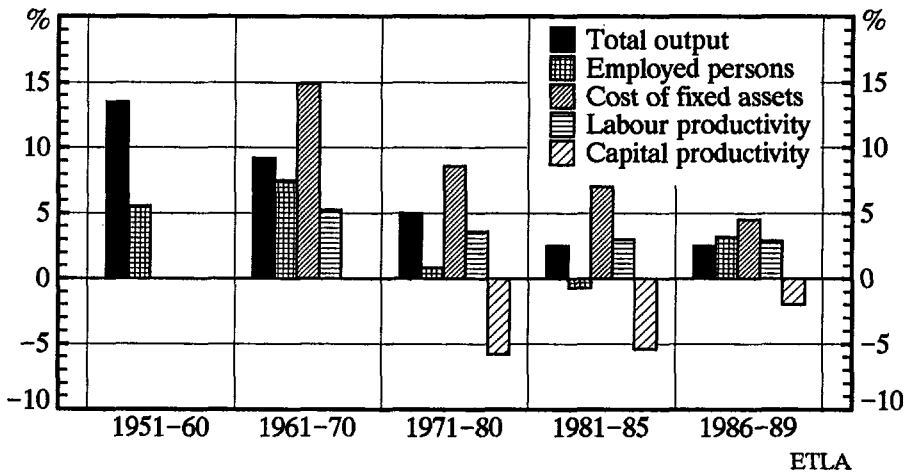
Sources: Eesti arvudes 1989, Lühike statistika kogumik, Tallinn, 1990, p. 83; Kapitalnoje stroitelstvo v Estonskoi SSR, Statisticheski sbornik, Tallinn, 1986, p. 162.

In Finland the building materials industry has been producing almost exclusively for the home market. Development towards greater use of industrial methods in building has boosted also the demand of the products of building materials industry.

The development of construction enterprises in Estonia in the post-war period is characterized by the centralization of management, while the share of state-owned construction organizations increased (see Table 18). The average number of workers in an enterprise was 370 in that period which is nearly 10 times more than in 1939.

Starting in 1989 state-owned small enterprises and cooperatives have been established en masse in Estonia. The number of such cooperatives in construction (their field of activity included also research and design) reached 780 by the end of 1990. They employed on an average 20 persons (Statistika Aastaraamat 1991 p. 62). In Finland the total number of construction enterprises was 9181 in 1984 and 13265 in 1989. This number has

Figure 22. Average annual growth rates of construction enterprises in Estonia in 1951 - 1989



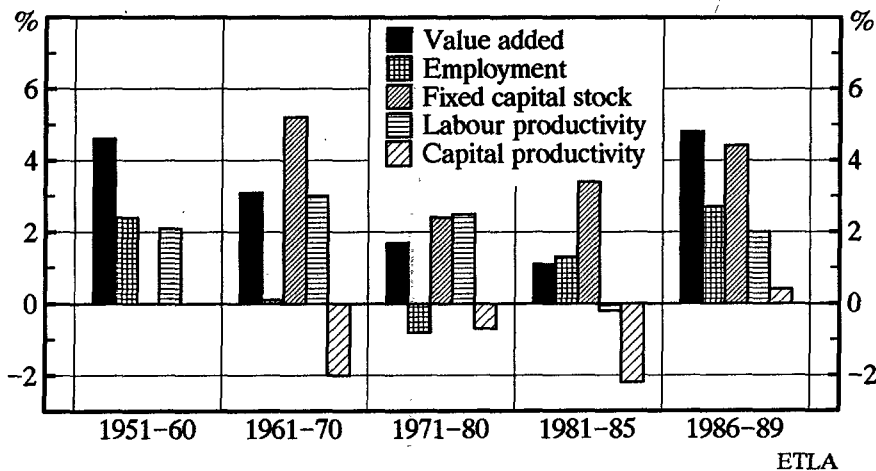
Sources: See Table 19.

declined after 1989 due to the downswing in the construction business. The number of large construction enterprises, carrying out larger construction projects, is rather limited, but there is a vast amount of small contractors and sub-contractors. During the upswing in the construction business in late 1980's a high number of small construction firms were established for only a single small building project. These small firms tend to vanish after the project is completed. The recession that followed the upswing is gave a hard time to the larger construction firms too.

The main indicators characterizing the economic development of the activity of Estonian construction enterprises are presented in Table 19 and Figure 22. Output of construction enterprises is in comparable prices (budgetary prices of construction fixed by the state as of January 1st, 1984).

It must be explained here that total output includes the monetary value of construction-installation works and constructive capital repairs, and number of employed persons includes people employed in construction-installation works and auxiliary production.

Figure 23. Average annual growth rates of construction branch in Finland in 1951 - 1989



Sources: See Table 20.

Table 19. Development of construction enterprises in Estonia in 1951 - 1989 (average annual growth rates, in per cent)

Indicators	1951-1960	1961-1970	1971-1980	1981-1985	1986-1989
Total output	13.5	9.2	5.0	2.5	2.5
People employed	5.5	7.5	0.8	-0.7	3.2
Cost of productive fixed assets		14.9	8.6	7.0	4.5
Labour productivity		5.2	3.6	3.0	2.9
Capital productivity ratio			-5.8	-5.4	-2.0

Sources: Eesti arvudes 1989, Lühike statistika kogumik, Tallinn, 1990, pp.27, 73, 83; Eesti NSV rahvamajandus 1988.a, Tallinn, 1989, pp. 65, 73, 195, 197; Eesti NSV rahvamajandus 1986.a, Tallinn, 1987, pp. 19, 55; Eesti NSV rahvamajandus 1975.a, Tallinn, 1976, p. 210.

Table 20. Development of construction branch in Finland in 1951-1989 (average annual growth rates, in per cent)

Indicators	1950-1960	1960-1970	1970-1980	1980-1985	1985-1989
Value added	4.6	3.1	1.7	1.1	4.8
Employment	2.4	0.1	-0.8	1.3	2.7
Net fixed capital stock		5.2	2.4	3.4	4.4
Labor productivity	2.1	3.0	2.5	-0.2	2.0
Capital productivity		-2.0	-0.7	-2.2	0.4

Source: National Accounts, Central Statistical Office of Finland

In 1985 out of the total volume of construction works (restoration, industrial construction, etc.) a share of 70 million roubles (8 %) was carried out by foreign firms (Polish, Finnish). At the same time the Estonian builders built every year up to 1991 approximately 17 million roubles worth of roads (40 km) and 5 - 10 million roubles worth of buildings outside Estonia.

In the second half of the 1950's there was a transition to cheap industrial construction in Estonia, mainly by all-Union standard projects, the use of which was compulsory in residential construction as well as for public and manufacturing buildings. It was accompanied by the need to use standard installation constructions, and armoured concrete, which in turn caused the development of relevant auxiliary production at the construction enterprises. In Finland a similar shift towards more industrial building methods was seen during the 1960's and 1970's. One reason for this was the growing demand for dwellings due to the migration from the countryside to towns. Tables 21 and 22 present a survey of the buildings completed in Finland and in Estonia during the post-war era. Figures 24 and 25 deal with the same issue graphically.

Only volumes of residential construction had steadily increased in Estonia up to 1987. During the last few years they have dropped to the level of the 1960's (a decrease of nearly a third). At the same time the construction of cultural establishments and general education schools has considerably increased. In Finland there was an enormous upswing in construction towards the end of 1980's. The main reason for this was the liberation of financial markets, which released pent-up demand for credit. The growth

Table 21. Buildings completed in Finland 1949 - 1990, mill m³, yearly averages

	1949-1951	1952-1960	1961-1970	1971-1980	1981-1990
Dwellings	12.3	8.9	12.0	18.3	17.8
Business buildings	1.3	1.3	2.5	4.3	5.3
Industrial buildings	7.7	2.6	6.5	11.6	10.1
Public buildings	1.8	2.5	2.9	3.2	4.9
Farm buildings	6.9	4.1	2.8	3.4	5.1
Total	27.4	20.6	28.1	42.0	45.2

Notes: Period 1949-1951: Building permits granted. Figures for the years 1981-1990 are estimates.

Sources: Suomen taloushistoria, osa III, p. 392; Statistical Yearbook of Finland.

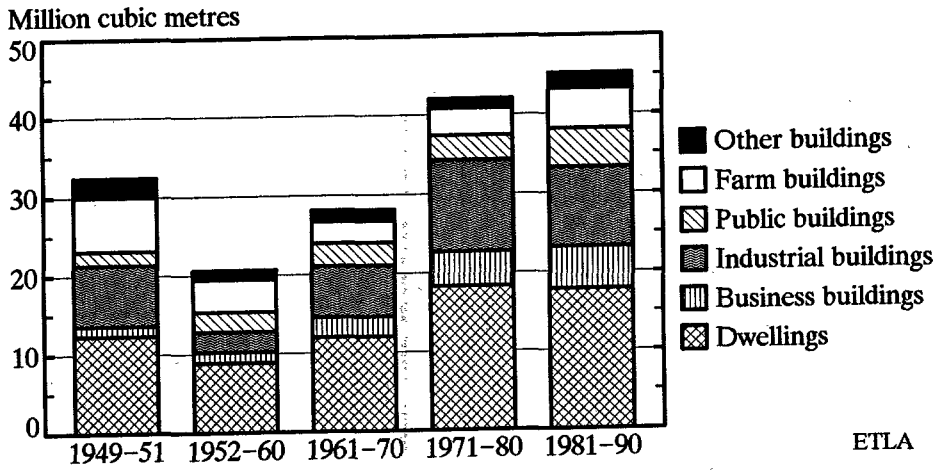
was particularly intense in residential construction, but also other branches of construction grew rapidly. During the year 1991 construction declined sharply. The structure of construction activity in Estonia and Finland is compared in Table 23 and Figures 26 and 27.

It appears from the above-presented data that the main difference in the structure of construction output between Estonia and Finland has been in residential and agricultural buildings. In Finland the main stress has been laid on residential construction, but in Estonia there has been no great differences in the construction volumes of residential and agricultural construction. In 1960 the number of dwelling units completed in Finland exceeded that of Estonia by nearly 3 times, and in 1989 by already 6 times.

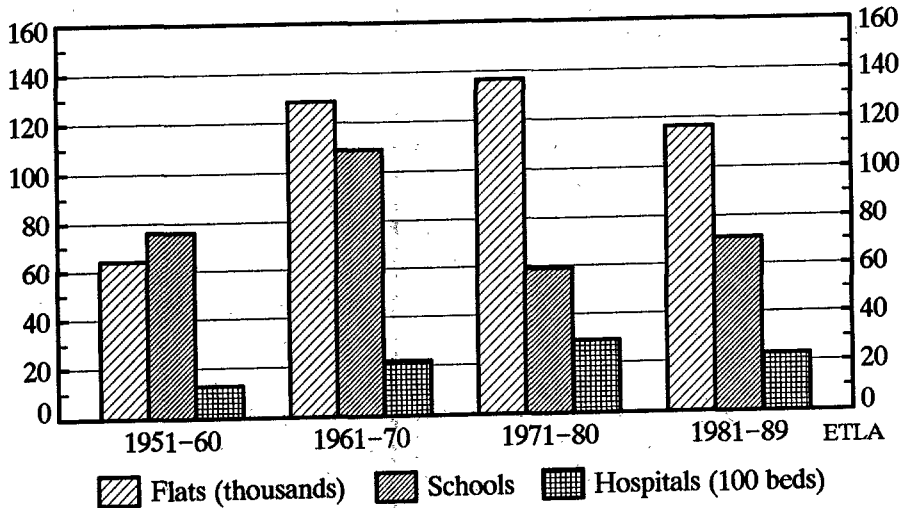
Table 22. Buildings completed in Estonia in 1946 - 1989

	Unit	1946-1950	1951-1960	1961-1970	1971-1980	1981-1989
Large-scale enterprises and their departments	number	28	227	225	160	..
Total floor space of dwellings completed among this flats	1000 m ²	1181	3078	6024	7436	6783
General education schools	1000 un	..	64	129	137	117
Nursery schools and baby nurseries	number	41	76	109	59	71
Hospitals	1000 beds	16	9	32	24	29
Sanatoria, rest homes	beds	1200	1300	2200	2900	2300
Cultural establishments, (theaters, cinemas, clubs)	beds	2500	600	1300	1300	1300
	number	169	176	82	26	36
In agriculture:						
Cow-farms	1000 cows	4	176	243	240	101
Pig-farms	1000 pigs	9	342	560	493	177
Poultry-farms	1000 birds	..	1120	1830	2900	1900

Sources: Eesti NSV rahvamajandus 1988.a, Tallinn, 1989, pp. 285, 288, 155, 312, 317, 329, 341, 350; Kapital'noje stroitel'stvo v Estonskoi SSR, Statisticheski sbornik, Tallinn, 1986, pp. 12, 94, 95, 131, 152, 154, 155; Eesti arvudes 1989, Lühike statistika kogumik, Tallinn, 1990, pp. 75, 77, 79.

Figure 24. Completed buildings in Finland, yearly averages

Period 1949 - 1951: Building permits granted.
 Data on year 1990 is based on estimates.
 Sources: See Table 21.

Figure 25. Buildings completed in Estonia

Sources: See Table 22.

Table 23. Completed buildings by their main use (in per cent)

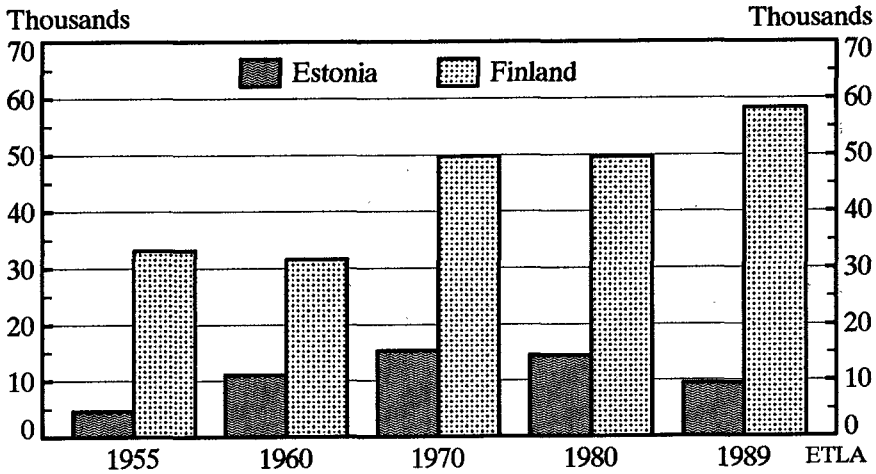
Years	Type of building				
	Residential	Industrial	Agric- ultural	Other	Total
ESTONIA (by cost of construction-installment works)					
1951-55	20	27	14	39	100
1961-65	24	27	21	28	100
1971-75	25	25	25	25	100
1981-85	29	22	21	28	100
1986-89	29	21	19	31	100
FINLAND (by m ³ completed)					
1950	47	10	22	21	100
1960	43	25	8	24	100
1970	43	27	9	21	100
1975	38	29	7	26	100
1980	42	17	11	30	100
1985	39	18	11	32	100
1989	41	16	9	34	100

Sources: Building Statistics, Central Statistical Office of Finland; Nõukogude Eesti entsüklopeediline teatmeteos, Tallinn, 1978, p. 147; Suomen taloushistoria, osa 3, Historiallinen tilasto, Helsinki, p. 392.

Here it must be remembered that the year 1989 was by no means normal in Finnish residential construction. If one bears this in mind in addition to the different sizes of the two countries, it might be said that when measured by the number of dwellings completed there are no great differences between the two countries. On the other hand, the assessment of the quality of dwellings could change this view.

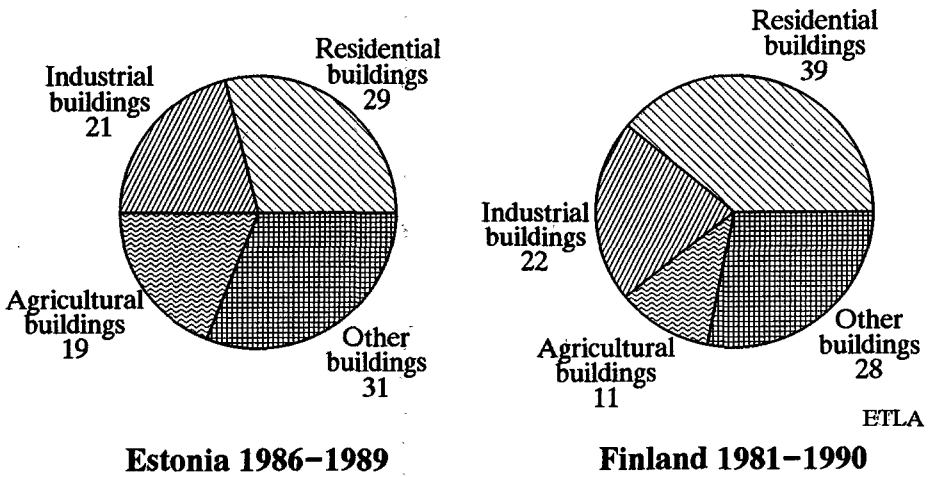
Tables 24 and 25 provide a survey about the development of the cost of residential construction in Estonia and in Finland. The average cost of one square metre is in the Finnish data calculated by dividing the value of the construction by the floor area of completed dwellings. This might cause some fluctuations in the cost of one square metre during times of rapid price and volume changes, for some dwellings may not be completed during the same year in which they are mainly constructed.

Figure 26. Dwelling units completed



Sources: See Table 27 in Ahde & Rajasalu (1992).

Figure 27. Completed buildings by their main use, %



Sources: See Tables 21 and 23.

Table 24. Residential construction in Estonia in 1960 - 1990

Year	Capital investments mill.rbl.	Turned over to tenants 1000 sqm	Average cost of 1 sqm roubles	Price index
1960	60	537	112	100
1970	125	765	163	146
1980	146	812	180	161
1985	171	785	218	195
1989	179	589	304	271
1990	211	468	451	403

Sources: Eesti NSV rahvamajandus 1988.a, Tallinn, 1989, pp. 191, 285; Eesti Statistika Aastaraamat 1990.a, Tallinn, 1991, pp. 195, 285.

Table 25. Residential construction in Finland in 1960 - 1990

Year	Value of construction mill FIM	Floor area of completed dwellings 1000 sqm	Average cost of sqm FIM	Price index	Building cost index
1960	821	1918	428	100	100
1970	2747	3645	754	176	170
1980	11111	4184	2656	621	508
1985	16375	3933	4163	973	736
1989	28820	4555	6127	1478	923
1990	29450	5226	5635	1317	990

Source: Statistical Yearbook of Finland, Central Statistical Office of Finland.

Up to the year 1980 there took place a fast transition to industrial residential construction in Estonia. The aim was to abolish the shortage of flats. But at the same time the immigration into Estonian towns increased. The floor space of an average newly built flat was 55 sqm. Many hostels and communal flats were built in that period. The floor space of auxiliary rooms was reduced to a minimum in order to save on construction costs. The share of private houses in residential construction fell below 5 % by 1985, while it was 25 % in 1960's. By the beginning of the 1990's the outward appearance, design of apartments, conveniences as well as the quality of construction

improved considerably. This applies especially to the houses built by individual projects, the share of which in residential construction increased considerably. All this brought about a 4-fold increase in the average cost of floor space (by 1990) as compared with 1960. Since 1990 the conventional prices have been used in construction that has brought about a steep rise in prices of residential construction. In 1991 the cost of 1 sqm was 1128 roubles already, and only 265 thousand sqm were built. As compared with 1980 the volume of residential construction has decreased 3 times, but the cost of 1 sqm has increased over 6 times.

In Finland the construction of dwellings has also been forced to grow by migration. In the beginning of the 1970's about 70000 dwellings were built, which is the largest figure in Europe, when calculated on a per capita basis (Suomen taloushistoria osa 2 1982 p. 233). In the 1960's and 1970's also the size of completed dwellings grew from 60 to 75 sqm. After that the growth of the dwelling size started to slow down.

The construction in Finland, though it is mainly performed by private firms, is regulated in many ways by authorities. The planning of land use is the monopoly of cities, towns and municipalities. This limits the availability of building sites particularly in larger cities and towns. Earlier the so-called ARAVA system, which provides loans for residential investments was an important source of standards for dwellings. The effects of these regulatory measures on the quality of dwellings have not always been only positive.

To sum up, it may be said that the Estonian construction policies have been to a large extent dependent on all-Union tendencies. It has, first of all, accompanied the excessive development of industry, approximately 90 % of which was subordinated to all-Union or Union-republican administration. As a result, approximately 50 % of total construction capacities were engaged in industrial and residential construction. The share of the construction of agricultural buildings has also been rather high (20 - 25 %). Therefore there has not always been sufficient construction capacity for building up a consumer-oriented services sector (Veski 1990).

The Soviet period is characterized by the relatively high growth rates in construction and the building materials industry up to 1980, after which a decline began. The reason for intensive construction activity was the industrialization and the extensive development characteristic of the Soviet

economic policy. This in turn brought about high migration and the need to promote the social sphere. Extensive development signified also gigantomania and numerous campaigns. Pig factories, large cattle-sheds and inhumane residential districts were built. Only large mechanisms were produced for construction, while small mechanisms were ignored. The picture was as gloomy as regards the quality of construction works and materials which led to high maintenance costs and the falling into disrepair of buildings. And on account of that more money is needed for capital repairs of buildings later, which is a direct result of cheap and shoddy building.

Intensive construction activity has been restrained by the reduction of public investments and shortage of building materials. The building materials industry of the Republic has become fully outdated. Production technology has remained on the level of the 1970's and the product range has not been innovated practically at all.

4.2.4. Services

The service sector in Finland, as in other developed market economies, has emerged as one of the most important and dynamic sector. But in Estonia, as is typical of the centrally planned economies, development priorities were generally given to the rapid expansion of the production sphere of the economy, particularly industry. As a result of this, services in Estonia have tended to be neglected and lagged behind the growing demand for them.

So, differences in the service sector in Estonia and Finland in the end of the 1980's are expressed not only in its role in the economy, but also in the specification of the essence of services and in the development level of service branches.

According to the classification scheme of the USSR statistics all activities were divided into productive and non-productive. Trade, public restaurants and part of the personal services (production and repair of commodities by individual orders) were included in the productive sphere, other services in non-productive sphere.

On the basis of the functional trends of services, taking into consideration the nature of the consumer's physical and intellectual needs, service

branches were mainly classified into four groups: 1) intellectual services - education, culture, art; 2) health and related services - medical care, physical culture and sports, recreation; 3) commercial services - trade and public restaurants; 4) services for meeting personal needs - public utilities, personal services, transport and communication.

The Finnish classification of industries is based on international recommendations (see for example United Nations 1968). The 1988 SIC (Standard Industrial Classification of Finland) includes 19 main classes of which the service industries in the so-called tertiary sector constitute 13 including a complex of all activities of the national economy outside agriculture, forestry, construction and industry. The main classes of services are as follows: wholesale and retail trade; hotels and restaurants; transport; communication; finance and insurance; real estate, cleaning and rental services; technical and business services; public administration and defence; education and research; health and social welfare services; recreational and cultural services; organizational and religious activities; other services.

Table 26. Percentage of population employed by services in the total number of employed population, %

	Estonia				Finland			
	1960	1970	1980	1990	1960	1970	1980	1990
Trade, catering, hotels	7.4	8.8	9.2	8.7	11.4	14.6	14.4	15.9
Transport, storage, communication	11.5	10.5	9.5	8.6	5.9	6.7	7.2	7.2
Financial institutions and insurance	0.4	0.4	0.5	0.5	2.5	3.8	5.8	7.1
Community, social and personal services	20.2	21.3	22.4	25.1	16.7	21.2	25.6	30.4
Total of services	39.5	41.6	41.6	42.9	36.5	46.3	53.0	60.6
Total employed population	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

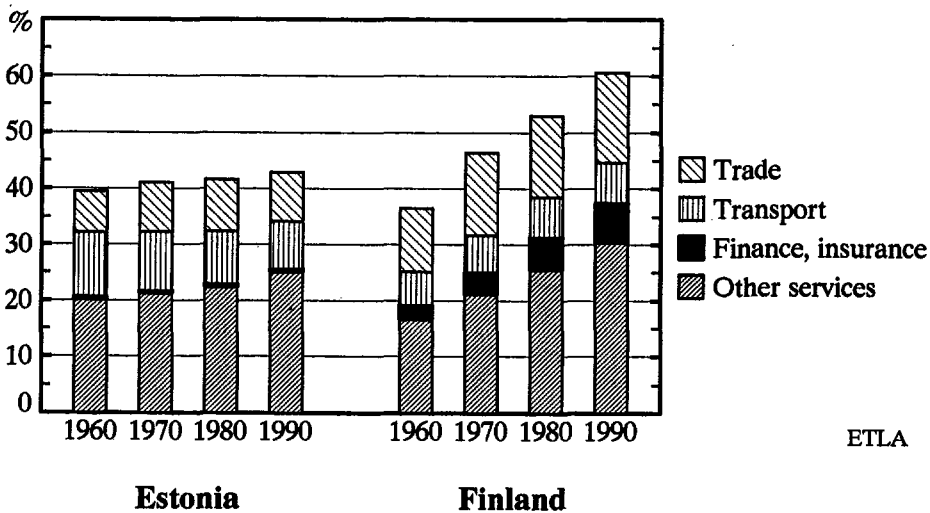
Sources: Eesti Statistika Aastaraamat 1990, Tallinn, Olion, 1991, p. 236; Statistical Yearbook of Finland 1991, Helsinki, 1991, p. 361.

Differences in the classification make it difficult to compare adequately statistical indices. In the following we try compare the statistical indices of service sector in Estonia with those of Finland.

The development level of services can be estimated by the percentage of people employed in the service sector relative to the total employed population. In 1990 60.3 % of the economically active Finnish population were employed in the service sector - nearly a third more than in Estonia (Table 26, Figure 28). The number of those employed by services in Finland has increased by 78 % during the last 30 years (on an average 1.9 % a year).

In Estonia the service sector employed 42.9 % of the total employed population in 1990, while the increase of the last nine years has been modest - only 3.4 % (0.1 % annually). The main agent of such a development was the above-mentioned different priorities in the economic policy of Estonia and Finland.

Figure 28. The share of employment in the service sector



Sources: See Table 26.

When analyzing the structure of services we must take into consideration the differences in statistical indices. For example, in Finland hotels are classified in one group with trade and restaurants. In the Estonian statistics we find indices concerning recreation (hotels, holiday inns, etc.) in one group with health care, physical culture and sports - i.e. in the group of community, social and personal services. Storage is in one group with transport and communication in Finland, while in Estonia it is in trade sector and defence is not reflected in the Estonian statistics at all, etc. Therefore, when estimating the structure of services we must take into consideration certain fluctuations in indices of the groups presented in Table 26. It is clear that the subdivisions of service sector presented in Table 26 (excluding transport and communication) lag essentially behind of those of Finland, which has an effect on the total as well. But on the basis of the above-presented groups it is not possible to estimate the share of service branches (it would be necessary to present a more thorough estimation later on). And in addition to that, only the state-owned sector is reflected in Estonian statistics. Rapid development of new forms of entrepreneurship (cooperatives, joint-stock companies, private enterprises and self-employed workers) since 1987 has never the less had an effect on the structure of Estonian economy and above all inspired the development of services. This is confirmed by the structural analysis of the new forms of entrepreneurship by kinds of activities.

In 1990 according to the Estonian Statistics Department 47 468 persons were employed as full-time workers in cooperatives, state-owned small enterprises and joint ventures, 43.7 % of whom are employed in various service establishments. State-owned small enterprises should be regarded as a transitional form of new entrepreneurship given much wider liberties as compared with the rather strictly regulated operation of the other state-owned enterprises.

Due to difficulties with the supply of resources and rental of space for production, cooperatives pursued mainly activities as services, catering etc. requiring less raw materials and financial resources. In addition to that the innovational potential and other factors were conducive to the development of entrepreneurship in its starting phase precisely in services (80 % in 1987). But numerous cooperatives which started with services, requiring less resources and simpler working conditions, have later in addition more profitable pursuits, which are predominating in their activities. At the same

time, services were rendered to people and enterprises by cooperatives whose main activities were production of consumer goods, construction, catering or something else. For this reason, the share of services in the activities of cooperatives was actually considerable bigger than appears from the official statistics.

For comparison, 28.7 % of those employed in the Finnish economy were working in the public sector and 71.3 % in the private sector (calculated according to the conventions in the Finnish national accounts). Practically all public sector production is included in the service sector. Public services in Estonia and Finland have been based on different ideological and socio-political programmes. Proceeding from the development concept of the so-called welfare state, the primary task of the Finnish public sector has been, besides providing the necessary infrastructure for economic growth, the development of social protection of people and guaranteeing social and also some other services for the members of society. In Estonia the development of the service sector, including public services, being subordinated to the Soviet Union economic development conception, has been of second-rate importance. Due to the different developments there are differences both in the volume of services and in the structure of the service sector. Determination of the structural differences in public services demands more thorough analysis, which is presented in a separate chapter.

In the private sector the share of employees of the service branches was about 46 % in Finland in the end of the 1980's. The highest share of the private sector was in trade (98.6 %) and financing (93.8 %), and the lowest share in social and personal services (24.9 %).

When comparing the development level of service branches the following indices are important: density of service networks, qualitative level of enterprises and work places, structure of rendered services, etc. In the following we compare the development of some service branches such as trade, public restaurants, hotels, and transport.

4.2.4.1. Trade, public restaurants, hotels

According to the economic census of 1937 there were 7974 shops and 3413 street, market and travelling shops in the Estonian retail trade. This makes

an average of one shop per 93 inhabitants of the Republic of Estonia. The selling area of shops was 281.7 thous.m² or 249 m² per 1000 inhabitants. Most of the legal structure of enterprises - 88 % - constituted sole owners, 3 % were economic associations and 7.2 % cooperative enterprises (Kaubandus ja transport 1939). The Estonian retail trade of that period is therefore characterized by the dominance of the private sector, high number of shops and therefore their nearness to consumers.

In Finland there were 30300 retail trade enterprises in 1930, 32200 in 1940, and an estimate for 1937 would be 31600 (Forszell 1979). But one enterprise might have more than one shop. On the other hand, new shops were well accounted for by the authorities, whereas closing down a shop might go unnoticed. The number of inhabitants per shop would have been 121 calculated on the basis of the above-given indices. Although there is no data on the selling area of Finland we can consider the selling area per capita approximately equal in Finland and Estonia. The structure of ownership forms was more or less similar as well. The share of different legal structures in Finland would have been approximately as follows: sole owners 75 %, joint-stock companies 10 % and cooperatives 15 %.

In 1989 there were great differences in the Estonian and Finnish retail trade as regards the density of businesses and therefore the nearness of services to consumers: in 1989 one shop served an average of 375 inhabitants in Estonia, while in Finland the corresponding figure was 186. The number of shops per 1000 inhabitants had decreased by 4 times in Estonia as compared with 1937. We can conclude here that during the past 50 years the supply of commercial services in Estonia had fallen to only a fraction of consumer demand and lagged behind the retail trade of Finland.

Trade in socialist Estonia developed towards the centralization of management. The management of retail trade was mainly subordinated to two organizations, namely the Ministry of Commerce of the Republic of Estonia and the Estonian Union of Consumers Cooperatives. In 1989 the trade turnover of those organizations was 82 % of the total retail turnover of the republic. Therefore, in essence the state monopoly dominated the Estonian retail trade, since over the course of time the system of consumers cooperatives had turned into an object of state administration as well, regardless of collective ownership.

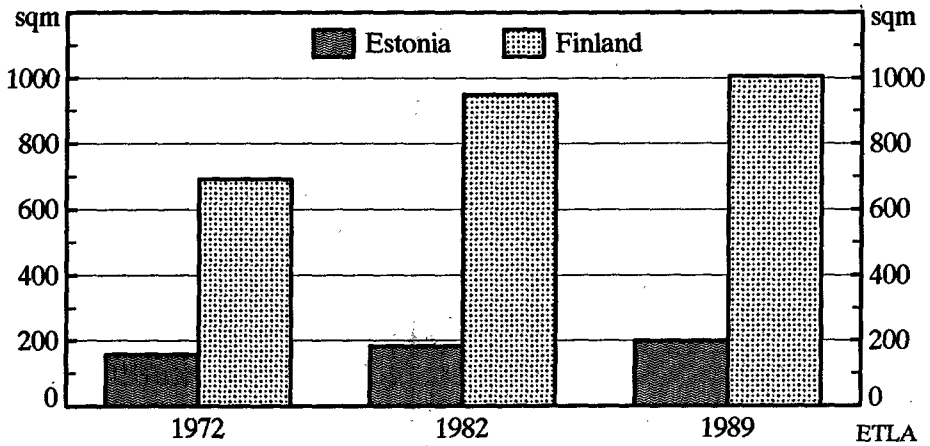
The development of the Finnish retail and wholesale trade has been steadfast. Since the beginning of the century a large number of cooperative retail societies has been founded side by side with the private shops. The free entrepreneurship and competition under the conditions of the market economy created conditions for the fast development of the trade sector. In 1989 98.6 % of the employees of trade (retail and wholesale trade, restaurants, hotels) were employed in private sector. The Finnish retail and wholesale trade is quite concentrated into four central organizations - Kesko, Tuko, SOK and Eka (Raumolin 1990). They account for 90 % of the sales of perishable goods. Excessive concentration in the trade sector never the less impedes the integration into the European market.

For the selling area of the retail trade we have data for 1972 - 1989 (Table 27). Within this period the selling area of retail trade establishments increased by 40.7 % in Estonia, while the total selling area of 1937 was reached only in 1983, but the level per 1000 inhabitants of 1937 has not been reached even by now. The growth of the selling area of retail trade establishments in Finland was 55.2 %, shops are on an average 1.4 times larger than in Estonia. This is caused both by differences in the types of shops and services rendered. In 1989 Finnish retail trade selling area per 1000 inhabitants was 5 times that of Estonia (Figure 29). Ensuing from that we can estimate the differences in the commercial services level in both these countries.

Table 27. Selling area in retail trade in 1972 - 1989

	Estonia			Finland		
	1972	1982	1989	1972	1982	1989
Selling area (1000 m ²)	221	276	311	3221	4595	5000
Number of shops	3183	3106	3251	38117	35780	38000
Area per shop (m ²)	69	89	96	85	128	132
Population (1000)	1391	1496	1565	4653	4842	4969
Shop area/1000 capita	159	184	199	692	949	1006

Sources: Eesti NSV rahvamajandus 1972.a, Statistika Aastaraamat, Tallinn, 1974, p. 270; Eesti NSV rahvamajandus 1982.a, Statistika aastaraamat, Tallinn, 1983, p. 197; Eesti Statistika Aastaraamat 1990, Tallinn, Olion, 1991, p. 298; Rytkönen, P.: Vähittäiskauppa 1970 - 80 -luvulla, Finnish Statistical Office, pp. 68 - 69; Finnish data on 1989 is based on expert opinions.

Figure 29. Selling area per 1000 capita

Sources: See Table 27.

Differences and development tendencies analogous to the retail trade can be also found when comparing the wholesale trade of Finland and Estonia. In 1936 there were 1533 wholesale enterprises registered in Estonia, 97.7 % of which were owned by private persons and 2.3 % by cooperatives. As of January 1, 1989 the retail and wholesale trade had 687 warehouses in Estonia, while their number has gradually decreased (for example, in 1970 there were still 951 warehouses) on account of old buildings which have fallen into disrepair. The warehousing capacity has increased as a result of building new warehouses (in 1970 an average warehousing capacity of a warehouse was 303 m², in 1989 614 m²). Wholesale establishments were strictly specialized in certain commodity groups and every establishment has a monopolist status in its group. They supplied only retail trade and public restaurants. Wholesale and retail trade and catering in Estonia functioned in a state planned closed system where there were no preconditions for competition between enterprises.

In the Finnish wholesale trade there were 8201 enterprises in 1986. Taking into account the number of commercial and catering enterprises and hotels, one Finnish wholesale establishment has to supply on an average 4 enter-

prises, while in Estonia the corresponding figure is almost 10 enterprises. Unfortunately we have no information on the size of Finnish wholesale establishments and on their organization as a whole, which does not allow us to draw concrete conclusions. The major difference between the wholesale trade system in Finland and in other western countries is that in Finland the volume of wholesale trade is concentrated to fewer firms and the competition is not very keen. This is going to change when Finland joins the European Community.

Comparison of public restaurants points out great differences in the number of establishments. In 1989 there was one public catering establishment per 2525 inhabitants in Estonia, in Finland one establishment serves 947 inhabitants. This reflects almost a threefold difference in the number of establishments, ensuing from the fact that the capacity and level of catering services were different as well.

As for tourist hotels and related establishments (camping sites, boarding-houses, etc.) Estonia has considerably lagged behind the level of Finland. By the official statistics of 1989 there were 4 beds per 1000 inhabitants in Estonian tourist establishments, in Finland 16 beds. At the same time many Estonian hotels do not correspond to modern standards for conveniences and services rendered. After the end of 1980's, in connection with the development of new entrepreneurship, a rather large number of cooperatives, joint ventures and joint-stock companies started to accommodate tourists and organize tours, meaning an increase in the number of beds and a rise in the quality of services.

4.2.4.2. Transport

The comparison of the Estonian and Finnish transport is to some extent obstructed by the insufficiency of statistical data for the earlier years of the period of comparison. Still, the comparison of existing data also provides some sort of picture about the differences in the development of transport on both sides of the Gulf of Finland.

The comparison should be started with traffic routes, the lengths of which are presented in Table 28. Because of the difference in the areas of Estonia and Finland, the density of route networks - i.e. length per 1000 km² of area

Table 28. Length of traffic routes (at year-end)

Year	Railroads km		Public roads thous.km		Trams and metros, km		Waterways km	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
1922	1020 ¹	4091	18	48	9			
1938	1434	5409	22	66	27			
1950	1389	4726	21	60	27	114	738	
1960	1422	5323	18	67	36	114	564	
1970	1204	5841	24	72	38	107	520	
1980	993	6096	27	75	38	72	520	
1985	1009	5900	28	76	37	98	520	9330
1986	1014	5899	29	76	39	82	520	9350
1987	1026	5884	..	76	39	82	520	9410
1988	1026	5884	30	77	39	82	520	9460
1989	1026	5844	30	77	39	84	520	9460

¹ Data for 1921

Sources: Eesti arvudes, 1920 - 1935, Tallinn 1937; Eesti Statistika 1938, Riigi Statistika Keskbüroo, Tallinn 1938; Eesti Statistika Aastaraamat, Tallinn (various years); Statistical Yearbook of Finland, Central Statistical Office of Finland, Helsinki (various years); Transport and Communications Statistical Yearbook of Finland 1991, Helsinki 1991.

- produces a more objective picture. Corresponding data are presented in Table 4.29. Since the densities of tram routes and metro routes convey very little - other transport facilities are also operating in towns - they have been omitted. Besides, there is no metro in Estonia nor any trolley-buses in Finland. Waterways depend strongly on the natural conditions and change little. In Estonia there are 11.5 km of inland waterways per 1000 km², in Finland 28.5 km.

As we can see from Table 29 networks of both railroads and roads are on the average much denser in Estonia than in Finland. And yet Finland is a highly developed country. The fact is that the northern part of Finland is sparsely populated so that there is not much need for a dense transport infrastructure. Estonia, at the same time, is populated rather evenly. The average population density is also bigger in Estonia. While Finland is 7.5 times larger than Estonia in terms of area, its population is only 3.2 times higher.

Table 29. Length of traffic routes per 1000 km² (at year-end)

Year	Railroads in operation km/1000 km ²		Public roads ₂ km/1000 km ²	
	Estonia	Finland	Estonia	Finland
1922	25.0 ¹	10.5	373.0	123.6
1938	29.7	14.1	448.1	168.6
1950	30.8	14.0	459.0	184.0
1960	31.5	15.8	390.2	199.7
1970	26.7	17.3	541.0	213.6
1980	22.0	18.1	605.3	222.6
1985	22.4	17.5	623.0	225.1
1986	22.5	17.5	634.1	225.4
1987	22.7	17.4	-	226.0
1988	22.7	17.4	667.4	226.3
1989	22.7	17.4	669.6	226.9

¹ Data for 1921.

Sources: See Table 28.

As we can see from Table 28 the length of railroads in operation in Estonia is not bigger at the end of the 1980's than it was in 1922. During subsequent years it even decreased due to the liquidation of narrow-gauge railway in the 1960 - 70's. In those times petrol was relatively cheap and freight transport by cars was economically more effective than by trains. Therefore it was decided to liquidate the narrow-gauge railway due to under-utilization. In recent years the length of railroads has remained stable both in Estonia and Finland.

In Estonian passenger transport by bus transport is dominating (see Figure 30). In Finland air transport has the biggest share in passenger turnover. In Estonia the share of bus transport in passenger turnover has steadily increased, though year after year in a slower pace. In Finland this share has decreased, especially in 1980's. The share of railway transport has decreased both in Estonia and Finland.

Data on interstate water transport of Finland is unavailable for the years before 1985, so that only internal transport has been taken into account. Thus only internal freight turnover is reflected in Tables 32 and 33. In freight

turnover the railway transport had the biggest share in Estonia. In Finland the lead was held by motor transport, the share of which seems to have increased even more in late 1980's.

If we take into account also the freight turnover of interstate sea transport, the share of water transport was the highest in both countries. The share of water transport in Estonia has increased a lot as compared with 1985. It is connected with vessels carrying grain from America.

Table 30. Turnover of passengers, mill.p. km

Mode of transport	1960		1970		1980		1985		1989	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
Railway	798	2300	1254	2200	1584	3200	1649	3200	1562	3200
Buses	500	5000	2610	7500	3658	8500	4279	8600	4516	8500
Water transport	5	8	16	56	36	74	44	85	54	103
Air transport	56	228	414	1295	990	3683	1130	5243	1261	9363
Total	1745	7536	4294	11051	6268	15457	7102	17128	7393	21166

Sources: Eesti Statistika Aastaraamat, Tallinn (various years); Eesti Arvudes 1989, Lühike statistika kogumik, Tallinn 1990; Transport and Communications Statistical Yearbook of Finland 1991, Helsinki 1991.

Table 31. Turnover of passengers by modes of transport, %

Mode of transport	1960		1970		1980		1985		1989	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
Railway	45.7	30.5	29.2	19.9	25.3	20.7	23.2	18.7	21.1	15.1
Buses	50.8	66.4	60.8	67.9	58.4	55.0	60.3	50.2	61.1	40.2
Water transport	0.3	0.1	0.4	0.5	0.6	0.5	0.6	0.5	0.7	0.5
Air transport	3.2	3.0	9.6	11.7	15.8	23.8	15.9	30.6	17.1	44.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: See Table 30.

Table 32. Freight turnover, mill. tkm

Mode of transport	1970		1980		1985		1989	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
Railway	5049	6270	5919	8336	6446	8066	7609	7958
Lorries	2345	13200	4218	18400	4406	20800	4761	25700
Water transport	144	2359	138	3395	164	2692	54	2727
Air transport	6	1	12	2	11	2	9	2
Total	7544	21830	10287	30133	11027	31560	12433	36387

Sources: See Table 30.

Table 33. Domestic freight turnover by modes of transport, %

Mode of transport	1970		1980		1985		1989	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
Railway	66.9	28.7	57.5	27.7	58.5	25.6	61.2	21.8
Lorries	31.1	60.5	41.0	61.1	40.0	65.9	38.3	70.6
Water transport	1.9	10.8	1.3	11.3	1.5	8.5	0.4	7.5
Air transport	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: See Table 30.

Table 34. Freight turnover, including interstate transport, mill. tkm

Mode of transport	1985		1989	
	Estonia	Finland	Estonia	Finland
Railway	6446	8200	7609	8100
Lorries	4406	22000	4761	27000
Water transport	9334	169840	14583	148307
Air transport	11	84	9	137
Total	20197	200040	36962	183544

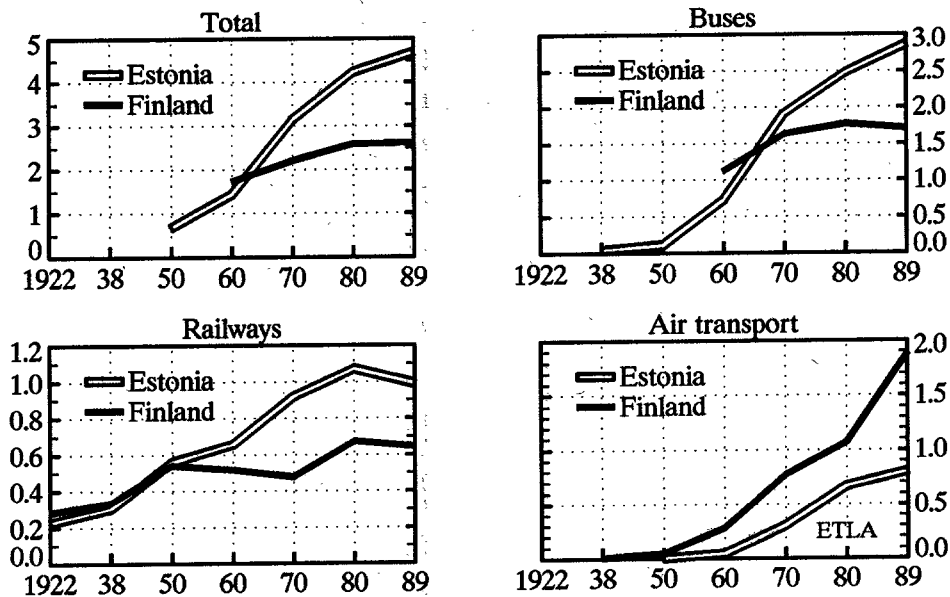
Sources: See Table 30. Data for Finland is partly estimated.

Table 35. Freight turnover by modes of transport, including inter state transport

Mode of transport	1985		1989	
	Estonia	Finland	Estonia	Finland
Railway	31.9	4.1	20.6	4.4
Lorries	21.8	11.0	12.9	14.7
Water transport	46.2	84.9	66.5	80.8
Air transport	0.1	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0

Sources: See Table 30 and Table 34.

Figure 30. Use of public transportation, 1000 km/year per capita



Sources: See Table 36.

As it was not possible to freely obtain private cars in Estonia, the state had to take care of the development of public transport. The result is the rather well-developed public transport network in Estonia. The use of public transport in Estonia and Finland is characterized in Table 36 and Figure 30. Estonian inhabitants used public transport on an average twice as much as Finns. This was due to the fact that the percentage of the Estonian population

who had a possibility to use private cars was much smaller than that of Finns. In Finland there were nearly 3 times as many private cars per 1000 inhabitants as in Estonia in the end of the 1980's.

Especially noteworthy is the wide difference in the use of buses. One reason here may be the sparse population of the northern part of Finland, which does not enable creation of a dense transportation network. At the same time Finns use air transport more than twice as frequently as Estonians. The cause has to be sought for in the openness of the Finnish community. Air transport is one of the most important types of transport fostering close ties with other countries. In Estonia extensive opportunities for intercommunicating with foreign countries have presented themselves only in the beginning of the 1990's.

As we can see from the Table 36 and Figure 30 the use of public transport as a whole has decreased in Estonia. Only in the air and water transport can further growth be noticed. It can be explained by the general economic recession, fuel crisis, political situation and probably also by the effect of the increase of private cars. The increase in the use of water transport in the last few years is connected with the increasing traffic between Estonia and Finland. In 1990 a shipping line between Tallinn and Stockholm was also opened.

Table 36. Use of public transport per capita, km/year

Year	Total		Buses		Railway		Water transport		Air transport	
	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.	Est.	Fin.
1922					225	284				
1938			43		305	336				
1950	679		111		560	542	3		6	7
1960	1436	1732	729	1125	656	517	4	2	46	51
1970	3146	2218	1912	1631	919	478	11	12	303	282
1980	4236	2590	2473	1775	1071	672	24	15	669	769
1985	4625	2627	2786	1751	1074	656	29	17	736	1068
1986	4729	2492	2840	1746	1111	543	28	19	750	1167
1987	4835	2612	2912	1741	1128	629	28	18	765	1423
1988	4844	2624	2931	1736	1096	646	28	21	789	1650
1989	4686	2612	2862	1711	990	644	34	21	799	1884

Sources: See Tables 28 and 30.

Table 37. Productivity of public motor transport

Year	Productivity of a bus seat thous.km/a year		Productivity of 1 ton cargo- carrying capacity of lorries thous.tkm/a year	
	Estonia	Finland	Estonia	Finland
1960	45.3	24.2		
1970	54.9	24.2	34.9	42.4
1980	57.0	21.7	42.6	37.2
1985	58.8	21.0	38.4	37.9
1986	58.6	20.8	38.9	37.6
1987	59.3	19.9	39.6	38.7
1988	59.6	20.0	40.2	38.3

Sources: See Table 30.

From the point of view of the use of transport facilities and attending to passengers the productivity of transport facilities is of great interest. Productivities of public buses and lorries are presented in Table 37.

As we can see the productivity of lorries is on more or less same the level in both countries. In Estonia the productivity has consistently increased, in Finland remained practically unchanged. The situation is quite different in passenger transport. In Estonia the productivity of a bus seat has been almost three times higher than in Finland in the end of the 1980's. At the same time in Finland this index is falling. When trying to analyze the essence of the productivity of a bus seat, we can see that the higher the productivity the more crowded the buses are, which in turn means a lower quality of service. At the same time we cannot say that when productivity is three times higher the quality of service is three times lower. First, the concept of the quality of service is rather difficult to define and secondly, when the crowdedness of a bus decreases to a certain level the quality of service does not rise any more, and thirdly, the quality of service depends not only on the crowdedness of buses but on many other factors too.

The reason for such a situation in the productivity of buses and lorries must be sought from the economic development as a whole. In the conditions of the slow development of the Soviet economy the quality of personal services has not been paid sufficient attention. Attainment of economic indicators has been much more important, though they were on the low level as well.

Paying attention to the quality of services could have lowered the economic indicators even more. In the use of lorries the situation is different: every society is interested in using them more effectively. Therefore there are no major differences in the productivity of lorries.

4.2.4.3. Financial sector

In this section the Estonian financial sector in the end of the socialist era is discussed more thoroughly, because the arrangements in Estonia have so many different features when compared to financial sector in western countries. The treatment of the Finnish financial sector is mainly conducted so that the banks are taken as one production sector among the others, while actual financial policy issues are left aside.

From 1940 till the end of the period under discussion the Estonian financial sector was a part of the USSR finances and the Estonian budget was subordinated to the USSR budget.

The monetary policy and emission of money was controlled by the State Bank of the USSR (Gosbank). In addition to that there were several branch banks, for example for construction, industry, agriculture etc. in the USSR which provided banking services to enterprises. These banks had their offices in the Union republics, including Estonia. At the same time it should be mentioned that banks had a secondary role in the Soviet economy. Problems of allocation of investments or credit as well as the problems concerning the interest rates were in principle solved on the government level through plans. The banks actually had to carry out the financing of these activities which were included in the plans. Possibilities for extra-plan financing of economic activities were very small. As the banks were specialized there was no competition between them.

The banking system of the USSR was used for introducing economic pressure against Estonia in the late 1980's. At first transactions were concentrated into the central banks in Moscow to have total control over economic activities of Estonia. Later there arose problems of very slow transactions - sometimes it took half a year to transfer sums from one account to another. The foreign exchange rates of the rouble were kept unrealistically

overvalued for quite a long period. About 2000 additional coefficients for converting export revenues into internal roubles and import expenditures from roubles into foreign currencies were used for running foreign trade. At the end of 1980's a tourist rate was introduced, which meant a devaluation of the rouble by about 10 times, as compared with the official rate, for currency exchange to individuals. In 1991 the commercial rate for enterprises was introduced, which devalued the rouble approximately 3 times. The Bank of Estonia began the notation of the rouble for residents and tourists in 1991, at the same time the currency auctions for enterprises were started.

At the end of 1991 the quotations of the Bank of Estonia exceeded 200 and auction rates 400 times the official exchange rate of the rouble. In order to promote the independent monetary policy and protect the Estonian economy from the uncontrolled inflation of the rouble Estonia introduced its own currency, the kroon, in 1992.

Interest rates on savings and loans were kept low even at the end of the 1980's when the inflation was increasing. It added tension to the consumer goods market and to the investment goods market as well. The situation may be described as a loose budgetary constraint both for enterprises and individuals. The debts of agricultural enterprises are large and actually nobody is responsible for them now that agriculture is going to be privatized.

After World War II the Soviet Union borrowed from its population great sums as the population was forced to buy the state loan certificates. This period lasted up to the end of the 1950's. These bonds were finally paid back to inhabitants by the end of the 1980's. In 1991 compensations were partly paid to the people who had suffered from the Stalinist terror. But all these compensations were paid back in currency which had lost its purchasing power.

The savings of the population in savings banks increased from 1.1 to 2.3 billion roubles in 1981 -1989 and then dropped to 2.0 billion roubles at the end of 1991. Since the inflation processes accelerated at the end of 1980's there developed an almost permanent shortage of cash. People lost their trust in the rouble, so they tried to invest their money in durables or any kind of consumer goods. Banks were not able to pay out cash from deposit accounts, in 1991 the difficulties with refunding wages and salaries became extremely

complicated. All these difficulties were accelerated by the aversion of inflation and monetary reform. As the accounting between banks had become complicated and many enterprises had lost their trust in banks, cash was partly introduced (illegally) into accounting between enterprises.

Banking system changed at the end of 1980's. At first some commercial banks were established. Then the Central Bank of Estonia was founded. The Estonian Office of State Bank of the USSR was merged into the Bank of Estonia finally on January 1, 1992. The total number of employees in the field of finance and state-owned insurance activities was about 4 thousand (0.5 % of the total number of employees) throughout the 1980's.

The budgeting system of Estonia was subordinated to the budget of the USSR during the whole socialist period. The budgets of the Soviet republics had no independent meaning at all and they served as means for funding the activities included in the plans. The budgetary expenditures were fixed first, then the possible revenues of the republican budgets were calculated. Since the revenues were smaller than expenditures then from the central budget of the USSR, some sums were added to the revenue side of the republican budgets. These transfers were fixed as a percentage from the turnover tax which was regarded as the centralized revenue of the USSR budget.

In addition to that one must bear in mind that a considerable share of enterprises were subordinated to the all-Union ministries. The financing of these enterprises was organized through the all-Union ministries (besides defence, security, police forces etc. also such ministries as electricity and power generation, chemicals, several ministries in the field of engineering, railroad and sea transportation, etc.) and these transfers were not reflected in republican budgets at all. Hence, the budget of Estonia up to 1990 gives a very restricted and not very reliable picture of the Estonian economy.

Insurance services were formerly provided only by the state-owned insurance companies through the whole socialist period of Estonian economy. There was actually no competition in this field. Competing insurance companies have been established only in the 1990's.

The Finnish banking sector has been functioning on a private basis during the whole post-war period. The government has been present in the banking business through Postipankki, which was reformed into a joint stock com-

pany in late 1980's. Government still owns all the shares. Government has also other means to be present in the field of banking. It has also some institutions for granting loans for special purposes, such as for housing, agriculture and industry in the underdeveloped areas of the country among other things. Government has also participated in the financial markets as a borrower by issuing bonds on both the domestic and foreign markets.

The private banks can be divided into two blocks. The commercial banks are located mainly in cities and towns and are organized in joint stock company form. The savings banks and cooperative banks are mainly based in rural areas. Nowadays all groups of banks are functioning nationwide.

Although Finnish banks have been privately owned the financial markets have been rather heavily regulated until 1980's. The Bank of Finland, which is controlled by the Parliament, set the base interest rate, against which the interest rates of all loans and deposits were tied with a margin which likewise could not be freely set by the banks. Also the capital movements between Finland and other countries were regulated.

The regulation led to strange phenomenon in the competition between banks. When the banks could not compete for deposits with the price of the money, the interest rate, they had to find other ways. All kinds of services were attached to the accounts free of charge. The quality of services was also enhanced by building more and more luxurious premises in which bank service took place.

On the loan market the situation was also strange. Although the government and The Bank of Finland did not have any influence on individual loans, the average interest rate of loans was kept down by regulation. For many years the real interest rate was even negative. There was a constant excess demand for loans. When the price of money could not keep the loan market in balance, other ways had to be found out. Banks could select very carefully to whom they gave a loan. Good security for a loan could be arranged easily in a situation where property prices were constantly rising with inflation. For private persons many kinds of preconditions were set before granting a loan, for instance part of the loan sum had to be saved in advance in the bank or the borrower had to accept an arrangement in which his salary went directly to his account in the bank.

This regulated environment gave the banks a good change to expand their operations and services. Only in the late 1980's, when regulation was abolished, was it found out that improvement would have been needed instead of expansion.

In the liberation process of the Finnish financial markets the loan market was liberated first. This led to tremendous loan expansion, during which the need of safe securities was often forgotten when the banks went on in their battle for market shares.

First signs of difficulties were seen when the interest rates on deposits were likewise set free and banks had to compete for deposits, which drove their interest rates up. At the same time borrowing from abroad was gradually set free and the money of Finnish banks seemed to be too expensive at least for the best clients. Banks had to settle for those customers that had no alternative but to pay the higher interest rates.

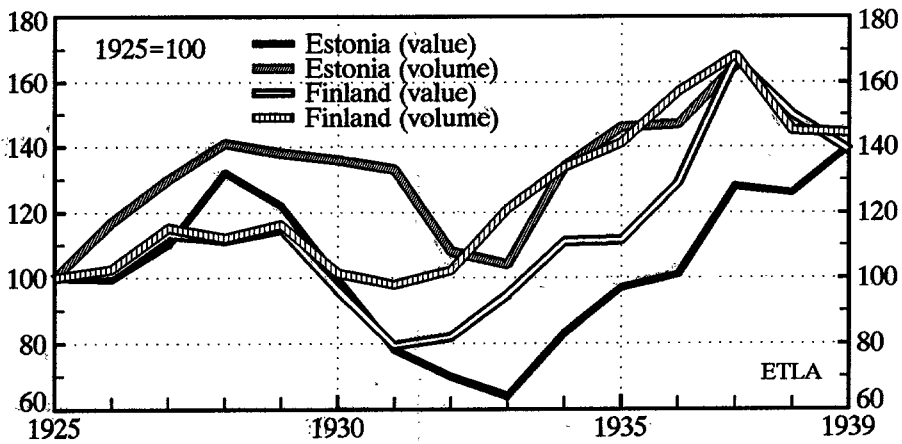
When the rest of the economy sunk into the recession the difficulties of the banks started. The sum of non-performing loans rose sharply and thereafter so did soon credit losses. In 1991 credit losses were about 6 billion FIM and the year 1992 was even worse. The Bank of Finland has already taken control of one bank and large sums of money has been raised to save the banks from bankruptcy.

The insurance branch in Finland is largely based on private insurance companies, although a large part of the insurance is obligatory, for instance pension insurance and insurance for employees against accidents. Also insurance for motor vehicles is partly obligatory. On the part of obligatory insurance the operations of the insurance companies are regulated by government. Obligatory insurance constitutes more than half of the entire insurance business.

4.3. Foreign trade

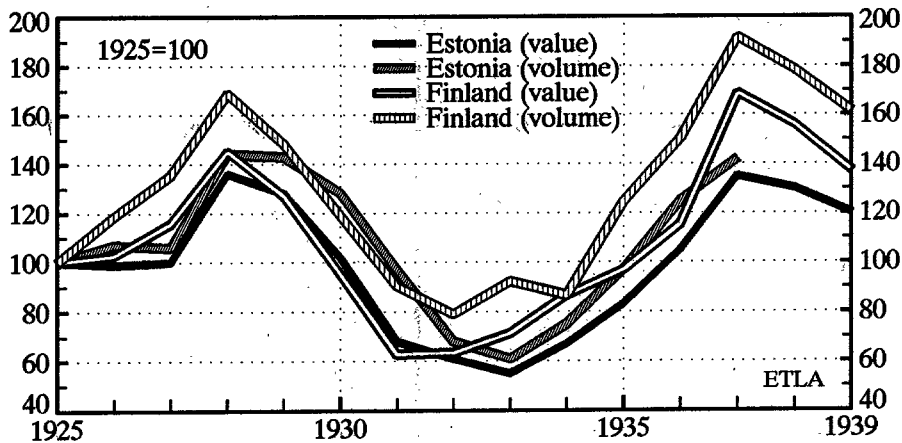
In the development of the foreign economic relations of Estonia and Finland there are relatively few informative fixed points so that the comparative analysis of the two neighbouring countries proves to be more complicated

Figure 31. Export of Estonia and Finland in 1925 - 1939



Sources: See Table 38.

Figure 32. Import of Estonia and Finland in 1925 - 1939



Sources: See Table 38.

than in most other spheres of economic activity. In the inter-war period the unitary economic-statistical criteria were just being established. Later the foreign economic relations between Estonia and Finland have been difficult to compare already because of their essence.

Term 'Estonian foreign trade' must be used with reservations for the post-war period. Economic relations of Estonia with other areas of the Soviet Union were not usually called foreign trade but simply economic relations or commodity exchange. In the communication with the outside world Estonia was not an independent subject either since this was a monopoly of all-Union foreign trade associations up to 1987. In addition to that for the unitary economic system of the Soviet Union union republics almost did not exist. Only the years 1957 - 1964, i.e. the time of the so-called economic model of Hrushtchov, were a kind of exception. As there were no republics they had no economic relations either. This statement is confirmed by the lack of even primitive statistical reports on the 'economic relations' of the union republics. Complete statistical information on the Estonian imports and exports, i.e. relations with other union republics as well as with foreign countries, were collected in the course of separate studies which were necessary for preparing the input-output tables for 1961, 1966, 1972, 1977, 1982 and 1987.

Since 1940 Estonia and Finland have developed in different ways. This naturally holds also for their foreign economic relations, which in 1920 - 1930 had developed rather synchronously (Figures 31 and 32). After World War II Finland integrated ever more into the world economy, while for Estonia the end of independent statehood meant the beginning of isolation from the world market. The share of Finland in world trade has been around 0.7 - 0.8 per cent during the past decades. Estonia, on the other hand, ceased to be an internationally recognized entity in the world market in 1940. Integration of the Finnish economy into the world economy in the post-war period is marked primarily by such events as joining the IMF (1948) and GATT (1950) and becoming an associate member with EFTA (1961, full and equal member since 1985) and the EEC (1973). Former economic relations of Estonia with foreign countries had to be replaced by 'dense brotherly cooperation with other Soviet republics', the result of which is the abnormally swollen eastern trade and low competitiveness of the Estonian production in the world market. The eastern trade of Finland developed from the war reparations worth 300 million gold dollars paid to the Soviet Union.

The foreign trade turnover of Estonia and Finland in 1920 - 1939 is presented in Table 38 and in 1940 - 1989 in Table 39.

Table 38. Foreign trade turnover of Estonia and Finland in 1920 - 1939, in the prices of each respective year

	ESTONIA				FINLAND	
	Mill.FIM*		Mill.Est.kroon		Mill.FIM	
	Export	Import	Export	Import	Export	Import
1920	263	299	19.6	22.2	2896	3626
1921	330	647	24.2	47.4	3341	3585
1922	714	829	52.8	61.4	4436	3969
1923	666	1088	61.8	101.0	4365	4600
1924	767	799	75.3	78.5	4884	4715
1925	1021	1019	96.6	96.5	5555	5519
1926	1016	1009	96.2	95.6	5615	5667
1927	1118	1019	105.8	96.4	6286	6385
1928	1351	1385	127.1	131.4	6190	8012
1929	1244	1303	117.5	123.0	6376	7001
1930	1018	1039	96.4	98.4	5345	5247
1931	799	689	71.1	61.2	4403	3464
1932	715	619	42.6	36.9	4551	3502
1933	651	558	45.6	39.0	5259	3928
1934	852	682	69.0	55.3	6171	4776
1935	989	849	80.1	68.8	6192	5344
1936	1027	1072	83.2	86.8	7159	6369
1937	1309	1371	106.0	111.1	9282	9306
1938	1283	1323	103.9	107.2	8334	8607
1939	1431	1227	118.2	101.4	7710	7572

* By the average annual exchange rates of the Tallinn Exchange.

Sources: Hjerppe, R.: *The Finnish Economy 1860 - 1985, Growth and Structural Change*, Helsinki, 1989; *Recueil Mensuel du Bureau Central de Statistique de l'Estonie*, Tallinn; *Statistical Yearbook of Finland*, Central Statistical Office of Finland, Helsinki; *Statistique Economique de l'Estonie, Commerce Extérieur*, Tallinn.

Table 39. Foreign trade turnover of Estonia and Finland in 1940 - 1989, in the prices of each respective year

	ESTONIA Mill. SU roubles		FINLAND Mill. FIM	
	Export	Import	Export	Import
1940			2870	9160
1945			5220	6820
1950			81470	89140
1955			181250	176960
1960			316470	340300
1961	497	529	337400	369020
1966	927	941	4817	5524
1972	1650	1785	12082	13107
1977	1990	2171	30931	30708
1982	2405	2949	63026	64751
1987	2904	3634	85516	2807
1989	3123	3818	99782	105519

* In 1963 the nominal value of the FIM was changed: 100 old FIM equals 1 modern FIM.

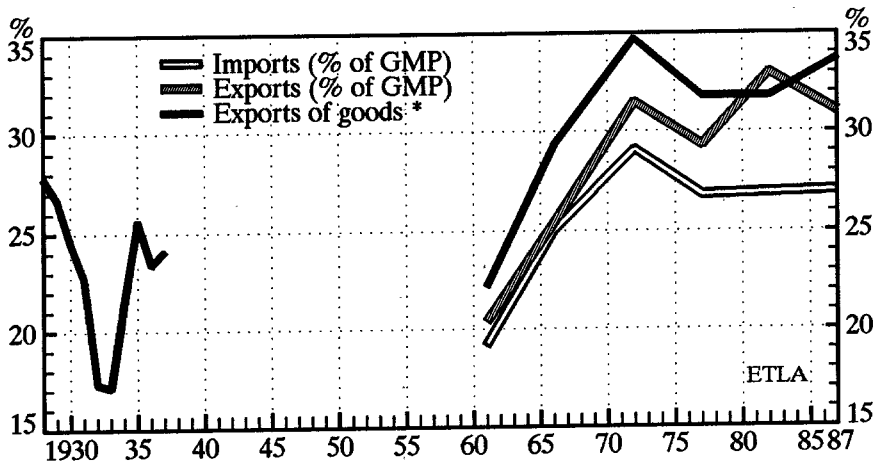
Source: The input-output tables of Estonia (1961...1989); Finland's Balance of Payments Statistics, Central Statistical Office of Finland; Hjerpe, R.: The Finnish Economy 1860-1985, Growth and Structural Change, Helsinki, 1989; Statistical Yearbook of Finland, Central Statistical Office of Finland, Helsinki.

4.3.1. Openness of the national economy

The Finnish and Estonian economies have always been characterized by extensive foreign relations. Unfortunately we have no statistical information which would enable comparison of the openness of the Estonian and Finnish economies and the changes which have taken place during a longer period. We have to use different indicators (Figures 33 - 35) which have had a different methodical essence in the course of time.

As to Estonia, only a few indicators, mainly those of the so-called casual character, are suitable for international comparisons. For example, as regards the volume of exports per capita (data of the League of Nations) Estonia

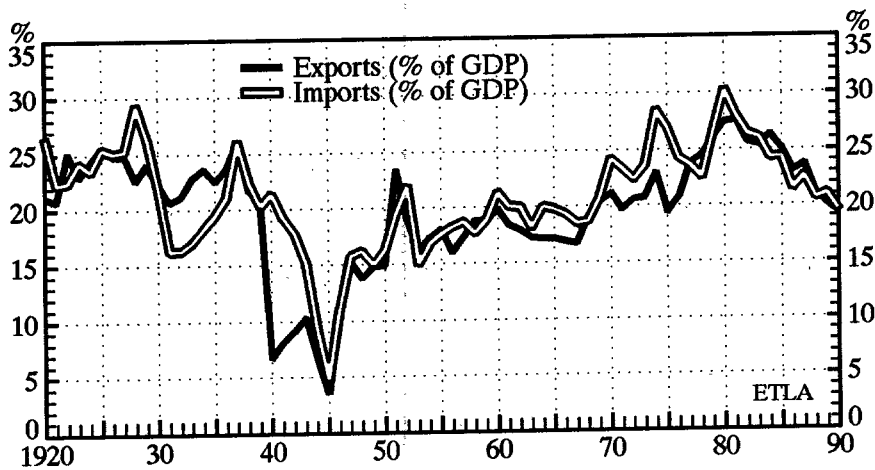
Figure 33. Intensiveness of Estonian foreign trade in 1928 - 1987



* Exports of industrial and agricultural goods as a percentage of their production.

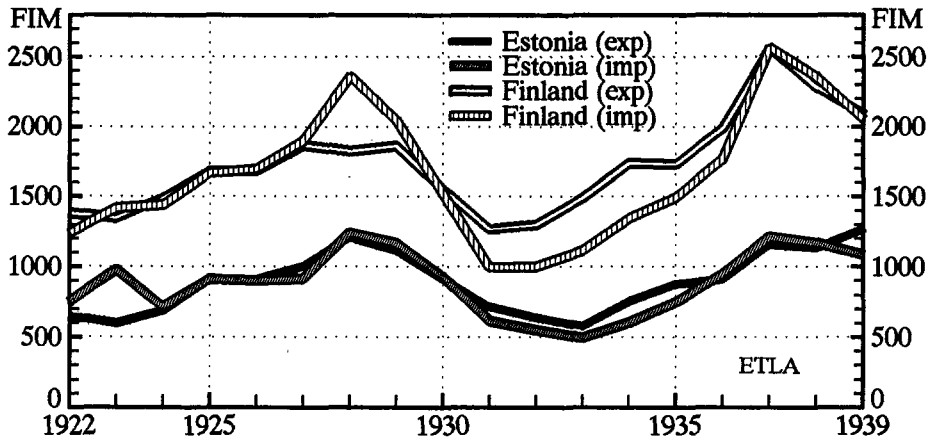
Sources: Eesti majandus 1938. a., The input-output tables of Estonia.

Figure 34. Intensiveness of Finnish foreign trade



Sources: Hjerpe (1988), Finnish National Accounts.

Figure 35. Foreign trade per capita in Estonia and in Finland in 1922 - 1939



Sources: As in Table 38, also Eesti statistika and Statistical yearbook of Finland.

occupied in 1938 the 12th place in Europe with 14.6 old gold dollars, and the 13th place with 15.2 gold dollars by the volume of imports. Finland occupied the 8th (29.1 old gold dollars) and 10th (29.5 gold dollars) places respectively (Statistical Year-book of the League of Nations, 1940). Figure 35 is presented to compare Estonia and Finland for this indicator during the whole inter-war period.

Finland occupies approximately the 10th place by the per capita volume of imports and exports in Europe also today. In 1987 its imports were 4484 USD and exports 4422 USD (United Nations, Monthly Bulletin of Statistics, 1991). The Soviet Union State Department of Statistics estimated the exports and imports of Estonia per capita respectively at 2087 and 3524 USD (Argumenty i fakty, 1989, No 50). This was done in connection with the discussion concerning the debts of the republics which culminated in 1987 - 1988.

The ratio of exports to GDP of Estonia was 49 - 50 % in 1987 -1989 (excluding export of services), which is more than twice as much as that of

Finland (see Figure 34). In 1991 the ratio of exports to GDP in Finland was less than 22 %, which is considered to be too low to restore the balance of the Finnish economy.

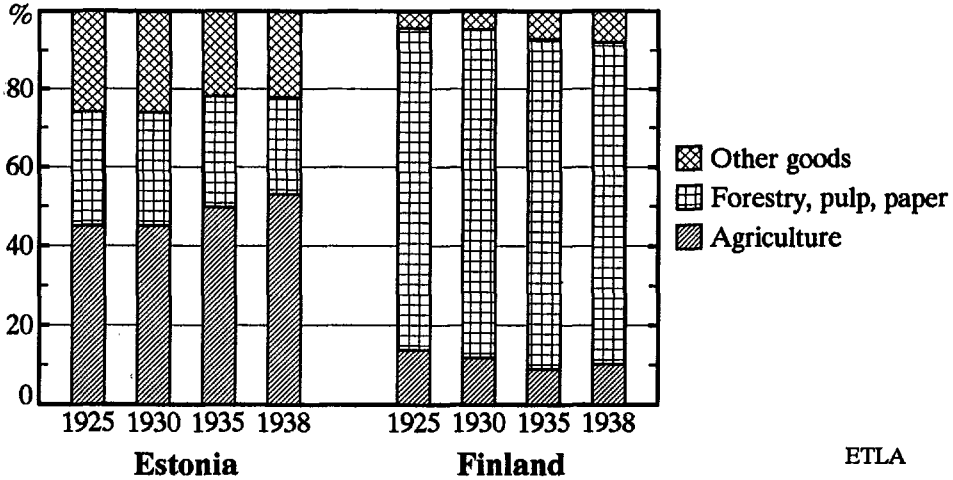
4.3.2. The structure of foreign trade

The structure of foreign trade, especially that of exports in both countries, has considerably changed in the course of time owing to internal and external factors. From 1920 to 1930 the export structure of Estonia was more varied than that of Finland. For example, the share of forest products (timber, wood products, pulp, paper) in Finnish exports approached 85 % in some years, besides which agricultural production was the only noteworthy class of goods (Figure 36). The major exports of Estonia at that time were butter (17 - 36 % of the total value of exports in 1925 - 1938), timber (6 - 18 %), textile products (9 - 19 %), pulp (8 - 13 % in 1930's), paper (6 - 12 % in 1920's) and flax (10 - 22 % in 1923 - 1927). The share of machinery and equipment was 1 - 3 % in both Finnish and Estonian exports.

Within the post-war decades the structure of Estonian exports was still more diverse than that of Finland, but at the same time, unlike in Finland, without distinct development trends. In Finland the aim was to reduce the share of wood products and increase the share of machinery and equipment. This goal was also partly achieved, due among other things to the exports to Soviet Union, which included a smaller share of products of forest industries than exports to western countries (Figure 37).

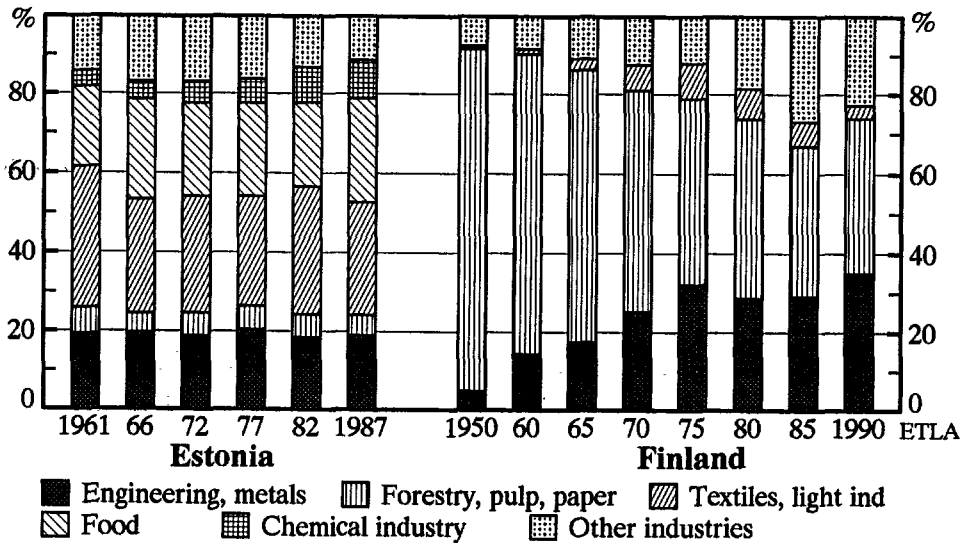
The structures of Estonian and Finnish imports have been relatively more stable and at the same time more alike. Raw materials, intermediate products and energy carriers have predominated in the imports of both countries (in Finland 60 - 75 % of the total imports, in Estonia 25 - 35 % in the inter-war period and 40 - 45 % in the last few decades). Some 10 - 15 % of the Finnish imports has usually fallen to investment goods. The same applies to the imports of Estonia of the last decades, in the 1920's and 1930's their share was 8 - 25 % of the Estonian imports. The share of consumer goods in the import structure of Finland has usually been 15 - 20 %, in Estonia approximately 25 - 30 %.

Figure 36. The structure of Estonian and Finnish exports in 1925 - 1938



Sources: Statistique Economique de l'Estonie, Statistical yearbook of Finland.

Figure 37. The structure of Estonian and Finnish exports after 1950



In Finnish data 'other industries' includes food industry, chemical industries and basic metal industry.

Sources: The input-output tables of Estonia, Finnish customs statistics and Hjerppe (1988).

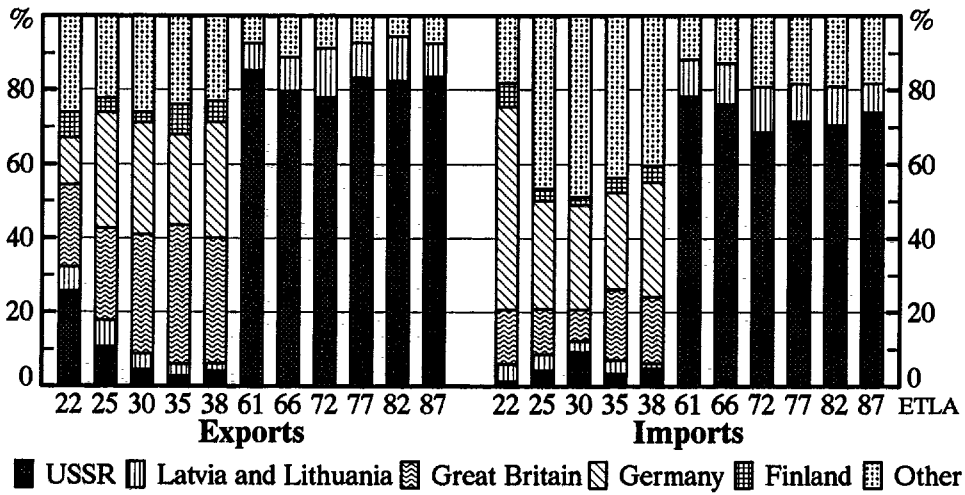
4.3.3. Geographical structure of foreign trade

In the 1920's and 1930's there were many common features in the geographical structure of foreign trade of both countries. Both Estonia and Finland exported mainly to Great Britain, with the biggest import partner of both countries being Germany. Common features were also the decaying trade with the Soviet Union and modest contacts, as compared with later years, with neighbouring countries (Finland with Sweden and Estonia with the other Baltic states). Their mutual trade was important mostly for Estonia as Finland was the 3th to 4th among her export partners (in 1922 - 1938 the share of Finland in Estonian export was 2.6 - 8.4 %) and 5 - 7th among her import partners (1.7 - 6.4 %). The share of Estonia in the foreign trade of Finland was around 1 % in the best years.

After World War II the geographical structure of both Estonian and Finnish foreign trade changed considerably. The annexation of Estonia by the Soviet Union signified a pure eastern orientation for Estonia in its foreign relations. The term 'eastern market' appeared also into the Finnish foreign trade - in connection with war reparations to the Soviet Union, the share of which was 28 % of the total exports of Finland in 1945 - 1949. A new boom in trade between Finland and the Soviet Union, based on the 5-year bilateral trade agreements, started in the 1970's in connection with the rise of world market prices of oil and raw materials. During the recent decades the four major trade partners of Finland have been Germany, Sweden, Great Britain and the Soviet Union (Figure 39).

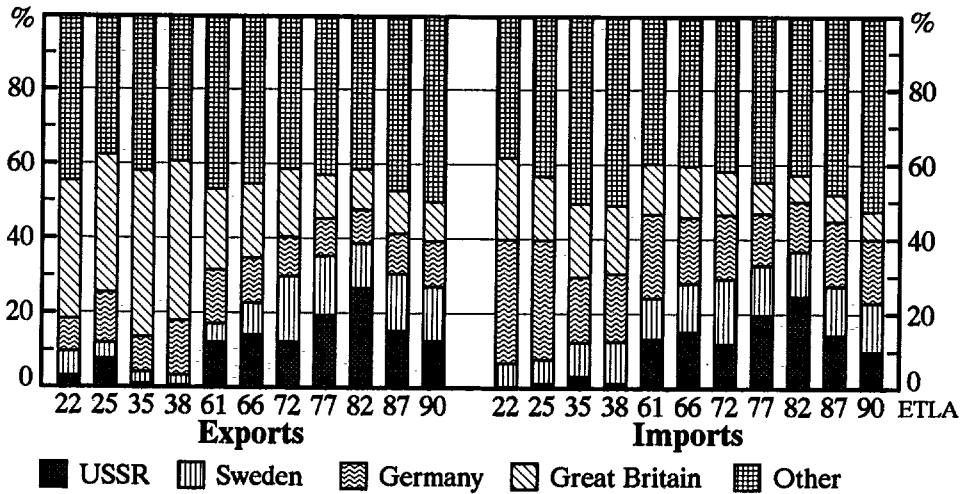
The former orientation of Estonian foreign trade towards the west was overnight replaced by eastern trade. For example, in the 1980's 93 - 95 % of the Estonian exports went to the Soviet Union and only 5 - 7 % to foreign countries. The share of foreign countries in Estonian imports was somewhat higher (nearly 20 %) which was attained by establishing high domestic prices on goods imported from there as well as on account of goods later re-exported to other areas of the Soviet Union for roubles. Such a one-sided geographical structure of the Estonian foreign trade is the result of autarchic economic policy of the Soviet Union. On the one hand, the appearance of the production of Estonian enterprises to the world market did not depend so much on the competitiveness of production as on the all-Union export possibilities and needs. On the other hand, the overcentralized foreign economic mechanism regulated by the Moscow authorities down to the

Figure 38. Geography of the Estonian foreign trade



From 1961 on the group 'Other' includes Great Britain, Germany and Finland.
Sources: The input-output tables of Estonia, Statistique Economique de l'Estonie.

Figure 39. Geography of the Finnish foreign trade



Sources: Statistical yearbook of Finland, Suomen taloushistoria, osa 3.

minute details dampened the interest of a producer in entering the world market.

The major trade partners of Estonia in the Soviet Union were Russia, Ukraine, Latvia, Byelorussia and Lithuania. Outside the Soviet Union the most important countries were the members of CMEA. Among OECD countries Finland has been the biggest trade partner of Estonia.

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5. CONSUMPTION

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* Robert Hagfors and Risto Sullström have also contributed to this chapter.

5.1. Aim of this chapter

In this chapter the differences and similarities of the consumption structure and behaviour in Estonia and Finland are described. There have been great differences in consumption traditions and habits mainly because of the different economic systems. Consumption was centrally controlled in Estonia for fifty years, while demand and supply have been more or less freely determined by market forces in Finland.

Comparisons before the Second World War are made only for some selected items while the main focus is directed toward the 1980s. There are, however, only a few indicators, classifications and so forth that are strictly comparable between the countries. Since the late 1980s and especially after 1991, when Estonia became independent, many new indicators have become available giving better possibilities for comparisons in the future.

On the macroeconomic level both the development and the structure of private consumption are described. There are also some references to public consumption, because the public sector has had different effects on private and public consumption in these countries.

On the microeconomic level the distributions of expenditures in different household groups are described. Households are characterised by income, socioeconomic status of the head of household and the number of members. The distribution of income is described in more detail in chapter 7. The prices and volumes of some typical commodities will be also compared.

Differences in statistical systems and the lack of convertibility of the currencies between the countries make economic comparisons difficult. In Estonia economic data has been based on the System of Material Balances (MPS) and in Finland on the System of National Accounts (SNA). When the Estonian economy was a small part of the large centrally planned economy, data collection was mainly organized to serve targets of the whole and the data needs for Estonia were neglected. Until now no studies of consumption based on the SNA have been carried out in Estonia. Also no statistics describing consumption from various aspects have been compiled.

This study begins by describing the data problems due to the different statistical systems. After that the data and general features of the development of consumption in Estonia and Finland are described. Aggregate final consumption expenditure is divided into the private and public components and respective shares of GDP are given. Using the consumption expenditure, saving and disposable income of households, households saving ratios are determined. Consumption expenditures on food and durables are of special interest.

Data on the structure of households is based on budget studies from selected years. Households are characterized by size, distribution of disposable income and socioeconomic status. Finally prices and quantities of some typical durables and necessities are compared.

5.1.1. Definitions and comparability

During the Soviet period and the first year of independence the collection of quantitative information on consumption in Estonia was based on the System of Material Balances (MPS), while in Finland the System of National Accounts (SNA) was used. From 1948 the relevant Finnish data is available in the form of the old SNA and since 1960 in the form of the new SNA.

In order to compare different consumption concepts between Estonia and Finland some conversion rules are needed. Because of the present economic transformation of Estonia from a planned to a market economy it is more relevant to convert data from MPS into SNA than vice versa. A conceptual framework for the linkage of the two national accounting systems have been specified by the United National Statistical Office (United Nations 1977).

The main problems as regards conversion of the MPS to the SNA arise from the estimation of non-material consumption. In the MPS final consumption comprises goods and material services. The corresponding concept of the SNA includes also non-material services. Payments for non-material services are taken in the MPS as transfer payments and only the material input used in rendering these services is included in the final consumption. The following five differences have noteworthy consequences (United Nations 1977 p. 36):

- (i) sales of second-hand goods by households,
- (ii) expenditure by enterprises on cultural, sport and similar facilities for their employees,
- (iii) travel expenses in connection with business,
- (iv) expenditure on uniforms and
- (v) import duties on direct purchases abroad paid by households.

However, according to the recommendation of the United Nations (1977) only the second and the third items are likely to be of sufficient importance in intersystem comparisons.

A further difference is that in the SNA fixed assets used for military purposes are included in final consumption expenditure of the general government via intermediate consumption of producers of government services. In the MPS it is included in capital formation. In this study the problems of consumption for military purposes are excluded.

In the SNA and MPS the following three categories of final consumption are separated:

SNA	MPS
(i) final consumption expenditure of households	(i) personal consumption of the population
(ii) government final consumption expenditure and	(ii) consumption of institutions serving the population and
(iii) final consumption expenditure of private non-profit bodies serving households	(iii) consumption of institutions satisfying the community needs of the society

These three categories correspond to each other except for the restriction of the MPS to only goods and material services. The further disaggregation of non-household final consumption is based on the institutional character of the agents providing goods and services in the SNA, but in the MPS it is based on the nature and the purpose of the goods and services.

In the SNA two concepts in the category (i) are used: (i.1) consumption of resident households and (i.2) consumption of households in the domestic market. The concept (i.1) excludes expenditure in the domestic territory by non-resident households but includes expenditure abroad by resident households. The concept (i.2) on the other hand includes expenditures of resident and non-resident households in the domestic territory of the country. The concept used in the MPS corresponds to the latter. So in order to determine the GDP correspondence of the SNA with the MPS some adjustments are needed.

5.1.2. Data of the study

Data collection systems in Estonia and Finland are based on different principles. So it is necessary to address the availability and quality of data in both countries.

Finnish data sources

The National Accounts series are the main Finnish data for the macroeconomic level comparisons. These give the structure of total consumption as a part of expenditure on the gross domestic product. Consumption is divided into private and public components. The former includes consumption expenditures of households and non-profit bodies. Public consumption consists of the value of goods and services produced by general government. Examples of non-profit bodies are registered associations, parties, foundations and churches. General government consists of central government, local government and social security funds. The income and outlay accounts show how different activities allocate their disposable income across consumption and saving. The final consumption of households is also given by type and purpose. The Finnish data before 1960 is taken from special studies (Laurila 1985, Hjerpe 1989).¹⁾

1) Laurila E., 1985, Consumption in Finnish Economy in the years 1900-1975, ETLA B42, Helsinki and Hjerpe R., 1989, The Finnish Economy 1960-1985, Growth and Structural Change. Studies on Finland's Economic Growth XIII, Bank of Finland, Helsinki.

The National Accounts does not include information on consumption of individual households. The only sources for this in Finland are household budget studies. These have a long history in Finland: the first study was made in 1908-1909 regarding consumption expenditures of 380 workers' households during one year. After this, household studies have become more elaborate with respect to number of indicators and methods used. Basic methods of collecting data are accounting, questionnaires and registers. The seventh budget survey in 1966 was the first, where representative random sampling was used and which covered all households in the country. Since then four extensive budget surveys have been carried out in 1971, 1976, 1981 and 1985. Some data from the most recent survey in 1990 is also available.

The budget surveys include information on consumption expenditures, incomes and characteristics of households. Information on the use of public services is available since the 1971 survey. The surveys of 1966, 1971 and 1976 consisted of two samples of different size. In those years only a part of the households kept an account on their every day consumption. Data on expenditures on semi-durables and durables was collected using questionnaires. The interviews at the beginning of the sampling period, yearly interviews and information from different registers (incomes etc.) were used. Partly because of the great non-response in the monthly bookkeeping (e.g. 30.9 % of bookkeeping households in 1976), the period was shortened to two weeks in the 1981 and 1985 surveys. As a result the nonresponse rate has somewhat decreased (Laaksonen 1988).¹⁾

Surveys differ a little according to the sampling method and the concept of the sampling unit 'household', because Finland has no register of households in the sense of the United Nations' recommendations from which a sample could directly be drawn. The surveys represent all private households in the country, but exclude institutional and collective households (hospitals, prisons, etc.). The definition of a household as well as the head of household corresponds the recommendations of the United Nations. A household is defined as "a group of individuals living together and sharing the principal means" and the head of a household is "the person responsible for the main part of the earnings" (Household Survey 1971, volume 1, 28).

1) Laaksonen S., 1988, Correcting for Nonresponse in Household Data, Central Statistical Office of Finland, Studies N:o 147, Helsinki.

Consumption expenditure in these surveys includes the value of goods and services that households have purchased or received during the period in question. However, consumption expenditure excludes the acquisition of goods used in production or in investment. Benefits from public services that are free of charge or partly compensated for are included since the 1976 survey. Purchases of goods and services are mainly registered at the moment of purchase, not at the moment of payment. Some goods and services like the rent of housing, electricity and telephone payments are registered according to the payment principle. Budget surveys underestimate the consumption of some goods. It is significant in the cases of alcohol and tobacco, which is typical for budget studies in other countries, too.

Estonian data sources

In Estonia there are macro-level information on the development of private and public consumption and GDP only since 1980. Analysis can be based on the study "Information Prepared for International Monetary Fund (IMF) on November 14-15, 1991 on the Basic Indicators of the Estonian economy". Here these indicators are transformed from the MPS to the SNA for a better comparability with the Finnish data.

Final consumption expenditures by categories and saving are taken from the Estonian Statistical Yearbooks. This data does not include the consumption of Estonians abroad, but it includes the consumption of foreigners in Estonia. It is not possible to separate these, because data is in aggregate form.

The analysis of the consumption of Estonians is based on budget studies. These include households of workers and employees and households of collective farmers with different incomes and composition. Household budget studies were carried out together with compilation of input-output tables and other statistics, and the questioning of household members on the basis of all-Union methods. In the present paper only comparable budget studies from 1970, 1975, 1980, 1985 and 1990 are used.

Finnish vs. Estonian data

In Estonia the budget studies concentrate on two types of households: (1) workers and employees and (2) collective farmers. Information on income and expenditure are available for these two types of households. In Finland

budget studies cover all households in the country, with some exceptions mentioned above. Many classifications can be used to study households, their income and consumption.

The budget studies in Finland are based on representative random sampling from the total population so that it is possible to make population estimates. Estonian budget studies were a part of all-Union samples and are not necessarily suitable for Estonian purposes. Estimates of the population consumption in Estonia are given as frequencies of the population census in a respective year.

Estonian household studies consider the age and sex structure of household members in four categories: children, young persons, people of working age and people of retirement age. There is no other information on consumption according to the age structure. It is not possible to form precisely same groups from the Finnish household surveys.

Great difficulties exist in making the concepts and classifications of incomes and expenditures comparable. This concerns especially services. In the Finnish statistics consumption of services is allocated to the functional groups of consumption. It was possible to separate 22 service issues (clothes and footwear; dwelling; household equipment, furniture and services; health care; transport; recreation; culture and education; other goods and services), which were comparable with everyday services in Estonia.

In the Estonian statistics services and goods are presented as a separate group. The Estonian consumption figures were recalculated in order to make them as similar as possible with those of Finland. The data on services is comparable with the exception that Finnish data on the repair of clothes, footwear, furniture, household equipment, recreational equipment and watches includes rental activities. In Estonian statistics rental activities are included in a separate category. Therefore only total volumes of services are comparable.

According to the 1989 population census 56% of Estonian households consisted of blue-collar workers, 34% were white-collar workers, 10% were collective farmers, and 0.2% were self-employed persons. That is why manual workers, office workers and collective farmers were selected as the main household groups.

In Finland 16% of the households were entrepreneurs, 31% office workers, 31% manual workers and 21% retired persons or students. Farmers and manual workers thus do not represent the whole Finnish population. How well the categories "manual workers" and "farmers" correspond to each other in Estonia and Finland remains somewhat unclear.

5.2. Characterization of consumption and its components

5.2.1. General factors affecting consumption

Consumption is one of the most important factors affecting economic development in market economies. Consumption has a role in welfare comparisons, too. Differences in consumption between population groups are often considered as differences in welfare.

When analyzing differences in consumption between different population groups and the effects on the welfare in those groups it is important to take into account, besides incomes, such factors as the age of people living together, family structure, ownership of durable goods, urban or rural residence and so on.

Market mechanisms are not the only factors affecting private consumption even in market economies. Public sector regulates consumption in many ways. One of these is indirect taxation. Different goods and services are taxed at different rates in order to steer consumption in a desired way. Good examples of heavily taxed commodities in Finland are alcohol, tobacco and private cars. Another way to affect private consumption is to offer services free of charge or priced below production costs. Social and health services are typical examples. Prices of these services and other commodities can be different for different households. Public sector can subsidize the production of some commodities and thus affect relative prices and consumption decisions in the market. Agriculture, in particular, is heavily subsidized in Finland.

In the centrally planned economies the public sector had a greater effect on private consumption. Both commodity prices and produced amounts were mostly set administratively. Consumption could be controlled administratively and, for instance, production costs did not necessarily have any effect

on relative commodity prices.

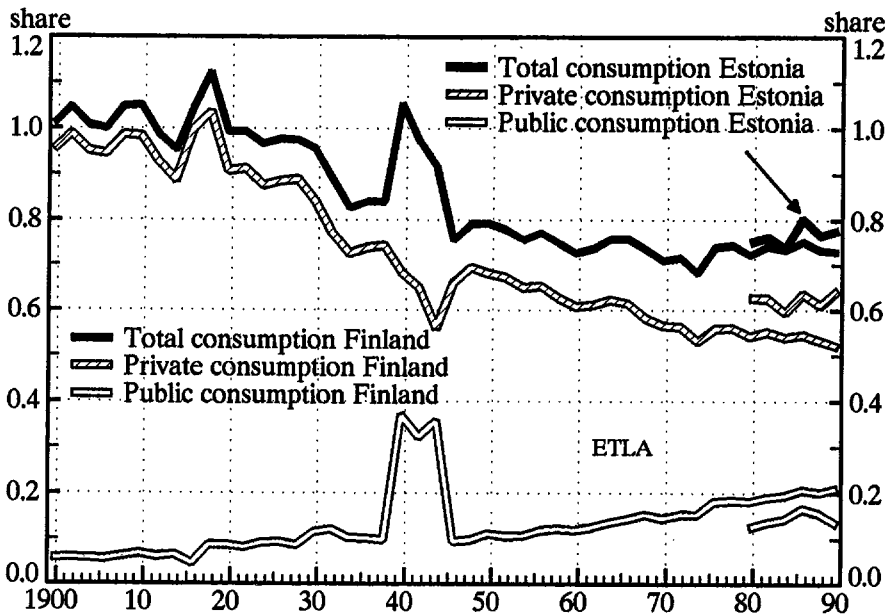
Differences in administration can explain a big share of the differences in consumption between these two countries belonging to different economic systems. For example, low housing costs in Estonia were a result of price regulation. On the other hand, high taxes on cars and fuels raise expenditures on transportation in Finland. That is why comparisons of private consumption and standard of living are problematic, when consumption is measured in monetary terms.

5.2.2. Consumption and saving

Public and private consumption

Until the Second World War living conditions in Estonia and Finland were quite similar. Both economies developed steadily and the standard of living rose. Comparison of the consumption structure shows, that differences between these neighbouring countries were small. After the war the situation changed. The economies developed differently in these countries.

Figure 1. The shares of private, public and total consumption within GDP in Finland and Estonia



After the Second World War economic growth has been rather fast in Finland. It has been transformed from an agrarian society into a society with a high level of services. One remarkable achievement is that the real private consumption is today about 10 times higher than it was in the beginning of the 1950s, which means a high standard of living for Finns today. However, the share of private consumption of GDP has decreased continuously.

The share of total consumption (public and private together) of GDP, on the other hand, has stayed on the same level since 1960. Public consumption has continuously increased faster than private consumption, which has been one of the most important features in the long-term economic development. Especially since the 1960s this increase has mainly meant the expansion of welfare services.

In Estonia there are no long-term statistics that could describe the trends in consumption after the war. However, statistics from the 1980s show some features of the development (Table 1). GDP in nominal terms increased during the 1980s about 80 per cent. Because there is no data on inflation, it is not possible to estimate the real growth.

The share of total consumption of GDP increased in Estonia from 75 to 78%

Table 1. Total consumption in Finland and Estonia 1960 - 1990

	Total consumption %/GDP	Structure, %	
		Private	Public
Finland			
1960	73.0	83.7	16.3
1970	71.3	79.7	20.3
1980	72.3	74.9	25.1
1985	74.6	72.7	27.3
1990	73.1	71.2	28.8
Estonia			
1980	75.1	83.5	16.5
1985	80.4	79.8	20.2
1990	77.7	83.0	17.0

Source: Appendix 1.

in the 1980s¹⁾. So the share is not much higher than in Finland. Both private and public consumption increased their shares. It is interesting that in Finland the share of public consumption is higher than in Estonia. It must, however, be taken into account that military expenditures are not included in the Estonian figures above, but this does not explain the whole difference.

Saving rates

The saving rate (the share of disposable income saved) is an important indicator in economy. It is important how people make a choice between current and future consumption, i.e. consumption or saving. If disposable income grows, both consumption and saving increase, but at different rates.

On the aggregate level the Estonian households had normally a lower average saving rate than the Finnish households. This was quite understandable, because there were different needs to save in Estonia than in Finland, for instance to purchase dwellings. On the other hand, the saving rate has varied quite a lot in Finland during recent decades. It had an increasing trend from the mid-1960s to the mid-1980s. Then it decreased very sharply on the second half of 1980s mainly due to changes in the financial markets.

The Estonian situation prevailing in the consumer goods market has had a considerable effect on the use of disposable income. Forced consumption owing to shortages was typical. In Finland the supply of consumer goods has been more abundant.

In Estonia the saving rate increased continuously in 1980-1990. This was connected with the deteriorating situation in the commodity market. Deepening shortages accompanied by slow growth of production created a situation where people's incomes were not covered by goods and services.

The household budget studies show great differences both during the period the amount of disposable income and its use between households of workers and collective farmers. In 1989 average disposable income, consumption

1) Information prepared for International Monetary Fund (IMF) on November 14/15, 1991, on the basic indicators of the Estonian economy.

and saving were higher among collective farmers than manual workers in Estonia. The mean income of the collective farmers' households per member was 1.3 times higher than the households of manual and office workers, consumption expenditure 1.1 times and savings 2.5 times bigger, respectively (Table 2). Collective farmers' households saved nearly a quarter of their disposable incomes while workers saved one tenth.

In Finland the incomes of manual and office workers were over 20 % higher than that of farmers. However, farmers save much more than manual and office workers. Other households, which are mainly pensioners and entrepreneurs, have a quite high saving rate, too.

The propensity to consume varies according to age, occupation, family size, wealth or other characteristics. There are no data available to refer to all factors. This study examines only impacts of income and household size.

Household budget studies show that income has a direct impact on choice between consumption and saving both in Estonia and in Finland. One example of this relationship is given in Table 3.

Table 2. Households disposable income per member and saving rate in Finland 1985 and in Estonia 1989

	Finland			Estonia		
	Households	Income FIM	Saving rate	Households	Income rbl	Saving rate
Manual and office workers	1215.8	37469	8.8	326	2207	10.8
Farmers and coll. farmers	118.5	30695	28.9	275	2836	21.3
Other households	1210.7	33358	22.2	--	--	--
All households	2045.2	35860	12.6	--	--	--

Sources: Household survey in 1985. Central Statistical Office of Finland, Helsinki. Household Budget Research in Estonia in 1989.

Table 3. Average disposable income, consumption and saving of workers and collective farmers (roubles in month per member) in 1989 in Estonia

Average income per member of household in month, roubles	Workers and employees			Collective farmers		
	Number of households	Disposable income roubles	Saving rate %	Number of households	Disposable income roubles	Saving rate %
- 50.0	0.5	34.38	1.0	0	--	--
50.1 - 75.0	6.2	61.96	-7.6	1	68.42	15.2
75.1 - 100.0	10.4	80.82	0.1	6	87.66	16.0
100.1 - 125.0	27.0	104.62	4.3	18	112.65	13.6
125.1 - 150.0	37.9	127.38	3.0	27	133.42	11.2
150.1 - 175.0	35.3	147.66	2.9	26	163.67	18.5
175.1 - 200.0	44.0	169.55	11.5	30	186.67	23.4
200.1 - 250.0	60.2	198.85	10.7	44	221.84	16.8
250.1 - 300.0	42.8	252.21	15.6	32	273.12	18.3
300.1 - 350.0	26.7	296.17	15.5	27	321.00	30.7
350.1 - 400.0	15.3	323.78	19.0	13	366.30	22.2
400.1 -	19.7	536.69	18.6	51	560.65	26.5
Total/Ave.	326.0	183.9	10.8	275	236.3	21.3

Source: Appendix 5.

The saving rate varied less in collective farmers' households than in workers' households in different income groups which shows that other factors affect the choice between consumption and saving. For example, the largest proportion of the disposable income was saved by single collective farmers and saving was the smallest in the five-person households of manual and office workers (Appendix 6).

5.3. Structure of consumption expenditures

5.3.1. General structure of consumption

The structure of private consumption has changed considerably in Finland during this century, especially during the last few decades. Because income have been increasing, a decreasing share has been needed to satisfy the basic

needs and the households' freedom of choice has grown. New consumer goods and services have entered the market affecting consumer behaviour.

In 1937/38 the structures of aggregate consumption in Finland and Estonia were rather similar, differing by a few percentage points in the main commodity groups (cf. Table 4.) The biggest difference in private consumption was in the share of housing rent, heating and electricity.

After the Second World War the development of consumption has been quite different in these neighbour countries. The structure of consumption in Finland has changed quite a lot. In Estonia there has been changes too, but partly in the opposite direction compared to Finland. The consumption structure was quite different in these countries in 1990. The main reason for the dissimilarity is, of course, the different economic systems.

One partial explanation for differences in the consumption structure is that in recent years the private consumption on the national level was higher than the absolute amount of income in Estonia, too. This is merely a statistical phenomenon because purchases made by Soviet tourists cannot be separated from the consumption statistics. These tourists made purchases in Estonia, because the shortage of consumer goods in other regions of the Soviet Union was even worse than in Estonia. These purchases were concentrated heavily on certain special items.

In Estonia prices have been strictly regulated by the state. The ratio between production and wages was also regulated by the state. As a result in Estonia

Table 4. Consumption structure in 1938 and 1990

Item	Estonia		Finland	
	1938	1990	1938	1990
Food, beverages, tobacco	43	45	42	23
Clothing, footwear	15	24	13	5
Gross rents, fuel, power	12	1	17	18
Other goods and services	31	30	28	53
Total	100	100	100	100

Source: Appendix 8.

commodity prices usually did not change much over a long time period. Only prices of certain commodity groups (alcoholic beverages, coffee, motor cars, etc.) rose.

There have been vast changes in the consumer goods market in Estonia recently. They started in 1987, when the development of entrepreneurship (cooperatives, small businesses, self-employment) was legalized. Changes in the economy have both direct and indirect effects on personal consumption, especially through the consumer goods market.

The situation in the Estonian consumer goods market has become increasingly strenuous since 1987 because of a growing scarcity of consumer goods, disruptions in production, rising prices, an increase in the amount of money rapidly growing demand for goods, changes in consumer behaviour, etc. The system of price formation underwent fundamental changes. The share of centrally fixed prices decreased gradually and the extent of prices determined by supply and demand processes increased considerably.

The measures taken by the government to protect the market (use of purchasing cards, rationing cards, etc.) reduced the demand of buyers coming outside the republic and to some extent curbed the purchasing of goods that were intended to be resold. They also affected the so-called forced consumption, where consumer lacked a possibility to choose.

Consumption conditions in Estonia, can be characterized by comparing changes in the cost-of-living index of the "purchasing basket"¹⁾, wages and supply of commodities. In this period the cost of the commodity basket increased 80 times in 1989-1992. During the same period the average monthly wage increased only 30 times²⁾, but the supply of consumer goods in the public and cooperative trade sector decreased. The effect of these and some other factors was a decrease in the average quantity of foodstuffs consumed per capita by one third, for instance, in 1985-1991. Consumption

- 1) The purchasing basket of the Estonian Statistics Department includes a collection of goods and services of a certain structure corresponding to a minimum amount of consumption. The purchasing basket does not include luxury goods, alcoholic beverages, cars or accessories.
- 2) Eesti Statistika Aastaraamat 1990. Tallinn, 1991. p. 258; Statistika aastaraamat 1992. Tallinn, 1992, p. 71.

of meat fell from 89 to 63 kg, sugar from 45 to 36 kg, fruits from 44 to 27 kg, and alcoholic beverages from 9.6 to 5.6 kg.¹⁾

Some more detailed changes in the structure of private consumption is shown in table 5. In Finland the most obvious features are decreasing shares in the categories of "food", "beverages and tobacco" and "clothing and footwear". The expenditure on "housing rent, heating and electricity" and "transport and communication services" had the biggest shares in 1990. The share of housing expenditure increased rapidly in the 1950s. The 1960s witnessed the growth of transport expenditure when the import of private cars was liberalized. Changes in recreation expenditures accelerated in the 1970s.

In Estonia the consumption structure has changed only a little in spite of the higher propensity to consume than in Finland. However, rapid changes have taken place in recent years. In connection to low incomes, restricted options

Table 5. Private consumption in Finland 1960 - 1990 and in Estonia 1980s

	Finland				Estonia	
	1960	1970	1980	1990	1980	1990
Food	30	24	21	16	36	30
Beverages, tobacco	6	8	7	7	15	15
Clothing, footwear	11	8	6	5	21	24
Cross rent, fuel	18	18	18	18	1	1
Furniture, furnishing, household equipment and operation	7	7	8	7	6	5
Medical care, health expenses	2	3	3	4	1	1
Transport, communic.	11	15	17	18	4	4
Recreation, culture and education	5	6	10	11	9	9
Other goods and services	9	11	10	13	7	11
Total	100	100	100	100	100	100

Sources: Appendix 8 and State Statistical Office of Estonia.

1) Statistika aastaraamat 1991, Tallinn, 1992, p. 147.

in commodity market and as a consequence of the so-called forced consumption, Estonians must use a greater share of to income today than Finns to satisfy their basic needs. The share of food and beverages is twice as high as in Finland. Other big differences in consumption structures are in wearing apparel, health care services and in housing rent, heating and energy expenses. High consumer demand for food, clothing and footwear characterizes the low supply of many consumer goods as well as low wages and purchasing power.

The difference in the shares of health care and housing rent, heating and energy is at least partly due to the fact, that these have been financed by state subsidies in Estonia and either fully (health care) or partly (housing rent, heating, energy) free of charge (see Chapter 6 "Public Services").

In Table 6 goods and services are aggregated into four groups.¹⁾ In Finland the share of non-durables has decreased. This group includes food, for instance, which explains the decreasing share. On the other hand, the share of services has increased continuously, by a particularly wide margin in the 1980s. New hobbies and types of recreation are usually used by large population groups. The share of durables increased especially in the 1960s and 1970s. New household appliances appeared then in households, but the most important new durable is a private car.

- 1) The Estonian classification of goods and services corresponds the international classification as much as the original data used (family budget studies) enables. It consists of the following components:
- durable goods:** furniture and household equipment; electric instruments; cars. motor-cycles etc. articles of cultural needs; watches;
 - semi-durable goods:** clothing and footwear; repairs of furniture; household equipment; electric instruments and articles of cultural needs; washing powder, soap, etc.; building materials;
 - non-durable goods:** food. beverages and tobacco; heating. electricity, gas, water supply, etc.; medicines;
 - services:** rents; rooms (flats). etc. repairs; vouchers for resthomes. sanatoria. etc.; transport charges; post and telegraph; use for nursery schools; tuition fees and hostel charges; cinema, theater, etc.; saunas, laundries, hair-dressers.

Table 6. Private consumption 1970 -1990, %

	Durables	Semi-dur.	Non-dur.	Services	Total
Finland					
1970	9.7	15.3	41.6	33.4	100.0
1980	10.7	14.0	42.1	33.6	100.0
1985	11.4	12.4	38.6	36.7	100.0
1990	11.0	12.9	34.3	39.5	100.0
Estonia					
Manual and office workers					
1970	10.8	25.1	51.4	12.7	100.0
1980	14.3	23.5	50.3	12.0	100.0
1985	14.9	24.3	48.9	11.8	100.0
1990	15.0	24.1	50.6	10.3	100.0
Collective farmers					
1970	9.7	25.3	59.2	5.8	100.0
1980	17.3	26.6	48.3	7.8	100.0
1985	24.5	24.8	43.5	7.2	100.0
1990	21.1	25.9	46.8	6.2	100.0

Sources: Appendix 10.

It is interesting that in Estonia the development has been quite different. The share of services is very low and even decreasing in the 1980s. On the other hand, Estonians use a big share of their income in the consumption of durables. However, durables are much more rare in Estonia than in Finland. The only explanation for this must be the fact that durables have been very expensive and the purchasing power of people low.

The development of the consumption structure, especially in Finland, is parallel to the general findings of the inverse relation between the share of necessities and total expenditure. Calculations from Finnish household surveys¹⁾ have shown, that expenditures like 'food', 'beverages and

1) Riihelä, M. - Sullström, R. 1993, Kotitalouksien kysyntäkäyttäytymisestä Suomessa. Department of Economics, University of Helsinki, Research Reports N:o 67 and Hagfors, R. - Koljonen, K., 1986, Prospects for household characteristics and the structure of private consumption in Finland, Economic Planning Centre, Helsinki.

tobacco', 'gross rent, fuel and power' and 'medical care and health expenses', are necessities. The elasticity of the group 'transport' has become closer to the value of unity (akin to a necessity). It can be reasoned that a private car has become more common and at the same time the share of repairs and driving costs has increased in total expenditures.

Many other factors affect the developments in private consumption. Relative prices are most important. Inflation has varied appreciably in Finland during this century. It was especially high during wartime, which is a very well known phenomenon in other countries, too. Relative prices changed then a lot. The demand for the most important goods was regulated and prices controlled by authorities. This regulation can be seen, for instance, in the prices of housing and medical care in the 1940s.

In "normal" times mainly the production costs affect the price trends in market economies. It is understandable that prices of goods tend to increase less than prices of services because of technical progress. In services the role of wages and salaries is higher. Prices of 'beverages and tobacco' increased the most and those of 'medical care and health expenses' the least during the period from 1900 to 1938. During the period 1938-60 the price of 'recreation, culture and education' increased the most and that of 'transport and communication' the least. Between 1960-85 the price of 'medical care and health expenses' has increased the most and that of 'gross rent, fuel and power' the least while after 1985 the increase in the prices of 'foods' has been the smallest.

The relative price of basic consumer goods or "necessities" has been quite stable and semi-durables have exhibited a decreasing trend over the whole period 1900 -1991. Only wartime has been an exception. The relative prices of durables and services have been more sensitive in this period. Durables are now relatively much cheaper, however, than for instance in the 1960s, which has made them affordable to most people.

The prices of some basic commodities, including foodstuffs, have been low in Estonia. Therefore their share in expenditures has been low. But wages and pensions have also been low. So the purchasing power of the Estonian population has been considerably lower than in Finland, especially with respect to many consumer durables like cars, dwellings etc.

5.3.2. Characteristics of households¹⁾

The household structure is one of the most important factors, when consumption and its distribution are compared between population groups. However, these differences can explain some differences in the country comparisons, too.

As a starting point it must be noticed that economic development has changed essentially the socio-economic structure of households in Finland. The number of farmers has decreased and that of workers increased. Another main change has been, that the number of households increased in 15 years more than one third. In Estonia this increase was about 12 percent in 20 years. In Finland this big change was mainly generated by two factors: (1) so-called "big generations" which were born in the late 1940 came to the age when own family is normally formed and (2) lengthening of the lifetime increased the number of retired people especially in the late 1970s. These two factors can explain why the average size of the Finnish households has decreased quite appreciably.

Table 7. Households according to the size

size, %	Finland		Estonia	
	1971	1985	1970	1989
1 person	21.6	35.2	32.8	28.7
2 persons	24.3	25.5	23.6	27.2
3 persons	19.5	16.8	20.7	19.7
4 persons	17.5	15.5	15.5	16.9
5 persons	8.6	5.1	5.3	5.3
6 and more persons	8.6	1.8	2.1	2.2
Total	100.0	100.0	100.0	100.0
total, number	1495700	2045200	532300	598700
Average size, persons	2.99	2.36	2.54	2.62

Source: Statistical Yearbook of Finland; The Population Census in Estonia in 1970 and 1989.

- 1) A household consists of one or more persons living together and having a common budget. Look at chapter 3 "Population", too.

The average size of Estonian households has increased a little during the last two decades. Their structure has changed, however, and changes have been the opposite to those in Finland. The increase has been the most notable in the case of two-person, four-person, six-person or bigger and five-person households. The absolute number as well as percentage of single persons decreased. The percentage of three-person households decreased as well, though their absolute number increased by 7665. In Finland only the share of small households increased. Big households with 6 or more members have almost disappeared.

One important factor, which is connected with the size of households, is the number of working members. During the last decade this number decreased in Estonia - from 52.4% in 1980 to 50.6% in 1990. This decrease was concentrated especially in households of workers and employees, where the share of other members increased substantially - from 34.1% to 39.1%. One reason for this kind development can be the increased fertility. However, the percentage of pensioners who do not work also decreased.

As regards the households of collective farmers the most important change was that in 1990 there was one person per 100 households who got a scholarship. In 1980 collective farmers had no such persons in their households. These changes in the household structure in Estonia mean that the importance of people who have no independent incomes and self-employed people has grown (in 1987 a law regulating self-employment was adopted).

In Finland the number of working members has decreased. It was 1.38 persons in 1981 and 1.16 persons in 1985. This change can be explained mostly by the decrease in the average size of households. Indeed, the employment rate of women has increased in last decades partly because the development in child care has given mothers the possibility to work and thus helped families with children to reach a high standard of living.

Households have their own life cycle, which affects their consumption needs and habits. In the beginning a new household has to purchase furniture and other durables and semidurables. Families with children have different needs than retired people. One way to look at the life cycle of households is to present the age structure of households or their members (tables 8 and 9).

The biggest percentage of the household members in Estonia in 1990 were women in the age group 18-54 years. Males aged 18-59 made up 19%. In 1980 the share of men of working age was 21% so their relative importance has decreased. Over half of the members of households were of working age and the share of females of retirement age is relatively high compared to that of males.

In Finland about one third of the heads of households were 35-44 years old and about a fourth 45-54 years old. Over 65 were 11.8% of the heads of households.

Table 8. Household members according to sex and age in Estonia in 1990, %

Sex	Age of the members	Share, %
Children	0 - 15	30
	16 - 17	1
	18 - 59	19
Males	60 or more	3
	16 - 17	1
	18 - 54	33
	60 or more	13
Females	0 - 15	30
	16 - 17	1
	18 - 54	33
	60 or more	13

Source: Household Budget Survey in Estonia in 1990.

Table 9. Households according to the age of household head in Finland in 1985, %

Age	Share, %
Below 25	3.6
25 - 34	22.3
35 - 44	30.3
45 - 54	18.7
55 - 64	13.3
65 and over	11.8

Source: Household Survey in Finland in 1985.

The smaller the household, the bigger the share of persons with high income when income is measured per household member. In 1989 in Estonia the average monthly income of about half of the households of workers and employees and 60 % of the households of collective farmers was over 200 roubles (Appendix 7). The average monthly income of the majority of single manual and office workers was over 200 roubles. Among five-person households only 10.1% of the members earned more than 200 roubles a month and among the six-person households nearly a half received less than 100 roubles a month (as against 1.7% of single persons). Among households whose monthly income was over 200 roubles, nearly a half lived alone, one fourth in two-person households and nearly one fifth in three-person households. Only one tenth of households in this income group had 4 or more members.

In all size-groups of collective farmers' households (excl. six-person and bigger) the percentage of members of high income was bigger and that of low income smaller (excl. single persons) than in the households of manual and office workers. The average disposable income of a collective farmer's household was both in 1980 and 1990 1.3 times bigger than that of a manual or office worker's household.

Households of collective farmers with children had a higher share (39.6%) of those whose monthly income was over 200 roubles than did households of manual and office workers and respectively a smaller share of those whose monthly income was below 100 roubles. The share of households with children was about 55% in both types of households.

In Finland in 1985 disposable income per household member for single-persons households was 1.2 times higher than the average and 1.5 times higher than in households of one breadwinner, but it was a little lower than in a childless couple.

Regardless of a lack of completely comparable data for Estonia and Finland and their different structures, it is possible to draw some conclusions:

1. The average size of Finnish households has decreased in recent decades; the average size of households in Estonia has increased.
2. The structure of Finnish and Estonian households has not differed appreciably; the biggest difference in the structure of households is that

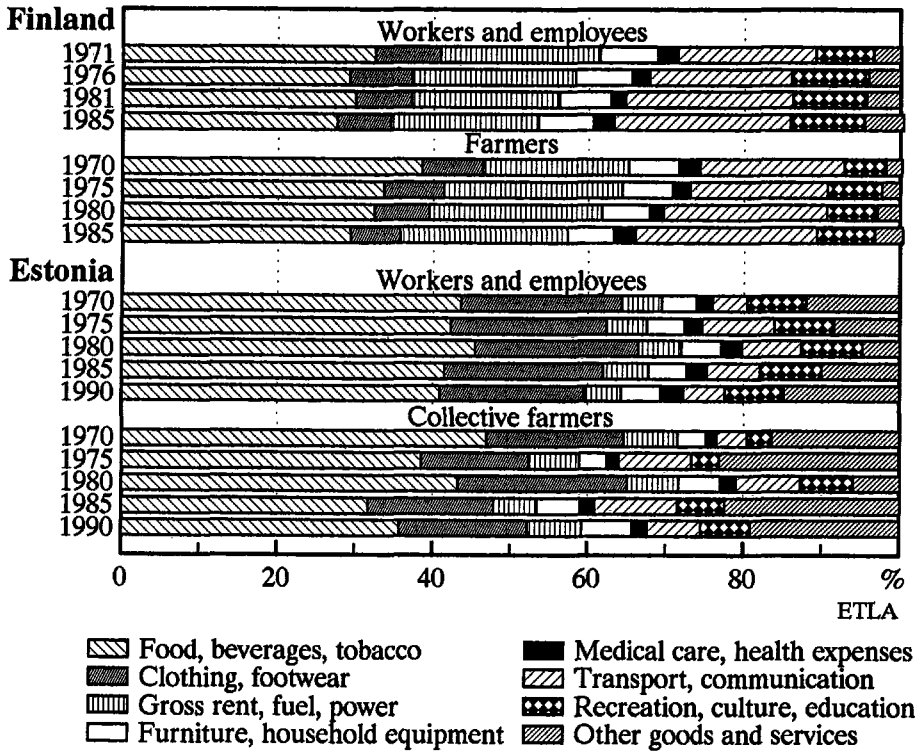
- the share of single persons is higher in Finland.
3. It is difficult to compare the age of household members, since different data are presented; it can be said, however, that over a half of the household members in Estonia are in working age and more women than men are in retirement age.
 4. Nearly all Estonian households were those of manual and office workers or collective farmers; in Finland over a half of households were those of manual and office workers.
 5. In Estonia the average monthly income of over a half of households of manual and office workers was more than 200 roubles, while 5.3% received less than 100 roubles; in collective farmers' households the share of those with incomes exceeding 200 roubles was even greater.

5.3.3. Consumption structure in different population groups

According to household budget studies there are common features in the private consumption of Finnish and Estonian workers and employees and collective farmers. For example, Finnish farmers as well as Estonian collective farmers spend less on clothing, footwear, recreation, culture and education than workers and employees of both countries. In Finland and Estonia in both social groups food consumption has decreased, but in Finland the farmers' share of food has remained higher than that of manual and office workers and the share of alcoholic beverages lower (Figure 2), when in Estonia collective farmers spend less on food, but more on alcoholic beverages than manual and office workers. Finnish farmers spend less than Finnish manual and office workers on tobacco, furniture and household appliances. In Estonia collective farmers spend much less on health care than manual and office workers.

The income level has a considerable impact on the structure of consumption in different commodity groups. It can be found that Engel's law is in effect, because the lower the incomes, the higher the share spent on food and other necessities. In Estonia in the lowest income group of collective farmers' households the share of food is 58% and the share of alcoholic beverages 21%, but in the highest income group the corresponding figures are 24% and 5% respectively. Thus the share of food more than halved and the share of alcoholic beverages decreased to a quarter when household income increased. In Finland the decline in the share of food was 7% and that of

Figure 2. The structure of consumption expenditures of employees' and collective farmers households in Finland and Estonia



alcoholic beverages 0.6% when disposable income increased. It must, however, be taken into account that income differences are measured in different ways in both countries and that in Estonia there are very few households in the lowest income groups.

In Estonia households of manual and office workers with the lowest income consumed only 20 percent as much alcoholic beverages as that consumed in collective farmers' households, but the share was 2.5 times higher (4.9%) in households with the highest incomes. The corresponding share of food was almost halved. As regards the consumption of Finnish manual and office workers the share of food decreased and that of alcoholic beverages increased when their disposable income rose.

The share of food expenditures were lower in households with lower income such as pensioners' and workers' households and higher in households where income per household member were higher. The structure of households can explain this phenomenon. The latter mainly included one- and two-member adult households, excluding elderly people.¹⁾

Income differences affect the consumption of foodstuffs to a lesser extent. It affects much more to the consumption of manufactured goods and services. In Estonia the share of food in the lowest income group was 3 times higher than in the highest income group, but manufactured goods and services the high-income collective farmers used 25 times and the manual and office workers 8 times more than low-income households in both groups. In Finland the corresponding differences were 2 and 3.5 times respectively.

In recent decades, due to the evening of the income distribution, differences in the level of consumption across households in Finland have diminished. The expenditures of the household of an agricultural entrepreneur has reached the level of other households. This is partly due the structural change inside this social group as the share of small farms has decreased. The expenditures of pensioners' households have approached those of the working-age population. Most pensioners had yet in the 1960s only national pension (*kansaneläke*). Improving the occupational pension system (*työeläke*) has improved the consumption possibilities of pensioners.

The comparison of the consumption structure based on the duration of goods and services confirms above statements on the general consumption level. In Estonia expenditures on semidurables and services by collective farmers' households have remained almost unchangeable during two decades (1970-1990), in the household budget of manual and office workers the share of services has declined. The share of expenditures on non-durables in the manual and office workers' households has changed only slightly, but in collective farmers' households it has decreased by 12.4%.

The share of durables and semidurables is almost two times higher and that of non-durables a little higher in Estonia than in Finland. The share of services, on the other hand, constitutes only a quarter as much in Estonia as

1) Kotitalouksien kulutusmenot 1990. Tilastokeskus, Helsinki 1992, p. 13.

in Finland. The underdevelopment and relatively low share of the service sector in the Estonian economy has had an impact on consumption because households must manage most of household and other works themselves, which also causes a higher demand for durables. In Finland, it is possible to use services more extensively.

In collective farmers' households, due to higher wages and possibilities to save, the share of the consumption of durables is relatively higher than in households of manual and office workers.

Thus depending on the change in income (disposable income), similar changes occurred in the consumption by Estonian and Finnish households in the years under investigation, but their magnitude was different.

Similar tendencies can be noticed also in changes in the consumption according to the size of household in Estonia and Finland: when the number of household members increased, the share of food and alcoholic beverages increased in the consumption expenditures. Changes in expenditures on food are bigger and its share higher in Estonia. On the other hand, differences in consumption structures in households of different size are relatively small.

As a conclusion the effect of economic factors such as situation in consumer goods market, role of prices, level of personal incomes and their differentiation between population groups can be estimated as the most important factor on the development of consumption and its structure in Estonia, especially during recent years when great changes have taken place in economy.

It may be assumed that even relatively small differences in the population structure, like the age-sex structure, size and composition of households, may become influential in two countries under similar conditions. Because of great differences in economic factors between Estonia and Finland, it is difficult, however, to identify these kinds effects.

Consumption is affected by the social and professional structure of the society, education and cultural level, historical traditions, etc. A number of social aspects (education, culture, etc.) share some common features in Estonia and Finland. Given however, from the economic backwardness of Estonia with respect to Finland, i.e. diverse needs in personal consumption

and the low level of public consumption, it is difficult to estimate the effects of social factors, too.

To sum up, the consumption in Estonia and Finland differ by:

- the nature of the factors affecting the consumption;
- the propensity to consume and to save;
- income and purchasing power of the population;
- public expenditures;
- the conditions prevailing in the retail trade: in Finland a large selection and abundance of goods, in Estonia forced consumption due to the shortage of goods;
- the role of prices in consumption;
- the demographic structure of the population;
- the size and composition of households;
- distribution of disposable income and consumption across households;
- effect of social factors.

5.4. Consumption of selected consumer goods and services

5.4.1. Consumption of food

A first impression of the standard of living in a country can be gained by looking at the share of foodstuffs in average consumption: the lower the share, the higher the standard of living. In countries with a high standard of living including all the Nordic countries the share of food (including tobacco and alcoholic beverages) is below 30%. In Finland food accounted for 23% of private consumption in 1990 and in Estonia 45%.

Consumption of food is connected with the basic needs of people. Changes in factors affecting consumption have a smaller effect on food consumption than on the consumption of many other goods or services.

As it is mentioned above, in Finland the share of food and other primary commodities in total expenditures has decreased. In 1960 food accounted for a third of consumption expenditures; today its share is 23%. At the same time changes have occurred in the structure of food expenditures. Eating out and the selection of foodstuffs have increased. Previously home-prepared

food is now more often bought from shops in a ready-made form. In 1985 consumption of flour, potatoes, milk, butter and sugar was much smaller and that of meat, especially minced meat, poultry, elk meat, sausages, vegetables, berries, yogurt and cheese was much higher than 20 years ago.¹⁾ The consumption of bread, margarine, vegetables, coffee and eggs per household member has not changed much.

The content of households' food basket is simultaneously affected by various factors. Women's employment has increased and thus time used on household work has decreased. One of its effects has been an increase in the use of rapidly prepared food and semi-manufactured products. The decrease in the consumption of butter, sugar and salt is due to the decrease in the baking and conservation at home as well as health education.

In 1985 households bought 12 kg of food per household member in a week. Of this approximately half were beverages. In 1966 the food basket per capita was one kilo heavier.

Dining outside has become more and more usual: on average 28 meals per person in 1981, 37 in 1985. One reason to that is increasing number of meals supplied by employers as a part of total remuneration.

Food consumption varies greatly according to the household type and socio-economic status. Besides dining outside the home the structure of food consumption is affected by economic resources, time available for cooking, household's knowledge and skills and customs, habits.

Food consumption in households with children differs from that of other households for most foodstuffs. The consumption is partly affected by the fact that those households eat more often outside, because many parents are wage earners. On the other hand, people of different ages have different needs. Thus it is not surprising that per capita consumption of most foodstuffs in households with children is lower than in those comprised of adults.

1) Kotitaloustiedustelu 1985, Tilastokeskus, Helsinki, 1987, p. 7-16.

Great differences in the consumption of flour, milk, fresh meat, fish, butter, vegetables and sugar refer to other reasons as well. Households with one adult eat a lot of macaroni, spaghetti, tinned food, yogurt, juice, margarine instead of butter.

Single persons are a very heterogeneous group. Most of them are either young people or pensioners. They consume more than on average foodstuffs needed for cooking such as flour, grain products, meat, fish, milk, cream, butter, berries, vegetables, potatoes, and sugar. This applies especially to household of elderly people, whereas use of sausages, yogurt, fresh juice and potato products is not as common in these households.

Dining habits of agricultural entrepreneurs and elderly people differ clearly from other socio-economic groups. These households eat out more seldom than others. They consume more than the average of raw products like fresh meat, fish, milk, sour milk, butter, vegetables, potatoes, sugar, etc. The consumption of flour and grain products is also high in farmers households - 55 kg per capita. The respective figure for a person on retirement pension is 41 kg and for a person on old-age pension 44 kg.

Table 10. Annual consumption of foodstuffs per capita in Estonia (kg)

	1970	1980	1985	1990	1991
Meat and meat products	73	82	89	84	63
Milk and dairy products (recalculated into milk)	420	453	489	487	409
Eggs, pcs	241	305	296	289	260
Fish and fish products	29.5	24.9	24.6	24.0	21.0
Sugar	43.6	46.0	44.7	44.5	36.1
Vegetable oil	6.7	9.0	9.5	7.0	6.3
Potatoes	151	122	133	103	104
Vegetables	80	83	79	64	57
Fruits and berries	..	36	44	36	27
Grain products	112	96	92	77	79
Natural coffee	..	0.68	1.18	1.58	0.65
Tea	..	0.29	0.33	149	0.29

Sources: Eesti NSV rahvamajandus 1980.aastal, Statistika Aastaraamat - Tallinn, Eesti Raamat, 981, p. 234; Statistika aastaraamat 1992. Tallinn, Estonian Department of Statistics, 1992, p. 147.

A more precise idea of the consumption of food can be obtained from a quantitative analysis. In Estonia per capita consumption of the main foodstuffs has steadily increased. Relatively low prices of foodstuffs have contributed to the growth of their consumption. The highest growth in the period 1970 - 1985 was in the consumption of vegetable oil and fats, meat, milk and eggs (table 10). Consumption of sugar and vegetables reached a peak in 1980 as their consumption subsequently started to decline. On the other hand, the consumption of grain products, fish and fish products has diminished continuously since 1970. The consumption of sugar and vegetables started to diminish after 1980. These changes took place together with the decline in the share of food in consumption expenditures (39.4% in 1970, 35.7% in 1985), and in connection with the changes in the consumption in the favour of culture, better recreation, buying of various durables, etc.

After 1985 the consumption of almost all foodstuffs started to decrease gradually. Besides other reasons, it was probably caused by the increasing shortage of foodstuffs in the consumer goods market. A sharp change happened in 1991-1992, when the consumption of all foodstuffs per household member decline below the level of 1970. It was mostly due to the considerable rise in prices of foodstuffs.

Regardless of the considerable decrease in quantities of foodstuffs consumed in Estonia the annual consumption of milk was almost two times higher, annual consumption of sugar 1.1 kg higher and that of meat 1.7 kg higher per capita than in Finland (Table 11). The consumption of coffee was very low in Estonia - only 0.65 kg per capita (in Finland 10.1 kg). The consumption of grain products in Estonia was 4.9% lower and that of alcoholic beverages 22% lower than in Finland. In Finland the consumption of alcoholic beverages increased 1.3 l per capita in 1980-1989. The consumption of tobacco in Estonia in 1990 was 12% higher than in Finland in 1989. A positive change in Estonia was also the decrease in the consumption of tobacco (24%) and that consumption of alcoholic beverages has been nearly halved.

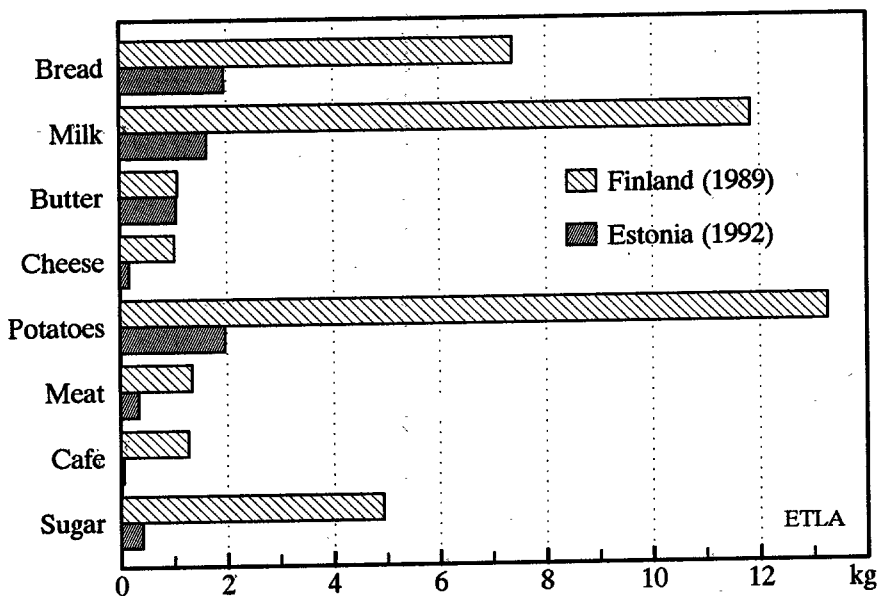
Consumption of foodstuffs varies somewhat in different social groups in Estonia. Collective farmers' households consume quite much eggs and potatoes but workers' and employees' households cheese (Appendix 11).

Table 11. Consumption of foodstuffs per capita in Finland and in Estonia, kg

	Finland		Estonia	
	1980	1989	1980	1991
Grain products	93.4	92.8	96.0	79.0
Coffee	10.3	10.1	0.7	0.7
Sugar	36.8	35.0	46.0	36.1
Butter	12.2	8.1	..	7.1
Meat	58.9	61.3	82.0	63.0
Milk	263.0	225.0	453.0	409.0
Alcoholic beverages (l)	6.3	7.6	11.2	5.6
Tobacco (thous. pcs)	1.7	1.7	..	1.9

Source: Statistical Yearbook of Finland 1990, p.344; Statistika aastaraamat 1992. Tallinn, Eesti Statistikaamet, 1992, p.147.

Figure 3. Food quantities purchasable with an hour's wages in Finland (1989) and in Estonia (1992).



Great differences occur in the consumption of food by Estonian households depending on income per household member. In households of manual and office workers with lower and higher incomes the greatest differences are in the consumption of meat, fruits and alcoholic beverages, in collective farmers' households in the consumption of cheese, eggs and fruits (Appendix 12).

Figure 3 shows peoples purchasing power to buy foodstuffs in Estonia and in Finland by using average hourly wages. The purchasing power in Estonia is much lower than in Finland. However, it decreased even more in Estonia (with respect to foodstuffs) in recent years, when prices increased much faster than income.

There are rather great differences in the quantities of foodstuffs consumed in Finland and Estonia, but long-term trends have been converging, i.e. the share of food in consumption has decreased and the differences are also decreasing between these two countries. The speed of changes has grown in Estonia in recent years in connection with political, social and economic changes.

The main differences in the consumption of food between Finland and Estonia were:

- the share of food in consumption expenditures;
- quantities of several foodstuffs consumed per capita and changes in the period under study: differences are greatest in the consumption of grain products, coffee, milk and alcoholic beverages. In the last decade the quantities of food consumed in Estonia have considerably diminished and approached the Finnish level of consumption;
- consumption of food depending on the social stratum, size of household and income;
- the cost of food basket in regard to earnings.

5.4.2. Consumption of durables and semidurables

Households have some kind durable goods, as furniture, other household equipment etc. Consumers purchase durable goods to increase their conveniences, either to substitute old ones or to get new services. Goods substituted for old ones have often a new and better quality.¹⁾ Technical progress in the last few decades has brought new durable goods that make housekeeping easier or are used in leisure time. These new durables (their purchases or their ownership) can be seen as an indicator of welfare of households. Semi-durables do not have as great a significance in welfare comparisons.

Durable goods give users many years of service and especially the flow of services is in principle most important for households. However, it is difficult to measure this flow. The ownership of durables and the share of income that households have allocated for purchases of these goods is presented next.

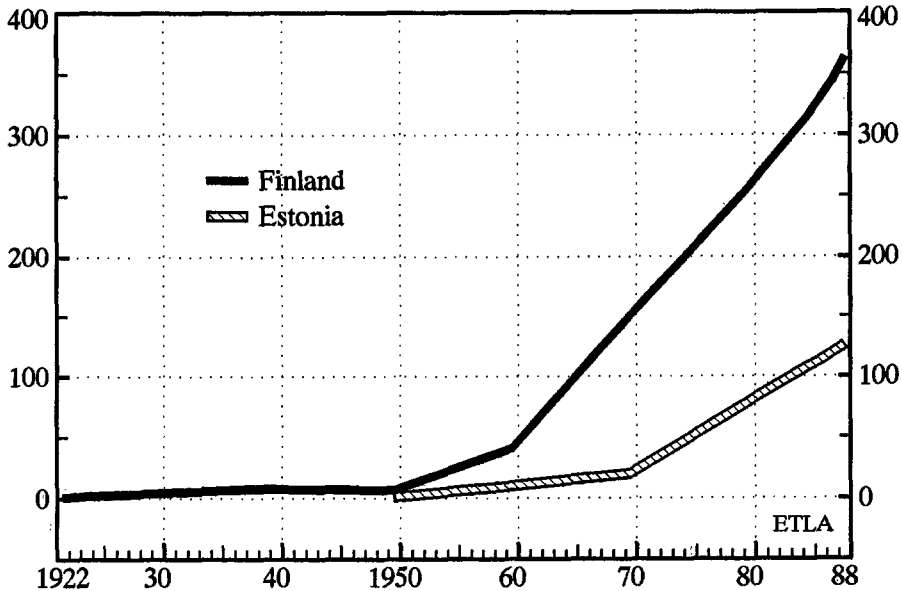
In Finland most households have a lot of household machines and equipment. Nearly all have radio, refrigerator and vacuum-cleaner. The ownership of deep-freezers, dish washers and colour TV sets has increased especially since 1976. In 1976 3/4 of the households had a black-and-white TV and 1/4 a colour TV while in 1985 already 75% of the households had colour TV and 35% black-and-white TV. The labour and living environment of Finnish households has considerably changed during last decades. Households have reached an environment where durables facilitate and speed up household tasks.

Women's working outside the home is one important factor which has increased the need for durable goods. Preparation and preservation of food requires, especially in cities, storage places. In rural areas shops are often far away and the hours when they are open are not always convenient.

In Estonia many durables are much more rare than in Finland. In 1990 there were one third of the telephones in Finland in 1985, two thirds the vacuum cleaners, sewing machines, TV sets, etc. One reason is that it was not possible to buy many durables in Estonia, because they were not available.

1) Kotitaloustiedustelu 1985, Tilastokeskus, Helsinki, 1987, p. 5-16.

Figure 4. Number of cars per 1000 inhabitants in Finland and Estonia



Dish-washers, coffee makers, food processors, computers, automatic washing machines, yachts, etc. were only a dream for Estonian households. This scarcity began to diminish in the second half of the 1980's.

One of the most important durable goods is a private car. Figure 4 shows that very few people had a private car yet in 1950s both in Estonia and in Finland. After that the number of cars shows a divergent trend in these neighbours. Today there are over 2 billion private cars in Finland, or in other words nearly 400 cars per 1000 inhabitants. In Estonia the same ratio is nearly 150.

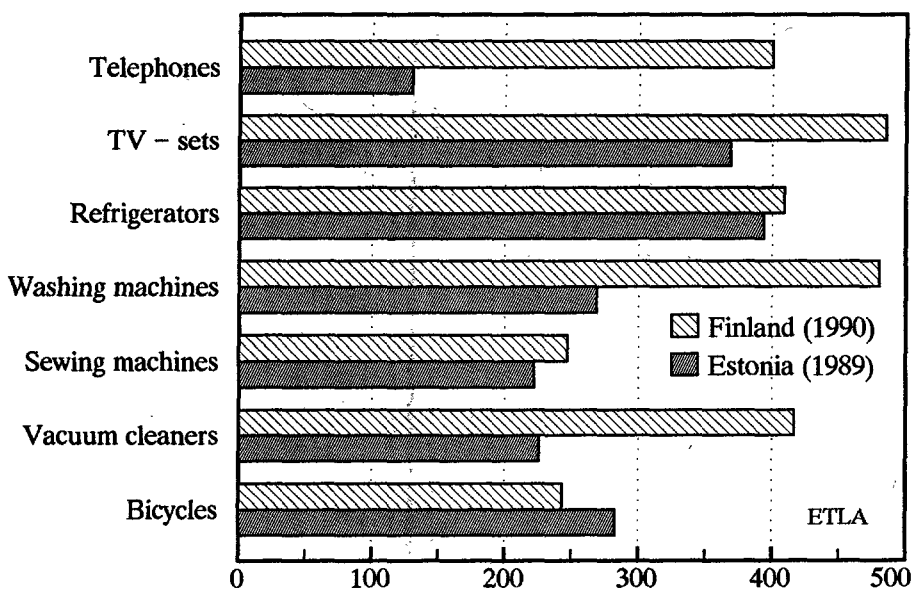
In Estonia the number of cars started to increase faster after 1972, when the Volga Motor Plant (Lada) went into operation. The economy of the Soviet Union was not able to produce a sufficient number of motor cars. People did

not have enough foreign currency to buy cars from abroad, either. Though the number of cars per 1000 inhabitants was highest in Estonia compared with the other Soviet Union republics, it still remained on the level of less developed countries in the world. In recent years, however, the number of cars has considerably increased in Estonia mostly on account to cars imported from Western Europe.

There are some differences in the ownership of durable goods between urban and rural areas in Finland. They are caused by factors forming the nature and environment of households, not so much by incomes and property per se.

Households around Helsinki differ from the other households. There are a lot of small households (e.g. there are many 2-member households in Helsinki and 3-member households in Oulu county). There are a lot of elderly people and other single persons, too, who do not have as many durables as households with children. On the other hand, there are often common laundry and cold storage facilities in houses in cities.

Figure 5. Durables per 1000 inhabitants in Finland (1990) and in Estonia (1988)



One interesting feature distinguishing between urban and rural areas is the ownership of private cars. They are more common in rural areas than in cities. The difference can be explained by many reasons. In addition to the household size public transport in cities reduces the necessity of owning a car. Furthermore, many wage earners have the right to use a car owned by their employers. On the other hand, in rural areas the distances are often long.

Dish-washers and deep freezers are more usual in rural areas than in the cities because of the bigger household size. On the other hand, such rather new durables as colour TV sets, video recorders and personal computers are more often found in cities. This shows that people in cities are more apt to purchase new machines.

Main factors affecting the obtaining of durable goods by households are income, household size and age of head of the household. Households with higher income modernize their property, while those with a lower income supplement it.

The size of household, number of children and adults are what affect the procurement of durables. Households with children buy more durables than single persons or childless families.

In Estonia the share of expenditure on durables has increased in the households of manual and office workers as well as collective farmers during the last two decades (Appendix 10). Comparison with Finland shows that the demand for durables was relatively low in Estonia. When incomes of the population increased, the demand for durables started to increase in 1970-1990. But the narrow assortment of commodities and small incomes did not enable people to satisfy their needs.

Today there is a large variety of durables in shops in Estonia. The availability is no longer the problem, but the Estonians do not have enough money to buy expensive durables. Some comparisons of the purchasing power in Finland and in Estonia are presented later in Chapter 7.

The previous analysis of consumption expenditure showed that in Estonia the biggest expenditure after food were purchases of semidurables. These expenditures accounted for 24.4% of the total consumption expenditures in

Estonia and 5.4% in Finland in 1992 (Appendix 8). This example reflects the lower supply of clothes and footwear in Estonia and the pent-up demand for these items. In 1970-1990 the buying of cotton textiles increased by almost a third in Estonia, the consumption of knitwear and hosiery almost two times.¹⁾ The consumption of other textiles and leather footwear per capita remained almost unchanged during this period.

The demand of semi-durables in Finland shows a decline to a half in their share in three last decades. The share of upper garments has increased and that of textiles decreased.²⁾

In Finland the highest expenditures on wearing apparel were made by single people below 45 years old, followed by childless couples of the same age. The lowest expenditures on these items were made by couples over 65 years of age. By the socio-economic status the highest expenditures on wearing apparel were made by the households of students (8% of the consumption expenditures). Higher officials spent the same share of their expenditures on wearing apparel. Other social groups spent less on clothing. In Estonia, there is no such thorough analysis of consumption so far.

Big differences in the supply of Finnish and Estonian households with durables, especially the shortage of household appliances affects the leisure time of households. For instance, women in Estonia spend almost a third more time on housekeeping than in Finland. One reason for this is the low level of mechanization of housekeeping tasks in Estonia, but there is also a considerably smaller variety of semidurables and services that would facilitate housewives' work.

The low supply of durables also affects the consumption of personal and public services. For example, the low supply of cars presumes greater use of public transport, the shortage of TV sets more visits to the theatre and cinema, etc. But incomes of the population and purchasing power are restraining factors here.

- 1) Eesti NSV rahvamajandus 1980. a. Statistika aastaraamat. Tallinn. Eesti Raamat, 1981, p. 234; Statistika aastaraamat 1991, Tallinn 1991, p. 148.
- 2) Kotitalouksien kulutusmenot 1990, Tilastokeskus, Helsinki, 1992, p. 26-26.

To sum up, differences between Finland and Estonia are:

- consumption expenditures on durables and semidurables and the need for them;
- supply of durables;
- the price level of durables as compared with incomes, i.e. the purchasing power;
- the effect of the supply of durables on leisure time and other spheres of life.

5.4.3. Consumption of private services

The concept "service" is a difficult one in practice. Many so-called "services" include some material goods, too, which are not always possible to separate from each other. A prime example is repair work. This is a problem especially in household studies.

According to the National Accounts about 40 % of private consumption is used for various kinds of services in Finland. During recent decades this share has been growing. The 1985 household budget study shows that the main items of household services are connected with housing, recreation and traffic.

In Estonia the share of private services is only about 10 % of households consumption. It must be remembered, however, that there are great difficulties in measuring private services in Estonia. That is why it is impossible to give any exact picture of services or their structure and distribution.

The difference in the shares of services partly reflect differences in the standard of living between Estonia and Finland, but this is not the whole truth. As a case in point, many so-called welfare services are strongly supported by the government in both countries. However, the way this support is organised causes differences in personal expenditure behaviour and in the statistics.

One big difference is caused by housing. In Estonia nearly all dwellings were owned by the society and people had to pay only very low rents. In Finland all housing costs are paid by individual households. The state support is

much smaller and given mainly in the form of income transfers, which are included in the income of households. Besides a part of the housing costs are artificial in the sense that they include estimated depreciation and benefits of housing in owner occupied house. In Finland housing services account for 18.2% of consumption expenditure, in Estonia 1.3%.

In addition there are differences between these countries in provision of health and education services. In both countries these services are provided in many cases practically free of charge for the population. In Estonian people have had to pay for medication, and also for the vouchers for a rest-homes or sanatoria, etc. As regards education people had to pay partly for the use of a kindergarten and for boarding-schools.

These expenditures are subsidised by the government in Finland, as well, which can be seen from their small share in service costs. People have to pay a small charge for hospital care, a higher share of medication and for visits to private physicians. In 1990 on average over 2/3 of health care expenditures were paid by the society.

Public childcare has been one of the most important social policy targets in Finland during the last two decades. The development in this area was needed especially because women increasingly worked outside the home. Public support explains why the share of expenditures on childcare is relatively low, on average below one percent in 1990. On the other hand, childcare is a good example of services which are aimed toward a special segment of the population: households with children of pre-school age. So households with children of pre-school age allocated almost 3% of their consumption expenditure to childcare.

Primary and secondary education is provided basically free of charge for Finns. Costs are mainly incurred in post-secondary education, adult education and private courses, for instance, for recreation and hobbies. These expenditures made on the average a bit below FIM 200 per household. They were higher (FIM 651) in households where children were 17-24 years old.

In Estonia many other services, such as saunas, laundering, hairdressing and transport, were subsidized by the state, which enabled consumer prices to be kept low. This also affected the actual structure of consumption of services. On the other hand, many necessary services were not rendered at

all. An example is home help services, which in Finland accounted for 21.3% of the consumption expenditures of personal services.

The administratively regulated supply of services, which was characteristic of the planned economy in Estonia, could not meet changing needs of consumers. Such a situation in the supply of services led to their use only out of the utmost need, as a result a slow increase in consumption of services.

A small selection and insufficient supply of durables and semidurables could not fully satisfy the Estonians needs. So repair services of these goods were quite important.

There are big differences in the use of services between population groups both in Estonia and in Finland. Of course there are differences between these countries, too. Partly these are quite natural, because some services are clearly depending of the structure of the households. Families with children use childcare and educational services. Medical services are used more often by elderly people than by younger people.

Households of manual and office workers spent more on services than collective farmers in Estonia. The share of services was the highest (12%) in 4-member households of manual and office workers and the smallest (5.6%) in 6- and more-member households of collective farmers. Collective farmers had the highest shares in public utilities and personal services. On

Table 12. Structure of expenditures on services by Estonian households of manual and office workers and collective farmers in 1989

Kind of services	Manual and office workers	Collective farmers
Personal services	17.2	24.9
Transport	23.1	10.9
Mail and communication	4.5	3.9
Public utilities	23.8	25.0
Other services	31.4	35.3

Source: Household Budget Research in Estonia in 1989.

the other hand, their expenditures on mail and communication services were the lowest (Table 12).

The structure of services depended on the structure and income level of the household. The consumption of services was affected also by the rise of prices in Estonia. For example, to pay for a hairdo at the hairdresser's one had to work, on average, for 1.4 hours in 1980, but this had risen to over 7.3 hours already in 1992. The cost of visiting a sauna took an average of 0.19 hours to earn in 1980, but more than 5 hours in 1992.

In recreation and cultural expenditures in Finland the biggest group was "hobby services", such as TV licenses, renting of hobby equipment, hobby lessons, etc. Every fourth markka spent on recreation and culture was spent on these hobby services. Single people in age 25-44 years spent most on these services. Recreation and cultural services were used quite extensively. Almost all households had these expenditures.¹⁾

Buying periodicals was the second biggest expenditure. They were bought by almost all households. Middle-aged and elderly people expended much more on newspapers than the average household.

An equivalent amount of money was spent on books, tickets for admission, pets and sports equipment - some FIM 200 per capita on each. The money spent on these items can characterize typical users of these goods. Books are bought by 25-64 year-old single people. Tickets for admission were needed by single persons below 25 years of age. Pets were owned by childless couples, both young and middle aged. Younger (24-44 years old) childless couples and single people were also interested in sports equipment.

In Estonia leisure-time possibilities were limited both due to economic and political restrictions, especially as regards the communication with foreign countries and travelling. Leisure expenditures were limited to visits to the cinema and theatre, buying books as well as improvement of the household environment.

1) Kotitalouksien kulutusmenot 1990, Tilastokeskus, Helsinki, 1992, p. 52A.

In Estonia expenditures by manual and office workers on the theatre and cinema were 9% of the expenditure on services; in households of collective farmers this figure was 6 and expenditures on nursery schools were 13% and 9%, respectively, in 1989.

Differences in the consumption of services in Finland and Estonia include:

- a low share of services in consumption expenditure in Estonia: (about 10%). In Finland the share of services was over 40 % of consumption expenditure;
- the consumption structure of services;
- consumption needs for services depending on the supply of durable and semidurable consumer goods;
- differences in government subsidies, especially in housing, social and personal services;
- differences in relative prices and in the price level as a whole.

5.5. Conclusions

The structure of consumption was quite similar in Estonia and Finland before the Second World War. After that great changes have taken place in both countries. Estonia has been a part of the Soviet planned economy whereas Finland remained more or less as a market economy. These changes have been reflected in the development of consumption in these neighbors.

There are great difficulties in comparing the development of consumption in so different countries as Estonia and Finland and in explaining the differences. One reason is technical in the sense that it is difficult to find comparable statistical information. That is why only a few factors affecting consumption are studied in this paper. More serious problems for analyzing different paths of development arise from the disparity in the economic systems. In Estonia, for example, both produced amounts and prices of consumer commodities were centrally determined. In Finland, on the other hand, relative prices had a decisive role in the formation of demand and supply of goods and services.

There is no doubt that economic development has been faster in Finland than in Estonia, resulting in a higher standard of living and better consumption possibilities for Finns today. This can be clearly seen for instance in the high amount of durable goods owned by Finns.

The share of total consumption of Gross Domestic Product (GDP) is a few percentage points higher in Estonia than in Finland. It must be pointed out, however, that Soviet military expenditures are not included in the Estonian figures. This share has stayed practically on the same level in the last few decades in both countries, but it has fluctuated more in Estonia.

It is maybe a little surprising that the share of public consumption in total consumption is higher in Finland than in Estonia even if the above mentioned military expenditures are taken into account. In addition the public sector has expanded rapidly in Finland during last decades, whereas the growth of private consumption was higher than that of public consumption in Estonia at least in the 1980's.

There are great differences in the structure of private consumption between Estonia and Finland. Some of them reflect the divergence of the countries' economic systems. It is very well known, for example, that housing was heavily supported by the state in the Soviet system and this can be seen clearly in the consumption structure as a low share (only below 2 % of consumption expenditure).

Weak consumption possibilities of Estonians are obviously the main reason why food has taken a large share of their expenditures. On the other hand, the supply of different services has been one-sided and inadequate in Estonia resulting in their small share in consumption. The lack of recreation services is only one example. In Finland services account for nearly a half of private consumption. Once again it must be noted that there are difficulties in the concepts. For example, in Finland the benefits of housing in owner-occupied houses constitute a large part of all services, but in Estonia these kinds of services are not at all included in expenditures.

This paper seeks to shed some light on the consumption of different household groups, classified according to household size, socio-economic status and income level, too. In this respect it is possible to find general rules in the behaviour of both Estonians and Finns. For example, higher income

normally means better consumption possibilities, which is followed by a decreasing share of food and other necessities. Another quite natural consequence is that on a certain income level bigger households must use more for necessities than smaller households.

In this study it is found that many factors have affected the development, the structure and the distribution of private consumption in Estonia and Finland. It has been possible to describe only some of these features and their effects. However despite of the problems in comparisons two factors have certainly had greater effects than all others combined - namely (1) the divergence of the economic systems and (2) the great difference in income levels. The first has disappeared nowadays, but it will take a long time before the same will happen with respect to the second factor.

Appendix 1.

Gross domestic product (GDP) and consumption mill.mk or roubles

	Finland (1991-prices)				Estonia			
	GDP	Consumption			GDP	Consumption		
		Total	Private	Public		Total	Private	Public
1900	25959	21851	19412	2440				
1938	83122	56524	42806	13718				
1950	106996	77274	56502	20772				
1960	174342	123722	92472	31251				
1970	278674	204741	153929	50812				
1975	340521	256145	189357	66788				
1980	394102	290099	207010	83089	4479,9	3364,1	2809,3	554,8
1981	400330	295976	212470	83506	4652	3568,1	2971,3	596,8
1982	414660	308880	221941	86939	4756,3	3625,5	2982	643,5
1983	426980	317741	226678	91063	5099,4	3758,4	3057,1	701,3
1984	440076	326507	231904	94604	5218,7	3852,2	3107,1	745,1
1985	454740	338668	237798	100869	4951,1	3978,7	3174,5	804,2
1986	464286	351619	247590	104029	5159,1	4141,9	3286,7	855,2
1987	482802	370595	261780	108815	5438	4414,1	3509,1	905
1988	509040	386460	274839	111622	5759,4	4410,1	3517	893,1
1989	536317	401026	286268	114758	6422,4	4758,4	3866,8	891,6
1990	538560	406347	287522	118825	7976,9	6195,2	5141,1	1054,1
1991	503171	398421	277007	121414				

Source: "Laurila, E.H.: Consumption in Finnish Economy in the years 1900-1975. The Research Institute of the Finnish Economy, Series B:42, Helsinki, 1985" Central Statistical Office of Finland: National Accounts 1960-1991.

Appendix 2. The structure of final consumption of households in Finland 1900-1990, %

Expenditure group	1900	1913	1925	1938	1950	1960	1970	1975	1980	1985	1989	1990	1991
Foods	52.1	47.4	46.8	35.2	38.0	30.3	24.0	22.1	20.9	19.5	16.7	15.9	15.8
Beverages and tobacco	7.1	6.3	4.7	6.5	8.0	6.4	7.8	7.1	6.6	6.4	7.0	7.0	7.3
Clothing and footwear	12.0	13.9	13.3	13.4	18.5	10.7	8.3	6.2	6.2	5.4	5.5	5.4	5.2
Gross rent, fuel and power	12.9	13.1	15.0	16.7	8.6	18.4	17.8	18.8	18.4	18.9	17.1	18.2	20.0
Furniture, furnishing and household equipment and operation	5.3	4.9	6.0	7.1	7.0	6.9	6.8	7.5	7.6	7.1	7.2	6.9	6.3
Medical care and health expenses	0.8	1.3	1.0	1.6	1.9	2.4	2.8	2.6	3.2	3.5	3.9	4.1	4.6
Transport and communication	3.4	4.3	4.5	7.9	6.2	10.8	15.2	16.2	17.1	17.8	19.2	18.4	16.7
Recreation, culture and education	1.8	2.9	3.2	4.8	5.0	5.4	6.4	7.7	9.5	9.7	10.3	10.8	11.0
Other goods and services	4.7	5.9	5.5	6.9	6.8	8.7	10.8	11.7	10.4	11.6	13.1	13.2	13.1
Final consumption expenditure of households in the domestic market						100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Consumption of non-profit bodies						3.0	3.6	3.5	3.5	3.6	3.6	3.9	4.0
Direct purchases abroad by resident and in the domestic market by non-resident households (netto)						0.8	-0.6	-0.2	-0.3	1.0	1.8	2.4	2.3
Private final consumption expenditure	100.0	100.0	100.0	100.0	100.0	103.7	103.1	103.3	103.2	104.7	105.5	106.2	106.3
Expenditures by duration													
Durable goods	1.3	1.7	1.8	3.8	3.4	6.7	9.7	11.5	10.7	11.4	12.7	11.0	8.5
Semi-durable goods	14.3	16.5	15.8	17.9	23.5	16.1	15.4	13.6	14.0	12.4	13.0	12.9	12.6
Non-durable goods	66.1	61.2	59.8	50.6	56.3	46.4	41.8	40.4	42.1	38.6	34.2	34.3	34.9
Services	18.4	20.5	22.6	27.6	16.8	30.1	33.6	34.6	33.6	36.7	38.2	39.5	41.7

Sources: Laurila, E.H.: Consumption in Finnish Economy in the years 1900-1975. The Research Institute of the Finnish Economy Serie B:42. Helsinki, 1985, p. 362. OECD: National Accounts Volume II 1960-1987, Paris, Table 2. National Accounts 1981-1990. Central Statistical Office of Finland. Helsinki 1991. p. 84-86.

Appendix 3.

Disposable income, consumption and saving of households

	Finland			Estonia		
	1970	1980	1989	1970	1980	1989
Disposable income	26170	108269	253947	1448	2376	4091
Consumption	24989	100420	248742	1453	2540	3878
Saving	1181	7849	5205	65	49	240
Saving rate, %	4,5	7,2	2,0	4,5	2,1	5,9

Source: Household Survey in 1985. Central Statistical Office of Finland, Helsinki; Household Budget Research in Estonia in 1989.

Appendix 4.

Household disposable income and its use

	Workers and employees				Farmers and collective farmers			
	Income ¹⁾	Consump.	Saving	Saving rate, %	Income	Consump.	Saving	Saving rate, %
Finland								
1971	17881	16151	1221	6,8	3141	3051	90	2,9
1976	44515	39027	3620	8,1	5748	5061	687	12,0
1981	78920	70267	4284	5,4	8895	8366	529	5,9
1985	120208	109612	3612	3,0	12515	10856	1659	13,3
Estonia								
1970	299176,5	295187,3	3989,2	1,3	315571,7	278343,3	37228,4	11,8
1975	354113,6	332711,8	21401,8	6,0	385219,7	336908,9	48310,8	12,5
1981	402593,1	376768	25825,1	6,4	536251,1	471723,9	64527,2	12,0
1985	451479,5	409135,4	42344,1	9,4	706229,4	590710,4	115519	16,4
1990	651684,3	597538,8	54145,5	8,3	905522,6	746696,6	158826	17,5

- 1) In household budget studies in Finland it is some items, which are included neither in consumption nor in saving. So consumption plus saving \neq income.

Sources: Statistical Yearbook of Finland 1992. Statistics Finland, Helsinki, p. 325; Information prepared for International Monetary Fund (IMF) in November 14-15, 1991, on the basic indicators of the Estonian economy: State Statistical Office of Estonia.

Appendix 5. Disposable income, consumption and saving of households in different income classes

Workers' and employees households				Farmers' households							
Finland 1985				Finland 1985							
Income/ household member in month	Number of house- holds 1000's	Averages per household in year, marks or roubles			Income/ household member in month	Number of house- holds 1000's	Averages per household in year, marks or roubles				
		Size	Income	Consump.			Saving	Size	Income	Consump.	Saving
All	1215,8	2,64	98872	90158	2971	All	118,5	3,44	105633	86435	30485
-1643	56,9	4,25	71131	78414	-10873	-1643	17,1	4,48	69162	82173	-16711
-1993	74,4	3,87	85341	85607	-4763	-1993	14,4	3,89	84978	83772	-3303
-2265	81,5	3,58	91727	89603	-2854	-2265	12,5	3,65	93266	81970	6495
-2507	87,3	3,42	98005	92052	388	-2507	10,2	4,02	114921	100856	8219
-2738	97,9	3,13	98455	94655	-1236	-2738	11,9	3,32	104555	82360	17825
-3019	105,6	2,90	100305	95518	-1041	-3019	12,7	3,31	114285	87073	21877
-3366	122,3	2,82	107875	97551	4487	-3366	11,3	3,09	117195	92834	18800
-3813	166,2	2,26	97106	87158	4619	-3813	9,0	3,10	132061	92509	32727
-4527	192,5	1,96	97174	84793	6386	-4527	9,4	2,47	120901	79014	35482
over 4528	231,3	1,63	110297	92349	10677	over 4528	10,1	2,13	142479	56966	49430
Estonia 1989				Estonia 1989							
All	326	2,56	5643	5034	609	All	275	2,96	8399	6608	1792
-50	0,5	4,20	1733	1716	17	-50	0	1,00	821	696	125
-75	6,2	3,92	2914	3137	-223	-75	1	4,52	4751	3989	762
-100	10,4	3,16	3068	3065	3	-100	6	4,29	5805	5015	790
-125	27	3,31	4157	3978	179	-125	18	4,19	6712	5963	750
-150	37,9	3,07	4690	4548	143	-150	27	3,48	6829	5568	1261
-175	35,3	3,10	5502	5342	159	-175	26	3,41	7638	5852	1786
-200	44	2,97	6039	5344	695	-200	30	3,30	8773	7297	1475
-250	60,2	2,42	5779	5158	621	-250	44	2,63	8634	7051	1583
-300	42,8	2,04	6187	5222	965	-300	32	2,45	9444	655	2901
-350	26,7	1,63	5777	4884	893	-350	27	1,75	7709	5995	1714
-400	15,3	1,54	5993	4854	1139	-400	13	1,66	11187	8226	2961
over 400	19,7	1,47	9154	7450	1703	over 400	51				

Sources: Household Survey in 1985. Central Statistical Office of Finland, Helsinki; Household Budget Research in Estonia in 1989.

Appendix 6.

Disposable income and its use of households of different size in Estonia in 1989, rubls/househol

	Workers and employees				Collective farmers			
	Number of households 1000's	Dis-posable income	Con-sump-tion	Saving rate-%	Number of households 1000's	Dis-posable income	Con-sump-tion	Saving rate-%
Total	326	5600	4990	10,9	275	8399	6608	21,3
1 pers.	85,9	3274	2990	8,7	49	5470	3761	31,2
2 pers	79	5100	4394	13,8	77	8010	6480	19,1
3 pers	68,5	6652	5866	11,8	38	8995	7135	20,7
4 pers	76,8	7164	6473	9,6	70	9654	7466	22,7
5 pers	11,9	8470	7974	5,9	28	10128	8630	14,8
6 and more	3,9	8905	7445	16,4	13	9527	7573	20,5
house-holds with children	176,4	6282	5733	8,7	154	8906	7035	21,0

Sources: Household surveys in 1971, 1976, 1981 and 1985. Central Statistical Office of Finland. Helsinki; Household Budget Researches in Estonia.

Appendix 7.

Distribution of households by size and income in Estonia in 1989, %

	Total	average income per member of household in month, roubles							
		up to 50.0	50.1- 75.0	75.1- 100.0	100.1- 125.0	125.1- 150.0	150.1- 175.0	175.1- 200.0	more 200.0
WORKERS AND EMPL.									
Total	100.0	0.2	1.9	3.2	8.2	11.7	10.8	13.5	50.5
1 person	100.0	0.0	0.0	1.7	2.1	2.4	4.2	6.1	83.5
2 persons	100.0	0.0	1.6	3.3	7.0	12.5	7.8	11.9	55.8
with children	100.0	0.0	3.8	6.2	14.8	22.2	9.2	15.4	28.4
3 persons	100.0	0.0	0.4	2.3	8.8	13.0	15.6	16.6	43.2
with children	100.0	0.0	0.5	2.9	10.9	15.6	15.6	16.8	37.7
4 persons	100.0	0.7	4.7	3.8	13.3	19.1	15.6	20.3	22.5
with children	100.0	0.7	5.0	4.1	13.4	19.8	16.8	20.4	19.8
5 persons	100.0	0.0	2.5	6.7	23.5	17.6	19.3	20.2	10.1
with children	100.0	0.0	2.5	6.7	23.5	17.6	19.3	20.2	10.1
6 and more persons	100.0	0.0	2.5	25.6	7.7	12.8	12.8	0.0	20.5
with children	100.0	0.0	20.5	25.6	7.7	12.8	12.8	0.0	20.5
Total househ. with children	100.0	0.3	3.6	4.8	13.4	18.7	15.0	17.9	26.4
COLLECTIVE FARMERS									
Total	100.0		0.4	2.2	6.5	9.8	9.5	11.3	60.4
1 person	100.0		2.0	0.0	6.1	0.0	2.0	2.0	87.8
2 persons	100.0		0.0	1.3	0.0	5.2	6.5	9.1	77.9
with children	100.0		0.0	0.0	0.0	11.8	23.5	17.6	47.1
3 persons	100.0		0.0	2.6	2.6	2.6	10.5	21.1	60.5
with children	100.0		0.0	3.4	3.4	3.4	13.8	24.1	51.7
4 persons	100.0		0.0	1.4	8.6	14.3	17.1	11.4	47.1
with children	100.0		0.0	1.5	9.0	14.9	17.9	10.4	46.3
5 persons	100.0		0.0	3.6	10.7	28.6	14.3	21.4	21.4
with children	100.0		0.0	3.6	10.7	28.6	14.3	21.4	21.4
6 and more persons	100.0		0.0	15.4	38.5	30.8	0.0	7.7	7.7
with children	100.0		0.0	15.4	38.5	30.8	0.0	7.7	7.7
Total househ. with children	100.0		0.0	3.2	9.7	16.2	15.6	15.6	39.6

Source: Household Budget Research in Estonia in 1989.

Appendix 8.

The structure of private consumption in 1937/1938-1990, %

	Finland					Estonia				
	1938	1980	1985	1989	1990	1937/1938	1980	1985	1989	1990
Food	35.2	20.9	19.5	16.7	15.9	42.8	36.0	36.5	33.9	30.1
Beverages and tobacco	6.5	6.6	6.4	7.0	7.0		15.2	14.9	12.3	14.8
Clothing and footwear	13.4	6.2	5.4	5.5	5.4	15.4	20.5	18.7	20.3	24.4
Gross rent, fuel and power	16.7	18.4	18.9	17.1	18.2	12.0	1.4	1.4	1.3	1.4
Furniture, furnishing, household equipment and operation	7.1	7.6	7.1	7.2	6.9		6.1	5.8	6.2	5.1
Medical care and health expenses	1.6	3.2	3.5	3.9	4.1		0.7	0.9	1.1	0.9
Transport and communication	7.9	17.1	17.8	19.2	18.4		4.0	4.1	3.8	3.5
Recreation, culture and education	4.8	9.5	9.7	10.3	10.7		9.4	11.3	9.8	8.7
Other goods and services	6.9	10.4	11.6	13.1	13.2	30.7	6.7	6.4	11.3	11.1
Total final consumption expenditures	100	100	100	100	100	101	100	100	100	100

Sources: Laurila, E.H.: Consumption in Finnish Economy in the years 1900-1975. The Research Institute of the Finnish Economy Serie B42. Helsinki, 1985, p. 362; OECD: National Accounts Volume II 1960-1987, Paris, Table 2.; National Accounts 1981-1990. Central Statistical Office of Finland, Helsinki, 1991, p. 84-86; State Statistical Office of Estonia.

Appendix 9. The structure of consumption of employees' and collective farmers' households in Finland and Estonia, %

	Finland				Estonia				
	1971	1976	1981	1985	1970	1975	1980	1985	1990
WORKERS AND EMPLOYEES									
Total expenditures	100	100	100	100	100.0	100.0	100.0	100.0	100.0
Food	27.3	25.3	26.1	24.3	39.4	38.1	40.4	36.7	34.6
Beverages	2.8	2.3	2.3	2.0	3.5	3.3	4.1	3.7	5.2
Tobacco	2.3	1.5	1.6	1.3	0.7	0.9	0.9	1.1	1.0
Clothing and footwear	8.4	8.1	7.1	6.9	20.7	20.1	21.1	20.5	18.6
Gross rent, fuel and power	20.6	21.1	19.1	19.0	4.6	5.2	5.0	5.1	4.7
Furniture, furnishing, household equipment and operation	7.4	7.2	6.6	7.1	4.4	4.7	5.1	4.9	5.1
Medical care and health expenses	2.6	2.3	2.0	2.7	1.3	1.4	1.4	1.3	1.1
Transport and communication	17.7	18.2	21.4	22.5	4.4	9.2	7.5	6.7	5.3
Recreation, culture and education	7.4	9.9	9.4	9.6	7.6	7.7	7.8	7.9	7.6
Other goods and services	3.5	4.1	4.3	5.0	13.3	9.3	6.8	12.2	16.6
COLLECTIVE FARMERS									
Total expenditures	100	100	100	100	100.0	100.0	100.0	100.0	100.0
Food	34.8	31.1	29.9	27.0	42.5	36.2	33.2	29.7	30.0
Beverages	1.9	1.6	1.4	1.3	5.5	5.4	5.2	4.7	7.1
Tobacco	1.8	1.0	1.1	1.0	0.7	0.8	1.0	1.0	1.2
Clothing and footwear	7.8	7.7	7.1	6.4	18.4	15.3	18.1	18.1	17.8
Gross rent, fuel and power	18.9	23.0	22.2	21.6	6.5	6.8	5.7	5.7	6.7
Furniture, furnishing, household equipment and operation	6.4	6.4	6.2	5.9	3.8	3.9	6.1	6.1	6.9
Medical care and health expenses	2.8	2.4	1.8	2.9	1.0	1.2	1.4	1.4	0.9
Transport and communication	18.4	17.5	20.9	23.2	3.6	9.7	11.6	11.6	7.3
Recreation, culture and education	5.4	7.0	6.5	7.4	3.4	4.0	6.8	6.8	6.8
Other goods and services	2.0	2.3	2.9	3.6	14.6	16.6	15.0	15.0	15.4

Sources: Household surveys in 1971, 1976, 1981 and 1985. Central Statistical Office of Finland. Helsinki; Household Budget Researches in Estonia.

Appendix 10.

**Private consumption of households in Finland and Estonia, mill. FIM,
mill RBL**

	1970	1975	1980	1985
FINLAND				
Durable goods	2436	6388	10765	19903
Semi-durable goods	3823	7516	14148	21774
Non-durable goods	10395	22351	42418	67614
Services	8346	19153	33852	64266
Total	25000	55408	101183	173557
ESTONIA				
WORKERS AND EMPLOYEES				
Durable goods	28707.2	48672.3	46905.4	55370.5
Semi-durable goods	66975.4	70737.4	77019.2	90270.3
Non-durable goods	136946.3	150296.7	165052.4	181496.5
Services	33765.6	41994.1	39363.4	43789.6
Total	266394.4	311700.5	328340.4	370926.9
COLLECTIVE FARMERS				
Durable goods	23322.7	49740.4	70868.7	126418.9
Semi-durable goods	60932.7	64472.9	109178.1	127714.1
Non-durable goods	142732.0	151538.9	198079.7	224611.2
Services	13976.5	21394.1	31849.0	37271.0
Total	240963.9	287146.2	409975.5	516015.2

Sources: OECD: National Accounts Volume II 1960-1987, Paris, Table 2.; National Accounts 1981-1990. Central Statistical Office of Finland, Helsinki, 1991, Household Budget Research in Estonia.

Appendix 11.

Consumption of food in workers' and employees' and collective farmers' households in Estonia, kg. (per member)

	Workers and employees						Collective farmers					
	1970	1975	1980	1985	1990	1991	1970	1975	1980	1985	1990	1991
Food												
Bread and cereal prod.	94.4	82.7	76.3	76.4	74.3	76.4	122.0	109.2	97.6	93.0	79.5	79.1
meat and meat prod.	72.8	76.0	79.0	78.8	81.5	59.6	71.4	70.1	73.6	75.7	73.2	62.2
fish and fish prod.	20.1	20.1	16.8	15.8	16.2	14.0	20.4	19.5	17.5	17.0	11.7	9.9
milk	403.2	416.6	437.0	435.4	452.1	387.8	439.5	419.3	431.5	422.3	404.3	367.3
cheese	3.1	3.1	3.4	3.6	4.7	4.1	1.8	2.3	2.1	3.1	3.5	3.2
eggs	226.8	210.0	241.3	217.3	216.3	236.0	229.1	235.6	252.6	245.9	260.2	266.7
fats and oils	12.4	12.3	13.3	13.7	12.0	11.8	11.4	12.7	12.6	12.6	10.5	9.9
fruit	40.2	44.0	39.8	42.2	33.3	27.1	38.3	30.2	31.8	36.8	33.8	24.8
vegetables	62.4	64.5	64.5	62.3	58.4	56.8	64.0	59.6	60.5	61.9	54.6	53.9
potatoes	117.7	106.9	101.7	95.2	93.9	98.4	173.9	154.0	151.7	127.2	113.6	125.4
sugar	23.0	20.4	18.8	18.5	17.5	14.3	24.7	21.7	19.7	19.5	15.5	12.9
other food stuffs	26.2	32.9	31.2	29.3	27.6	22.5	29.9	36.2	37.3	39.6	28.2	22.6
Changes, % (1970=100)												
	Workers and employees						Collective farmers					
	1970	1975	1980	1985	1990	1991	1970	1975	1980	1985	1990	1991
Food												
Bread and cereal prod.	100.0	87.6	80.8	80.9	78.8	81.0	100.0	89.5	80.0	76.2	65.2	64.8
meat and meat prod.	100.0	104.4	108.6	108.3	112.0	81.9	100.0	98.3	103.2	106.0	102.6	87.1
fish and fish prod.	100.0	99.6	83.3	78.7	80.4	69.5	100.0	95.4	85.4	83.0	57.5	48.4
milk	100.0	103.3	108.4	108.0	112.1	96.2	100.0	95.4	98.2	96.1	92.0	83.6
cheese	100.0	101.3	109.4	115.9	152.7	134.1	100.0	130.7	118.8	174.6	200.2	182.9
eggs	100.0	92.6	106.4	95.8	95.3	104.1	100.0	102.8	110.3	107.3	113.6	116.4
fats and oils	100.0	99.4	107.5	110.3	97.1	94.9	100.0	111.2	110.5	110.3	91.5	86.8
fruit	100.0	109.3	99.1	104.9	82.8	67.3	100.0	78.9	83.0	96.2	88.3	64.7
vegetables	100.0	103.4	103.4	99.9	93.7	91.1	100.0	93.1	94.6	96.8	85.4	84.3
potatoes	100.0	90.8	86.4	80.9	79.8	83.6	100.0	88.6	87.2	73.2	65.3	72.1
sugar	100.0	88.6	81.8	80.4	75.8	62.2	100.0	87.8	79.8	79.0	62.8	52.4
other food stuffs	100.0	125.5	119.2	111.8	105.5	85.9	100.0	121.1	124.8	132.4	94.4	75.7

Sources: State Statistical Office of Estonia.

Appendix 12.

Consumption of food of collective farmers' households in Finland and Estonia in 1989, kg

FARMERS	All households	average income per person, in month, roubles										
		50.1-75.0	75.1-100.0	100.1-125.0	125.1-150.0	150.1-175.0	175.1-200.0	200.1-250.0	250.1-300.0	300.1-350.0	350.1-400.0	over 400.0
broad and cereal prod.	85.7	82.9	53.7	64.3	60.1	65.6	77.9	84.6	95.2	102.9	137.0	145.8
potatoes	115.3	45.0	83.2	82.3	89.8	96.3	97.9	115.3	124.1	153.2	172.4	178.4
vegetables	59.1	14.6	37.1	33.6	44.0	42.5	48.1	61.4	67.1	79.6	90.9	104.9
fruit	43.6	14.8	22.6	24.1	34.1	24.0	43.8	43.5	49.9	54.8	55.5	83.2
sugar	28.5	41.2	18.7	22.5	23.6	22.6	26.0	24.1	34.0	33.5	44.6	46.4
fats and oils	12.7	11.3	12.2	13.9	13.9	8.9	9.5	12.3	11.7	12.3	20.0	18.3
meat	77.5	36.7	48.5	51.5	53.8	57.8	67.3	79.5	92.7	95.4	110.3	134.4
fisch	13.5	8.9	8.3	10.2	9.1	10.1	11.7	12.0	15.8	16.7	24.3	25.0
cheese	3.6	0.4	1.4	2.6	2.9	2.7	3.8	3.5	4.8	4.3	5.2	5.2
milk and dairy prod.	427.6	284.2	282.2	337.9	347.5	322.6	377.6	435.1	461.1	487.7	665.3	680.2
eggs	253.3	52.7	123.9	184.1	179.7	185.0	202.2	275.4	269.0	363.5	429.7	406.2
wine	2.2	0.0	0.4	0.5	1.4	1.6	1.4	2.9	2.3	2.7	3.3	4.7
brandy	21.8	4.5	4.7	14.3	11.6	15.2	11.7	25.5	28.4	33.1	30.1	43.1
other	1.0	0.0	0.0	0.9	0.4	0.6	0.9	1.4	1.4	1.0	0.1	1.9

WORKERS AND EMPL.	All households	average income per person, in month, roubles											
		up to 50.0	50.1-75.0	75.1-100.0	100.1-125.0	125.1-150.0	150.1-175.0	175.1-200.0	200.1-250.0	250.1-300.0	300.1-350.0	350.1-400.0	over 400.0
broad and cereal prod.	71.5	9.6	55.1	58.5	55.3	66.0	69.8	65.1	75.6	83.8	90.5	90.9	109.9
potatoes	88.3	9.1	71.5	75.1	72.7	79.7	87.8	85.8	90.6	100.0	116.5	96.0	124.0
vegetables	61.3	5.9	31.6	56.4	41.4	55.7	56.4	57.8	66.2	74.9	91.3	76.2	93.3
fruit	38.2	9.1	18.1	33.1	26.5	32.4	35.6	37.3	41.1	46.4	57.1	46.3	61.5
sugar	28.9	3.1	21.1	24.4	24.4	27.0	27.0	27.9	29.3	33.0	38.3	36.9	41.3
fats and oils	13.0	2.0	9.4	11.6	10.0	12.6	12.5	12.3	13.6	14.6	17.3	15.3	17.8
meat	79.3	14.1	50.1	59.7	54.6	72.0	74.7	74.2	86.7	96.0	109.3	104.7	125.6
fisch	17.2	2.0	10.5	13.4	10.6	15.3	16.6	15.8	18.9	19.9	24.1	32.5	26.1
cheese	4.4	0.3	3.0	3.6	3.0	3.9	4.0	4.6	5.2	4.8	5.8	5.4	6.5
milk and dairy prod.	441.0	50.1	308.3	398.9	350.0	410.9	391.9	421.2	481.7	505.8	575.9	545.6	623.5
eggs	215.7	26.5	142.0	196.5	155.4	191.1	198.3	202.3	227.8	280.0	284.0	263.0	332.2
wine	2.5	0.2	0.9	1.2	1.0	2.2	2.3	2.4	2.3	4.1	4.5	2.6	5.0
brandy	14.0	3.5	6.1	8.9	6.7	10.4	14.0	14.4	13.3	20.2	20.0	35.2	21.7
other	4.1	0.4	2.0	3.3	2.9	3.9	4.2	4.9	4.5	5.0	5.0	4.2	4.9

Appendix 13.

Food quantities that could be bought for an hourly wage in Finland and Estonia in 1980-1992

	Finland 1989		Estonia 1989	
	price of kg. FIM	for hourly wage, kg	price of kg. rouble	for hourly wage, kg
Bread	5.93	7.38	0.49	3.18
Milk	3.70	11.84	0.24	6.50
Butter	40.40	1.08	3.44	0.45
Cheese	43.08	1.02	2.97	0.53
Potatoes	3.30	13.27	0.16	9.75
Meat	32.62	1.34	1.76	0.89
Cafe	34.42	1.27	26.87	0.06
Sugar	8.88	4.93	0.80	1.95
Hourly wage	43.79		1.56	

Appendix 14.

Durables per 1000 inhabitants in Finland and Estonia

	Finland				Estonia						
	1971	1976	1981	1990	1992	1938/ 39	1960	1970	1980	1985	1988
Telephones	131	260	311	356	6	25	...	35	88	108	130
TV-sets	249	350	398	446	...	...	31	202	288	349	369
Refrigerators	215	336	370	389	...	...	6	123	363	394	394
Washing machines	188	278	326	352	...	...	13	177	233	235	269
Sewinh machines	104	162	205	231	...	...	100	170	217	221	222
Vacuum cleaners	205	307	350	394	...	...	22	126	171	201	226
Bicycles	...	...	...	203	9	117	167	217	223	266	283

Sources: Central Statistical Office of Finland, Statistical Reports TU1987:1, Helsinki Budget Survey 1990 (unpublished) Eesti NSV rahvamajandus 1988.aastal. Statistika aastaraamat - Tallinn: Olion, 1989, lk.210, 216; eesti NSV rahvamajandus 1980. aastal. Statistika aastaraamat - Tallinn: Eesti Raamat, 1977, lk.201; Eesti arvudes 1989. Lühike statistika kogumik. - Tallinn, 1980.

Appendix 15.

Number of cars in Finland and Estonia

Year	Number of cars			Number of cars per 1000 inhabitant		
	Finland	Estonia		Finland	Estonia	
		private	total		private	total
1922	1891 ¹	...	256	0.9	...	0.2
1938	27788	...	3227	7.6	...	2.8
1950	26814	1298	...	6.7	1.2	...
1960	183409	12225	...	41.0	10.0	...
1970	711968	27337	...	151.0	19.9	...
1980	1225931	117495	123448	257.0	79.1	83.2
1985	1546094	167376	172846	316.0	108.5	112.1
1986	1619848	175957	181686	330.0	113.1	116.8
1987	1698671	187551	193523	344.0	119.4	123.2
1988	1795908	198257	205814	363.0	126.0	130.9
1989	1908971	214132	222094	384.0	135.2	140.3
1990	1938856	226972	241664	388.0	144.5	153.9
1991	1922541	245478	261086	363.0	157.2	167.2

1) 1923

Sources: Liikennetilastollinen vuosikirja. Tilastokeskus, Helsinki, 1992; Eesti 1920-1930. Arvuline ülevaade. Riigi Statistika Keskbüroo, Tallinn, 1931; Eesti 20 aastat iseseisvust. Konjunkturiinstituut, Tallinn, 1939; Datas of State Statistical Office of Estonia.

6. PUBLIC SERVICES

By Maija-Liisa Järviö and Urve Venesaar*

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6.1. Public expenditure

Public expenditure includes public consumption and investment expenditure and current transfers. Public expenditures can be further broken down according to the purposes for which they are used. One possible classification is: 1) individual services, ie. education, social services and health care, which are also called welfare services and 2) collective services, ie. administration, public order and safety, defence, etc. In this project we concentrate on the development of welfare services in Finland and Estonia.

In Finland public expenditure accounted for 41 per cent of GDP in 1990 (Table 1). The ratio have risen by 11 percentage points in 1970-80 and by five percentage points in 1980-90. The rapid growth rate is caused by the reforms of primary school (1972), The Primary Health Care Act (1974) and several social reforms in the 1980's. About half of total public expenditure is public consumption expenditure, which are mainly used to product public services.

Table 1. The ratio of public expenditure to GDP in Finland and Estonia, %

	1960	1970	1980	1990
FINLAND				
Total	26.7	30.6	36.8	41.3
Consumption	11.9	14.5	18.1	21.1
Investment	4.5	3.5	3.6	3.5
Current transfers	9.8	12.2	14.5	16.4
Other expenditure	0.4	0.5	0.6	0.4
ESTONIA				
Total				23.1
Consumption				12.2
Investment				2.5
Current transfers				8.4

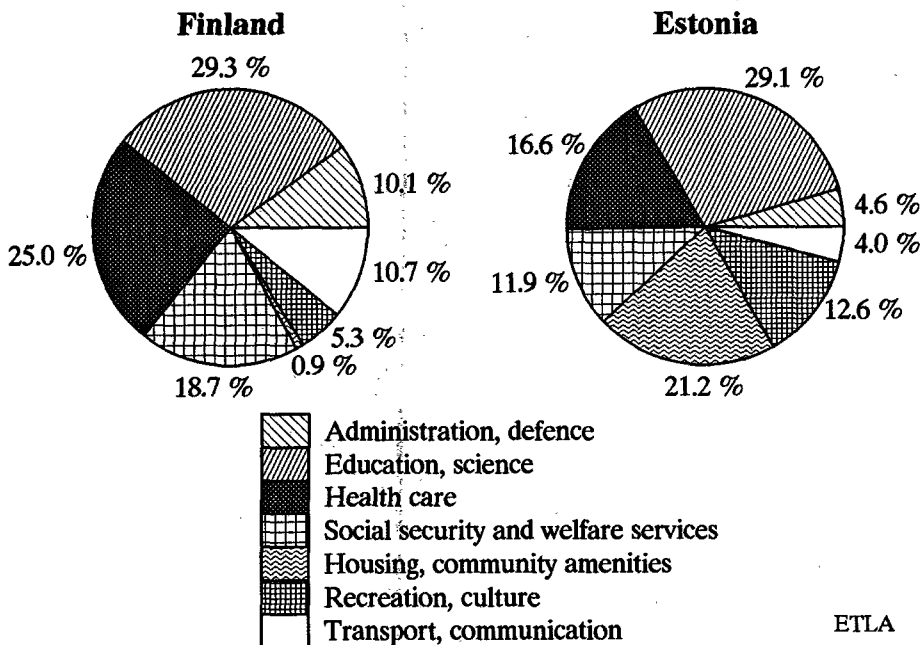
Source: National Accounts in Finland 1981-1990; Information prepared for International Monetary Fund (IMF) in November 14-15, 1991, on the basic indicators of the Estonian economy; Statistika aastaraamat 1991. Eesti Vabariigi Riiklik Statistikaamet. Tallinn, 1991, p. 64.

Of wage-earners 38 % worked in public sector in 1989 and according to a report by the Government Institute for Economic Research (VATT) nearly 80 % of these persons worked in public services: 23 % in social services, 28 % in health care and 26 % in education.

The share of public expenditure in the national economy of Estonia has changed little during last decades. Public expenditure accounted for 23 % of GDP in 1990, which is almost half of the corresponding share in Finland. About one half of public expenditure is consumption expenditure.

In Finland education, health services and social services (welfare services) are the most extensive task areas and, accounting for nearly two-thirds of public consumption expenditure. The traditional collective functions including administration, internal and external safety are, used one-fifth of all public consumption expenditure.

Figure 1. The structure of public expenditure in Finland and Estonia in 1990



Differences between the public consumption structures of Finland and Estonia are considerable. In Finland more emphasis has been laid on education, health care and social security. In Estonia the greatest expenditure has been made on housing and community amenities, education and science (Appendix 1, Figure 1).

In Estonia two thirds of public consumption expenditure entails provision of education, health care, culture and social security services, which were free for the population. The small share of finances allocated to public services can be explained by the relatively low salaries in this sector (in health care 66 %, education 71 %, culture 65 % of the average salary of the republic in 1990). At the same time the number of people employed in this sphere has been relatively large.

In Estonia large sums have been allocated in the government budget for the financing of housing and construction, while the share of state-owned flats is approximately 70 % of the whole housing stock. At the same time the rent was very low and by no means covered maintenance costs. Plans call for raising rents manifold in 1992, however, thereby considerably reducing the subsidization of housing. The state-owned flats will eventually be privatized.

The structure of Estonian public expenditure does not include state defence expenditure, since this was financed from the Soviet Union budget. This fact reduces the comparability of public expenditure in Finland and Estonia and increases the relative share of welfare services in the structure of Estonian public expenditure.

An important objective of public expenditure is to develop the structure of the economy by investment in infrastructure. Investment expenditure covers about eight per cent of public expenditure and investment in transport and in education predominate in the public investment in current transfers of Finland.¹⁾ In Estonia the investments have decreased almost by half in 1980-1990 and represented only 2.5 % of GDP in 1990. Over two thirds of investments in Estonia were made in housing and education.

1) The Finnish Economy to 1994. Ministry of Finance. Helsinki, 1989.

The aim of current transfers is to improve the living conditions of people whose possibility to live a normal life is otherwise difficult. The main part of current transfers in Finland and Estonia include subsidies, social security benefits. In Finland they also include social assistance grants and transfers to domestic sectors.

In Estonia most of the social security expenditures are current transfers but the share of these benefits in GDP was only 8 % in 1990. In Finland in 1989 the share of total subsidies going to enterprises was 17 per cent and to households and nonprofit institutions 24 per cent. The main part of the subsidies to households were social security benefits and social assistance grants. Support rendered by means of the tax system, ie. tax expenditure, results from tax concessions granted to certain potential sources of tax revenue. In 1988 tax expenditure on social security, health care and education, science and culture were FIM 13.5 billion.

The administration and financing of welfare services in the public sector in Finland are based on the responsibility of local authorities to organize the provision of services, a mixture of local and central government funding and supervision and control by the central government. The term local authorities denotes municipalities and federations of municipalities, which are voluntarily established to provide certain services for citizens belonging to the members of the federation.

Welfare expenditure covers about 80 per cent of consumption expenditure of municipalities. These expenditure are funded by general government (43 %), by municipalities (46 %) and by users (11 %). The system of state subsidies has been based on costs of services. The proportion of costs which is financed by the state has depended on the economic situation of a municipal and has varied between services.

Public services in Estonia were mostly (over 60 %) financed from the government budget. Moreover, budget revenues of the central and local governments formed an integral whole up to 1991. Revenue and expenditure in the budgets on all levels were planned from above. Almost all (98 %) taxes and other revenue were included in the central government budget, from which they were allocated to the local budgets, mainly for the financing of public services. The economic and social situation in the various regions was not taken into consideration to a sufficient extent. That was one reason

for the formation of the underdeveloped borderlands in Estonia. In the course of the administrative reform in Estonia (since 1990) the local governments have become more independent in drawing up their budgets and the principles of budget formation are going to change. In connection with rearrangements in the budgetary financing and in economy as a whole the budgetary expenditure on public service and its structure will probably change as well.

In Estonia over one-fifth of public services was financed by state-owned, cooperative and communal enterprises and collective farms. A smaller share was derived from centralized all-Union funds and from trade-union budgets. Military expenditure were financed from the Soviet Union budget. In addition, enterprises provide considerably large sums for the construction of dwellings, for the maintenance of kindergartens, for feeding their workers and for other needs, which need not be reflected in separate entries and it is not possible to consider these expenditures. For this reason the actual consumption expenditure in Estonia is somewhat higher than that covered by the statistics.

In the future the share of enterprises and organizations is probably going to decrease due to the heavy tax burden which reduces their finances. The taxes for enterprises are increasing in connection with the replacement of the direct financing of health care with the medical treatment insurance system (since 1992) and with a forming social fund for financing other social expenditure (Appendix 2).

In conclusion, in Finland and Estonia the responsibility to provide and finance welfare services lies with the public sector. These services are mainly free of charge for users. The main differences in public expenditure of Finland and Estonia relate to

- the share of public expenditure in GDP;
- the growth rate of public expenditure;
- the structure of public expenditure;
- the sources of revenue;
- the administration of the public sector and its financing.

6.2. Social security

The aim of social security is to improve the welfare of people and compensate for the differences between incomes to ensure a normal standard of living.

The need for public services and especially for social security services depends on various demographic and socio-economic factors, ie. average lifetime, income level, the average size of families and the number of non-working people and all other groups who need social aid.

The number of those under 15 years and over 65 years is the demographic indicator of the population at a non-productive age. In Finland the share of these persons is somewhat lower (19 % in 1990) than in Estonia (22 %) but the share of those over 65 years of age is nearly the same.

The need for social security in Finland and Estonia should be similar on the basis of the similarity of demographic indicators. In Estonia the share of both children and elderly persons is more stable than in Finland, where the share of children is decreasing faster and the share of the elderly persons is increasing faster.¹⁾ In recent years the share of people over 70 years of age temporarily has decreased in Estonia (Table 2).

Table 2. The share of elderly persons in the population of Finland and Estonia, %

	1970		1980		1990	
	Finland	Estonia	Finland	Estonia	Finland	Estonia
In retirement age						
60 years and over	14.4	16.8	16.7	16.3	18.4 ¹	17.3
65 years and over	9.3	11.9	12.1	12.6	13.3 ¹	11.7
70 years and over	5.5	7.3	8.0	8.2	8.9 ¹	7.4

¹ 1989

Sources: Statistical Yearbooks of Finland 1982, pp. 39-40; 1990, p. 70; 1991, p. 399; Eesti arvudes. Lühike statistika kogumik. Tallinn, 1990, p. 9; Statistika aastaraamat 1991. Eesti Vabariigi Statistikaamet. Tallinn, 1991, pp. 10-11.

1) Chapter 3 (E. Hindov).

In Finland the share of elderly persons is steadily increasing because of the rise in life expectancy and a high birth rate in the late 1940's and early 1950's. In Estonia both have been comparatively stable. In 1970 the life expectancy of Estonian females was longer (74.5) than that of Finnish females (73.6), but today it is the other way around: the life expectancy in Finland is 70.5 for males and 78.7 for females and in Estonia 65.3 and 74.9 respectively.¹⁾ In Estonia the share of non-working age population has increased in the last decade because of the increase in the share of people in retirement age.

Factors of importance for social security include the purposes ascribed to the social policy, which are expressed in the setting of the retirement age and in the choice of other contingent for social security. Hence, due to the lower retirement age (60 for males and 55 for females) in Estonia the needs for pension insurance are relatively higher than in Finland.

On the one hand, the needs of social security and maintenance depend on the number of dependents in society. How to meet those needs depends on the level of economic development of the country and the social and economic policies of the government. Differences in the latter are the reason for the different levels of social maintenance and insurance in Estonia and Finland. On the other hand, the proportion between the non-working and working population determines the possibilities of social security. The growth of the also share of non-working people of retirement age in Estonia can be explained by the effect of the new economic policy. The non-working portion of the working age population increased at the same time on account of the growth of the number of disabled persons and other groups (women on maternity leave, persons taking advantage of the lower retirement age, unemployed persons, and those not seeking work). There are relatively more persons of working age in the total population in Finland than in Estonia. This creates better conditions for Finland to support the non-working population. In this chapter the Finnish and Estonian social security systems are analyzed by classifying them.

1) Statistical Yearbook of Finland 1982, p. 71; Demographic Yearbook 1989. United Nations. New York, 1991, pp. 470-495; Eesti NSV rahvamajandus 1988 aastal. Statistiline aastaraamat. Tallinn, 1989, p. 21; Tablitsa smertnosti za 1989-1990 g. po Estonskoi Respublike. Moskva, 1991.

One way to consider the Finnish and Estonian social security systems is to classify into the financial assistance programs, the health security programs (which are considered in Chapter 6.3) and the social services according to the purpose of the assistance. The social insurance systems of Finland and Estonia include pension insurance, sickness insurance, family and child benefits, unemployment protection, while Finland also provides occupational accident insurance and local authority income support (Appendix 2). The Estonian and Finnish social security systems will be compared on the basis of the above classification.

6.2.1. The development of Finnish social policy¹⁾

In the beginning of the 20th century the most significant reform in social policy was the National Pensions Act in 1937. Before that reform the main form of social security was assistance to the poor. According to the National Pensions Act all residents of Finland were entitled to National Pension Insurance benefits, including old-age, invalidity, unemployment and survivors' pensions. Together with the Maternity Benefit Act in the same year and the Accident Insurance Act in 1935, the emphasis in social insurance shifted from insurance of the employees to national insurance.

After World War II helping the wardisabled, war widows and orphans and carrying out the resettlement of evacuees was the most urgent task. In the 1940's an important sociopolitical reform was a National Family Allowance in 1948. According to the reform every Finnish child under 16 years of age is entitled to a child allowance, which is determined by the order of birth of the child.

The next significant reform was that of the National Pensions Act in 1956. Through the reform, income security provisions for the elderly and disabled were extended to cover all residents of Finland above the age of sixteen. The national pension became a flat-rate, means-tested benefit, which was intended to provide a minimum of basic security. Because national pensions were not earnings-related, another compulsory old-age and invalidity program was created in 1961, occupational pension insurance.

1) The text describing the development of Finnish social policy is based on KELA's publication by J. Pajula, E. Kalimo: *Social Security in Finland*. Helsinki, 1989.

The National Sickness Insurance program was created in 1964. As compensation for loss of income (sickness and maternity allowances), National Sickness Insurance improved the income security of the population of working age: as a system providing for refunds of medical expenses, it promoted the development of out-patient health care. The National Sickness Insurance included maternity insurance, which provided each mother a maternity allowance and access to maternity care measures.

Through the occupational pension insurance the labor market organizations became actively involved in the development of social security and earnings-related social security became the primary point of interest. Along with income policy, social security was made part of an overall policy based on economic growth. The state and local government pension programs were unified along the lines of the private-sector pension insurance. Survivors and unemployment pensions were gradually combined with the National Pension Insurance and occupational pension programs (in 1967, 1969 and 1971) and the pension insurance of farmers and self-employed persons with occupational pension insurance (in 1970). An across-the-board raise for future pensions to equal 60 % of earned income was carried out in 1975 and a group life insurance program in 1977.

The abolishment of means-testing in National Pension Insurance was planned to be implemented in four stages. While the first three stages were carried out in 1980-85, the final stage has yet to be implemented. Flexible pension age provisions in National Pension Insurance, occupational pension insurance and public-sector pension programs were carried out in 1986-1989. Due to many reforms concerning social security, related expenditure, specially pension expenditure, have increased rapidly specially in 1980's.

After World War II Finland grew relatively fast into a society in which all citizens are provided with income security under social security programs. Every resident of Finland is eligible for social insurance benefits irrespective of citizenship (Appendix 2).

The most important social services have been the care of the elderly and the disabled and children's day-care. Services have been arranged both in institutions and as out-patient care.

The first day-care centers were established in 1880's. The law concerning state subsidy for day-care centers was given in 1927, although the first funds for day-care centers were in the state budget in 1919. According to the law passed in 1936 municipalities had a duty to establish an institutional framework to promote children's home care. The most important point in children's day-care was the law in 1973: the law gave administrative and economic framework to develop children's day-care and municipalities were required to provide day-care corresponding to the demand for it. Municipal day-care in families had been begun in the end of 1960's but its growth begun after the law in 1973. In the 1980's places in children's day-care have been increased by two thirds. It has been estimated that half of the children under seven years of age would need day-care and in 1990 the shortage of day-care places was estimated at only seven per cent. Local authority day-care facilities can now accommodate over 200 000 children, but the overall objective is to enable all parents of children under the age of three to place their children in local authority day-care if they so desire.

In past decades the care of the elderly was centralized to the institutions. In the 1970's and 1980's the aim has been to increase home care. In 1960 there were over 27 000 places in homes for the elderly, the amount increased until the end of 1970's but subsequently diminished in the 1980's and was 27 000 places in 1990. Because the number of the elderly has increased during the last three decades, in the 1980's in homes for the elderly there was a place for every tenth person over 75-years old, when the relation in 1960's was twice as high.

In a time when places of homes for the elderly have decreased, the amount of service-houses and home-help have increased. According to the recommendation of the National Agency for Welfare and Health the amount of places in homes for the elderly should be 7-8 percent of those over 75 years. In 1990 202 000 families and 18 % of those over 65 years, received domestic help provided by local authorities.

Social services are provided by local authorities, either on their own, with their co-operation, or under their supervision. Services are financed by state subsidies, local taxes and userfees (Table 3).

Table 3. Expenditure and financing of certain social services in Finland in 1990

	Consumption expenditure FIM million	Financing, %		
		State	Munic.	Users
Children's day-care	3967	43	47	10
Day-care in families	2495	42	45	14
Homes for the elderly	3075	39	42	18
Home help	1628	42	45	12

Source: Social Security in 1990. Ministry of Social Affairs and Health. Helsinki, 1992, p. 67, pp. 80-82.

6.2.2. The development of social security in Estonia

Systematic organization of social security started gradually in the first years of the independent Republic of Estonia. In 1925 the Social Security Act was adopted in Estonia which established social security principles recognized in European countries. An independent Ministry of Social Security was founded in 1936. Up to then social security was administered by the Ministry of Health and Social Security programs. Child welfare was to be separated from other social security. After World War II child care was borne into the sphere of health care and education. The present social maintenance of Estonia is dealing with the elderly and disabled persons (both adults and children). But for better comparison child welfare problems are also considered here under social security.

In 1937 financial support and services were rendered to 59 000 persons, ie. 5.2 % of the population. Social security expenditures were mainly divided between the state (40 %) and municipalities (55 %), while the share of private organizations was 5 %.

The state primarily took care of children and the mentally ill. The task of municipalities was to establish homes for elderly persons, invalids and children, as well as taking care of the poor and the disabled. The state supported the maintenance of wards by municipalities and private organi-

zations. Social maintenance was divided into open (medical care free of charge and subsidies to the disabled, sick persons and their families), that are social insurance measures, half-closed (communal flats and alms-houses for social maintenance), and closed (children's homes, homes for the elderly, homes for the mentally ill and blind persons).

The development of social security is reflected also in the development of retirement insurance. Pensions were first established for the veterans of the War of Independence and their families in the independent Estonia. Later pensions were awarded to several groups of civilians. An Act passed in 1920 reestablished the previous pensions of Russia. In 1921 pensions were awarded to those who participated in the establishment of the Republic, in 1924 to state and municipality employees, to military men, in 1926 to employees of state-owned enterprises. In 1936 two new acts combining these laws were adopted: the Pensions Act and the Pension Act for Military Personnel.

In 1939 1.5 % of the Estonian population received a pension, 3 % of the population received disability or old-age insurance and 20 % sickness insurance.

In 1940 there were 37 social maintenance institutions for over three thousand persons in Estonia. The prewar level was reached only after 1950. In 1950-1980 the number of places in institutions and number of wards doubled. During the last decade (1980-1990) these indicators have somewhat decreased. But the need for inpatient treatment has not decreased. In 1990 a high number of persons waited to be admitted to those institutions.

A large part of the homes for the elderly, disabled persons and children are presently in old buildings adopted to social maintenance. They need capital repairs and are often overcrowded. The shortage is especially great in homes for the mentally ill and children.

In the 1970's some homes for the elderly were also established by collective farms. In 1976 homes for the elderly were transferred to the administration and financing of local governments. The central government supports them with capital investments. Specialized institutions for the mentally ill remained under the central administration.

Rendering of social aid to elderly and disabled persons at home started in Estonia in 1986. In 1991 there were over 23 000 elderly and disabled persons living alone in Estonia. One third of them (7 % of the population over 70 years of age) needed social care. In 1990 3600 elderly persons received out-patient social aid and 1550 inpatient social aid, all together 2/3 of registered requests.

In 1956 the State Pensions Act went into effect. As a result pensions increased two times. The state started to support mothers with many children and unmarried mothers. In 1965 collective farm pensions were established. The pensions of collective farmers were initially three times smaller than state pensions due to their low wages. After the wages of agricultural workers and collective farmers were raised in the 1970's and 1980's the average collective farm pensions approached state pensions.

The Soviet pension laws established the pension age of 60 for males and 55 for females and required lengths of service of 25 and 20 years respectively. Such requirements were valid also in several socialist countries.

In April 1991 a new pension act came into force in Estonia, according to which a person can get only one of five possible kinds of state pensions. In addition to that the employers pension and voluntary retirement insurance systems are under elaboration. The new law did not change the age-limits, but it changed the order of calculating the length of service and the pension itself. Up to then the pension depended only on the length of one's service and the average labor income. The new law connects the calculation of pensions also with the minimum wage.

In 1990 total expenditure on social security and welfare services accounted for 10 % of the GDP, most of which consisted of pensions and subsidies. Thus the share of services is small, only 14 % of the total social security expenditure (Appendix 3). Social services for children (day-care and children's homes) cover about 60 % of state budgetary expenditure on social services. Nearly one half of the budgetary service expenditure for the elderly and disabled is used for inpatient services (Table 4). Nearly a half of budgetary expenditure for the elderly and disabled are financed from the central government budget. Expenditure for children are financed mostly from local government budget.

Table 4. State budgetary expenditure on social services in Estonia in 1990

	Mill. rubles	%
Total services	60.38	100.0
For the elderly and disabled	24.17	40.0
Inpatient care		
- homes for aged and disabled people	13.71	22.7
- homes for disabled children	12.24	20.3
Outpatient care	1.47	2.4
- home help	0.50	0.8
Other	9.96	18.4
For children ¹	36.21	60.0

¹ Children day-care and child welfare.

Source: Ministry of Finance of Estonia.

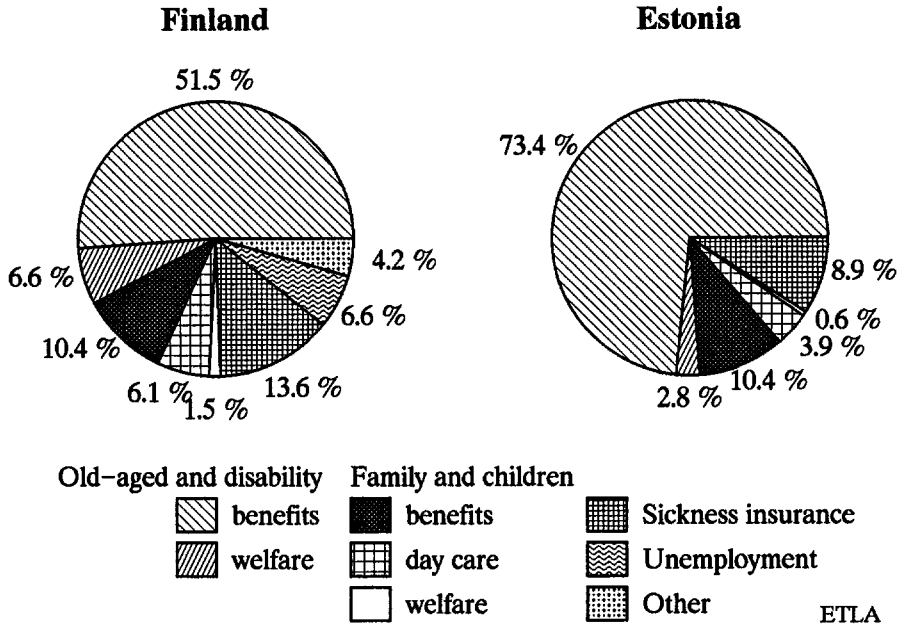
6.2.3. A comparison of social security in Finland and Estonia

The comparison of the social expenditure with the GDP gives an idea about the relative size of these expenditure. Estonia has lagged behind Finland by the share of social expenditure in GDP. Estonia has by now reached the level Finland attained in 1970 (Appendix 3). The share of social security expenditure (excluding health services) of GDP in Finland in 1990 was 21 %, over two times bigger than in Estonia in 1990 (10 %).

The expenditure on social maintenance and social insurance in Finland have increased more rapidly than in Estonia. In the 1960's the social expenditure per capita increased slowly in Finland since the benefit funds were small and the creation of the system of social insurance was unfinished. In the 1970's the growth rate of social expenditure increased both in Estonia and in Finland. Only the growth rate decreased in the 1980's.

In Estonia over 60 % of expenditure on social security is paid as pensions, in Finland this share is over 50 %. Benefits and welfare for elderly and disabled persons make up 3/4 of social security expenditure in Estonia and about 60 % in Finland. The share of expenditure on family and children in Finland is bigger than in Estonia (Figure 2, Appendix 3).

Figure 2. Structure of social security expenditure in Finland and in Estonia in 1990



The system of pension insurance of Finland is different from that of Estonia. In Finland it consists of many stages, a person may receive pension from different foundations. In Estonia there were state and kolkhoz pensions and no unemployment insurance until 1991. According to the new Pensions Act (1991) there is only one state pension system in Estonia now.

The general retirement age for the national pension is 65 in Finland. There are differences in retirement ages between occupational pensions, for instance, it is 65 years in private sector and 63 years in public sector. Due to the lower retirement age the share of people of retirement age in Estonia exceeds the share in Finland (in 1990 20 % and 13 % respectively). At the same time the share of those who receive pension benefits is about the same in Estonia and in Finland because the pension system in Finland allows one to go into retirement before reaching the official retirement age (Table 5).

Table 5. Structure of pension beneficiaries in Finland and Estonia, %

	1980		1990	
	Finland	Estonia	Finland	Estonia
Persons getting pension, % of population	20.2	21.2	22.7	23.4
% of pensioners, total	100.0	100.0	100.0	100.0
- Old-age pension	63.1	76.2	65.0	77.1
- Disability pension	28.4	14.2	26.6	10.6

Sources: Social Security in 1990. Ministry of Social Affairs and Health. Helsinki, 1992. pp. 55-58 ; Eesti arvudes 1989. Lühike statistiline kogumik. Tallinn, 1990, p. 9; Statistika aastaraamat 1991. Tallinn, 1991, p. 11.

The share of old-age pension beneficiaries in the total number of pensioners in Estonia is considerably higher than in Finland due to the differences in the pension benefits systems, especially the different retirement age. In Finland the share of old-age pension beneficiaries in the total population was 15 % in 1990 and that of disability pension beneficiaries 6 % in 1989, while in Estonia the corresponding shares were 18 % and 2.5 %. Such a big difference may be due to the difference in requirements for the pension age and the length of services, but also in needs for disability insurance.

Table 6. Average pension in current prices in Finland and Estonia (mk/per month, rubles/per month, % of average wage)

	Finland		Estonia	
	1980	1990	1980	1990
Average wage	3686	9352	189	341
All pensions	1440	3896	66	109
% of average wage	39	42	35	32
Old-age pension	1475	3924	71	113
% of average wage	40	42	38	33

Sources: Ministry of Social Maintenance of Estonia; Ministry of Social Affairs and Health of Finland.

Expenditures on pension benefits and the size of the average pension have grown more rapidly in Finland than in Estonia. In Estonia the average pension was about 1/3 of the average wage, in Finland about 40 %. In practice the pension can be estimated by the ratio to wages and by its purchasing power. During the 1980's in Finland average pensions grew more rapidly than average wages but in Estonia the growth of wages was stronger (Table 6). In Estonia about one-third of pensioners continue working because of the necessity of bringing home extra incomes in addition to the quite low pensions. Working pensioners can be on a job and receive a limited pension at the same time.

During recent years the material situation of pensioners of Estonia has sought to be improved with the establishment of a minimum pension (in 1991 and 1992 provisionally the equal living allowance for all pensioners), raising it in accordance with the cost of living. But the economic situation of the pensioners continues to deteriorate.

In Finland services for elderly and handicapped persons include home help and other external services, pensioners' dwellings, homes for the elderly and care of the handicapped. The main type of care of elderly and handicapped persons in Estonia are homes for the elderly and homes for the mentally ill. There are only a few dwellings in Estonia for pensioners. Home help delivery began in Estonia in 1986 and is underdeveloped.

In Finland social services for children and families include children's day-care, child welfare work and youth care services. Estonian institutions of youth care belong to the health care system (homes for children up to four years old) and public education system (children's day care centres and homes for children over four years old). Estonian social maintenance system includes only children's homes for handicapped children (four homes for 500 children).

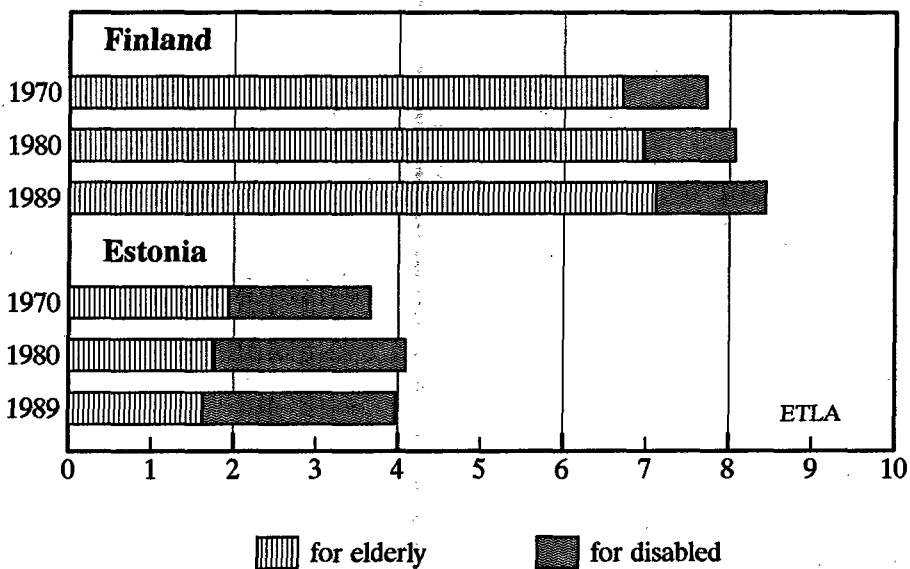
In Finland there are various kinds of social services for elderly and handicapped persons. In the care of elderly persons the backwardness of Estonia per 1000 old-aged is 4-fold. In Estonia the number of places in institutions for handicapped people per 1000 inhabitants is 1.8 times as big as in Finland (Table 7, Figure 3). There are differences in the quality of help as well as in the principles of organizing the care. In Estonia the main stress is laid on inpatient care, while Finland has concentrated on developing outpatient care.

Table 7. Number of places in institutions of social maintenance in Finland and Estonia

	Finland			Estonia		
	1970	1980	1989	1970	1980	1990
Per 1000 inhabitants						
Inpatient care	7.7	7.3	7.0	3.7	4.1	3.8
- homes for elderly	6.7	6.3	6.0	1.9	1.8	1.4
- homes for disabled	1.0	1.0	1.0	1.7	2.3	2.3
Outpatient care	..	0.8	1.5	..	..	..
- dwellings for elderly	..	0.6	1.1	..	..	0.2
- dwellings for disabled	..	0.1	0.4	..	..	..
Per 1000 old-aged						
- total for elderly	71.7	57.8	55.2	16.2	14.2	14.0
- in homes for elderly	71.7	52.6	46.9	16.2	14.2	12.2
Per 100 children in day-care institutions	3.3	13.0	27.0	50.0	63.0	60.0

Sources: Ministry of Social Affairs and Health of Finland; Ministry of Social Maintenance of Estonia.

Figure 3. Number of places in institutions of social maintenance in Finland and Estonia, per 1000 inhabitants



During the 1980's the number of places in Finnish homes for the elderly have not increased, the number of places in homes for disabled persons has decreased while there has been an increase in the number of places in dwellings for elderly and disabled persons.

In Estonia the volume of institutional social maintenance has been fairly stable, while open maintenance has been developed only recently. In Finland every sixth (18 %) elderly and disabled person was delivered home help already in 1980. In Estonia two elderly and disabled persons per 1000 inhabitants (1.5 % of elderly persons) received home help in 1990.

The network of pre-school children institutions is more extensive in Estonia. The number of places in children's day-care centres per 100 children is twice as large in Estonia than in Finland. Including family day-care in Finland, in both countries 60 % of children at the pre-school age were delivered day-care services.

To sum up, it must be said that in Estonia there is no such variety of social services as in Finland. Rendered services are of low quality because of the shortage of means allocated for this purpose and of the depreciation of existing material basis. There is also a shortage of qualified staff in the Estonian social maintenance system.

Inflation and the fast increase of the cost of living require frequent raising of the minimum wage and pensions (or living allowances) together with the payment of ever larger compensations to the risk groups.

In connection with new economic policy, differences in incomes of individuals are increasing and that determines the formation of new social security policy as well. If Estonian economic strategy and social policy proceeds from the experience of Nordic countries, this would mean a rapid increase of social expenditures.

Conclusions:

The public sector in both countries has taken the responsibility to produce day-care of children and the care of elderly and disabled persons. Taking into account the age structure of population there are no significant differences in the need of social security between Estonia and Finland. Although

the share of pensioners in the total population are alike, but quite great part of Estonian pensioners (about one-third in 1990) continue working because of the necessity of earning extra incomes in addition to the quite low pensions.

Differences between Finland and Estonia prevail in

- social security and social maintenance expenditure;
- structure of transfers;
- variety of social services;
- retirement age and the required length of service;
- social policy, assistance programs;
- development tendencies of social maintenance.

6.3. Health care

Health policy programs in many countries also include the aim of ensuring equal access to health services, regardless of income or region of patients. To facilitate this, the public sector has often at least partly taken responsibility to finance and to provide health services.

The organization of health services are divided to the institutional care, ie. hospital care and to the ambulatory care.

6.3.1. The development of health care in Finland

Already at the end of the 1800's a system of municipal physicians was in place. At the end of the 19th century epidemic diseases had been prevented by vaccinations. During 1940's and 1950's maternal and children's health care were developed of the municipal level. Most of the health care resources in the 1950's and 1960's were allocated for the development of the hospital system. As a result of intensive and large-scale hospital construction Finland has the highest number of hospital beds per capita of the developed countries.

In 1964 National Sickness Insurance was set up to remove the economic burden for the use of medical services in primary medical care. Finland is a country with both national sickness insurance and national health care

schemes.

Because of the shortage of physicians in the late 1960's three new faculties for medical training were founded, facilitating rapid growth in the number of physicians in the 1970's.

The reform of municipal health care with the primary Health Care Act in 1972 favored out-patient care. The Act defined several outpatient care services as municipal responsibilities. Due to the Act health care services provided by local authorities are partly financed by state subsidies. The Act contained a planning system which includes an annual political decision by the Cabinet, simultaneously approving the national plans for hospitals and primary care.

Nowadays the health care services are mainly produced by municipalities and federations of municipals. At the end of the 1980's there were 217 health centres, of which 112 were formed by two or more municipalities, and 424 hospitals, of which most were owned by local municipalities, usually jointly. In addition to public outpatient care there is a wide sector of private physicians, whose patients are supported by national sickness insurance. Inpatient care is provided by public hospitals and by a few private hospitals. Public hospitals are classified as hospitals of health centres (13), university hospitals (5), central hospitals (16), regional hospitals (30), mental hospitals (46) and private hospitals (8).

Table 8. Health care expenditure by source of financing in Finland, %

	Central Government	Municipalities	National Sickness Insurance	Households	Other Private Sources
1960	28	30	0	39	3
1965	30	32	6	29	3
1970	33	32	11	22	2
1975	37	30	13	18	2
1980	38	29	12	18	2
1989	35	34	11	17	3

Source: U. Häkkinen: Cost, financing and prices of health care in Finland 1960-87. Helsinki, 1989, p. 17. Statistical Yearbook of the Social Insurance Institution. T1:26. Helsinki, 1991, p. 45.

Public health services are mainly financed by state subsidies and by local taxes (Table 8). The finance system of state subsidies is based on costs of services. The proportion of costs which is financed by state subsidies has been dependent on the economic situation of a municipal. Health centre services are provided free of charges, while is charged for hospital services.

National sickness insurance covers also various health services in work places. According to the Occupational Health Act (1979) employers have to arrange statutory occupational health services for their employees. The cover of employer-operated occupational health services has growth from 34 per cent to over 80 per cent from 1970 to 1986. Occupational health services are provided mainly on a private basis.

Expenditure on hospital care has constituted nearly a half of Finnish health care expenditure. The share has decreased during the 1980's because of the development of ambulatory care (Table 9).

Table 9. Health care expenditure by source of use in Finland, %

	1960	1970	1980	1989
Hospital care	44	50	49	45
Ambulatory care	23	22	27	34
Medicines	17	13	11	9
Expenditure of public health care	55	74	79	83

Source: OECD Health Data 1991.

Nowadays the main problems in Finland public health care are rapidly growing expenditure and long waiting times for certain surgical operations.

6.3.2. The development of health care in Estonia

According to the law on the organization of health care (1928) the organization, administration and supervision of health care in Estonia were the responsibility of the Ministry of Health and Social Security, who carried this

out through the Board of Health and Social Security. The principle of decentralization was applied in the organization of health care: the practical work in providing health care took place on the local government level. There were three kinds of hospitals: state-owned, municipal and private hospitals. In addition to hospitals there were also consultation offices for mothers and children and dispensaries for consumptive, sanatoria, institutions for the mentally ill, etc. Outpatient aid was rendered mostly by private physicians; dispensaries were owned by sickness funds and schools. In 1920-1938 the activity of sickness funds was stepped up. The number of doctors increased gradually and societies of physicians were founded. The training center of doctors has always been Tartu University.

After the establishment of Soviet power in 1940 the state health organization was founded and medical and inpatient aid became free of charge.

The Estonian hospital network was influenced by the introduction of the Soviet health care system in 1945, when extensive conversion of buildings built for other purposes began. The number of hospital beds multiplied, but the inpatient treatment actually worsened. In 1946-1975 only 47 % of hospital beds taken into use were in new buildings; the rest were in buildings converted into hospitals (schools, hostels, etc.). Construction of hospitals was backward also in comparison with the construction of other buildings of social infrastructure (day-care centers, shops, etc.).

Since 1975 the construction of modern hospital buildings has increased in Estonia. Main structural units in the Estonian health care system are hospitals, ambulatories and sanatoriums. In 1990 there were 125 hospitals, 372 ambulatories and 15 sanatoriums in Estonia.

In the Estonian health care there has been shortage of modern diagnostic and surgical instruments and medicines. The construction of health care establishments has also long been insufficient.

The technical backwardness and the weak economic basis (no fees, low wages, etc.) and strong centralized administration of health care are the main reasons for the problems in the health care system in Estonia, for example the improper distribution between inpatient and outpatient care, inappropriate ratios between doctors and other medical staff, inefficient use of beds and equipment, etc.

In Estonia all public health establishments and medical aid were free of charge and services were mainly financed by the state up to 1990. In addition to state financing health care was financed also by enterprises and institutions. An essential part in building hospitals in the countryside has been paid by collective farms. By 1990 the institutional financing of health care has decreased drastically. In 1990 state budgetary expenditure on health care accounted for 88 % of the total expenditures, 30 % of this from the central government budget and 70 % from local budgets. More than 3/4 of the expenditure on health care are ambulatory and hospital care expenditure, the major part of these are covered by hospital care (Table 10). At the same time the share of private medical services began to increase in 1990. From the beginning of 1992 a charge has been collected for a visit to a doctor in ambulatory care.

At the beginning of 1992 an essential change took place in the Estonian health care system: the ownership reform and the transition to a system of medical treatment insurance began. In the course of the ownership reform a number of previously state-owned medical institutions will be transferred to municipal ownership. All city, county and district hospitals, clinics, dispensaries (excl. departmental), ie. over 4/5 of medical institutions, dependent on the state budget will be municipalized. Nevertheless numerous small medical cooperative, private clinics and joint-stock companies have been established in Estonia during recent years. Service charges are very high in those establishments and therefore their services are not available to the less affluent population.

Table 10. Structure of expenditure on health care in Estonia in 1990, %

	All expenditure	State budgetary expenditure
Total	100.0	100.0
Inpatient care	76.4	71.4
Outpatient care		7.5
Other programs	23.6	9.4
Medicines	..	11.7

Sources: Statistical office of Estonia; Estonian Ministry of Finances.

The Medical Treatment Insurance act went into force in 1991. In all secondary-level local administrative units (counties and republican towns) sickness insurance funds have been created, mainly by means of an obligatory medical treatment contribution from employers. The sickness insurance fund keeps track of the insurance by one's place of residence and sickness benefits will be paid from this fund.

In addition to obligatory medical treatment insurance an employer or individual will have a right to have a voluntary medical treatment insurance in the future. There are three kinds of possible voluntary insurance - insurance paid in foreign currency, collective voluntary insurance, and individual voluntary insurance.

The transition to the insurance based medical aid is accompanied by a charge for a visit in the case of outpatient treatment and a change in the system of financing of health establishments and physicians.

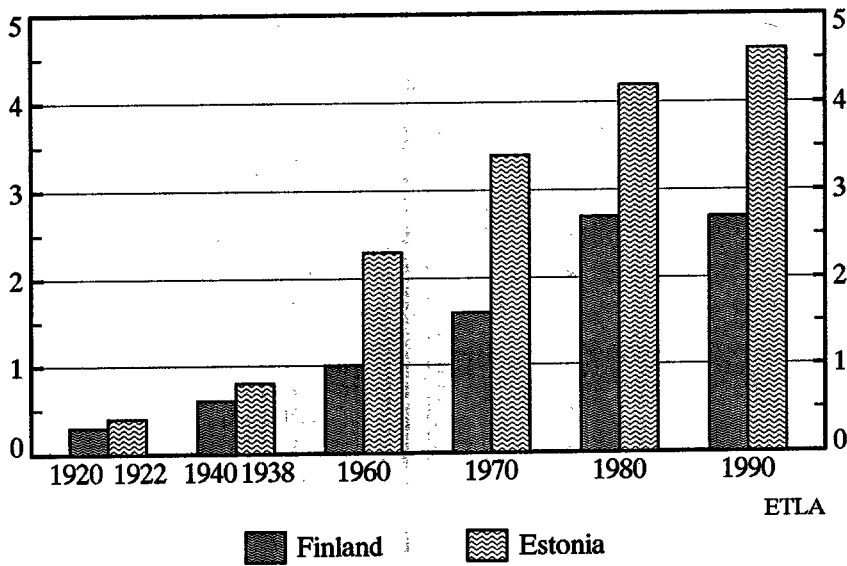
6.3.3. A comparison of health care in Finland and Estonia

Before the Second World War the health care systems were quite similar in Finland and Estonia.

Before 1940 the relative number of physicians was almost equal in Estonia and Finland (Appendix 4, Figure 4). After 1945 the number of physicians increased rapidly in Estonia due to changes in the system of health care: Estonia adopted the Soviet system of health care.

In 1960-1970 there were about twice as many physicians per 1000 inhabitants in Estonia as in Finland. Later this difference has diminished a little. On average an Estonian visited a physician nearly three times more often than a Finn. This illustrates the difference in access to medical care (Appendix 4).

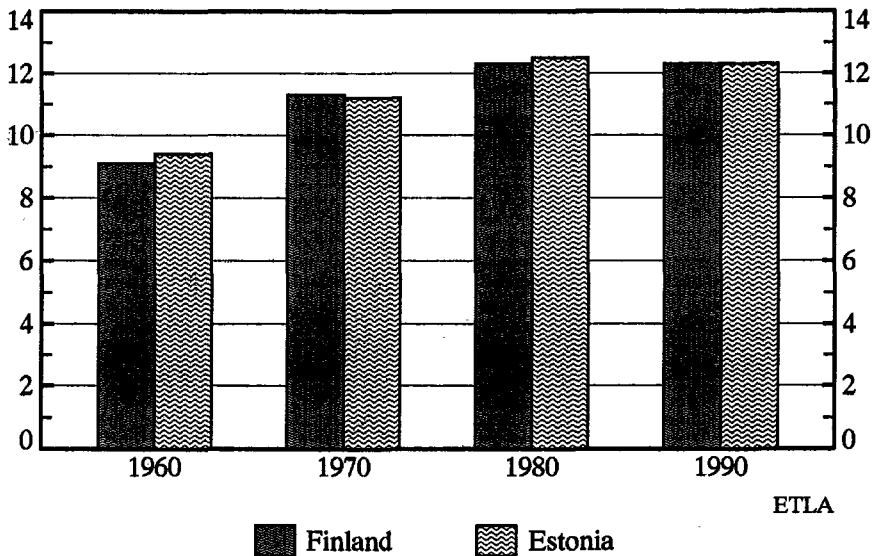
When looking at the total number of medical workers in the system of the Estonian Ministry of Health (physicians, active health personnel) it turns out that the large number of physicians per 1000 inhabitants is caused by relatively low number of nurses, midwives etc. (Table 11).

Figure 4. Number of physicians per 1000 inhabitants**Table 11. Active health personnel**

	Total number		Number per 1000 inhabitants	
	Finland 1988	Estonia 1988	Finland 1988	Estonia 1988
Number of physicians	9614	5487	1.9	3.5
Number of dentists	3746	759	0.8	0.5
Number of other staff ¹	81705	14220	16.5	9.2

¹ Nurses, midwives, etc.

Sources: Statistical Yearbook of Finland 1990. Helsinki, 1991, p. 396; Statistical Yearbook of Finland 1991. Helsinki, 1992, p. 397; Ministry of Health of Estonia.

Figure 5. Number of hospital beds per 1000 inhabitants

The number of hospital beds per 1000 inhabitants increased steadily in Finland and in Estonia up to 1980. In the past years the number of hospital beds per 1000 inhabitants has not increased in Estonia (Figure 5). This trend has continued and is connected with the growth and regulation of the efficiency of the treatment system, and the reorganization of medical care and social maintenance (hospitals in the rural districts often fulfill the functions of social maintenance).

One hospital and bed is serving on an average nearly the same number of people in Finland and in Estonia. When comparing the number of hospital beds in different countries, however, the material conditions of hospitals, surface norms, etc. should be taken into account as well. For instance, in the case of Estonia central heating and hot water as well as the level of the amortization of buildings (over 35 % on average) were not taken into consideration. Only 55 % of the existing number of hospital beds of Estonia meet the quality standards of a conventional hospital bed. There are also differences in specialization of hospitals.

One of the most often used indicators of the efficiency of health care is the

life expectancy of inhabitants. In 1989 in Finland the life expectancy for males was 71 for females 78 years, in Estonia 66 and 75 respectively.

Another indicator of the standard of health care is the infant mortality rate, which is defined as the number of infants who die before their first birthday per one thousand live births. This figure was 6.0 for Finland in 1989 but 12.3 for Estonia in 1990, ie. twice as high.

The analysis of the causes of death can also give an idea about health care indicators. In 1990 cardiovascular diseases (60 %) held the first place in Estonia, tumors (16 %) were second and injuries and poisonings (10 %) third.¹⁾ In Finland the main causes of death were the diseases of the circulatory system (50 %), neoplasms (20 %), accidents and violence (9 %) and diseases of the respiratory system (7 %).²⁾ This means that main causes of death in Finland and Estonia are similar.

Conclusions:

In Finland and Estonia the public sector has the main responsibility to produce health care services, which are mainly free for users.

Main differences in health care between Finland and Estonia occur in:

- financing and the structure of expenditure
- number of physicians and medical personnel
- material and technical supply of medical institutions
- organizational system
- existence of a private health care system in Finland

1) Eesti rahva tervis ja tervishoid 1990. aastal. Tallinn, 1991, p. 17.

2) Suomen tilastollinen vuosikirja 1990. Helsinki, 1990., p. 98.

6.4. Education

The present comparison of the formal educational system of Estonia and Finland discusses two structural aspects, ie. general and vocational education.

By the formal educational system we mean school systems organized for systematical teaching of children and the young which takes place in accordance with curricula and program during an extended period of time. Such differentiation is necessary in order to distinguish supplementary education of adults that may take place in different ways and forms and mainly during a brief period of time.

6.4.1. The education system and its development in Finland

A statute in 1866 obliged towns to establish elementary schools, while in rural areas the establishment of schools was voluntary. Studies in elementary schools took six years in towns and four years in rural areas. In 1922 a law was passed concerning compulsory education. In 1943 the Elementary School Act was adopted, which instigated compulsory education for all 7-16 years old. The elementary school took six years which was then supplemented by two years of secondary school. Elementary schools were free of charge. After the fourth year in elementary school pupils had a possibility to continue in elementary school or switch to secondary school. A vocational school could be chosen after either of them, but only the upper secondary school gave right to continue in higher schools and universities. The upper secondary schools and high schools were mainly privately owned and thus not free of charge.

According to a statute in 1968 elementary school with nine classes was replaced with general schools. The reform was carried through in 1972-77. A law on comprehensive school took effect in 1983, according to which compulsory education begins at the age of seven and lasts ten years. Pre-school begins at the age of six and there is established a voluntary tenth year.¹⁾

1) Kivinen-Rinne-Ahola. Koulutuksen rajat ja rakenteet. Helsinki, 1989, pp. 33-46.

The regular education system in Finland comprises the comprehensive school, senior secondary school, vocational education institutions and the universities. There are no pre-schools in Finland, but instruction of this kind is provided at day-care centres, which are under the jurisdiction of the social welfare administration and linked with the comprehensive schools. In addition to the regular education system, formal education is also given in music schools and colleges and institutions of physical education, which provide training for both professionals and amateurs.¹⁾

The general school is compulsory and free of charge for the whole age group 7-16, including the disabled. The subjects taught at the general school and the senior secondary school are fixed by law, time allocation and optimal subjects being decided on by the Government. All individuals completing the general school have the same eligibility for further education.

Post-compulsory education is divided into general education given in the upper secondary schools and vocational education provided in the vocational institutions.

The upper secondary school is a three-year educational institution. The school concludes with a matriculation examination consisting of centrally administered tests which are identical for all senior secondary schools in the country. The matriculation examination provides pupils with a general qualification for higher education and other forms of education which require the completion of such an examination.

The Finnish university system consists of 20 institutions, of which 10 are multi-faculty universities, three technical universities, three schools of economics and business administration, a veterinary college and three academies of art. All the universities provide undergraduate and post-graduate education, confer doctorates and are required to carry out research. It takes 6-8 years to complete the first degree (master's degree), while a post-graduate degree (licentiate, doctorate) takes several more years.²⁾

1) Education in Finland 1991. Helsinki, 1991, p. 211.

2) Education in Finland 1991. Helsinki, 1991, p. 214.

Table 12. The distribution of expenditure of the education system in Finland in 1990, %

Total	100
Comprehensive schools	45
Vocational institutions	21
Universities	14
Adult education	8

Source: P. Parkkinen: Koulutusmenojen kehityspiirteitä vuoteen 2030. VATT Research Reports 9/1992. Helsinki, 1992, p. 47.

Expenditure on the regular education system in 1990 was 5.8 % of GDP. Approximately 90 % of the costs of Finland's educational institutions are publicly financed, of which 24 % comes from the state and 76 % from local authorities.

Adult education in Finland is provided within the formal education system, at places of work, by various organizations etc. One third of all adult participants were educated within the formal education system and two thirds outside the system, the latter type of course being of much shorter duration. The adult education is only partly free of charge. Participation of adults has increased rapidly since 1980, when 30 % of the population were attending. Some 1.6 million persons attended adult education in 1990, ie. 44 % of the population aged 18-73 years. ¹⁾

The expenditures on research and development have steadily increased in the 1980's and in 1990 the share of these expenditure of GDP was two percent. The public sector (central government administration, other public institutions and the private non-profit sector) has funded 19 per cent of R&D expenditures. R&D expenditure by universities covered the same share as the public sector per se and was mainly funded by the central government budget.

1) Education in Finland 1991. Helsinki, 1991, p. 241.

Table 13. Distribution of estimated research and development expenditure, %

Year	Public sector	Higher education sector	Business enterprise sector	Share in GDP
1983	21.4	22.9	55.7	1.3
1990	18.7	19.0	62.3	1.9

Source: Research and development in Finland 1989. Education and research 1991:7. Central Statistical Office of Finland. Helsinki, 1991.

6.4.2. The education system and its development in Estonia

In the 19th century Estonians had schools in their mother tongue, but in 1887, as a result of the russification policy teaching in Estonian was forbidden in all kinds of schools, excluding religious instruction and lessons on the Estonian language itself. The Estonian school system was formed during the period of independent Estonia. In 1918 compulsory education was established for all aged 9-14. In 1920, the primary school act extended the limits to 7-16 years. Primary school was free of charge. Primary education could be obtained also in private schools or at home (with the permission of local school councils). In 1920-1934 the secondary school was based on a six-year elementary school. In all secondary schools tuition fee was charged.

The number of vocational schools, especially industrial, technical, agricultural and home economics schools, grew rapidly since the beginning of the independent statehood. Vocational education turned out to be the most advanced branch of education in the Republic of Estonia.

After 1940 the education system was radically rearranged in Estonia, based on the system of general schools. In organizing lessons and educational work the principles of Soviet pedagogy were followed. The whole educational system was politicized, which meant that for several decades pupils were deprived of objective information, especially in the field of history and social sciences.

The vocational school system was reorganized. It was especially ruinous that the socio-economic base of this type of education (private and small-scale production, family farming, trade, etc.) was destroyed. Seven-year compulsory education was established, which was implemented by the end of 1951. In 1959 a law was adopted according to which a eight-year compulsory education was established. The same law envisaged the reorganization of the vocational, secondary, professional as well as higher education. In 1967 a task was set to implement general secondary education, which was realized by 1980. Vocational schools were also changed to provide secondary education.

In 1984 a new educational reform was started concerning the general and vocational education. The aim was to organize the mass training of workers. This reform was the last in the long period of the centralization and unification of the Estonian education.

At the present time new foundations for educational system are under elaboration in Estonia, the aim being to bring education into line with today's requirements. A possibility has cropped up to found alternatives (Stainer-school, humanitarian institute, etc.) to the public educational system. The state guarantees free compulsory education. According to legislation adopted in March 1992.

In 1980-1990 the current expenditure on education increased 53 % and were 4.4 % of GDP in 1990. Funding for education in Estonia have been allocated from the government budget (92 %), from the funds of public and cooperative organizations (0.3 %), and from the funds of ministries and enterprises (7.7 %).

In 1990 expenditure on education made over one-fourth of the general expenditure on public services, among this consumption expenditure 85 %. Relatively greater expenditure was spent on general education but very little on adult education (Table 14).

In Estonia problems of science are considered within the realm of education as a branch of public services.

Table 14. Distribution of government expenditure on the education system of Estonia in 1990

	The structure of expenditure %
Total	100.0
Elementary and secondary schools	62.1
Vocational schools	18.3
Higher schools	17.0
Night schools and advanced training courses	2.6

Source: Statistical Office of Estonia.

In the 17th and 18th centuries the focus was upon the compilation of Estonian grammar and dictionaries. The reopening of the university in Tartu in 1802 was accompanied by the foundation of research establishments. Tartu University became a prominent research center, contributing considerably to chemistry and medical sciences. The Tallinn Technical University, founded in 1936, became the research center of technical sciences. In 1938 the Estonian Academy of Sciences was founded as a scientific research center. The Academy provided financial support for its members for their research work as well as scholarships for scientists and subsidized research work of scientific societies. In 1940 the work of research establishments and scientific societies was reorganized.

In 1946 the Estonian Academy of Sciences was refunded, and the subject matter of research had to be comparable to the other Union republics. The research activity was determined by the unification and centralized leadership of research work.

In 1989 there were about 100 research establishments (including construction, design and research organizations) in Estonia, including 17 institutes of the Academy of Sciences and six public universities.¹⁾ The number of research workers was 7100, including 352 holding doctoral degrees.²⁾

1) Eesti Statistika aastaraamat 1990. Tallinn, 1991, p. 361.

2) J. Laas: Läbi kriise uuele teaduskorraldusele. Eesti kroonika 1990. Tallinn, 1991, p. 69.

Research work was financed from public funds. In 1990 the expenditures on science were 84 million rubles, half of which were financed from the government funds of Estonia, 14 % from the all-Union budget, and the rest (37 %) from the funds of enterprises.

The main problems in Estonian science are its poor technical facilities, low wages, relatively high age of scientists, institutional hierarchical structure and isolation from world science. The aim of the development of sciences is to advance the cooperation with the whole world and to participate in the research program of different countries.

6.4.3. A comparison of educational systems in Finland and Estonia

Both in Finland and Estonia children go to school at the age of seven, and almost all children six years of age are generally guaranteed pre-schooling. Both countries have established compulsory general education consisting of nine grades.

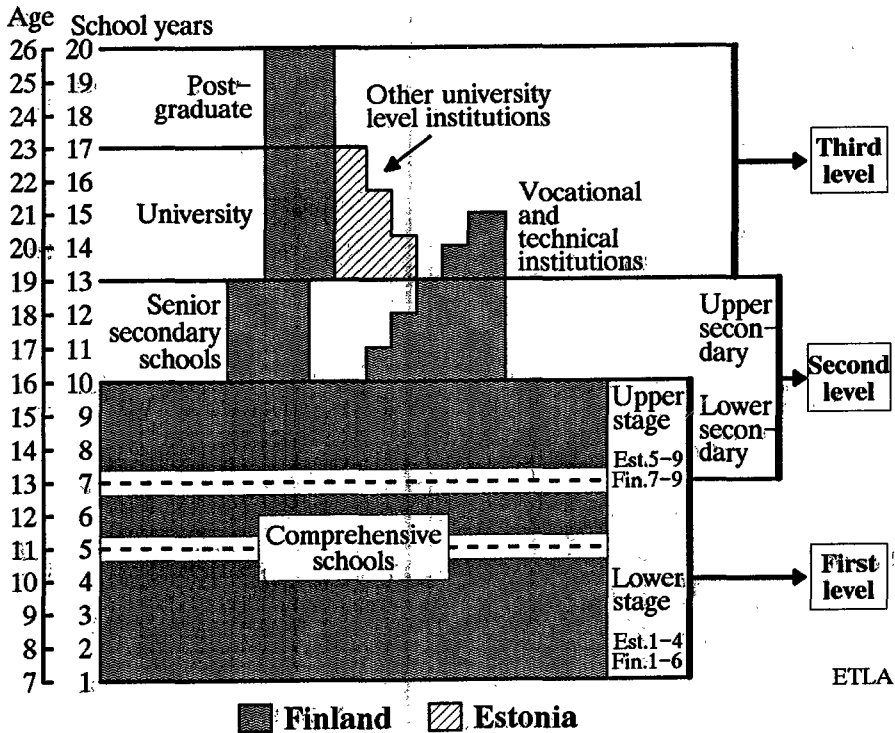
A comparison of the structure of the general education shows that the duration of the general secondary education is the same, the length of basic education is also the same, but in Finland the tenth grade is voluntary (Figure 6). The main difference lies in the elementary school, which lasts four years in Estonia and six years in Finland.

There is also a difference in the higher education systems: in Finland higher education consists of two stages but in Estonia it included onestage. Since the school year of 1991/92 the Estonian higher education system also became two-staged in connection with the establishment of the first vocational upper level schools. After graduating one can continue onto post-graduate courses both in Finland and Estonia.

In Finland the compulsory general school is free of charge, including all expenditure on study materials, meals and transport. In Estonia the studies in elementary, secondary and higher education have been free of charge so far.

By branches of education Estonia has spent relatively more expenditures on

Figure 6. Simplified diagram of the educational system in Finland and Estonia

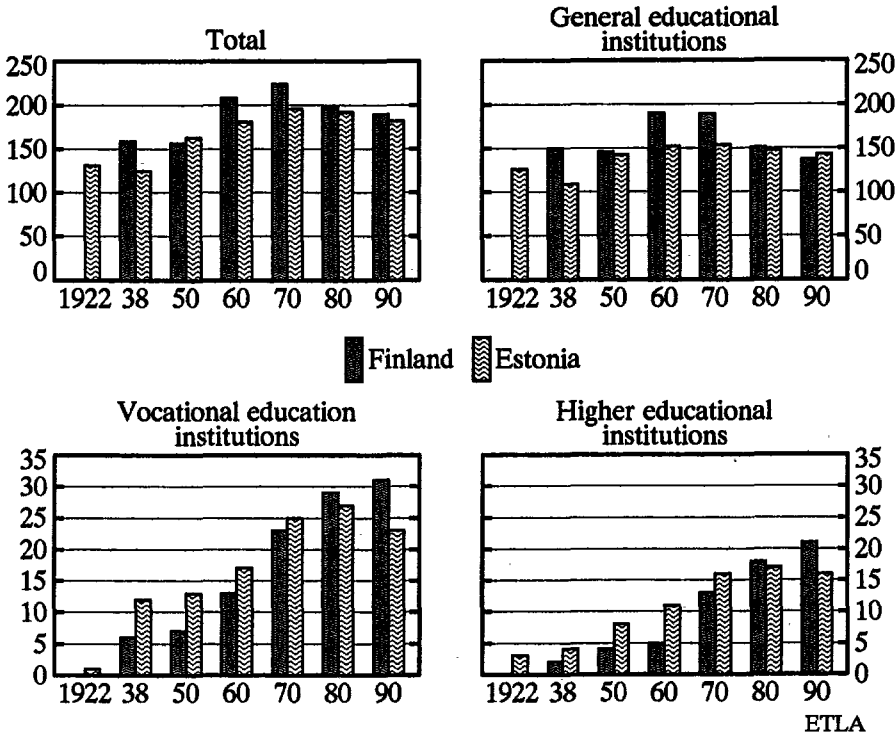


general education (62 %, 45 %). Finland supports more vocational (21 %, 18 %) and adults education (8 %, 3 %).

Extensive changes have taken place in the Estonian educational system. Until the 1980's the educational system has been characterized by extensive concentration. The number of students in different kinds of educational institutions has steadily increased, but the number of educational establishments has decreased (Appendices 6 and 7). The growth of the size of schools has in most cases been accompanied by the concentration of school networks into towns. In Finland both the number of pupils and the number of elementary schools have decreased during the last decade.

Among the general education schools in Estonia elementary schools have suffered most in connection with the start of their liquidation in the 1960's.

Figure 7. Number of pupils/students by type of educational institution, per 1000 inhabitants



In 1960-1985 the number of elementary schools diminished by 87 percent.¹⁾ In recent years authorities have admitted the erroneousness of this step and have started to restore and reopen elementary schools.

In Estonia the development of vocational schools during the Soviet period continued in the 1960s (Appendices 5 and 6). The number of pupils and students in vocational schools and higher educational establishments has also increased in connection with the expansion of possibilities of evening and correspondence studies.

Reasons for changes in the amount of pupils in Estonia were the rapid population growth (high birth rate) before World War II and the subsequent

¹⁾ Calculated on the base of: Eesti NSV rahvamajandus 1986. aastal. Statistika aasta-
raamat. Eesti Raamat. Tallinn, 1987, p. 315.

decrease after 1945. In Finland the trends in the amount of pupils were largely determined by the postwar baby boom. In the 1980's the number of students in higher and specialized education institutions increased more rapidly in Finland than in Estonia because of the increase in the number of higher educational institutions in 1960-1970.

In Finland vocational technical and professional teaching is organized into 25 basic branches broken down further into over 200 lines of specialization. Vocational education at the upper secondary level usually takes 2-3 years and technical and professional education at the tertiary level 4-6 years.¹⁾

In the Estonian higher educational system and in vocational education institutions there are approximately 100 specialties. In higher educational institutions specialties are divided into 22 groups. A degree can be obtained after five years of study as a rule, in medical faculty after seven years.

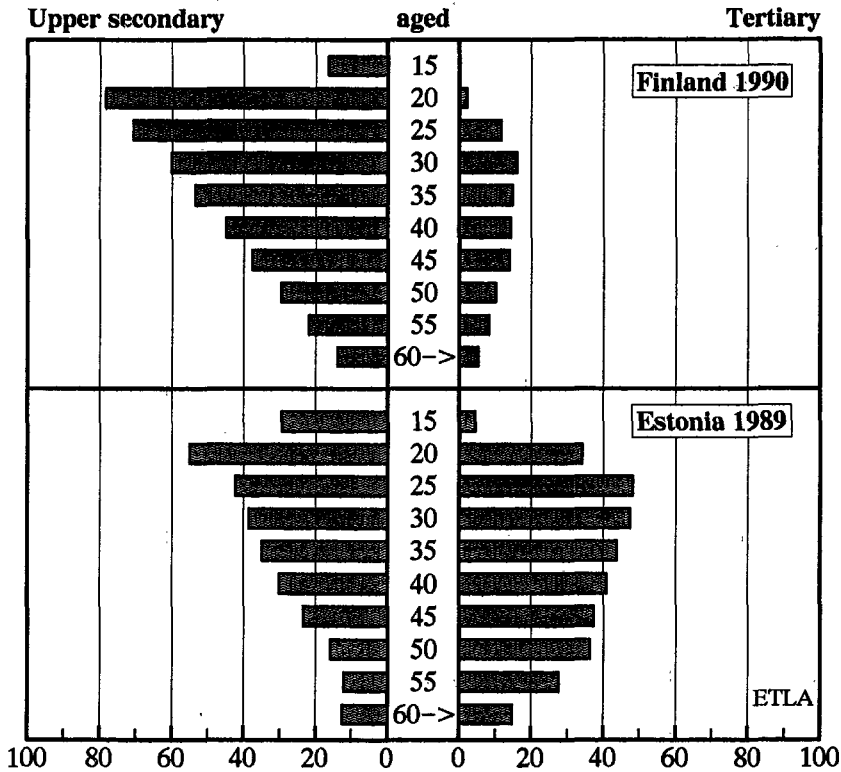
There are some differences in the advanced education system between Finland and Estonia. In the present education policy of Finland great attention is being paid to adult education, both general education and vocational education. Vocational adult education started in 1970. Vocational training centers were founded in every town.

Due to the dynamics of the labor market conditioned by the changes in the economy, the foundation of the adult education in Estonia is undergoing wide change. There is a shortage of energy specialists, translators/interpreters, bookkeepers, banking experts, auditors, computer programmers, diplomats etc. in Estonia.

In Estonia, of those who finished elementary school in 1989, 58 % continued their studies in general education schools, 4 % in evening schools and 13 % in vocational schools. Of those who finished secondary school in the same year, 17 % went on to vocational schools while 28 % went to higher schools. In Finland it has estimated that over 90 % of pupils completing their general school proceed to the upper secondary level: 49 % went to upper secondary schools, 34 % went to vocational schools while 10 % went to the upper secondary level in some subsequent year. Of those who matriculated in 1989,

1) Education in Finland 1991. p. 213.

Figure 8. Distribution of population aged 15 years or over by education level



17 % continued immediately in universities and more than 20 % in vocational and professional education institutes.

Data of censuses in Estonia testify to the rather rapid increase in the educational level (Figure 8). A half of the population aged 15 over in Finland have at least a general education and half have a specialized education. In Estonia 40 % of the population aged 15 or over have at least a general education and 60 % have a specialized education.

The administration of education is rather centralized in both Finland and Estonia. This is due to the fact that the main part of the educational system in Estonia and Finland is publicly owned. In connection with the implementation of the new education law in Estonia changes are expected in the administration in 1992.

In Estonia the reformation of the education legislation provides the basis for the future development. After this reformation stage there will be created prerequisites for the evaluation of the activity of the whole educational system.

Some conclusions:

Most of the expenditure on education are covered from public funds both in Finland and in Estonia. The duration of general education and, since 1992, also the composition of the compulsory elementary education are similar in the two countries.

Differences occur in:

- the grades and structure of specialized education
- the time of obtaining education within one's life cycle: in Estonia the final education is obtained mostly in one's youth, in Finland there is an opportunity for permanent education during the whole lifetime
- educational distribution of the population.

6.5. Culture

For the reason that culture is closely related to all other social processes, and directly concerns every individual, the development of culture becomes an ever more topical and objective necessity.

Cultural activity differs a lot from other branches of public services, since the product to be produced must satisfy the cultural and creative needs of both producers and consumers; in the production process the producer is in direct contact with the consumer, or acts in the name of satisfying the needs of all others; activity in this field may be on a professional, semiprofessional as well as on an unprofessional level, often on one's spare time.

In this section we are going to examine libraries, clubs, museums, theaters and cinemas, i.e. activities, which may be classified under the name "cultural service", since they have been oriented towards the passive consumer and

they render the population various services - both free of charge and for charge.

We also observe the publication of books and periodicals, radio and television transmissions, sports and music activities.

6.5.1. The development of culture in Finland

Public cultural services in Finland can be divided to those produced and financed by the public sector and those produced privately but at least in part financed by the public sector. The first group includes for instance libraries, the biggest theaters and museums. Newspapers, radio and television and the press belong to the second group. Cinemas are in Finland private, while the production of Finnish films are state subsidized.

Public libraries are perhaps the most important public cultural service; every municipal has at least one library and its services are for the most part free for inhabitants. In libraries there are various kind of facilities for amateurs. In addition to book lending, one can borrow recordings, videos, magazines, newspapers. In 1989 there were almost 1200 public libraries in Finland.

The first Finnish theater was established in 1872 and at the turn of twentieth century several theaters were established, for instance Tampereen Työväen Teatteri and the present Helsingin Kaupunginteatteri.¹⁾ In 1989 there were 52 professional theaters in Finland of which 37 were stationary theaters. Nowadays 75 % of expenditure of theaters are covered by communal and state funds.

Nowadays a very important culture service, broadcasting, begun in the 1920's and television activity begun in the 1950's. In 1990 every third Finnish had a color television set. State grants covered only 0.5 % of expenditure in 1990, the main part of revenues was collected by license fees.

The press is private in Finland but the public sector promote it by subsidies for transport. The political party-owned press receives grants according to political distribution of the Finnish government.

1) Teatteritilastot 1989.

Municipalities (and the central government with state subsidies to municipalities) promote various kind of amateur sporting activities by building and maintaining sporthalls and sports fields for athletic clubs and inhabitants.

6.5.2. The development of culture in Estonia

Before World War II cultural work was sponsored mainly by educational and temperance societies: there were 271 of them in 1919 and 1710 in 1930. Cultural activity was conducted, for instance, by the Estonian Educational Society (1923-1940). After the violent coup d'état in 1940 Estonia was separated from Western culture and the movement towards the Soviet culture started.¹⁾ The latter is characterized by the endeavor to even out regional differences. As a result, the state of cultural establishments of Estonia as a region, initially enjoying a relatively higher development level, deteriorated. The material impoverishment of Estonian culture increased especially in 1960-1980. The previous cultural policies, and the low evaluation of the sphere of culture on the state level have contributed to the present backwardness of the facilities. Fixed assets of science, culture, art and other unproductive sectors make up only 4 % of all fixed assets of the national economy in 1990. At that the depreciation of cultural establishments is estimated at 40-60 %.

This was conditioned by the allocation of finances to the priority development regions with the goal of evening out the development of culture. The management of cultural establishments was centralized, cultural activity was concentrated into larger cities, the number of country schools, libraries and village clubs diminished and many traditions of country towns and rural settlements were destroyed. Instead of the diversification of cultural services, the development was towards indeed cheap, but ever more uniform cultural services.

Alongside of the impoverishment and the ideologization of the culture there took place the russification of the culture: the share of publications in Russian grew rapidly.

1) M. Järve. Eestlane kultuuritarbijana: Soome ja Vene vahel (Manuscript).

Within the framework of the unification of national cultures the severest blow fell on the personality and the bearer of the culture. The destruction of a free personality with independent mind runs in parallel with the purposeful destruction of the cultural properties (to the change into social, economic and population structures, etc.). The Soviet culture also affected Estonians, as illustrated by the deterioration of the working morale, morality, initiative and free manner of thought. But thanks to the Estonians' passive resistance and immunity towards an alien ideology characteristic they managed to keep their national identity and individuality.

Estonian music has had an interesting evolution, since it remained for a long time an expression of peasant culture only. It is not until the first great all-Estonian festival of choral singing in 1869 that we may talk about national music.

Choral singing has grown into a powerful element of culture. In folk music and various foreign types of music a national choral style has evolved. The song festivals have held their unique position, as a sort of culture of the masses. The work started by the Union of Estonian Singers in 1921 toward raising the quality of choral singing has now become systematic.¹⁾ Estonian song and dance festivals are known world-wide.

In Estonia there are 449 clubs placed under different organizations or enterprises, nearly third-fourth of them located in rural areas. Clubs (circles, societies) practice mainly amateur activities such as singing, playing musical instruments, dancing, literary work, but also sports, handicraft, photography, gardening and collecting. More wide-spread are dramatic circles, dancing and choir singing. Under the guise of clubs all traditions of collective folk-art, first of all choir singing, folk-music and brass-instrument music, were kept safe.

At the present time there are 152 100 persons engaged in some circles or hobby-clubs, 6000 of them are members of folk-art groups (Table 15).

1) H. Olt. Estonian music. Tallinn, 1980, pp. 21-30.

Table 15. Clubs and other similar institutions in Estonia (by the end of the year)

	1980	1985	1989	1990
Number of clubs	453	456	466	428
Number of circles	5746	6922	7300	5525
- in folk-art groups	4344	4912	4190	3511
Number of participants (1000)	129	168	190	112
- in folk-art groups	62	71	63	52

Source: Statistika aastaraamat 1991. Tallinn, 1991, p. 168.

Besides the Ministry of Culture trade unions, collective farms, and other institutions and enterprises have clubs of their own as well. Clubs are already nowadays and even more in the future rather problematical institutions. Their number has been decreased already since the 1950s. The condition of the houses of culture in the country is especially bad and there is a continual shortage of personnel. Estonian clubs are maintained by institutions or organizations, but in the new conditions there is no use for many of them any more. Not only do problems concerning personnel, financing and construction need solution but also the future ownership of existing buildings must be decided. This subject needs more thorough examination.

In Estonia the culture has been maintained, figuratively speaking, from remnants. Some 13 % of total expenditure on social sphere have been

Table 16. The structure of state budgetary expenditure on culture in Estonia in 1990

	Share of expenditure %
Total	100
Libraries	15
Museums, exhibitions	7
Houses of culture, clubs	7
Other cultural institutions	8
Theaters	11
Radio and television	48
Other	4

consumed by culture. The sources of financing are the government budget (40 %), funds of enterprises, institutions and organizations (46 %), trade union budget (5 %) and the budget of Soviet Union (9 %). In the government budgetary expenditure financing of radio and television and libraries are the main items (Table 16). The consumption expenditure of culture was only 1.9 % of GDP.

6.5.3. A comparison of culture in Finland and Estonia

Culture has been closely related to the socio-economic and ideological processes. The profound difference between these processes in Estonia and Finland during the last half of the century led to the difference in the cultural development of the countries concerned.

Cultural services are all public in Estonia, while in Finland there is a mixture of public and private cultural services. For instance publication of books, some theaters and the press are private but they are at least partly supported by public funds in Finland. Libraries, the biggest theaters, museums, sports halls are publicly financed and produced also in Finland. The difference in the variety of public cultural services can be seen in their share of the expenditure of GDP: in 1990 it was 1.1 % in Finland and 2.3 % in Estonia (Appendix 1).

An elementary requirement for a culture to persist and progress is the sufficiency of the printed word. To maintain a national culture publication in the mother tongue is perhaps the most important.

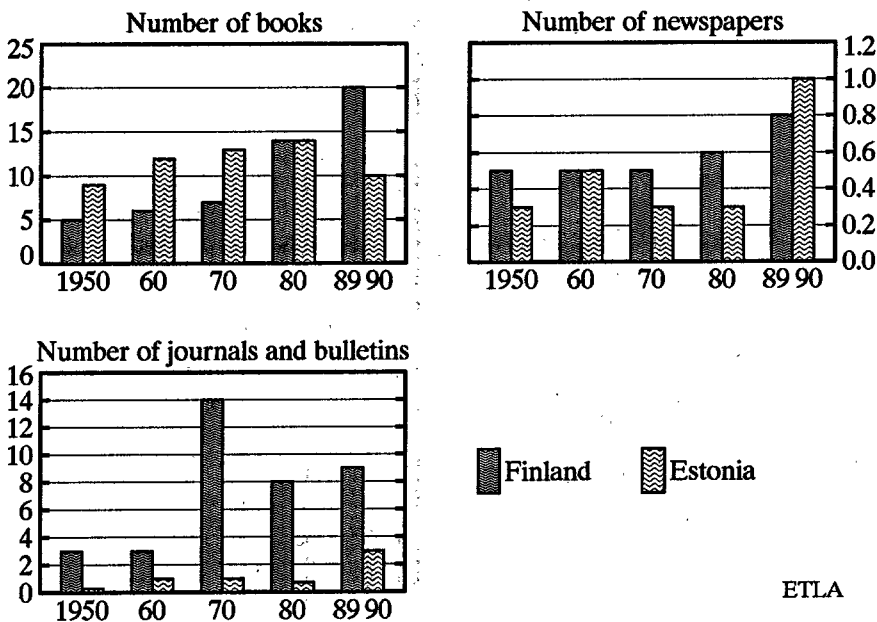
While the number of books published in Estonia is comparable to that of Finland, the number of newspapers and periodicals as well as the quality of the whole publication activity do not bear comparison. It must be remembered, however, that in 1932-1936 on an average 92 newspapers and 201 periodicals were published in Estonia annually, nearly twice as many as in 1990.¹⁾ The increase in the number of publications is a positive trend, but the prewar level has still remained unattainable. It must also be mentioned that foreign literature is more available in Finland.

1) Eesti Statistika 1938. Riigi Statistika Keskbüroo. Tallinn, 1938, p. 19.

The number of books and periodicals published per 10000 inhabitants does not reflect the real situation in the publication activity. The language structure of the publications must also be taken into consideration. Unfortunately, the share of publications in Estonian (in 1936 96 %, 1986 71 %) has decreased on account of the intrusion of Russian literature in connection with the change in the population structure (Figure 9).

In 1936/37 there were 724 libraries in Estonia. Every tenth Estonian visited libraries as readers.¹⁾ The number of libraries has diminished 2.5 times since the 1950s, and the number of readers and borrowers has dropped recently as well (Figure 10). It may be to some extent due to the political situation, but actually should reflect the one-sided activity, bad material situation and the supply of Estonian libraries. As compared with Finland, the Estonians have more libraries per capita and their location density is higher, but they

Figure 9. Publishing of books, journals and newspapers, per 10 000 inhabitants



1) Eesti statistika 1938. Riigi Statistika Keskbüroo. Tallinn, 1938, p. 395-397.

often have only 1-2 small rooms where one can only borrow books to take home to read. In Finland libraries are also places for entertainment and social intercommunication, where one can listen to music, read newspapers or journals, have a cup of coffee, etc.

Public libraries in Estonia consists of those belonging to the Ministry of Culture, trade unions, collective farms and other departments and organizations. They do not include specialized libraries belonging to scientific research institutions, high schools and universities, various establishments and organizations, etc.

But the decrease in borrowing does not signify a decline in reading in Estonia. The decreasing number of libraries and their impoverishment were accompanied by the active buying of books and the growth of home libraries. The book-shelf became an integral part of typical Estonian family's home, while people's life concentrated more and more around the job-home axis.

Figure 10. Public libraries, per 1000 inhabitants

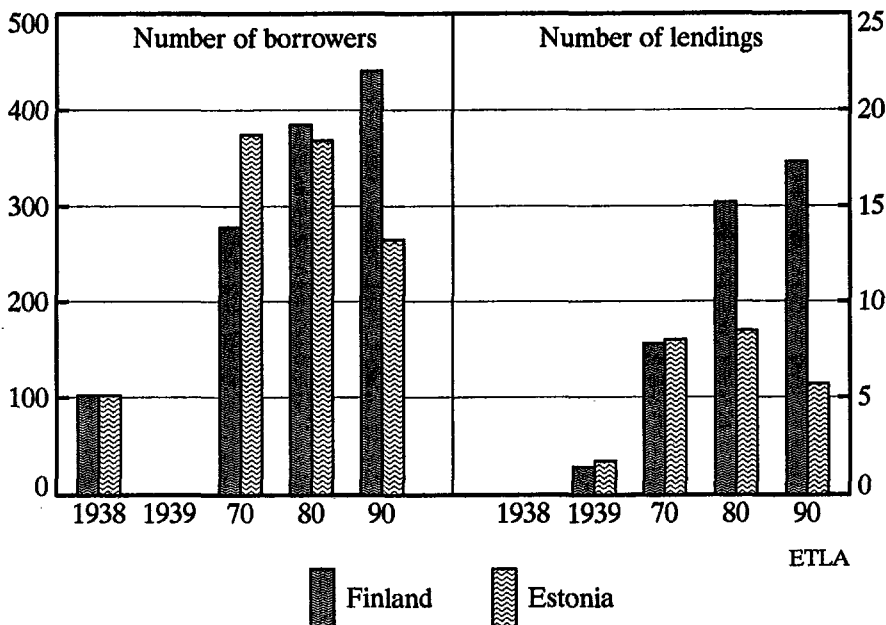


Table 17. Theaters and museums

	1970		1980		1989	1990
	Finland	Estonia	Finland	Estonia	Finland	Estonia
Number of theaters	34	9	48	9	51	10
Number of museums	...	42	...	61	206	77
Number of performances	7905	..	10551	..	11198	1990
Number of visits	1934	1280	2672	1434	2247	1242
Number of visits (1000)	0.4	0.9	0.6	1.0	0.5	0.8
Number of museums		42		61	206	77
Number of perform.(1000)	1.7	...	2.2	...	2.3	1.3

Sources: Eesti statistika aastaraamat 1990. Tallinn 1991, p. 369, 374; Statistika aastaraamat 1991, Tallinn, 1991, p. 167, 169; Suomen tilastollinen vuosikirja 1989. Helsinki, 1989, p. 401; Suomen tilastollinen vuosikirja 1991. Helsinki, 1991, p. 428.

In Estonia there were ten professional theaters in 1990 with less than 200 employees. Estonians can be considered theater fans since, as compared with Finns, they visit theaters relatively more (Table 17). The reason was a relatively low ticket price, but also often fewer opportunities to spend leisure time in any other way (limited travelling possibilities, mass sports, etc.)

In between 1980-1990 the number of concerts decreased by a quarter. Visits to concerts per 1000 inhabitants have decreased from 490 in 1980 to 180 in 1990. The most active year in this respect was 1985, when there were 660 visits to concerts per 1000 inhabitants.¹⁾

In 1989 there were 77 various kinds of museums in Estonia which were visited by two people per capita. The number of both museums and their visitors has considerably increased since 1940.

The number of installations for showing films for charge and the number of seats in cinema-halls have steadily increased in Estonia. As compared with

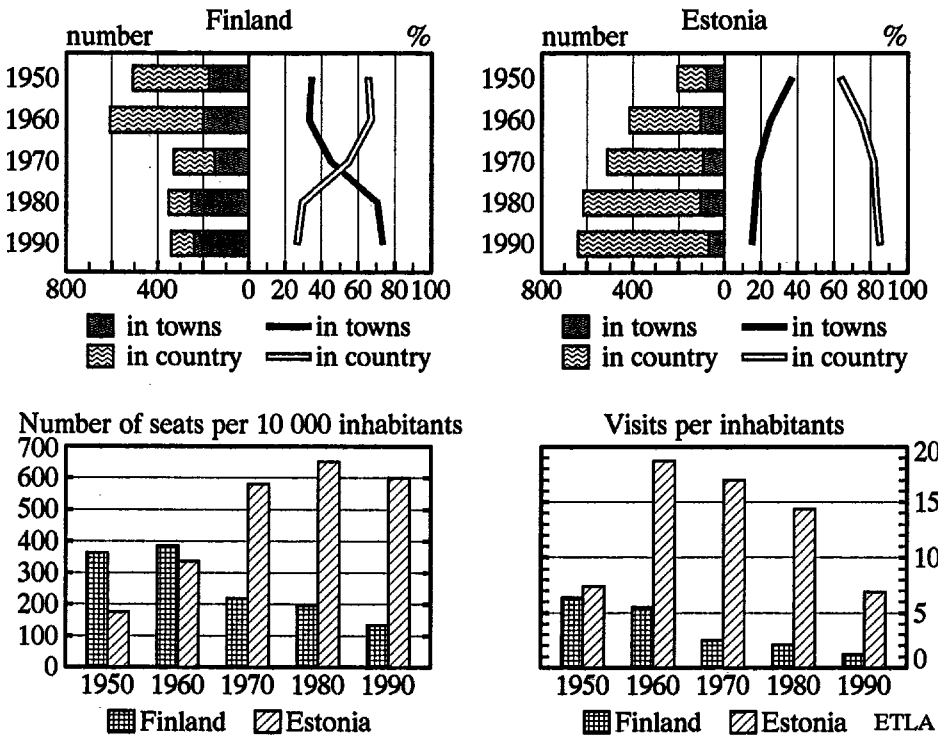
1) Source: Statistika aastaraamat 1991. Tallinn, 1991, p. 167; Eesti Statistika aastaraamat 1990. Tallinn, 1991, p. 369, 374; Statistika aastaraamat 1991. Tallinn, 1991, p. 169; Statistical Yearbook of Finland 1991. Helsinki, 1991, p. 167, 428.

Finland, Estonia has five times more cinema seats per 1000 inhabitants and approximately as many times more visits to the cinema today (Figure 11).

The number of cinemas started to fall in Finland already in the 1950s and at the present time video apparatus and films are dominating in the films market of Finland. By the annual income per cinema and per cinema-visitor one may also conclude that in Finland the tickets cost more and private cinemas are orientated towards profits. A decrease in the visits to stationary cinemas can be forecasted in Estonia as well. Modern radio, video and computing machinery is not, however, as available as in Finland.

Differences occur in the structure of television and radio broadcasting between Finland and Estonia - in Finland the highest share is with cultural program (series, films, science, music - 72 %), while in Estonia the broadcasts are dominated by daily news, sports and broadcasts discussing socio-economic problems (53 %) (Table 18).

Figure 11. Cinemas



**Table 18. The structure of radio and television transmissions
(% of total offerings)**

	National Radio		Television	
	Oct. 1989	1989	1.6.1988- 31.5.1989	1989
	Finland	Estonia	Finland	Estonia
News bulletins	7	18	10	9
Current affairs and factual program	12	19	25	44
Sports program	4	2	11	5
Educational program	3	0.2	3	4
Other program	74	61	50	38

Source: Statistical Yearbook of Finland 1990. Helsinki, 1990, p. 434,437; Statistika aastaraamat 1991. Tallinn, 1991, p. 171.

The most active hobby both in Finland and Estonia has been sports. In 1987 35-38 % of the Finnish population aged 10-64 participated in sports and outdoor recreation¹⁾, while the corresponding figure for Estonia in 1988 was 34 % of the total population.²⁾ In Estonia, due to the centralized administration of sports the greatest emphasis was laid on the training of top-class athletes. The sports movement in a broader sense has remained quite modest. Sports and physical culture in Estonia have been obstructed also by the shortage of sports equipment.

The events of 1941 cut through many national traditions, as many, cultured men in particular, suffered from repression. In the years between which the liberties of choice and action were limited, certain views and attitudes were forced or prescribed through the mass media and individuality was suppressed. The damage from this cannot be counted in money.

1) Statistical Yearbook of Finland 1990. Helsinki, 1991, p. 439.

2) Tervishoid ja sotsiaalkindlustus Eesti NSV-s. Statistiline kogumik. Tallinn, 1989, p. 119.

Conclusions:

Estonian and Finnish culture are characterized by the same tendency towards the increased prominence of mass media in every-day life, and the decrease in visits to the cinema with a certain lag in time (in Estonia about 20 years later).

The differences start with the considerably larger role of state financing in Estonia the whole public cultural services. In Finland there is a mix of public and private culture services.

Differences also prevail in:

- number of publications;
- number of books and lending in libraries;
- choice of theater performances and the number of visits;
- structure of radio and television transmissions;
- opportunities for sports;
- consumption of culture.

6.6. Conclusions

Finland and Estonia resembled each other a great deal in their socio-economic development between the World Wars in 1922-1938. The subsequent period of fifty years under two different economic systems led to vastly different economic structures and behavioral patterns and opened up a gap between the development of Finnish and Estonian public sectors.

The level of the development of the public sector, especially public services, is usually described by the share of expenditure on public services in the GDP. In 1990 this share was 41 % in Finland and 23 % in Estonia. In Finland the main purpose has been to develop public welfare services, while in Estonia a remarkable share of public funds is used to promote the housing sector. In 1960-90 the share of public service expenditure in GDP grew 15 percentage points in Finland. In the same period the corresponding share in Estonia remained unchanged and has recently even decreased.

The difference in the relative amount of public service expenditure has affected the different structures of public services. In Finland the expenditure on social security, health care and education cover 60 % of public consumption expenditure. In Estonia the share of these welfare service expenditures was approximately the same, but the share of housing and culture was nearly one-fourth of public consumption expenditure in 1990. Public order and safety in Estonia were financed by the Soviet budget. As Estonian social insurance and public services were incorporated into the Soviet System after World War II, they were financed from what was left over from other economic branches. The development of education and culture has been seen as more important than social security and health care in Estonia.

Social security has different aims depending on the socio-economic situation of a country. Before World War II, in both countries the national social security was established the aim was of which, to ensure normal human living conditions for poor, disabled and elderly persons and to create a childcare system.

After the formation of retirement insurance and other insurance systems in 1950-1960 in both countries, it became possible to ensure a minimum income level for the whole population. In Finland the distributive effect of social security was increased by means of social insurance. In Estonian the establishment of such a system started with the social policy of the transition period at the beginning of the 1990's.

According to the similarity of rough demographic indicators, needs for social security should be rather similar in Finland and in Estonia. However, the social maintenance systems are not similar: the main stress has been laid on different kinds of welfare. In Finland wide systems of transfers and services for children and elderly persons have been developed. Estonia recently started to introduce more large-scale social insurance programs in connection with the new social policy, but the supply has yet to meet the demand for social services.

By share of social security expenditure in GDP, at the end of the 1980's Estonia reached the level of Finland in 1970. Although the level of social security is lower in Estonia, there is at least one similarity in the structure of social security expenditure: pensions are the biggest part of social security expenditure in both countries.

Estonia has lagged in development of some kinds of social insurance ie. unemployment insurance. Insurance against industrial accidents, has not belonged to Estonian social security system up till nowadays. In Finland there exist side by side several retirement insurance systems. In Estonia till the adoption of the new pension law in 1991, there existed kolkhoz pension and state pension systems, but at the present time only the state pension insurance is in force.

According to the share of social service expenditure, in Finland there are relatively wider and more diverse social services than in Estonia. The main difference in the variety of social services is the more developed home care for elderly and disabled people in Finland. Estonia started to introduce outpatient care in the late of 1980's. There are relatively more places in institutions for elderly persons in Finland. The quality of social maintenance is lower in Estonia due to the physical deterioration of institutions, shortage of qualified staff and finances. In 1991 Estonia started to introduce the municipalized social maintenance system as in Finland.

The structure of health care is rather similar in both countries. Public health services are free for users or they are charged a nominal fee. There is relatively as large a hospital system in Estonia as in Finland. In the organization of the ambulatory care there are differences, because the number of physicians is relatively much greater in Estonia. In Finland there exists a system of private health care and its user fees are compensated by public funds. In Estonia private physicians were allowed to take up private practice in 1987. In Estonia the qualified medical care has been concentrated mostly into Tallinn and Tartu. The municipalization of Estonia health care started in 1992 when the new health insurance system came into force.

When comparing the education in Finland and in Estonia it must be remembered that the administration of education has been different. The central administration and planning of Estonian education has led to an overexpanded educational system: the aim was to increase steadily the number of pupils/students without considering the actual needs of society.

The lowest stage of education, comprehensive school, is free in both countries. Also the study in institutions of upper levels has been free in Estonia but not in all institutions in Finland. Due to the free and large education organization, the educational level of Estonians is higher than that

of Finns.

The main difference in education system between Finland and Estonia is the more developed adult education in Finland. In Estonia the education has, as a rule, been obtained in one's youth and persons specialize rather narrow professional area. As a result there is a need for retraining and it is possible that there will exist a shortage of specialists when the economy is moving towards a market economy.

The main difference in public cultural services is their quantity. In Estonia all cultural services have been produced and financed by the state. In Finland there is a mixture of public, partly publicly promoted and private cultural services. In both countries the public sector supplies library, theater and museum services. The public sector also promotes sports training and various kinds of hobbies.

In this comparison the prime focus has been upon the main structures and indicators of public services in Finland and in Estonia. The study depicts the extent of resources allocated and the consequent results, ie. the quantity of services provided in various kinds of institutions. Now we have basic information about the expenditure, financing, regarding provision of public welfare services in Estonia and Finland. The next stage could be to research in more detail the reasons for the differences uncovered. It would also be important to have more information about the use of public services and get users' points of view regarding the comparison.

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Appendix 1. PUBLIC EXPENDITURE BY PURPOSE CATEGORIES IN FINLAND AND ESTONIA IN 1990 (FIM billion, million rubles)

	FINLAND				ESTONIA			
	Cons. exp.	Investments	Total	% GDP	Cons. exp.	Investments	Total	% GDP
General administrat. central government	9887	827	10714	2.0	53.9	-	53.9	0.7
local government	5068	622						
Public order and safety	4819	1205						
central government	5915	653	6568	1.3				
local government	4527	332						
Defence	1388	321						
Education	7508	184	7692	1.5				
central government	27329	3624	30953	5.9	316.2	33	349.2	4.4
local government	6507	1012						
Health	20882	2612						
central government	24626	1865	26491	5.0	178.1	20	198.1	2.5
local government	332	43						
Social security and welfare services	24294	1822						
central government	18479 ¹	1319	19798	3.8	107.6	1	108.6	1.4
local government	186	18						
social security funds	14923	1229						
Housing and community amenities	3370							
central government	3515	473	988	0.8	132.1	125	257.1	3.2
local government	980	224						
Recreation, culture, etc.	2535	249						
central government	3916	1667	5583	1.1	147.1	6	153.1	1.9
local government	228	230						
Transport and communication	3688	1437						
central government	5813	5475	11288	2.2	35.1	13	48.1	0.6
local government	4373	3575						
Other economic services	1440	1900						
central government	3315	363	3678	0.7				
local government	2982	363						
Other purpose, central government	333	0						
Total general government expenditure	339	6	345	0.1				
central government	110642	17420	128062	24.4	970.1	198	1168.1	14.6
local government	33030	6609						
social security funds	74242	10775						
	3370							

¹ inc. social security funds

Sources: Economic survey 1991. Ministry of Finance. Economics department. Helsinki, 1991; Statistical Office of Estonia.

Appendix 2.

THE FINNISH ASSISTANCE PROGRAMS ¹⁾**1. Pension Insurance:**

The obligatory pension protection in Finland consists of the National Pension Insurance and employment pension insurance plus supplementary pension protection under employment pension programs. The national pension is intended to provide all residents of Finland with a minimal level of basic security. An employment pension is aimed at helping pension recipients maintain the level of spending they have achieved.

National pension insurance:

All residents of Finland are entitled to National Pension Insurance benefits, including old age, invalidity, unemployment and survivors' pensions. Persons are entitled to the national pension as follows: 1) old-age pension to over 65, 2) invalidity pension to 16-64 year old persons suffering from an illness, injury or defect that makes them unable to earn an adequate living and 3) unemployment pension to elderly long-term unemployed.

The national pension consists of a basic flat amount and an increment that is dependent on the amount of the employment pension. A Child increase, spouse increase, veterans' supplement, pension care allowance and housing allowance can be received in addition to the national pension.

The national survivors' pension is payable to orphans and widows. Veterans of the 1939-45 wars aged 55-64 are entitled to a veterans' pension. Child care allowance is paid towards the care and rehabilitation of a disabled and chronically ill child. The benefits under National Pension Insurance are pegged to the consumer price index. The National pension basic amount and increment are taxable income. The National Pension Insurance is operated by the Social Insurance Institution.

1) J. Pajula, E. Kalimo. Social Security in Finland. Helsinki, 1989, pp. 15-20.

Employment pension programs:

Employment pension insurance is divided into separate insurance programs for the private and public sectors. The programs consists of old age, invalidity, unemployment and survivors' pensions. In employment pension insurance the age limit for the old age pension is 65. A pension accrues at the rate of 1.5 % a year. The full pension, 60 % of the recipient's pay prior to the beginning of pension payment, is earned in 40 years. For employees in the public sector, the full pension amounts to 66 % of pay prior to the beginning of pension payment and is earned in 30 years. The pension age for the public sector employees is 63.

Employment pension insurance is based on partial funding by the employers. The administration of employment pension insurance is divided between private insurance companies, pension funds and foundations. The public sector pensions are financed by central government and local government tax income.

The payments of employment pensions is determined by the number of working years and the amount of earned income prior to the beginning of pension payments. All the periods of employment and all earned income are taken into account. In the case of an invalidity pension in addition to the earned income, the time before attaining the age limit for an old age pension is relevant for the calculation of the pension. The employment pensions are pegged to the TEL index, which is an average of wage and price indices, and are taxable income.

Flexible pension age provisions:

The flexible pension age provisions are intended to complement the primary system of fixed pension age making it possible to better take into consideration individual circumstances for pension claims and phased retirement. A special invalidity pension is payable to persons over 55 whose working capacity has permanently diminished. Early old age pension is payable at a reduced rate to insured persons over 60. At 65, insured persons can defer the beginning of old age pension payment and receive a larger pension later. Both of the pensions are included in both the national and employment pension programs. A A part-time pension is a component of the employment

pension system only. The part-time pension is payable to 64 year-old wage and salary earners who are working reduced hours.

2. National Sickness Insurance

All residents of Finland are covered by national sickness insurance. Besides provisions for sickness allowances and compensation for loss of income, it includes a cover for health expenses. The latter one is considered in the section of health care.

Sickness allowance is payable to insured persons aged 16-64 who, because of illness, cannot carry on their usual work. The sickness allowance consists of a general flat-rate component and an earnings-related component. The minimum allowance has been 59.75 FIM a day from the beginning of 1991. For persons with average income, the allowance is paid at a rate equivalent to 80 % of their earned income. Sickness allowance recipients supporting a family are eligible for a child increase payable in respect of children under 16. After a waiting period of seven weekdays, the allowance is paid for a maximum of 300 weekdays. It takes precedence over invalidity pension, which is paid only after the recipients is no longer entitled to the sickness allowance.

Mothers who have lived in Finland for at least 180 days are entitled to a maternity allowance (payable as either a maternity, Father's or parent's allowance) paid on the basis of pregnancy, confinement or care of an adopted child. The amount of maternity, father's and parent's allowance is determined in the same way as sickness allowance. All the above allowances are taxable income. National sickness insurance is financed chiefly by insurance contributions by the insured and the employers.

3. Family and Child Benefits

All mothers are entitled to a maternity benefit award in some form of either a cash benefit or a maternity package containing child care necessities. A child benefit is payable to all mothers up to the 17th birthday of their children. In order to guarantee the income security of children born out of wedlock or whose parents have divorced, the local authorities disburse

income support benefits subsidized by the state.

Starting in 1990, the parents of children under three will have a choice between local-authority day care and the child home care allowance.

4. Unemployment Protection

Unemployment protection consists of unemployment allowance, unemployment pension and redundancy payment. The unemployment allowance is payable either in the form of a basic allowance, guaranteeing a minimum level of income or an earnings-related allowance, which is intended to help recipients maintain their achieved level of spending. The earnings-related allowance can be awarded to members of unemployment funds. All others are covered by the national basic unemployment allowances scheme.

The long-term unemployed over age 60 have been eligible for an unemployment pension since 1991. Employees over 40 who have worked for one employer for a lengthy period and have been made redundant because of financial reasons or reasons related to production are eligible for the redundancy payment. The Employment Act requires that the young and the long-term unemployed be provided with employment.

THE ESTONIAN ASSISTANCE PROGRAMS

1. Pension Insurance

In Estonia state pensions were paid to workers, office workers and militaries on the basis of the State Pension Law adopted by the USSR Supreme Soviet in 1956. During the years following this law was improved, pension rates were increased and the circles of pensioners widened. Members of the collective farms were paid collective farm pensions on the basis of the Law on the Pensions and Benefits of Collective Farm Members adopted in 1964.

There were four kinds of pensions according to the legislation: old age pension, disability pension, survivor's pension, superannuation pension (for

army officers, airmen, teachers, medical workers, etc.). Persons with special services to his country and his family member were awarded personal pension.

As a rule, males 60 years of age with at least 25 years of service and females 55 years old with at least 20 years of service were entitled to old age pension. Both prerequisites had to be fulfilled for getting pension. In some cases employees were awarded old age pension on more favourable conditions. For instance, those who had been working on underground works, in unhealthy or difficult conditions could retire 5 or 10 years earlier.

According to old laws the pension was conditioned by the length of service and the previous average income of the applicant, and limited to the fixed maximum pension. Old-age pension was 50-100 % of the average monthly wage. State old-age pension was added supplements (10 % of the pension) for the length of service (10 years over the required length of services) and for continuity (over 15 years)

The size of disability pension depended on the degree and reasons of disability (disability group) as well as on working conditions and the wages received before becoming an invalid. The pension of an invalid as a result of general illness depended on his length of service. Disability pension and survivor's pension were also added supplements (for continual length of service, for the maintenance of dependents). Collective farm pensions were not added supplements. Since the collective farm pensions paid from the centralised fund were lower than state pensions collective farmers received small supplementary pension from collective farms' funds. Persons not getting pension were paid monthly benefits.

The Supreme Council of Estonia adopted the Pension Law of the Republic of Estonia in April 1991 which came into force in May 1991.

According to the Resolution of the Supreme Council of Estonia (January 1992) pensions were temporarily replaced by living allowances from February 1992.

In March 1993 the Estonian Parliament adopted the Law of State Living Allowances which came into force in April 1993.

New laws join the calculation of pensions with the minimum wage and complete the pattern of calculation of the pensionable length of service.

2. Family and Child Benefits, Unemployment Protection

As child benefits in Estonia may be regarded: birth grant, benefits to single mothers and mothers with numerous children, benefit until the child is 1,5 years old, benefit to children 1,5-0 years of age who are not going to kindergartens, to the children of servicemen, to families with low income, to children in ward, compensation for additional leave for a parent of a disabled child. Some of them have been there already for years, but several new benefits and privileges for children have been established in recent years. The Law On Child Benefits (February 1992) established the new state benefits and privileges which are connected with the minimum wage.

Family benefits are various compensations for the rise in the cost of living, e.g. additional benefits for the compensation for the rise of the prices of foodstuffs and manufactured goods (were applied from the end of 1990 up to the beginning of 1992) and for the rises in housing rent and public utilities (heating, gas, hot water, electric energy, etc.) from 1992.

Social allowances to university and vocational school students can be regarded also as family benefits.

The government has arranged the unemployment insurance from April 1991.

Pensions, subsidies, unemployment benefits and allowances are financed from the Social Fund.

3. Sickness Insurance

The Medical Treatment Insurance Act was passed in Estonia in June 1991. It re-established the principles of medical treatment which had been in force in Estonia up to 1940. The Act came into force in 1992.

Appendix 3. SOCIAL SECURITY INDICATORS

1. Current transfers	Expenditures				Number of pension beneficiaries, 1000			
	Finland bill.mk		Estonia mill.rubles		Finland		Estonia	
	1980	1990	1980	1990	1980	1990	1980	1990
Total	28.5	87.3	346.3	718.5				
Old-age and disability benefits	18.8	55.0	280.2	569.0				
Pensions ¹	18.8	31.8	256.7	482.1	1017.4	1212.0	327	384
Old-age					610.1	737.2	237	293
Disability					274.8	300.9	43	39
Other					132.5	173.9	47	52
Family and children benefits	3.3	11.2	11.7	80.5				
Sickness insurance	4.3	14.6	54.4	69.0				
Unemployment	0.8	3.2	-	-				
Other	1.3	3.3	-	-				
2. Social services	Expenditures				Number of places			
Total	5.3	20.4	35.4	56.6	171390	255750	89540	89960
Old-aged and disabled	1.0	7.1	6.6	22.0				
Inpatient			6.6	11.5				
Outpatient			-	0.5				
Other				10.0				
Old-aged welfare	0.2	5.3			33380	35350	2610	2570
Inpatient					30370	30000	2610	2230
Outpatient					3010	5350	-	340
Disabled welfare	0.8	1.8			6370	6520	3430	3690
In-patient					5790	4690	3430	3690
Out-patient					580	1830	-	
Family and children	2.4	8.2	28.8	34.6				
Day care	1.4	6.6	26.7	30.1	131640	213880	83500	83700
Welfare	1.0	1.6	2.1	4.5				
Unemployment	1.0	3.9						
Other		1.2						

¹ including survivor's and war pensions

Sources: Social Security in 1990. Publication 1992:5. Ministry of Social Affairs and Health. Helsinki, 1992, pp. 80-82 ; Statistical Yearbook of Finland 1982. pp. 330-332; Statistical Office of Estonia; Ministry of Social Maintenance of Estonia; Statistika aastaraamat 1991. Tallinn, 1991, p. 68, 159.

Appendix 4.

NUMBER OF PHYSICIANS, VISITS AND HOSPITAL BEDS

Year	Number of physicians ¹ per 1000 inhabitants		Number of visits per inhabitant	
	Finland	Estonia	Finland	Estonia
1922	0.3 ²	0.4	...	...
1938	0.6 ³	0.8	...	...
1950	0.8	1.4	...	...
1960	1.0	2.4	1.6 ⁴	...
1970	1.6	3.4	2.4	8.4
1980	2.7	4.2	3.2 ⁵	10.6
1990	2.7	4.6	4.2 ⁵	11.2

¹ Number of physicians and dentists; 2 1920; 3 1940; 4 1964; 5 1989

Sources: Eesti 1920-1930. Arvuline ülevaade. Tallinn, 1931, p.363; Eesti arvudes. Tallinn, 1937, p. 292; Eesti NSV rahvamajandus 1987. aastal. Statistika aastaraamat. Tallinn, 1988, p. 345; Eesti NSV rahvamajandus 1988. aastal. Statistika aastaraamat. Tallinn, 1989, p. 334, 342; Statistical Yearbook of Finland 1990. Helsinki, 1991, p. 396.

NUMBER OF HOSPITAL BEDS PER 1000 INHABITANT

Year	Finland	Estonia
1930	2.9	2.3
1937	3.7	2.6
1945	7.8	6.7
1950	7.4	6.7
1960	9.1	9.4
1970	11.3	11.2
1980	12.3	12.5
1990	12.3	12.3

Sources: Eesti 1920-1930. Arvuline ülevaade. Tallinn, 1931, p. 366; Eesti arvudes. Tallinn, 1937, p. 292; Eesti NSV rahvamajandus 1987. aastal. Statistika aastaraamat. Tallinn, 1988, p. 345; Eesti NSV rahvamajandus 1988. aastal. Statistika aastaraamat. Tallinn, 1989, p. 334. Statistical Yearbook of Finland 1991. Helsinki, 1992, p. 396.

Appendix 5.

NUMBER OF EDUCATIONAL INSTITUTIONS IN FINLAND AND ESTONIA

Year	FINLAND				
	Total	General education institutions	Vocational education institutions	Higher education institutions	Other institutions
1922	..	..	..	..	..
1938	..	..	393	9	1
1950	..	..	469	16	3
1960	8027	7471	542	12	2
1970	6110	5320	770	16	4
1980	5974	5393	531	20	30
1989	5900	5334	546	20	20
Year	ESTONIA				
	Total	General education institutions	Vocational education institutions	Higher education institutions	Other institutions
1922	1554	1521	31	2	
1938	1565	1382	177	6	
1950	1318	1243	68	7	
1960	1275	1211	58	6	
1970	877	805	66	6	
1980	666	587	73	6	
1989	718	634	78	6	

Sources: Eesti 1920-1930 Arvuline ülevaade. Tallinn, 1931, pp. 336-348; Eesti statistika 1938. Tallinn, 1938, pp. 617-642; Eesti NSV rahvamajandus 1968. aastal. Statistiline aastaraamat. Tallinn, 1969, pp. 209-223; Eesti statistika aastaraamat 1990. Tallinn, 1991, pp. 348-357; Education in Finland 1991. Helsinki, 1991, p. 216.

Appendix 6.

NUMBER OF PUPILS/STUDENTS BY TYPE OF EDUCATIONAL INSTITUTION IN FINLAND AND ESTONIA, thousands

Year	FINLAND							
	Total		General education institutions		Vocational education institutions		Higher education institutions	
	Number	Per 1000 inhab.	Number	Per 1000 inhab.	Number	Per 1000 inhab.	Number	Per 1000 inhab.
1920	..	..	..	..	..	..	..	..
1930	580.8	159	549.6	150	22.2	6	8.9	2
1950	628.6	157	584.9	146	27.8	7	15.1	4
1960	952.2	208	845.8	190	55.9	13	23.6	5
1970	969.1	211	805.3	175	105.1	23	58.7	13
1980	939.3	196	714.3	149	140.8	29	84.2	18
1989	974.9	195	697.3	140	164.6	33	113.0	23
	ESTONIA							
1922	143.8	131	139.2	126	1.2	1	3.4	3
1938	141.3	125	123.6	109	13.0	12	4.7	4
1950	179.0	163	156.5	142	13.7	13	8.8	8
1960	219.1	181	184.7	152	20.9	17	13.5	11
1970	265.3	196	211.4	154	33.9	25	22.1	16
1980	282.2	192	217.6	147	40.6	27	25.5	17
1989	294.7	187	227.5	145	40.9	26	26.3	17
1990	287.7	182	225.4	143	36.4	23	25.9	16

Sources: Eesti 1920-1930. Arvuline ülevaade. Tallinn, 1931, pp. 336-348; Eesti statistika 1938. Tallinn, 1938, pp. 617-642; Eesti NSV rahvamajandus 1971. aastal. Statistiline aastaraamat. Tallinn, 1972. p. 303; Statistika aastaraamat 1991. Eesti Vabariigi Riiklik Statistikaamet. Tallinn, 1991, p. 154; Finland: years 1922-50 Central Statistical Office of Finland, years 1960-90 Government Institute for Economic Research; Koulutusmenojen kehityspiirteitä vuoteen 2030. Helsinki, 1992, p. 77.

Appendix 7.

DISTRIBUTION OF POPULATION AGED 15 YEARS OR OVER BY EDUCATIONAL LEVEL

	Number of inhabitants		%	
	Tertiary	Upper secondary	Tertiary	Upper secondary
FINLAND 1990				
15-20	3	49445	0.0	16.4
20-25	7205	276604	2.0	78.3
25-30	44186	267730	11.7	70.8
30-35	61938	232697	16.0	60.1
35-40	61093	219857	14.9	53.6
40-45	62418	195633	14.3	44.8
45-50	41282	112272	13.9	37.7
50-55	28198	82398	10.1	29.6
55-60	21016	55971	8.2	21.9
60->	48518	127685	5.3	14.0
Total	375857	1620292	9.4	40.4
ESTONIA 1989				
15-20	4893	32855	4.4	29.4
20-25	35447	57301	34.1	55.1
25-30	57442	50662	48.1	42.4
30-35	57546	46682	47.5	38.6
35-40	49975	39911	43.7	34.9
40-45	38379	28283	40.9	30.2
45-50	36093	22766	37.3	23.5
50-55	35723	15682	36.2	15.9
55-60	25853	11396	27.6	12.2
60->	39027	33145	14.8	12.6
Total	380378	338683	31.3	27.8

Sources: Central Statistical Office of Finland; Eesti Vabariigi maakondade, linnade ja alevite rahvastik. Rahvaarv rahvuse, perekonnaseisu, hariduse ja elatusallikate järgi. 1989.a. rahvaloenduse andmed. Tallinn, 1990.; Eesti Statistika aastaraamat 1990. Tallinn, 1991, p. 37.

Appendix 8.

PUBLICATION OF BOOKS, JOURNALS AND NEWSPAPERS

	1938	1936	1950		1960		1970		1980		1989	1990
	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia
Number of published units/year	1555	1708	1891	942	2493	1477	3351	1803	6511	2120	10097	1628
Number of books/1000 inhab.	0.4	1.5	0.5	0.9	0.6	1.2	0.7	1.3	1.4	1.4	2.0	1.0
Number of newspaper	188	49	203	34	207	55	240	43	298	43	385	165
Number of journals and bulletins	857	217	1202	28	1540	115	1903	149	3606	105	4520	434

Sources: Eesti Statistika 1938. Riigi Statistika keskbüroo. Tallinn, 1938, pp. 17-23; Eesti NSV rahvamajandus 1971. aastal. Statistiline aastaraamat, Tallinn, 1972, p. 341; Statistika aastaraamat 1991. Tallinn, 1991, p. 170; Statistical Yearbook of Finland 1982. Helsinki, 1983, pp. 375-377; Statistical Yearbook of Finland 1991. Helsinki, 1991, pp. 432-434.

PUBLIC LIBRARIES

	1938	1939	1970		1980		1990	
	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia
Number of borrowers (1000)	37	115	1282	507	1842	543	2191	417
Number of borrowers/1000 inhabitants	10.2	101	278	374	385	368	441	265
Volumes lent (millions)	5.0	1.9	35.7	10.9	72.5	12.4	86.0	8.9
Home lending/1000 inhabitants	1.4	1.7	7.8	8.0	15.2	8.5	17.3	5.7

Sources: Eesti NSV rahvamajandus 1988. aastal. Statistika aastaraamat. Tallinn, 1989, pp. 323-324; Statistika aastaraamat 1991. Tallinn, 1991, p. 166; Statistical Yearbook of Finland 1981. Helsinki, 1982, p. 370; Statistical Yearbook of Finland 1991. Helsinki, 1991, p. 431.

CINEMAS

	1950		1960		1970		1980		1990	
	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia	Fin-land	Esto-nia
Number of cinemas	507	207	610	417	330	514	352	619	340	641
in towns (%)	35	37	33	25	45	19	71	17	71	15
Number of seats/ 1000 inhabitants	36	18	39	34	22	58	19	65	13	60
Visits/inhab.	6.4	7.4	5.5	18.7	2.5	17.0	2.1	14.4	1.2	6.9

The term "cinema" includes both stationary cinemas and halls used for showing films. Number of seats concerns stationary cinemas and public halls having stationary equipment for showing films.

Sources: Eesti NSV rahvamajandus 1971 aastal. Statistiline aastaraamat. Tallinn, 1972, p. 337; Eesti NSV rahvamajandus 1988. aastal. Statistika aastaraamat. Tallinn, 1989, p. 329; Statistika aastaraamat 1991. Tallinn, 1991, p. 169; Statistical Yearbook of Finland 1991. Helsinki, 1991, p. 426.

7. INCOME - STRUCTURE AND DISTRIBUTION

by Robert Hagfors and Toivo Kuus

Contents

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7.1. Level of income and the purchasing power of wages

In this section we are trying to compare the levels of household income per capita in Estonia and Finland in 1938-1988. However, the statistical data, especially the Estonian data, is not sufficient for a comprehensive comparison between the two countries.

This section focuses on the following question: "Who was better off in 1938, and who was better off in 1988, after fifty years of development under different socio-economic systems?" How big was the difference and how has it changed? There has been some speculation around these questions before, but up till now not much empirical evidence has been provided.

The possibilities to compare the levels of income in 1938 are strictly limited by the data which is available. Before World War II no such aggregate indicators as the household income per capita were provided by the national accounts. But wage data is available and wages have been the main source of income for working people then as it is now. Since wages in agriculture, given as daily, weekly or monthly wages, depend on the hours worked, we have used in the present study the average hourly wages of industrial workers to achieve a better comparability.

It is possible to compare directly the wage levels in both countries by applying the exchange rate between national currencies. In 1938 the average hourly wage of an industrial worker was 668 pennies in Finland and 37,9 cents in Estonia.¹⁾ The sales rate of the Finnish mark (FIM) at the Tallinn exchange was 8,10 Estonian crowns (EKR) per 100 marks. Thus, the direct conversion of the wage levels gives a result that the average hourly wage of an Estonian industrial worker was about 70 percent of the level of a Finnish worker, in other words Finnish wages were about 1,4 times higher. Approximately the same would be the result if the prices of US dollars in Tallinn and Helsinki would be used (8,06 EKR per 100 FIM).²⁾

- 1) The Estonian figure refers to the hourly wage of workers in large-scale industry. The large-scale industry included enterprises with 20 or more workers. It is interesting to note that in 1938 the average hourly wage of female workers was considerably lower compared with male workers: in Estonia it was 62,5 percent and in Finland 58 percent of the level of male workers.
- 2) Suomen tilastollinen vuosikirja 1939; Suomen pankki, vuosikirja 1947; Eesti statistika 1939; Eesti statistika 1940.

However, the currency exchange rate used above cannot be taken for granted for the purpose of comparing the living standards. For a more adequate picture of the real income levels it is necessary to compare the purchasing power of the wages in both countries. There is a possibility to compare the purchasing power of wages (PPW) with respect to foodstuffs using the data on food prices which are available in statistical yearbooks for 1938-39. Since the expenditures on food formed a major share of the consumption expenditures of workers households at that time, the comparison also reflects well the differences in the living standards. The Finnish price data refers to the average prices of food collected from 36 localities and the Estonian price data is calculated on the basis of prices collected from 13 towns (see Appendix 1).

The results of the comparison are presented in figures 1 and 2. For a better comparability the level of the PPW (amounts of goods that can be bought with the hourly wage) of the Estonian worker is taken as 100. The figures show that out of 24 items of foodstuffs for which we have comparable data the PPW of an industrial worker for 13 items it was greater in Estonia and for 10 items Finland held the edge. However, the differences are not big and, in practice, industrial workers were approximately in the same position in both countries. In the case of non-meat foodstuffs the PPW varied slightly more than in the case of meat foodstuffs.

What was the situation fifty years later, in 1988? This can be studied on the basis of the PPW of employees in that year. But before the study some notes should be added. Firstly, the share of foodstuffs in the consumption basket of working people has changed during fifty years. The share of food expenditures in total expenditures of employees households was only 17,8 % in Finland (1985) and 38,3 % in Estonia (1988).¹⁾ Therefore, the PPW with respect to foodstuffs is no longer as good an indicator of the general standard of living as it was fifty years ago.

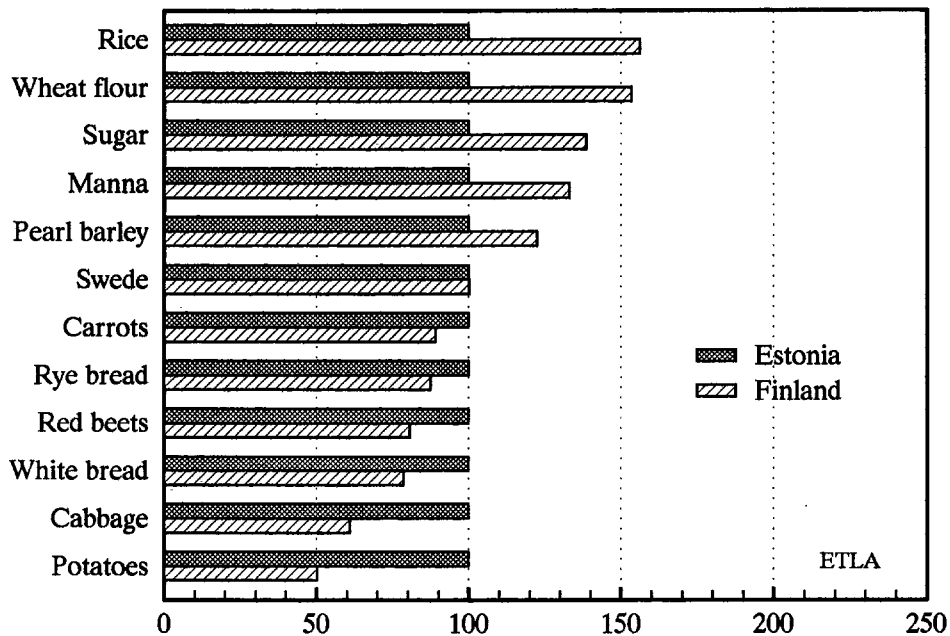
Secondly, the comparability of the PPW with respect to foodstuffs is lower in 1988 than it was 1938 due to the difference in the price system in Estonia and Finland in 1988. While prices in Finland, in principle, follow the changes in the supply and demand, the food prices in Estonia have been

1) Suomen tilastollinen vuosikirja 1990; Töölise, teenistuja ja kolhoosniku perekonna budzett, Tallinn, 1989.

fixed by the state. It has been the Soviet price policy in Estonia after World War II to keep the prices of foodstuffs relatively stable and lower than the cost of production with the help of significant subsidies to agriculture. This has been possible because of the monopolistic position of the public sector in Estonia. Although there exist subsidies also in Finland, they affect the price level indirectly and not to the same extent. Thus, the following comparison obviously puts an Estonian employee in a more favourable position.

Thirdly, the quality of foodstuffs should be also taken into account. While the quality was approximately the same in 1938, we cannot make a similar assumption automatically for 1988. Since we do not have any estimates of the quality levels of foodstuffs we have used in the comparison the unadjusted prices of nominally identical foodstuffs. This also favours the Estonian side, because the quality of food is to a certain extent lower there.

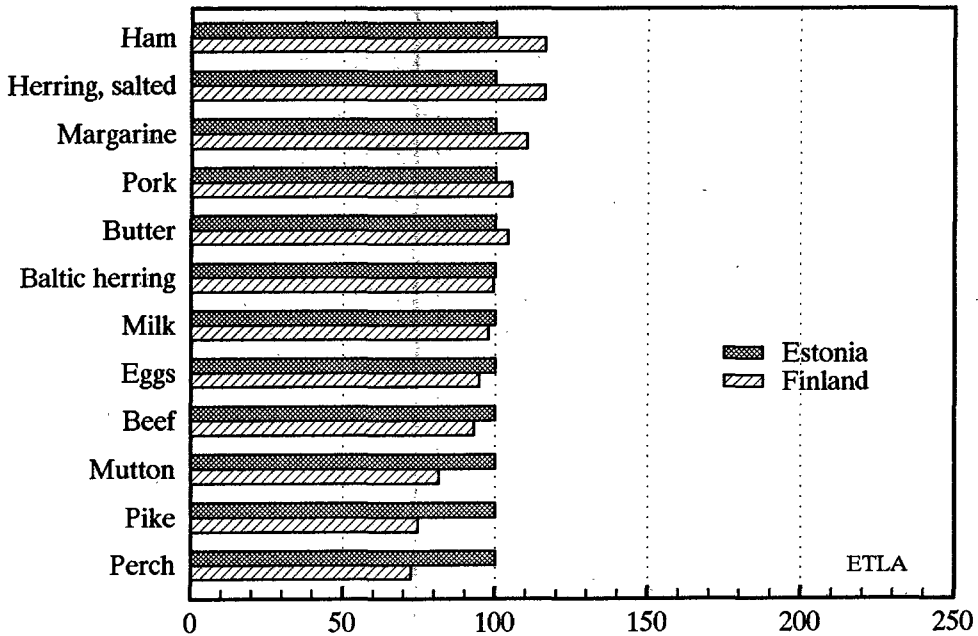
Figure 1. Comparative levels of the PPW of industrial workers with respect to non-meat foodstuffs in 1938 (Estonia = 100)



Fourthly, although the prices of foodstuffs in Estonia which have been used in the comparison are the actual purchasing prices derived from the Household Budget Survey, it cannot be assumed that all these items of foodstuffs were always available in shops. The degree of food shortages has been varying and it increased significantly in 1989 and 1990. In 1988, however, the food situation was still reasonable and the majority of these foodstuffs to which we have referred were more or less permanently available. Therefore, the comparison is, perhaps, not too distorted.

The wage data for 1988 is based on the average monthly wages of employees. It was 249,2 roubles in Estonia and 7243 marks in Finland.¹⁾ To get the hourly wages we have applied the conversion rates which are used in both countries for that purpose: 173,1 in Estonia and 170 in Finland.

Figure 2. Comparative levels of the PPW of industrial workers with respect to meat foodstuffs in 1938 (Estonian level = 100)

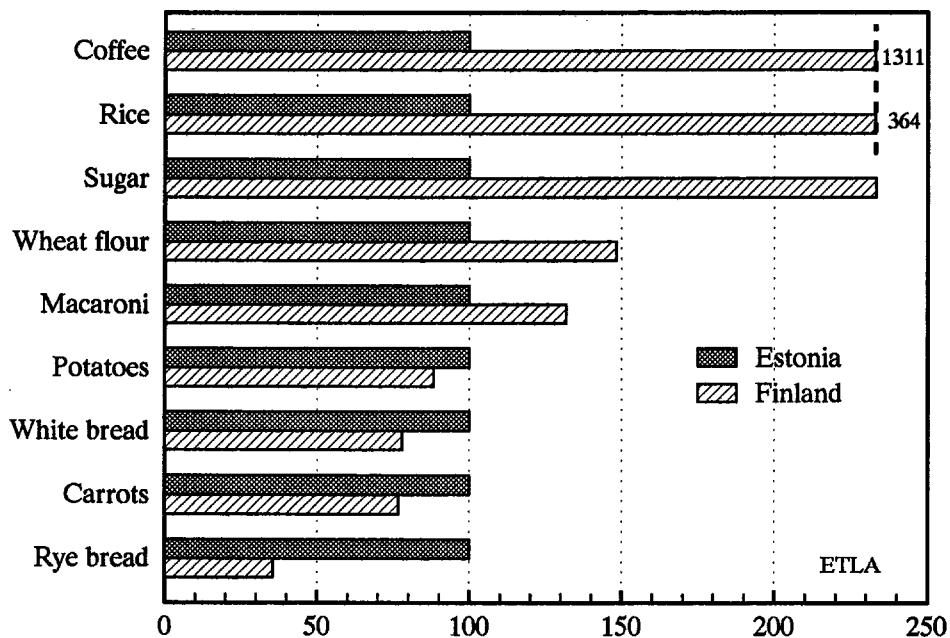


1) See tables 5 and 6 in subsection 2.

The average net wage seems to be relevant for the comparison of the PPW in 1988 rather than gross wage, because we are trying to measure the disposable income that people actually had to buy goods. Taxation has been quite different in Estonia and Finland (see subsection 7.2 about personal taxation). In the estimation of net wages we have used the rate of direct taxes of gross income of employees: in Estonia it was 8,7 percent and in Finland 28,3 percent. The average hourly net wages would be accordingly 1,31 roubles and 30,55 marks. Relative levels of the PPW of employees with respect to foodstuffs are presented in figures 3 and 4.

Compared with 1938 some changes have occurred. In 1988 for the majority of meat products the PPW of a Finnish employee appears to be 1,45-2,1 times higher than that of an Estonian employee, though there were two products that were relatively cheaper for an Estonian employee: beef and Baltic herring. In general, however, it should be admitted that a Finnish employee can be considered to be better-off. As regards the non-meat

Figure 3. Comparative levels of the PPW of employees with respect to non-meat foodstuffs in 1988 (Estonian level = 100)



products, the results of the comparison depend on the item of foodstuff which we compare. The extreme cases are rye bread and coffee: while the first one was about 3 times cheaper for an Estonian employee, the second one was 13,1 times more expensive. Thus, rather different price structures in the two countries can be found. In general, figure 4 seems to suggest that this sample of non-meat products for which we have data was cheaper for a Finnish employee. Unfortunately, the data is not sufficient for a better comparison based on a comprehensive basket rather than on separate items of goods.

It is also possible to compare the PPW of employees with respect to some manufactured goods and services (see figure 5). Instead of comparing how much of a good can be bought with the hourly wage we have made the reverse comparison: how much worktime is needed to buy a unit of a good or service.

Figure 4. Comparative levels of the PPW of employees with respect to meat foodstuffs in 1988 (Estonia = 100)

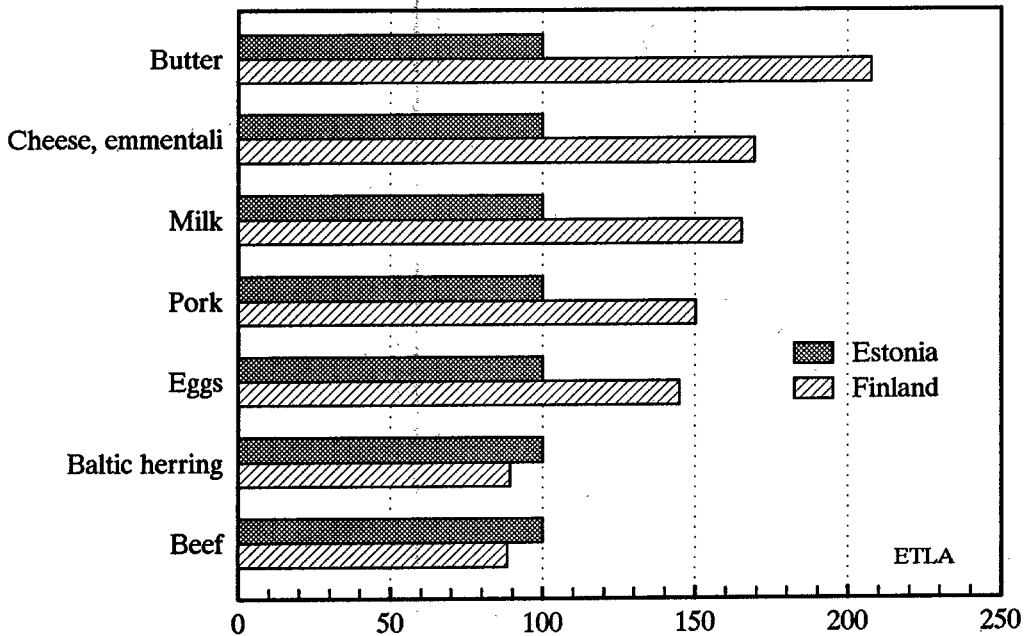
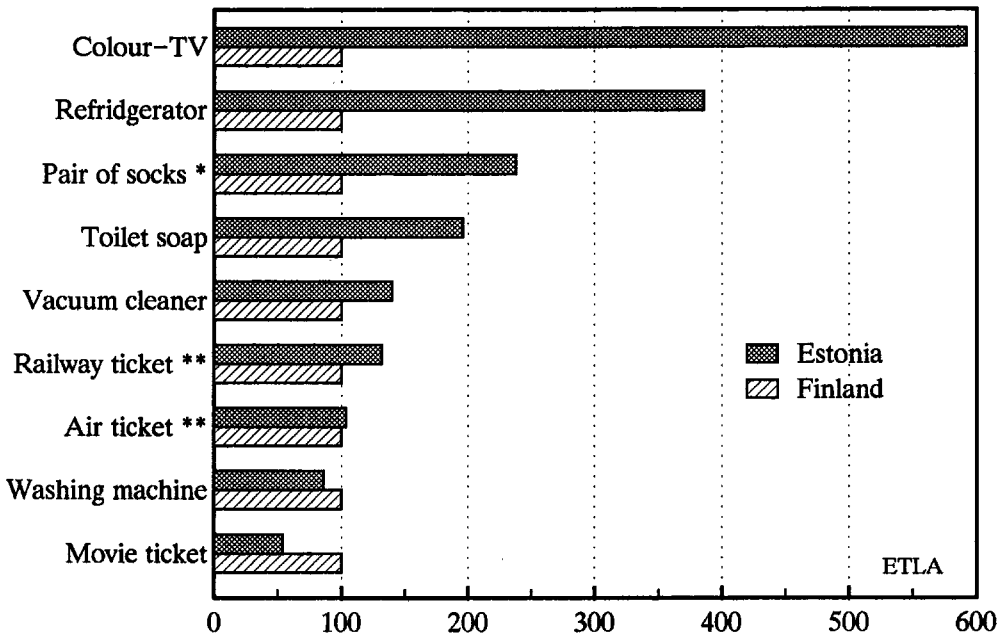


Figure 5 suggests that the differences in the PPW with respect to manufactured goods are bigger than they were in the case of foodstuffs. An Estonian employee had to work approximately six times longer to buy a colour TV, about four times longer to buy a refrigerator and 2-2,4 times longer to buy a pair of socks or a bar of soap. In the case of transportation services the differences were smaller and a movie ticket was even two times cheaper in Estonia than in Finland. However, there are two factors which seriously affect the comparability of data on the consumer durables and semidurables.

First, the prices on which the comparison is based do not reflect the different quality of goods. In case of foodstuffs a simplifying assumption was made that the quality of goods in Estonia and Finland is close to each other, but similar assumption cannot be used for manufactured goods. If the prices

Figure 5. Comparative lengths of worktime needed to buy some goods and services (Finnish level = 100)



* A pair of socks or stockings.

** Comparison is based on the following distances: Tallinn-Tartu (Estonia) and Helsinki-Tampere (Finland), approximately 180 km each.

were adjusted to take into account the differences in the quality of goods, the differences of the PPW would be several times bigger in favour of Finland. The "quality factor" varies with items of goods being more significant in consumer durables. In some cases goods can even belong to a different technical generation in spite of the nominal identity of goods.

Secondly, also the "shortage factor" should be taken into account, i.e. the shortage of goods in Estonia. This means that the state prices which are used in the present comparison do not lead to a correct estimate of the real PPW. In 1988 the shortage of consumer durables was much sharper than the shortage of food. Therefore, if correctly adjusted equilibrium prices were available, the PPW in Estonia would be considerably lower. Because the present comparison fails to take into account the quality and shortage factors, the comparison of the PPW with respect to consumer durables and semi-durables is less reliable than with respect to foodstuffs. But in spite of the factors which cause the deviation of results that favour an Estonian employee, the PPW appears to be bigger in Finland.

However, the comparison of the PPW with respect to various items of goods and services does not present an aggregate estimate of the income level unless the basket of goods and services which is used is representative of the actual consumption. Since a correct and comprehensive comparison of the purchasing power parities of national currencies would go beyond the scope of the present study we have to look for some alternative ways to compare the income levels.

Next we try to estimate the levels of household income per capita with the help of some conceivable and available conversion rates between the Finnish mark (FIM) and Soviet rouble (SUR). First we follow the development of income levels in both countries converting the Estonian income level from roubles to marks by the official exchange rate. The results are presented in table 1 and figure 5.

Figure 6 shows that the difference of income levels between the two countries has grown during 1960-1988. Since the figure is drawn on the basis of nominal income, the income levels in different years are not comparable in real terms. Real household income per capita in Finland in that period has grown less than nominal income, about 3,4 times. We do not know what has been the real income growth in Estonia, because the collection of data

for calculating the consumer price index started in 1989. The difference between the two countries in the same year can nevertheless be estimated. According to the latest observation household income per capita was in Finland 4,6 times higher than in Estonia in 1988.

However, the assumption that the official exchange rate reflects the purchasing power parity of the Finnish mark and Soviet rouble is incorrect. In fact, the relationship between the official exchange rate and the purchasing power parity of the currencies has been weak or non-existent. The rouble has been considerably overvalued during 1960-1988. Thus, it is justified to take into account also some alternative conversion rates to get more correct estimate of income levels in real terms. Figure 7 presents household income per capita in Estonia and Finland in 1988 using the following conversion rates (FIM per SUR).

Table 1. Household income per capita in Finland and Estonia in 1960-1988

Year	Finland FIM	Estonia SUR	Official exchange rate FIM per SUR	Estonia, converted FIM
1960	2811,8	594,9	8,025*	4774,1
1970	7962,6	1135,9	4,680	5316,0
1980	34469,9	1731,1	5,701	9869,0
1985	60297,2	2076,3	7,163	14872,5
1988	76435,1	2413,1	6,861	16556,3

* November 1960

Sources: "Kansantalouden tilinpito 1981: Aikasarjat vuosilta 1960-1981", Tilastokeskus, Helsinki, 1984; "Kansantalouden tilinpito 1984-1989", Tilastokeskus, Helsinki, 1990; Statistical yearbooks of Finland from the years 1988 and 1990; "Bank of Finland Monthly Bulletin No.1, 1961", Bank of Finland, Helsinki, 1961; "Eesti rahvamajandus 1988. aastal", Olion, Tallinn, 1989.

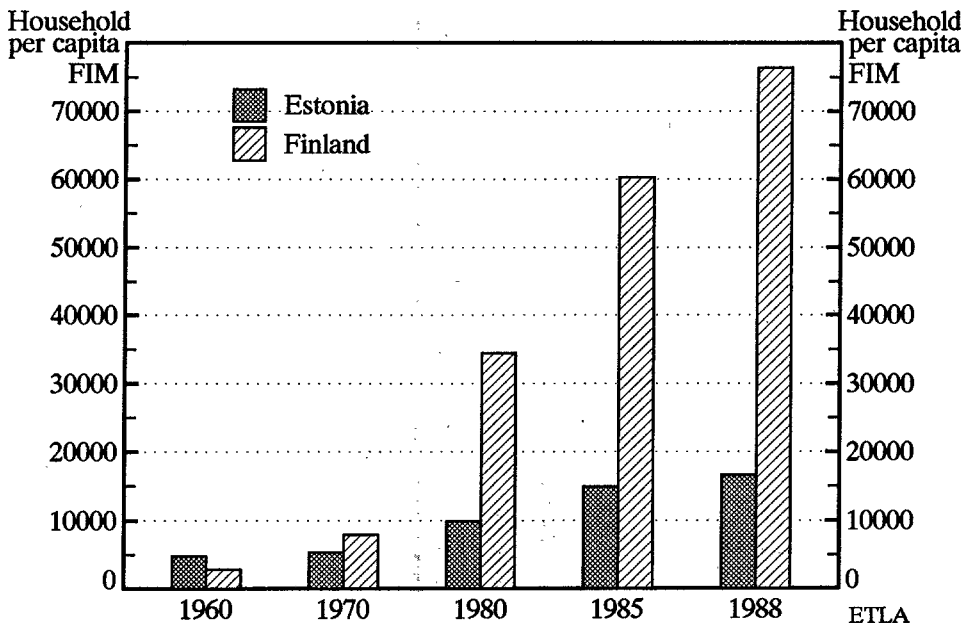
1. Official exchange rate (6,861): Estonia 1 in the figure.

2. "Food rate", calculated as the average ratio of foodstuff prices used in the comparison of PPW in present study (8,501): Estonia 2 in the figure.

Since the quality differences and the shortage factor explained above would have affected considerably the results in the case of other goods and services, we have calculated only the ratio of foodstuff prices.

3. Tourist rate, used in Estonia and in the Soviet Union when selling foreign currency to Soviet citizens who have planned and received permission to undertake a tourist trip abroad. It is ten times lower than the official exchange rate, in our calculations thus 0,6861. The amount permitted to exchange was limited to 2000 roubles per person per year. Estonia 3 in the figure.

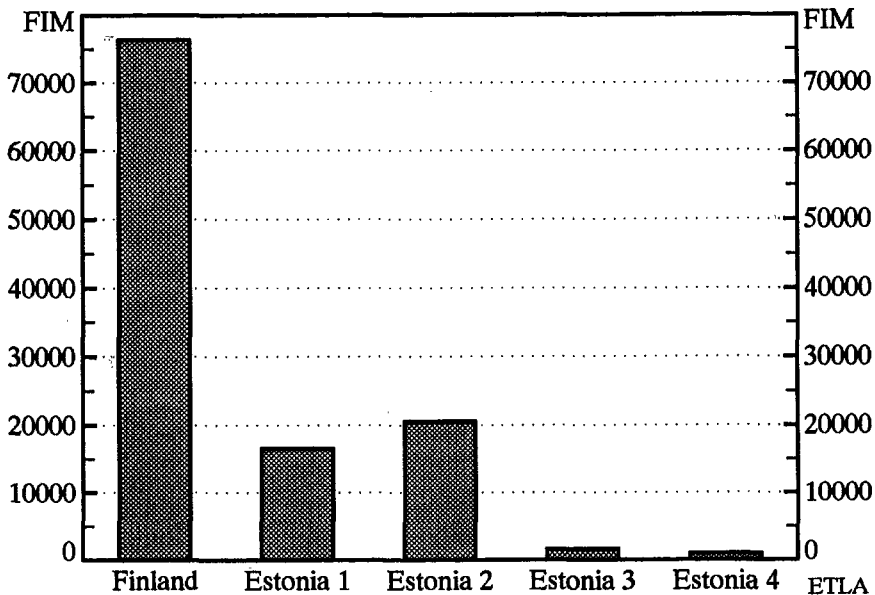
Figure 6. Differences of the levels of household income per capita in Estonia and Finland in 1960-1988; the Estonian income level is converted from SUR to FIM by the official currency exchange rate



4. Black market rate in Estonia (0,4 - estimate by Kalev Kukk): Estonia 4 in the figure. Since 1988 the price of the Finnish mark in the black market has risen rapidly and in January 1991 it was already about 6 SUR per 1 FIM , or 0,16 FIM/SUR.

These conversion rates give rather different estimates of the income level in Estonia. According to the "food rate" it was 3,7 times lower than in Finland, but according to the black market rate even 79,2 (!) times lower. While these extreme estimates hardly tell anything about the real income level in Estonia compared with Finland - its estimation implies the use of a purchasing power parity rate - they can indicate the range within which it lies. Since the official exchange rate certainly overvalues the rouble while the tourist rate which is ten times lower, on the contrary, tends perhaps to undervalue it, the mistake in estimating income levels would be smaller if the arithmetic average of

Figure 7. Household income per capita in Finland and Estonia according to different conversion rates between the Soviet rouble and Finnish mark



these rates is used: 1 SUR=3,77 FIM. In that case the household income per capita in Estonia in 1988 was 9097,3 FIM or approximately 8,4 times lower than in Finland. Since taxes are different - in Estonia the gross tax rate was 7 and in Finland 26,3 percent of all household income - the difference of disposable income levels is somewhat (1,3 times) smaller. Nevertheless, it does not change the picture much.

Table 4. Comparison of the PPW of employees with respect to some manufactured goods and services in 1988

Item of good or service	Prices		Working hours needed to buy a good or service	
	Estonian roubles	Finnish marks	Estonia	Finland
Colour-TV	717	2825	547,33	92,47
Refridgerator	290	1750	221,37	57,28
Washing machine	110	3000	83,97	98,20
Vacuum cleaner	51	850	38,93	27,82
Pair of socks	2,63 ¹	25,82	2,01	0,85
Bar of soap (kg)	2,9	34,5	2,21	1,13
Railway ticket ²	3	53	2,29	1,73
Air ticket ²	8	180	0,38	0,70

¹ A pair of socks or stockings.

² Comparison is based on the following distances: Tallinn-Tartu (Estonia) and Helsinki-Tampere (Finland), approximately 180 km each.

Sources: "Eesti NSV rahvamajandus 1988. aastal", Olion, Tallinn, 1989; "Töölise, teenistuja ja kolhoosniku perekonna budzett", Eesti NSV Riiklik Statistikaakomitee, Tallinn, 1989; "Suomen tilastollinen vuosikirja 1990", Tilastokeskus, Helsinki, 1990; "Kuluttajatilasto 1988"; Suomen Radioliikkeiden liiton tilastot.

There are two factors which account for the difference of income levels in Estonia and Finland in real terms: the amount of goods and services that can be consumed and the quality of these goods and services. During the last few decades the Estonian economy has failed to keep pace with the qualitative shifts that have taken place in world economy. Since the prices in the world market can serve as a basis for calculating comparable income levels, it is even possible that the total value of production (real income level) can decrease in spite of the growth of the volume of production if the latter is not sufficient to compensate the increasing quality lag of production. Thus, it is mainly the technical and technological lag of goods produced in Estonia that accounts for the growing gap between the real income levels in the two countries.

7.2. Structure of income and personal taxation

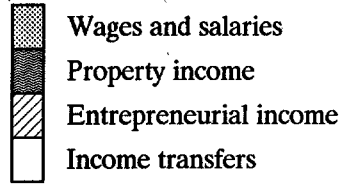
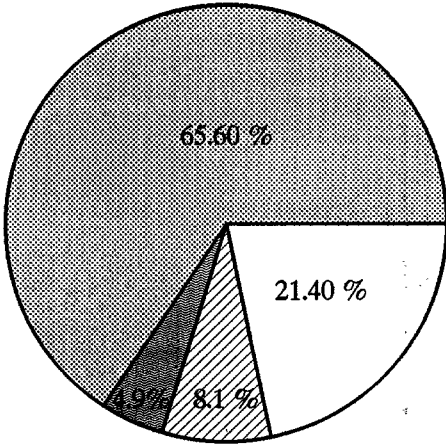
The Estonian data in this study has two sources. The first source is the statistics of the Balances of National Economy which provides data for the total population since 1960. The second source is the Household Budget Surveys which provide data for employees for 1988. The classifications of income types which are used in both cases can be regarded as identical although there might be slight differences.

The Finnish data on the structure of income is derived from the Household Budget Surveys and Income Distribution statistics and is available since 1966. There is also data available from the System of National Accounts for a longer period, but the categories of income used there are not entirely comparable with the Estonian ones and also with the Finnish data from other sources. It should not be inferred, however, that the categories used in Estonia and Finland were properly comparable for the study. In order to achieve desired comparability it was necessary to make some aggregation of the structural elements of the Estonian data.

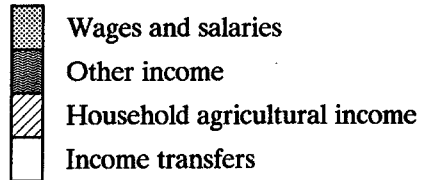
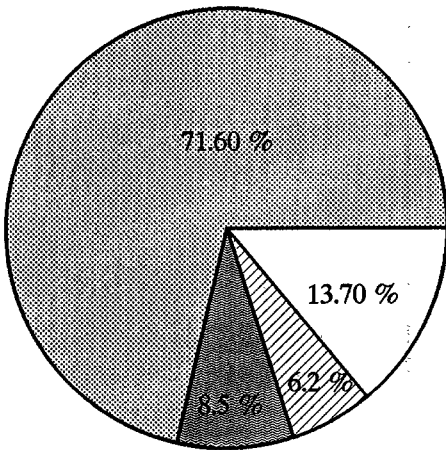
The data on the structure of household income in Estonia and Finland in 1988 is presented in figure 8. The development of the structure of income can be followed in tables 5 and 6. On the basis of that data the following main differences can be noticed.

Figure 8. Structure of household income in 1988

FINLAND



ESTONIA



ETLA

Table 5. Income structure in Finland in 1966-1988, income/ household

Income item	Per cent						
	1966	1971	1976	1981	1985	1988	1988 ¹
Wages and salaries	66,5	66,2	67,9	69,5	65,9	65,6	85,0
Income transfers	9,7	14,0	16,5	17,4	21,2	21,4	9,5
Entrepreneurial	18,3	13,6	11,2	9,9	9,6	8,1	2,4
Property income	5,5	6,2	4,4	3,3	3,5	4,9	3,1
Gross income	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Direct taxes	-16,2	-19,6	-25,0	-23,4	-25,2	-26,3	-28,3
Disposable income	83,2	80,4	75,0	76,6	74,8	73,7	71,7

Table 6. Income structure in Estonia in 1960-1988

Income item	Per cent					
	1960	1970	1980	1985	1988	1988 ¹
Wages and salaries	79,3	78,7	75,7	72,7	71,6	80,0
Income transfers	8,9	10,9	13,2	13,6	13,7	8,5
Household agricultural income	8,1	6,4	4,5	6,2	6,2	2,2
Other income	3,7	4,0	6,6	7,5	8,5	9,3
Gross income	100,0	100,0	100,0	100,0	100,0	100,0
Direct taxes	-6,2	-6,8	-7,2	-7,0	-7,0	-8,7
Disposable income	93,8	93,2	92,8	93,0	93,0	91,3

¹ Families of employees

Sources: Uusitalo, H. "Income Distribution in Finland", Tilastokeskus, Helsinki, 1989; "Tulonjakotilasto 1988", Tilastokeskus, Helsinki, 1990; "Eesti rahvamajandus 1988. aastal", Olion, Tallinn, 1989.

First, the taxation plays a significantly more important role in the income formation of households in Finland than in Estonia. In 1988 the share of direct taxes in gross income was 26,3 per cent in Finland, but only 7,0 per cent in Estonia. Accordingly, the share of disposable income in gross income was lower in Finland.

The gross tax ratio has increased more in Finland during the period. In 1966 roughly one sixth of gross income was used to pay taxes, but in 1988 a bit more than one fourth. The increase was particularly rapid in 1966-1976 reflecting the expansion of the welfare state. During the following five years there was a small setback, but in 1980s the welfare state recovered and the share of taxes in gross income has increased again. In Estonia the share of taxes has changed very little during 1960-1988, by only 0,8 percentage points.

The above-mentioned difference indicates the different role which has been assigned to direct and indirect taxation in the two countries and reflects the difference of the economic systems. Direct taxation is more important in Finland and indirect taxation in Estonia. Consequently, the ratio between final income, which includes also the value of public services, and gross income should be lower in Finland. This is in accordance with the observation that in 1981 the ratio between final income and gross income was 88,1 percent in Finland, but the same figure for Estonia was about 125 per cent in 1988 (estimate for employees).

Secondly, **income transfers** are a considerably more important source of income for the Finnish households than for the Estonian households: the share of this type of income was 21,4 per cent in Finland and 13,7 per cent in Estonia in 1988. This difference is also connected with the development of welfare state: redistribution of income is more extensive in Finland. In both countries the share of income transfers has increased, but considerably more in Finland. The share of **wages and salaries** has declined in both countries, but has remained higher in Estonia. In the case of employees, on the contrary, the share of wages and salaries is higher in Finland.

Thirdly, there are two income categories in Finland which have been insignificant or missing and not reported for Estonia: **entrepreneurial income and property income**. This is due to the difference of the economic systems in the two countries. Although in Finland the shares of entrepreneurial and property income have decreased, together they formed still one seventh of gross income in 1988. In Estonia one can find a quite specific type of income, viz. the **household agricultural income**. Since the public agricultural sector has not always been able to supply the amount or quality of foodstuffs that is needed, many house-holds have been engaged in growing vegetables, livestock etc. for their own use and selling a part of

their products on markets or to the state. During 1960-1980 the share of this type of income decreased, but in 1980s this process was reversed and in 1988 it formed 6,2 per cent of gross income. This figure refers to all households; for many households, especially in the countryside, this type of income has been much more important. In general, the structure of income has changed more in Finland. In Estonia it has been quite stable.

Since taxes play an important role in the formation of disposable income of households it is interesting to compare briefly the tax systems which are operating in Finland and Estonia. Data on the structure of direct taxes in the two countries is presented in tables 7 and 8.

Table 7. Structure of direct taxes in Finland 1970-1988

Tax	Per cent			
	1970	1980	1985	1988
State income tax	35,9	39,3	40,4	42,8
Municipal inc. tax	52,7	51,2	48,5	47,4
Property tax	1,0	0,4	0,4	0,2
Social security fees	10,4	9,1	10,7	9,6
Total	100,0	100,0	100,0	100,0

Table 8. Structure of direct taxes in Estonia 1960-1988

Tax	Per cent				
	1960	1970	1980	1985	1988
Income tax	78,7	87,8	90,7	90,8	92,2
Childlessness tax	13,5	8,5	6,0	5,2	4,4
Agricultural tax	3,6	1,0	0,4	0,4	0,3
Other taxes	4,2	2,7	2,9	3,6	3,1
Total	100,0	100,0	100,0	100,0	100,0

Sources: "Tulojen ja varallisuuden perusteella maksuunpannut verot vuodelta (*) toimituksessa verotuksessa", Verohallituksen julkaisu, Helsinki; "Tulo- ja omaisuustilasto", Tilastokeskus, Helsinki; Unpublished statistical tables from the Estonian Statistical Office. (*) years 1980, 1988.

In Finland direct taxes include the state income tax, the municipal income tax, the property tax and social security fees. The first two types of taxes formed about 90 per cent of direct taxes in 1988. Since 1970 the share of the state income tax has increased a little bit and the share of the municipal income tax decreased, but the latter has still the biggest share. The share of the property tax has been quite small and it has fallen during 1970-1988 up to 0,2 per cent. The social security fees have formed about one tenth of all direct taxes during 1970-1988.

In Estonia direct taxes include the income tax, the childlessness tax, the agricultural tax and some less important taxes. The income tax is the most important of these taxes: its share was 92,2 per cent of all taxes in 1988. During 1960-1988 its share has continuously increased. The childlessness tax ranks in second place and it formed 4,4 per cent of all taxes in 1988. During 1960-1988 its share has fallen approximately threefold. The agricultural tax is to a certain extent analogous to the property tax in Finland and it is paid by those people who own land. Its share has fallen during 1960-1988 and it constituted 0,3 per cent of all direct taxes in 1988.

The main features of the tax systems in Finland and Estonia can be described as follows. In Estonia the income tax is paid usually on monthly basis from wages and salaries, stipends and also sickness allowances. It is not paid from pensions and other types of income. The tax scale is progressive, but the

Income tax at some levels of income in Estonia (1973-1990):

Taxable income roubles	Tax roubles	Tax rate %
71	0,25	0,4
80	3,41	4,3
90	6,81	7,6
100	8,20	8,2
150	14,70	9,8
200	21,20	10,6
300	34,30	11,4
400	47,20	11,8
500	60,20	12,0
501 and above	60,20 + 13 per cent of the income above 500 roubles	

marginal tax rate has been quite low, only 13 per cent on income higher than 500 roubles per month. The progression varies: tax scale is highly progressive for lower levels of income of 70-100 roubles per month, and slightly progressive or nearly proportionate for income over 100 roubles. The scale has not been changed since 1973 when it was introduced and with the growth of average income level the progression is, thus, decreased. Initially it was more progressive. There is also a separate, slightly modified tax scale with lower tax rates for persons who have four or more dependents.

The childlessness tax has a constant tax rate, 6 per cent of income. In Finland there are two types of income taxes: the state income tax and the municipal

State income tax schedule in Finland in 1988:

Taxable income mk	Tax at the lower frontier of interval mk	Tax from the income above the lower frontier of interval %
15900 - 22200	10	6
22200 - 27500	388	13
27500 - 32800	1077	19
32800 - 42400	2084	23
42400 - 54000	4292	28
54000 - 78000	7540	29
78000 - 104000	14500	33
104000 - 162000	23080	38
162000 - 270000	45120	45
270000 - 485000	93720	50
485000 -	201220	51

Also the property tax has a progressive scale in Finland (1988):

Taxable property mk	Tax at the lower frontier of interval mk	Tax from the property above the lower frontier of interval %
845000 - 1580000	200	1.0
1580000 - 3170000	7550	1.5
3170000 -	31400	1.7

Source: Onikki, E. (toim.) "Verolait 1988", Suomen Lakimiesliitto, Helsinki, 1988.

income tax. Both taxes are paid on a yearly basis, but have different tax schedule: the state tax schedule is common for all taxpayers, but each municipality has its own tax rate. The tax schedules are changed every year, since otherwise the progression would rise along with the rise of general income level. However, the marginal tax rates have remained the same since 1979. Up to 1973 all taxpayers were divided between three different categories depending on their marital status and the presence of children, but since 1975 all taxpayers have formed one common category.

7.3. Distribution of disposable income

While the international comparisons of income levels are usually made using aggregate data from national account statistics, the concentration to distributional issues is more demanding in this respect. Clearly some more detailed information concerning the income formation of the households in both countries is needed. Additional difficulties are faced because of the differing economic systems in question. This matter is highlighted especially when one is trying to find comparable income definitions to be used in income distribution analysis.

In this section we use data collected from individual households. In Finland data on the disposable income of households is available from the Household Budget Surveys for the years 1966, 1971 and 1976. Since the year 1977 Central Statistical Office of Finland has carried out Income Distribution surveys annually. The population consists of all noninstitutional households in Finland. (In 1988 the sample was 12200 households, while earlier it was around 10000). Most income data was collected from administrative records, but interviews were also carried out. The sample information was transformed to the basic population level by using coefficients, which depend on the sampling probability of the household in the sample. The Income Distribution Statistics are representative for all households in Finland. We are using here surveys from the years 1986 and 1988.

Household data in Estonia is available from two types of household surveys. The Family Budget Survey has been carried out annually since the year 1952. The sample size has been around 1000 households (1150 since the year 1988). The Income Survey was carried in 1967, 1972, 1975, 1978, 1981,

1984 and 1989. The latest income survey sample consisted of 3230 households. Until 1989 the results from household or income surveys were secret and part of them could be used only for official use.

The structure of the household budget survey and the income survey is determined by the instructions of the Statistical Central Bureau of the Soviet Union. The number of households from different industries and population groups to be included in the sample is determined so that it represents the population of the whole Soviet Union. Similarly the coefficients to raise the results to the basic population level follow the structure of the Soviet Union. These restrictions are serious and therefore we have decided to use only Household Budget Survey sample data from the years 1986 and 1989 here. There are no coefficients for taking the results to the Estonian population level and the sampling method does not lead to a representative sample. This should be kept in mind while evaluating the results of this section.

Table 9. Average income, population and households in Finland and Estonia according to Income Distribution Statistics (Finland) and Household Budget Survey (Estonia)

Finland:		
Year	1986	1988
disposable income, FIM/month		
- per household		8633
- per member	3200	3725
population (1000)	4925,6	4954,4
households (1000)		2102,3
Estonia:		
Year	1986	1989
gross income, SUR/month		
- per household		405,4
- per member	167,3	197,7
population (1000)	1549,1	1570,4
households (1000)		600,9

Another difficulty is the definition of the income to be used. From the point of view of economic welfare, the **disposable income** of the household would be the best indicator for its ability to allocate expenditures. In this definition transfers received are added and transfers paid subtracted from factor incomes following the recommendations of the United Nations provisional guidelines (1977).

In the Estonian Household Budget Survey data evaluated here the income of the household includes transfers received. Taxes are not excluded. We maintain, that from the distribution point of view this is not of great importance, because the tax system in Estonia is approximately proportional. (See also section 2 concerning taxation.) Later when we discuss income distribution, we mean **gross income** with respect to the Estonian side.

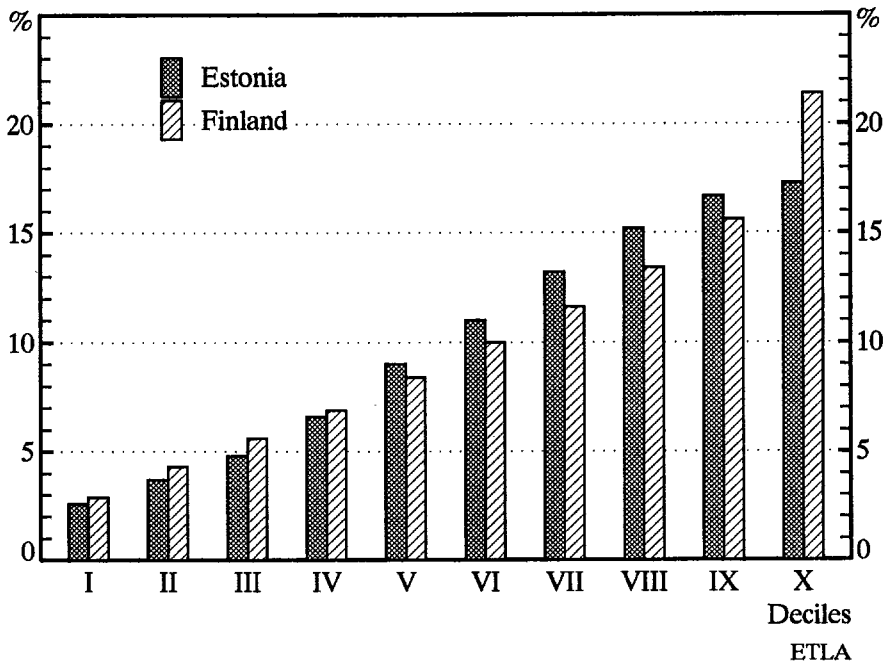
Table 10. The shares of disposable income per household (Finland) 1988 and gross income per household (Estonia) 1989 in household deciles

	1988	1989
DECILES	SF	E
I	2.9	2.6
II	4.3	3.7
III	5.6	4.8
IV	6.9	6.6
V	8.4	9.0
VI	10.0	11.0
VII	11.6	13.2
VIII	13.4	15.2
IX	15.6	16.7
X	21.4	17.3

When income distributions are compared, the frequently faced question is the trade off between equity and efficiency. This issue is especially important

when the difference between the average income of the households is big, as it is between Finland and Estonia. Handling this problem properly would demand rank ordering techniques and will not be done here. To give some idea of the difficulties involved we can try to convert average monthly per capita income in Estonia (197,7 SUR in the Household Budget Survey 1989) into FIM. In Finland the average monthly disposable income per capita was 3725 FIM in 1988. There are numerous exchange rates available. At the official rate the average monthly income would be 1347,7 FIM. At the tourist rate it would be 134,8 FIM, ten times lower. By using black market rates estimated in Estonia (Kalev Kukk), the average income per month is even smaller, 49,4 FIM. From 1990 commercial and auction rates by the Bank of Estonia could also be used. Purchasing power parities for a more proper conversion are not available.

Figure 9. Shares of disposable income (Finland 1988) and gross income (Estonia 1989) per household in household deciles



Source: Finland, "Income Distribution Statistics 1988", Official Statistics of Finland, Central Statistical Office of Finland, Income and consumption 1990:6. Estonia, unpublished files of the Household Budget Survey 1989 carried out by Statistics Estonia.

Before the comparison of the household income in Estonia can be made with the corresponding Finnish income on the purchasing power basis it seems to be reasonable to concentrate only on distributions and leave the level comparisons to later stages of this common research project. (See, however, section 2 on this subject.)

We find it convenient to make the income distribution comparison by using income shares in deciles. These tell how large a share of the relevant income is allocated to different deciles. The number of units (households or household members) in different deciles is the same. The Estonian data was given in income class intervals and frequencies. Moreover the upper interval was open. The Finnish data was published in the Income Distribution Statistics for households in January 1991. The data for household members for the years 1986 and 1988 was processed in the Central Statistical Office of Finland for this study. In table 10 we present the distribution of income between households in Finland and Estonia.

Table 11. Shares of disposable income per household member (Finland 1986, 1988) and gross income per household member (Estonia 1986, 1989) in household member deciles

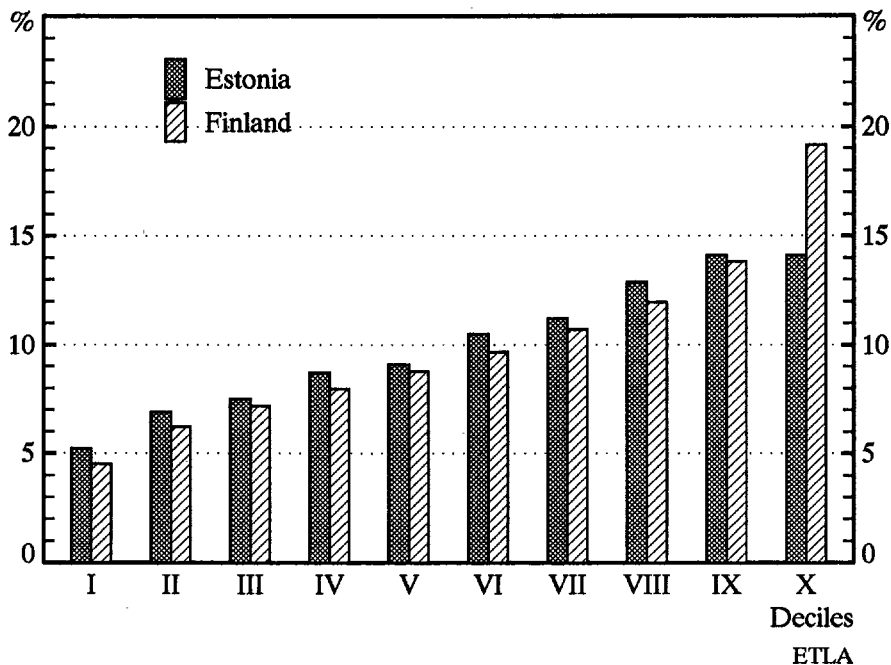
DECILES	1986		1988	1989
	SF	E	SF	E
I	4.51	5.2	4.53	4.6
II	6.23	6.9	6.18	6.3
III	7.18	7.5	7.05	7.3
IV	7.96	8.7	7.87	8.0
V	8.78	9.1	8.69	9.1
VI	9.66	10.5	9.60	10.1
VII	10.72	11.2	10.63	11.6
VIII	11.96	12.9	11.89	11.8
IX	13.83	14.1	13.87	13.1
X	19.16	14.1	19.69	18.0

As a first rough estimate of income differences in both countries we calculate the relation between the highest and lowest deciles: Finland $X/I=7.4$ and Estonia $X/I=6.7$. This of course does not give the definite answer to the question, in which country the distribution is more unequal. However, it appears to be the share at the upper level is higher in Finland. This observation is also confirmed with the following figure:

The distribution of income between households has the unpleasant feature that the size of the household is not constant in household deciles. In order to take this matter into account we have repeated the calculations using household members as a relevant unit. In this way we try to adjust the distribution with the differences in the household size in both countries.

We present also results from two different years in order to see if any noteworthy changes have happened during the short period we are observing. The household member deciles are presented in table 11 for Finland and Estonia in the years 1986 and 1988/89.

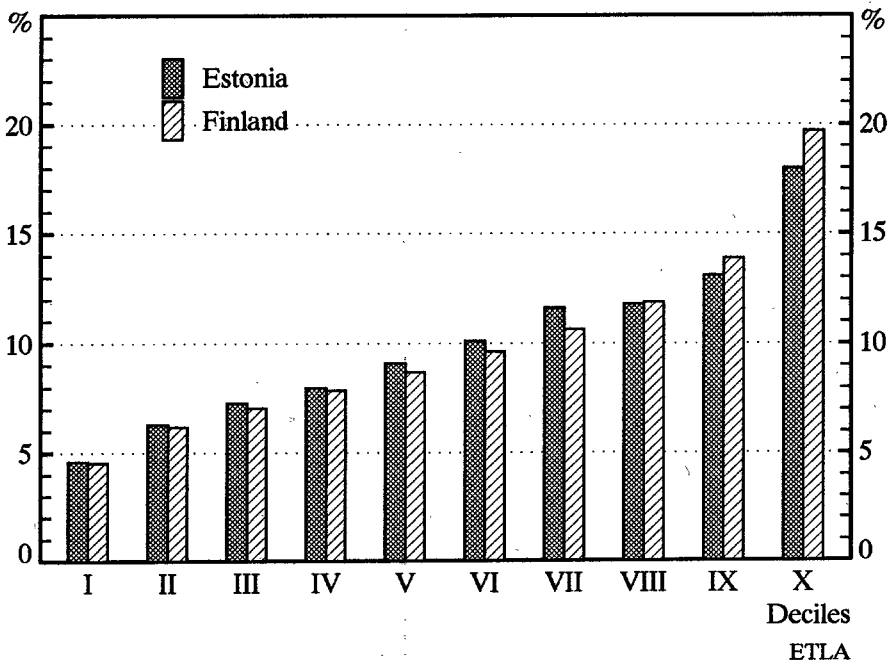
Figure 10. Shares of disposable income (Finland) and gross income (Estonia) per capita in household member deciles 1986



In the year 1986 the relation of the highest to the lowest decile was 4.3 in Finland and 2.7 in Estonia. In the year 1988 the figure in Finland was unchanged, but in Estonia it increased to 3.9. So that while it looks like the distribution is somewhat more equal in Estonia than in Finland, the development was towards a more unfavourable direction in the sense of equality in Estonia during 1986-1989. We present the deciles in figures 10 and 11.

Finally we present some gini coefficients from Finnish and Estonian data in the table 12. The ginis are calculated from the decile data and give therefore the lower limit of the index.

Figure 11. Shares of disposable income (Finland 1988) and gross income (Estonia 1989) per capita in household member deciles



Source: Finland, Central Statistical Office of Finland, Income distribution statistics unpublished data bases. Estonia, unpublished files of the Household Budget Survey carried out by Statistics Estonia.

Table 12. Gini coefficients in Finland and Estonia

Finland:		
Year	1986	1988
disposable income per household member	0.218	0.224
disposal income per household		0.300
Estonia:		
Year	1986	1989
gross income per household member	0.166	0.203
gross income per household		0.297

4. Summary

The availability of statistical data limits the possibilities for the comparison of income levels in Estonia and Finland before World War II. Comparison of the purchasing power of wages in 1938 shows that industrial workers in both countries could buy approximately the same amounts of foodstuffs for their hourly wage and it is likely that they had similar living standards.

Comparison based on the statistical data of 1988 indicates that the purchasing power of wages of employees appears to be bigger in Finland, especially with respect to consumer durables. The possibilities to compare the levels of household income per capita are limited unless the purchasing power parity rate between the Finnish mark and Soviet rouble is calculated. However, it is likely that this rate lies between the official exchange rate and so-called tourist rate. The arithmetic mean of these rates would give an estimate of household income per capita in Estonia that is about eight times lower than in Finland.

The main difference between tax systems in Finland and Estonia lies in the fact that in Finland the tax system is more progressive and is more designed to redistribute the gross income of households than in Estonia.

In the year 1988/89 there was no difference in the distribution of income between households in Finland and Estonia.

In the year 1988/89 the distribution of income between household members was more equal in Estonia than in Finland. This may be partly due to the differences in the structure of households in both countries.

From 1986 the distribution of income between household members in Estonia has become relatively more unequal than the corresponding distribution in Finland.

Appendix 1.

Prices of foodstuffs in Estonia and Finland in 1938-1988

Foodstuff item	Unit	1938		1988	
		Estonian cents	Finnish pennies	Estonian roubles	Finnish marks
Milk	l	10.2	184	0.25	3.53
Butter	kg	182.0	3080	3.41	38.30
Margarine	kg	93.7	1499	..	12.12
Cheese, emmental	kg	..	..	2.90	39.93
Eggs	10 pc	57.7	1075	1.00	16.10
Potatoes	kg	3.2	112	0.17	4.50
Carrots	kg	9.9	196	0.32	9.73
Red beets	kg	9.3	203	..	..
Rutabaga	kg	7.9	139	..	..
Cabbage	kg	6.7	194	..	..
Wheat flour	kg	46.2	531	0.42	6.61
Pearl barley	kg	32.8	472	..	..
Rice	kg	57.7	651	0.79	5.06
Manna	kg	47.3	626	..	..
Rye bread	kg	19.2	387	0.21	13.84
White bread	kg	49.3	1106	0.53	15.85
Macaroni	kg	77.4	..	0.67	11.85
Pork	kg	91.9	1539	2.10	32.62
Ham	kg	178.0	2697	..	82.13
Beef	kg	62.6	1185	2.15	56.69
Mutton	kg	63.7	1377	..	..
Pike	kg	44.5	1052	..	..
Perch	kg	29.3	714	..	..
Baltic herring	kg	23.6	419	0.31	8.10
Herring, salted	kg	50.1	760	..	..
Sugar	kg	48.0	611	0.80	8.00
Coffee	kg	..	..	20.00	35.32

Sources: "Eesti statistika 1938", Riigi Statistika Keskbüroo, Tallinn, 1938; "Suomen tilastollinen vuosikirja 1938", Tilastokeskus, Helsinki, 1938; "Töölise, teenistuja ja kolhoosniku perekonna budzett", Eesti NSV Riiklik Statistikaakomitee, Tallinn, 1989; "Suomen tilastollinen vuosikirja 1990", Tilastokeskus, Helsinki, 1990.

Appendix 2.

Quantities of foodstuffs that can be bought with the hourly wage in Estonia and Finland

Foodstuff item	Unit	1938		1988 Employees	
		Industrial Estonia	Workers Finland	Estonia	Finland
Potatoes	kg	11.844	5.948	7.706	6.789
Carrots	kg	3.828	3.408	4.094	3.140
Red beets	kg	4.075	3.291	..	..
Rutabaga	kg	4.797	4.806	..	..
Cabbage	kg	5.657	3.443	..	..
Wheat flour	kg	0.820	1.258	3.199	4.622
Pearl barley	kg	1.155	1.415	..	..
Rice	kg	0.657	1.026	1.658	6.038
Manna	kg	0.801	1.067	..	..
Rye bread	kg	1.974	1.726	6.238	2.207
White bread	kg	0.769	0.604	2.472	1.927
Macaroni	kg	0.490	..	1.955	2.578
Sugar	kg	0.790	1.093	1.638	3.819
Coffee	kg	..	..	0.066	0.865
Milk	l	3.716	3.630	5.240	8.654
Butter	kg	0.208	0.217	0.384	0.798
Margarine	kg	0.404	0.446	..	2.521
Cheese, emmental	kg	..	..	0.452	0.765
Eggs	10 pc	0.657	0.621	1.310	1.898
Pork	kg	0.412	0.434	0.624	0.937
Ham	kg	0.213	0.248	..	0.372
Beef	kg	0.605	0.564	0.609	0.539
Mutton	kg	0.595	0.485	..	..
Pike	kg	0.852	0.635	..	..
Perch	kg	1.294	0.936	..	..
Baltic herring	kg	1.606	1.594	4.226	3.772
Herring, salted	kg	0.756	0.879	..	..

Appendix 3.

Distribution of household members by the size of income per capita in Estonia

Income class (roubles/month)	1986 %	1989 %
- 50.0	0.3	0.7
50.1 - 75.0	4.6	2.4
75.1 - 100.0	9.2	7.0
100.1 - 125.0	17.8	12.2
125.1 - 150.0	17.3	14.4
150.1 - 175.0	15.9	11.3
175.1 - 200.0	10.7	12.5
200.1 - 250.0	24.2 ¹	18.3
250.1 - 300.0		9.4
300.1 - 350.0		4.9
350.1 - 400.0		2.5
400.1 -		4.4
Average monthly income (roubles)	167.3	197.7

¹ 200.1 roubles and above

Appendix 4.

Distribution of households by size of household income

Income class (roubles/month)	1989 %
100.1 - 150.0	8.8
150.1 - 200.0	14.4
200.1 - 250.0	4.7
250.1 - 300.0	8.9
300.1 - 350.0	6.7
350.1 - 400.0	11.8
400.1 - 500.0	11.3
500.1 - 600.0	10.8
600.1 - 700.0	7.8
700.1 -	14.8
Average monthly income (roubles)	405.4

8. HOUSING IN ESTONIA AND FINLAND

by Heldi Aarma, Seppo Laakso and Heikki A. Loikkanen

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8.1. Introduction

The purpose of this chapter is to compare housing in Estonia and Finland since 1939. International comparisons of economic and social institutions, and government policies concerning subsectors of the economy are fraught with difficulties. Differences in "programs" and outcomes are far more subtle than those that can be revealed by highly aggregated national data. Thus the norm in international comparative comparisons is in relatively "soft" comparisons augmented with less of the "hard" figures.

This is particularly true in comparative analyses of housing and the functioning of housing markets. The institutions that influence the production, distribution and consumption of housing differ enormously across market economies as well as across socialist economies, not to speak of cross-system differences. Moreover, housing markets are local or regional in character, and the effects of government policies on the housing situation depend upon important characteristics of the local environment.

Housing is part of the infrastructure and as such it is durable capital. Changes in the quantity and quality of the housing stock are slow processes at least in peace times. Thus history matters. A considerable share of the present housing stock is "inherited" from the previous generation or from the previous economic system when a change has taken place.

The strategy of this article in comparing Estonia and Finland aims at overcoming at least some of these difficulties by paying attention to country's specific features and not always trying to boil them down to detailed numerical comparisons. Our starting point is a characterization of the developments of fundamental determinants of housing demand in Estonia and in Finland (section 2). Although these developments are very much affected by the national economic and social systems and their working in both cases, we take them as given and try to concentrate on the following: what response have these demand developments had in realized housing conditions, i.e. on the supply side? In order to understand how the "market" or "planned" outcomes have come about, it is essential to understand the working of the housing sector and its key connections to the national economy. For this purpose we summarize some key institutional features in both countries (chapter 3). We discuss ownership of land and housing, urban and rural development policies, housing finance and housing support.

Moreover, we describe the working of the systems by paying attention to the role of price and non-price allocation mechanisms in Estonian and Finnish housing markets.

Fundamental determinants of housing demand and institutions together with the working of the "housing market" affect actual outcomes. In section 4 we first describe the post World War II housing stock in both countries. Subsequent developments of the housing stocks are affected by building of new dwellings and by demolitions of old ones. Lacking direct information on the latter, we describe post-war housing construction series and the housing stocks at certain points of time. Also some information on the qualitative aspects of the housing stock is given.

After rather aggregative analyses we turn our attention to housing consumption more from the consumers' viewpoint (section 5). Housing conditions are described by several indicators including family size, tenure type and the age of the head of household. In addition to physical indicators, we pay attention to housing expenditures and in this connection we partly return to institutional differences which through pricing and support mechanisms affect the financial burden of housing at the household level.

Our comparative analysis concentrates on the post-war period. Only in section 6 will we pay attention to recent developments in both countries. After gaining independence the Estonian society and its housing markets have been subject to a transformation towards a market economy. Some key features and problems related to these developments are described. Also Finland has experienced important institutional changes at the end of the 1980s. The central theme of these changes has also been the liberalization of markets, especially deregulation of financial and rental markets. Finally, during the last few years the transformation of the East European economies, especially the former Soviet Union, and the continued recession in Western countries have also heavily affected the Finnish economy as a whole, and via macroeconomic channels also the housing sector.

In most parts of the text we have not cited the exact references used. The institutional descriptions are based on books and articles mentioned in the reference list, and statistical figures are mostly based on official statistics.

8.2. Development of fundamental demand factors

Demographic factors are key determinants of housing demand. Population size and its structure - family sizes and age compositions - affect the desired size and quality of the housing stock. Real income developments together with housing prices (or rents) are the other fundamental determinants of housing demand. In any society aiming at promoting the welfare of its citizens demand developments should be the key driving force affecting allocation of resources. As regards housing, one would expect realized housing conditions to respond at least in the long run to changes in the fundamental determinants of demand. For this purpose we shall present some stylized facts about demographic and income developments in Estonia and Finland and relate them later to the evolution of housing conditions.

8.2.1. Demographic developments

Estonia

In 1940 the population of Estonia was 1,054,000 and after the war in 1945 it had dropped to 854,000. The restoration of the economy was accompanied by industrialization, which led to intensive immigration, rapid growth of the population and urbanization. In 1950, the population of Estonia was already 1,097,000. In 1989, the Estonian population was 1,573,000. The population had thus increased 1.8 times during the post-war period.

As for the population structure, in 1934 about 88 per cent of the population were Estonians, whereas in 1989 this share has diminished, especially as a result of immigration of Russians, to 61 per cent. In absolute terms a bit more than 600,000 people living in Estonia were non-Estonians by nationality. On the other hand, 72,000 people of Estonian nationality lived outside Estonia in the Soviet Union (Census of 1979). Most of the Estonian Swedes living on the west coast and on islands left in 1943 and especially at the end of summer 1944. Some Estonians left also for Sweden and Finland as war refugees. The number of Estonians who remained abroad (mainly in Sweden, Canada and Australia) is some twenty or thirty thousand.

The population growth in Estonia increased the demand for housing substantially. On the other hand, the composition of the population has changed. Family sizes decreased from what they used to be prior to World War II. Somewhat surprisingly, household sizes have leveled off during the post-war period. According to the censuses of 1959, 1970, 1979 and 1989, the average number of household members was 3.1. There are not great differences in the size of households in urban and rural districts. Thus on demographic grounds there has been an overall increase in the demand for dwellings but the demographic structure of families has also changed, restructuring demand towards smaller units.

This kind of argumentation would be appropriate if demographic developments could be regarded as exogenous, which they clearly are not. It is not only so that demography affected housing demand in the case of Estonia: actual provision of housing also affected demography. Small family sizes are at least partly due to the housing market policies and housing conditions, a fact that is important to recall although we cannot give estimates of how great the effects involved were.

As a third element related to demography, we shall refer to urbanization. In 1940 33.6 per cent of the Estonian population lived in cities. In 1989 the respective figure was 71.6 per cent, i.e. a rapid urbanization process took place. Urban growth was, however, predominantly growth of Tallinn with a population of 481,000 inhabitants in 1990. The next largest cities (Tartu 115,000, Narva 82,000, Kohtla-Järve 77,000, Viljandi 65,000 and Pärnu 53,000 etc.) are clearly smaller.

Finland

In 1939 the total population of Finland was 3,700,000 and after the war in 1945 it was 3,779,000. The country had lost areas, especially Karelia, in the war and faced the challenge of relocating about 400,000 people within the new borders. A significant part of these people were relocated in rural areas, which postponed urbanization in Finland and preserved the share of the labour force in basic industries (especially in agriculture and forestry) high for a far longer period than in other Nordic countries. The subsequent population developments were heavily affected by post-war baby boom and

emigration especially to Sweden. During 1960-74 the net emigration to Sweden was 135,000 people. The total population of Finland was 5 million in 1990. Thus the population has increased by 32 per cent during the post-war period.

Just like in Estonia, in addition to population growth there have been changes in family structures. Household sizes have decreased during this century and this trend has continued also more recently. For instance, in 1960 the average household size was 3.6 persons and 2.5 in 1987. In addition to the common feature of a small number of children, there is a difference in these developments. In Finland young people began to move away from home earlier to live on their own forming their own small households instead of living with their parents. This has increased the demand for aggregate housing and kept the demand for small dwellings high.

In the case of Estonia we claimed that population developments were not independent of the housing situation. In the case of Finland we cannot exclude this possibility either but, as we try to show below, the constraints for family formation and for increasing family size have been far smaller than in the case of Estonia.

As for urbanization, the general post-war trend has been similar both in Estonia and in Finland. However, the phases of major changes have differed. Partly as a result of the policy of settling the population of lost areas (mainly Karelian people) to rural areas, urbanization was slow immediately after the war. In 1950 26 per cent of the Finnish population lived in towns and cities. When the baby boom generation born after the war completed their basic education, they entered the higher educational institutions and/or labour markets of cities. The demand pressure exceeded both the possibilities of the urban labour markets to offer jobs and consequently, there was emigration especially to Sweden beginning in the latter half of the 1960s. In addition to a shortage of jobs, the availability of housing, especially rental housing, turned out to be a bottleneck affecting migration, too. Since the 1970s urbanization has continued but at a slower pace. In 1991 62 per cent of the Finnish population lived in towns and cities.

8.2.2. Income developments

While demography affects the basic need for dwellings and living space, household incomes together with the net price of housing, i.e. rent levels and the user cost of owner-occupied housing after subsidies and tax advantages, determine to a great extent how much and what type or quality of housing would be demanded. We shall discuss housing prices and rent levels as well as non-price allocation mechanisms later. Here, we shall just look at income trends in the two countries.

Estonia

Measurement of real income is a complicated matter in all societies, and especially in previously socialist countries like Estonia. For our purposes it is enough to get an idea of real income trends. The problem is that there are no measures like Gross Domestic Product (GDP) covering the post-war period. There are, however, more recent estimates according to which nominal GDP was 4,447,900 rubles in 1980 and 7,976,900 rubles in 1990 while the nominal disposable income of the household sector was 2,376,000 and 4,091,000 rubles a year respectively.

A longer range view can be achieved by confining our attention to industrial production. The value of gross industrial production using wholesale prices (millions of rubles, undeflated) developed as follows: 191 in 1938, 341 in 1950 and 1,107 in 1960. Over the next thirty years industrial production expanded almost six-fold, gaining the level of 6,082 million rubles in 1989.

Lacking a price index (officially there was no inflation!) it is hard to say what the increase in total production or disposable income was in real terms. However, it seems obvious that production increased manyfold during the post-war period. Thus the crucial question was allocation of resources to alternative uses and in this respect Estonia did not differ essentially from the whole Soviet Union: heavy industry was favoured at the expense of consumer goods and services. What happened to housing production and housing conditions in Estonia will be discussed below.

Finland

In the Finnish case GDP has increased by more than 414 per cent during 1946-85. The respective per capita growth has been 301 per cent. Households' disposable incomes have increased respectively. Economic growth in Finland, relative to other West European countries, has been rapid. Finland has been able to diminish the income gap to several other countries by the end of the 1990s.

On the basis of the above real income trends one would expect to see a rapid increase in housing consumption during the post-war period both in Finland and in Estonia.¹⁾

8.3. Housing institutions and policies

Above, we have looked at the fundamental determinants of housing demand from the point of view of consumers. However, housing has neither in socialist countries nor in market economies been regarded solely as a matter of individualistic concern. In both cases the society has also had a role in demand formation.

One argument often associated with housing in Western societies is that consumption of housing (more and of better quality) generates positive externalities. According to this view housing consumption should exceed (for the aggregate and at least for some households) what individuals would demand on their own. A second motive for intervention is related to

1) The connection between income and housing consumption is often measured by income elasticity. Salo (-91) estimated the income elasticity of housing expenditures using national level aggregated time series data from Finland. According to Salo's results the income elasticity is around 0.3 which means that one percent increase in aggregate income increases aggregate real housing expenditures by 0.3 %. Laakso and Loikkanen (-92) have results which are based on household level cross section data from the metropolitan area of Helsinki in 1989. According to Laakso and Loikkanen the demand for housing (measured as the size of the dwelling) increases 0.35-0.45 %, in average, when the permanent income of the household increases by one percent. In owner-occupied sector the income elasticity is clearly higher (0.45-0.50) than in rented sector (0.10-0.15).

distribution. In addition to an aim to make income distribution more equal through tax and transfer schemes, there has also been a paternalistic tendency to promote equality in kind. From this view-point housing is treated like a merit good alongside education, health and culture. Third, housing is, by nature, part of a volatile investment activity and stabilization policies have often led to intervention in the housing market also on these grounds. These three motives for intervention have led to various forms of policies ranging from land use restrictions and zoning, housing subsidies, rent controls, public housing, and to taxation (or promotion) of construction on macroeconomic grounds.

What about socialist views on housing? Similar arguments can also be seen at least partly in socialist housing policies. The stress of both consumption and distributional goals is obvious, although one cannot easily find an explicitly stated goal of housing policy saying that housing consumption should be more than what consumers would be willing to consume under market conditions (the externality argument). However, already Lenin had defined housing adequacy as having one person per room. According to the Soviet constitution every family has the right to have a dwelling (Citizens rights to housing). In the XXII Party Congress held in 1961 the party leadership noted that the most acute problem to be solved if the standard of living of the population were to be raised was housing. It declared that by 1971 the housing shortage would have to come to an end, and by 1980 every family would have its own fully equipped flat (Andrusz, 1984).

The fulfillment of these obligations was, on the one hand, the responsibility of the central authority in the role of channeling funds for housing through state-owned banks. On the other hand, the provision of housing has been the explicit domain of the enterprise, kolkhoz and local government, which have also been involved in housing finance.

Promotion of housing consumption from the demand side has been carried out by rent policies, i.e. negligible rents covering only a fraction of maintenance costs. On the other hand, there have been various forms of policies which have constrained demand. Limitation of migration i.a. by the resident permit (internal passport) system aimed at controlling the growth of cities. Demand at the household level was also limited by access criteria for the waiting lists (queue) and rationing of living space in the allocation of dwellings through the queue systems.

Despite constraining demand, the efforts on the supply side have turned out to be insufficient and the outcome has been a chronic housing shortage and a lack of basic infrastructure and amenities. The targets of housing policy, as well as more general living standard targets have remained unfulfilled or postponed. According to the last targets of the Soviet era submitted in 1988, the goal of housing policy was to provide all families a separate apartment or individual unit by the year 2000 (IMF, 1991).

The purpose of the next section is to describe in broad terms the institutional arrangements and the working of the housing "markets" in Estonia and Finland. This is to uncover what actual forms of intervention have taken place in the two cases. As housing in neither country has been "market determined", without an institutional description it is impossible to understand the outcomes, e.g. housing conditions to be described in later sections of this paper.

In this section we shall describe issues related to land ownership, land use planning, the role of developers and constructors, housing finance and tenure alternatives. Moreover, we summarize the role of price and non-price allocation mechanisms and housing support policies in Estonia and Finland.

8.3.1. Land and land use

Estonia

Nationalization of land and housing in 1940

During the inter-war period Estonia was a sovereign state and had housing legislation and housing institutions not very different from those of other West European countries at the end of the 1930s. One major difference relative to other countries like Finland was the fact that no major land reforms had taken place in Estonia. During the inter-war period land was still mainly owned by very few people with great holdings and quite a few of them were Germans (Lipping, 1981). In other respects a market-oriented housing policy gained support. For instance, rent regulation was abolished in 1927. On the other hand, during the 1918-39 period 93 per cent of new

housing was produced by the private sector and only two per cent by municipalities and the state. This type of structure and pursued housing policies came to an end in 1940.

On July 21, 1940, the newly elected State Assembly of the Republic convened for its first regular session, where they decided to proclaim the Republic of Estonia the Estonian Soviet Socialist Republic and enter the realm of the Soviet Union. Besides the nationalization of large-scale industry and banks, the land was declared the property of the whole nation.

On October 31, of the same year, the Presidium of the Estonian SSR Supreme Soviet adopted the law on the nationalization of big houses. The law established that all houses with a useful floor space over 220 m² in Tallinn, Tartu, Narva and Pärnu, and over 170 m² in other towns and settlements together with the buildings attached to them were to be nationalized. At the same time, the following houses together with the buildings attached to them were to be nationalized, regardless of their floor space: houses belonging to various socio-political organizations liquidated; houses the owners of which had fled abroad; houses having socio-political or artistic value; houses in which state institutions were located.

On June 22, 1941, the war started and after the departure of the Soviet army from Estonia the Germans abolished all legislative acts adopted by the Soviet power. They became effective once again after the withdrawal of the Germans and the reestablishment of Soviet rule. A second major wave of nationalization took place in 1955.

The reconstruction and development of the economy during the post-war years was based on Soviet law. It lasted until August 20, 1991, when the Supreme Council of the Republic of Estonia adopted the resolution on the political independence of Estonia. It decreed that, proceeding from the legal consistency of the Republic of Estonia as a subject of international law, and relying on the will of the Estonian people clearly expressed on the plebiscite on March 3, 1991, the independent nationhood of the Republic of Estonia was restored.

Land use planning in Soviet Estonia

During the years of Soviet rule, land use planning and housing construction (and also other construction) in Estonia were based on the rules and standards elaborated in the Soviet Union. They established that the construction of towns and settlements must take place in accordance with the general plans (compiled for 25-50 years) or priority projects of locating construction (10 years) connected with general plans under elaboration. The development perspectives of rural settlements were planned on the basis of the development projects of state and collective farms or of the district development projects.

In the development and construction projects of towns and settlements their territory was divided into zones according to the field of use, distinguishing between the following functional zones: residential zones - housing districts (mass housing construction and individual construction districts), social centres (administrative etc. institutions) and allocation of publicly used green zones - and separately industrial, communal and transport zones. As land was nationalized and land pricing mechanisms were absent, economic efficiency considerations played a minor role in land use planning.

Throughout the Soviet Union and also in Estonia the planning practices dating from the 1950s meant the construction of new large suburbs outside the existing urban structure. Adoption of planning standards was designed to fit the needs of large scale industrial housing production and tended to magnify land, transportation and infrastructure requirements. Mustamägi and Lasnamägi suburbs in Tallinn are examples of the Soviet type of urban planning. High-rise apartment buildings were also built in the country-side. The scope of building alternatives was extremely limited, having very little to do with consumer preferences. Rather, they were dictated by the planning system with its standards, and the monopolistic construction industry.

Finland

During the previous century most of the land in industrialized urban centers of Finland was owned by the municipalities, which also controlled its development. Outside town borders private people, land speculation companies etc. could acquire land from the market, divide the land into smaller

units and sell single lots. This resulted already around the turn of the century in a dual structure of planned city centers and more spontaneously created suburbs.

In 1925, the cities acquired legal rights to incorporate suburbs and the Town Plan Code of 1931 gave the municipalities the privilege of planning the use of privately owned land. The Building code of 1958 strengthened the planning monopoly of municipalities. Landowners, however, must be heard at various stages of the planning process and their interests are safeguarded by a two-stage appeal procedure.

Publicly owned land was fully developed in most cities by the 1950s. In expectation of urban growth both municipalities and the private sector, especially construction companies, began to buy land. When facing the rapid urbanization process in the late 1960s, municipalities were willing to plan extensive amounts of land irrespective of owner and they paid little attention to the scattered urban fabric that emerged. Land owning construction companies made so-called site development contracts with municipalities. According to these contracts the town developed the land and in return, the construction company agreed to undertake the construction of public utilities which should have been the concern of the municipality. Instead of using tax money the utilities were financed through the sale of dwellings to prospective buyers.

Urban growth has also affected city centers. Certain areas of cities have been planned and rebuilt several times, each time in greater volumes and higher buildings.

Despite the abundance of land relative to population, land has been expensive. The prices of farm land and forest land have been internationally high. The reason for this is at least partly related to extensive subsidization of agriculture and the increase in the demand of forest based products in the world markets, both leading to capitalization effects. These developments and land-use practices have kept undeveloped land and especially developed land internationally expensive until the beginning of the 1990s and the same has been true for housing prices.

8.3.2. Construction of housing

Estonia

In the post-war years state housing construction was dominating in Estonia. In the mid-1950s, the mass construction of large panel houses by standard projects started. For example, large panel houses accounted for 73 per cent of the total living space produced by the state (government capital investments) and housing cooperatives in 1985. In urban areas this share was 77 per cent and in rural areas 57 per cent, respectively.

Special housing construction organizations in Estonia have been housing plants in Tallinn and Tartu which produce building components and structures, and erect multi-storey houses from them. These two plants have built dwellings (also for housing cooperatives) in several towns and counties of the republic. In addition there have been several smaller construction organizations. Individual builders, especially in rural districts, have often used the services of construction organizations. Besides big construction organizations, several enterprises and institutions have built houses for their employees.

Alongside urban planning procedures, housing developments can be understood by the institutional characteristics and behaviour of the construction sector. Each of the very few and huge housing combinats enjoyed a monopoly position in an environment of shortage. The performance of these combines was measured in terms of square meters produced, and salaries and bonuses were related to total project cost so that they had a vested interest in cost overruns.

The neglect of qualitative indicators in evaluating performance led i.a. to a poor quality level, low rate of innovation and unfinished projects. Upon delivery of new units households spent on average about 10 per cent of production costs to upgrade their unit to a desirable level (IMF, 1991). The reason for regarding unfinished housing projects as being ready was also due to the shortage of building materials which prolonged construction processes. As a part of the Soviet Union, Estonia was relatively self reliant as regards construction materials except iron, metal and heating and ventilation products. This, however, did not spare Estonia from shortages because

building materials had to be exported to other parts of the Soviet Union in exchange for oil and raw materials etc. (Nieminen, 1992).

Poor initial quality has also been a reason for the rapidly increasing need of repairs and maintenance in the housing stock. The quality of construction has also been one major reason for the energy intensiveness of the whole Soviet Union, including Estonia. The energy consumption per square meter has been fourfold relative to that in comparable buildings in Sweden and Finland. Thus the expected returns on investments that reduce energy consumption in Estonia are high (Nordic Investment Bank, 1991).

Finland

In rural areas it has always been common that people participate in the production process of their houses. In this case the developer, builder and the user can be the same person or family. The other extreme also exists, i.e. the developer, builder and the user are different. Here the developer acquires land, gets it planned, financed and chooses the constructor by tender. Finally, the developer sells the dwellings to the market. Some of the developers operating in this manner have been working on a non-profit basis and quite a few of them are owned at least partly by municipalities.

The most common form of production in urban areas, however, has been one in which the construction firm also operates as a land owner and developer in order to sell the dwellings to initially unknown buyers. Alternatively, the prospective buyers are people participating in the savings programs of the banks which are involved in financing the projects. In this form of production competition between construction firms concerns land and good relations with planning authorities and local politicians in addition to cost effectiveness in production.

The number of Finnish firms carrying out year-round construction of buildings was some 800 in 1971 and 850-900 in 1980. A comparable figure is not available for more recent times. However, the total number of firms operating in construction of buildings at least for half a year increased from 3913 in 1986 to 6818 in 1990 (a boom year). These figures include small firms acting as subcontractors. In all the whole sector employed 166,000 people in 1990.

The construction sector is fairly concentrated and the market share of the biggest firms has increased over time. Out of the total labour force in construction, the share of the 20 largest companies was 29 per cent in 1973 (a boom year), 46 per cent in 1979 (a recession) and some 30 per cent in 1990 (boom). Entry in booms and exit in recession is normal for quite a few small and medium-sized construction companies. During the 1980s the reason for increased concentration was based on take-overs of medium-sized firms by the largest ones. As a result of this process, the operating area of the largest construction firms began to cover the whole country instead of earlier regionally divided markets.

8.3.3. Housing finance and tenure forms

Housing markets are neither homogenous nor neutral. The working of the housing sector in different countries can only be understood by paying attention to subsectors by tenure type and form of finance as each subsector is different and subject to unequal intervention or housing policy.

Estonia

As housing provision was regarded as a collective responsibility, the role of the "private" sector was extremely minor. Households were restricted largely to holding their savings in financial assets - mainly saving deposits - rather than private housing. As a result they had little control over the flow of funds that affected their housing, although with municipal, enterprise, cooperative and other (incl. private) types of housing, the extent to which payment is outside their control has varied.

Channeling of state funds for housing was a part of central planning in the Soviet Union and its republics. Central government capital investment was divided by Gosplan among All-Union ministries and republics. Republican councils of ministers parceled out capital investments between regional authorities and republican level ministries. These resources were then divided among the cities and various enterprises. In the distribution of finance the Soviet banking system controlled by Gosbank and a few other specialized banks fulfilled the financing of planned projects and they could

not finance other additional investments. Moreover, there were no mortgage loans directly from banks to households. Interest rates were regulated to a low level creating excess demand for funds. Both the banks and the investors faced in actual fact a "soft" budget constraint as the state budget was the bearer of cost overruns and other investment risks (IMF, 1991).

In Estonia the collectivized housing stock accounted for 70 per cent (64.5 per cent state and 5.6 per cent cooperative housing), and the private housing stock (mainly single family houses) for 25.5 per cent and other forms for 4.4 per cent of the total stock at the end of the 1980s (Inkinen and Tiit, 1992). In addition to construction, maintenance and capital repairs of the collectivized housing stock owned by municipalities, enterprises, institutions and organizations was to be financed either from the state budget or by the self-financing state, social or cooperative organizations. The collectivized housing stock includes also the housing stock of housing cooperatives, which has been financed by the downpayments of the members of the cooperative and long-term loans.

Rents were harmonized to the rent policy of the Soviet Union, i.e. to a level fixed in 1927, and had no actual role in allocating people to dwellings. Thus rental dwellings owned by the state and municipal organizations and enterprises have been allocated by means of queues in established order. Records on the citizens in need of bigger living-space have been kept by municipalities or institutions who own dwellings. There have been monetary costs involved in being in the queue, but access to queues has not been automatic. It has been based on needs and related to affiliation with the specific work unit, but household income is not a consideration. The most important indicator of need is the current "square meter of living space per capita". The maximum value for eligibility on a waiting list usually ranged during the late 1980s between 5.5 and 7 square meters.

At the beginning of 1990 there were 14.3 million families on housing waiting lists in Soviet cities (23 per cent of the urban population) and the average expected wait in 1989 was some eight years. Alongside the queues, privileged people (so called nomenklatura) could have access to housing outside the waiting lists. In the whole Soviet Union 9 per cent of all housing was distributed outside the waiting lists. The corresponding figure for Moscow was 49 per cent (Kalinina, 1992)!

In Estonia there were 150,000 people in waiting lists, of which one third in Tallinn, in 1991 (Lounela, 1993).

In practise most of newly built state and municipal rental housing has been allocated to immigrants from other parts of the Soviet Union and thus the possibilities of ethnic Estonians to improve their housing conditions with the help of new construction have been limited.

People in need of better living conditions also had the right to join a housing cooperative and get a cooperative apartment. There were also queues and records on citizens who wanted to join a housing cooperative. The member of a housing cooperative owned only a share in the cooperative. The possessor of the cooperative apartment could not sell, give away or bequeath his apartment prior to July 1988 when a decree was passed, according to which the rights of the members of the housing cooperatives were expanded. Tenants in state apartments have had life-long leases and they have even been allowed to exchange and rent their property, which has partly created an illegal market in state housing.

Cooperative housing has given rise to social injustices in other respects. These types of dwellings are, as a rule, built not by those having more money, but by those who cannot improve their housing conditions in other way.

Finland

In Finland two types of tenure dominate: owner-occupancy and tenancy. Unlike in other Nordic countries cooperative housing (less than 0.5 per cent of the stock) is insignificant. There are two types of owner-occupied housing. One consists of those held in "fee simple" (generally detached houses), the other is a particular form of condominium ownership where each owner is a shareholder in a housing company, which manages the property and is a self-governing unit. Decisions are taken at meetings of shareholders. Each shareholder decides himself or herself about matters affecting the control and use of the flat designated by the shares owned, e.g. whether to sell or let it. Most new condominium housing is built by construction companies which often also act as developers. They form the companies initially and sell the flats (shares) to private individuals, who then become shareholders in this company.

A real estate company is a joint stock enterprise established to own rental dwellings. The shareholders can be different kinds of corporate bodies including, for example, municipalities, foundations and insurance companies. Rental stock thus consists of dwellings in real estate companies, leased condominiums and leased detached houses (or parts of them). Financing of both construction and ownership of real estate companies and joint-stock housing companies (condominiums) can be either private or public (state loans).

Privately financed owner-occupied housing, including detached houses and condominiums, is a "free" market in the sense that prices are market determined. Regulatory aspects in this subsector come from the financing side. Namely until the mid 1980s financial markets were regulated. Interest rate regulation led to excess demand for loans and credit rationing. In order to get housing loans from the very bank-centered financial markets one had to save in advance as much as 40 percent of the value of the house or flat. The amortization periods for loans were 8-10 years still at the beginning of the 1980s. Deregulation of financial markets began in the mid-1980s and it brought longer, 20-30 year housing loans.

In privately financed owner-occupied housing subsidization has been carried out through taxation. Imputed income from housing and housing wealth have in principle been taxable income but due to assessment procedures and basic deductions effective taxation has been negligible. Capital gains from ones' own residence have been tax exempt, whereas capital gains from other dwellings have become totally tax exempt either after five years (shares in housing companies related to flats) or ten years (houses). Interest payments on housing loans were fully deductible until 1974, but since that the deduction possibilities, and accordingly indirect subsidization, has been lowered. The general housing allowance system has also covered private owner-occupied dwellings since 1974, applying to dwellings built after that year, but its role has been minor.

Private rental housing has been subject to rent controls or rent regulation most of the post-war era. After a controlled period rents were freed for the period 1963-67. In connection with a sizable (23 per cent) devaluation, rent control was adopted again at the end of 1967. In 1973 it changed to rent regulation with annually accepted rent increases and maximum rent levels decided by the parliament. Special housing courts were established in the

biggest cities to handle rent disputes. Rent control and rent regulation led to declining real rents (see figure 6) and a housing shortage in this subsector. Supply did not increase or it diminished. Non-market channels (acquaintances, relatives etc.) of information became more important than open market types of mechanisms in allocation of private rental dwellings. Also use of bribes or unreported rents emerged.

Since 1949 an essential part of active housing policy has taken the form of financing housing production (and subsequent possession) by state housing loans with subsidized interest rates and long amortization periods. Initially, the amortization periods were 45 (rental) or 27 (owner-occupied) years. They were later in the 1970s reduced to 27 and 18 years, respectively. Also, the interest rates have been raised. In addition to terms of finance, there are other institutional arrangements related to the publicly financed sector (the so-called ARAVA-sector according to the previous name of the National Housing Board), and we shall discuss the rented and owner-occupied ARAVA subsectors next.

In the subsector of ARAVA owner-occupied dwellings the National Housing Board regulates new production setting quality, construction cost and land price constraints as a condition for state loans. Previously, state loans could be paid off any time and the dwelling could be sold on the free private market. In 1980 the rule changed allowing free sale only after 27 years of possession. The time limit was changed to five years in 1987. If the unit were sold while the state loan is still outstanding, price regulation continued. The resale prices are tied to the initial construction cost corrected by the construction cost index. Furthermore, old ARAVA dwellings must be sold to municipal housing offices which resell them at controlled prices.

Access to the owner-occupied ARAVA sector has been limited. Eligibility and terms of finance have depended on family size and income. Also the maximum size of the dwelling has depended on family size at the time of application. Otherwise, the allocation of new owner-occupied ARAVA dwellings has taken place mainly by banks which have offered the primary loans needed in financing the dwellings in addition to state loans.

In the ARAVA rental sector rents have been based on the down-payment structure of historical construction costs and running (maintenance, heating etc.) costs of each company. Thus there has been rent dispersion according

to the age of the building. Allocation of residents to ARAVA rental units has taken place by queues of municipal housing offices, employers, or non-profit organizations depending on the owner of the rental housing company. Like in the case of owner-occupied ARAVA dwellings, also here access and maximum size of the dwelling are determined by family size and income.

In addition to tax advantages and favourable terms of state housing loans, owner-occupied housing has also been supported by some special interest subsidy and savings programmes made available to young people. On the rental side, the most important form of subsidization is through housing allowances. The amount of allowance depends on family size and income, and on the size of dwelling. There are in effect three different housing allowance systems, one for families with children, another for students and a third one for pensioners. In 1985 16 per cent of all households received housing allowance through one of the three systems.

A summary of the various direct and indirect forms of housing support is given in table 3.1.

Table 3.1. Housing subsidies in 1989, million FIM

Direct subsidies		1.600
Interest subsidies and home saving premiums		2.600
Tax subsidies		12.800
- Interest deductions	3.600	
- Non-taxation of imputed rental income	3.500	
- Non-taxation of capital gains	5.700	
TOTAL		17.000

8.4. Housing production and the housing stock

The supply of housing services is based on the housing stock. The production of new housing units as well as demolition of old residential buildings affect the size of the stock. Buildings last for several decades. The planning and construction of a new building is costly and takes one or two years, at the minimum. It is natural that the annual increase in the housing stock is rather small, typically 1-3 percent.

In this section we describe the volume of housing production in Finland and Estonia since 1950. We also compare the structure of production between the countries. From the consideration of production we move to the housing stock and compare the size, quality and tenure structures of the housing stock in the two countries.

8.4.1. Production

Finland

Housing production in Finland has, at least to some extent, followed the changes in housing demand due to demographic factors, regional mobility, household income and housing policy. According to figure 1 housing production increased rather modestly after the war before the 1970s. The only boom occurred around 1963 when rent control was abolished and investors had the last chance to utilize tax concessions related to investments in new rental housing. From the beginning of the 1970s there have been large cyclical variations in housing production. The first peak took place during 1972-75, in top year 1973 as much as 73,000 dwellings were completed. The next time the production increased to an exceptionally high level was during 1989-90. Between these peaks the level of the production was much lower, for example in 1986 only 42,000 dwellings were completed. After the last boom the production collapsed and only 37,000 dwellings were completed in 1992.

The volume of completed dwellings compared with the size of the population has been higher in Finland than in most other industrialized countries

during the 1970s and 1980s. The estimated annual net increase in housing stock, due to construction and demolition, has been 2 per cent on average during the period 1970-1990.

From the point of view of the national economy, housing construction is part of investment activity. The proportion of residential building construction in GDP has been internationally high in Finland, around 6 per cent, during the 1980s. The share of housing construction of total investment has been about 25 per cent, on average. It has been an important part of capital formation in the Finnish economy.

Approximately 35 per cent of completed housing units in Finland have been in blocks of flats and 65 per cent in detached or terraced houses during the 1970s and 1980s. Some 60 per cent of the new dwellings have been produced in urban and 40 per cent in rural municipalities. The large share of housing construction in rural areas is surprising if one takes into account the fact that fast urbanization and migration from rural to urban areas has taken place during the whole period after the war. Immediately after the war about half a million Karelians had to be relocated, and most of them moved to the countryside. In the 1970s housing policy in Finland became an essential part of the regional policy of governments. Hence housing construction in rural areas has been strongly subsidised in order to slow down the urbanization process.

In spite of the large proportion of new dwellings in rural areas there has been strong concentration of construction activity in the southern part of Finland. Approximately 24 per cent of all completed dwellings were located in the county of Uusimaa, which includes the greater Helsinki area, during 1970-1989, while the proportion of Uusimaa of the population of Finland was 21 per cent in 1970.

The average size of completed dwellings has increased from 60.8 m² in 1960 to 79.9 m² in 1990. The quality of new dwellings has improved in other respects as well. The standard of kitchens and bathrooms has increased and heating technology has improved. The overall quality of new dwellings is very high in Finland compared with other Scandinavian and Western European countries, in spite of the fact that new Finnish dwellings are still much smaller on average than in most of those countries.

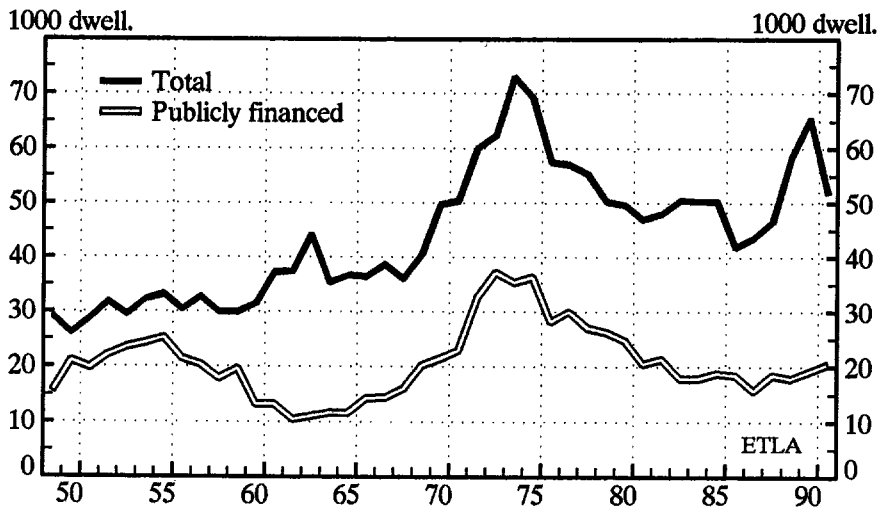
The development of the input prices of construction are measured in Finland by the construction costs index. In the long run construction costs have increased at approximately in the same pace as the cost of consumption measured by consumer price index (see figure 5).

About half of the new dwellings built have been financed by state loans since the year 1949 when the ARAVA system was implemented in Finland. The proportion of public finance has varied strongly during the years (see figure 1). Of the publicly financed new housing units 40 per cent have been rental and 60 per cent owner occupied dwellings.

Estonia

Housing production in Estonia increased during the 1950s from 5,000 to 12,000 dwellings per year (see figure 2). From the early 1960s until the late 1980s the level of housing production was very stable, 12,000-14,000 new dwellings per year. Cyclical variation, which has been a typical feature of housing production in Finland, cannot be noticed in Estonia. Housing

Figure 1. Housing production in Finland 1949-1991 by the type of finance



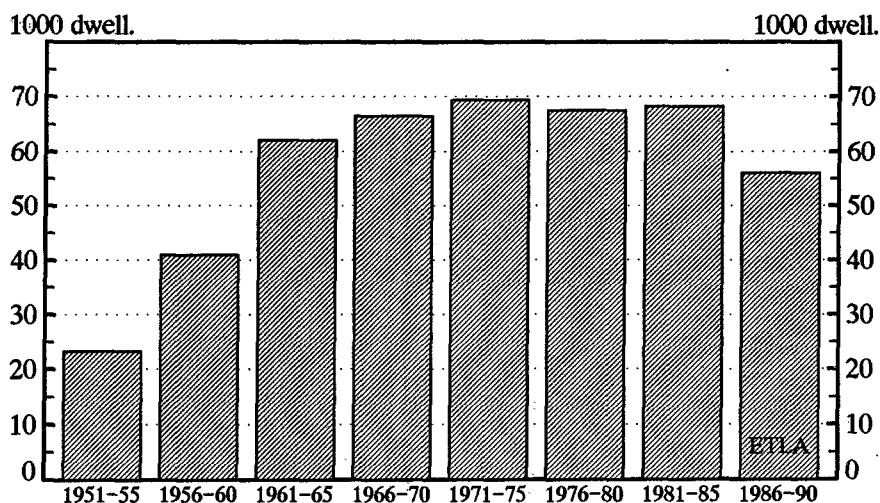
construction started to decline in 1988 and only 5,200 new dwellings were completed in 1991.

The volume of completed housing has been about 9 units per 1,000 inhabitants during the 1970s and 1980s while it was 11 in Finland during the same period. This means that both in Estonia and in Finland housing production has been clearly more intensive than in most European countries where the ratio has typically been 5-8. The annual net increase of the housing stock due to construction and demolition has been very high in Estonia, approximately 2.5 per cent per year during the 1970s and 1980s.

During the period 1971-1985 16 per cent of aggregate capital investment took the form of housing construction. In 1986-1989 the respective proportion was 15 per cent.

Housing production in Estonia has been more concentrated in urban areas than in Finland. Some 30 per cent of completed dwellings were located in rural areas in the 1980s. There have been great differences in housing construction between regions. In 1966-1985 almost half (42-48 per cent) of the completed dwellings were located in the cities of Tallinn, Kohtla-Järve and Narva.

Figure 2. Housing production in Estonia 1951-1990 (annual averages of 5-year periods)



The majority of the completed dwellings in Estonia have been in blocks of flats during the last decades. In owner-occupied housing construction the main form has been one-family houses but also duplexes and row houses are common. The size of owner-occupied houses and the area of a building lot were strictly limited. The area of the lot for an owner-occupied dwelling in a settlement was 600 m² in Tallinn and 900 m² elsewhere. The floor space of a house was limited to 120 m². The latter restriction has been abolished by now. The area of the lot will be affected by the fact that the Land Reform Act adopted by the Supreme Council of the Republic of Estonia in 1991 permits the sale of land.

The average size of completed dwellings has increased almost by a quarter during the last three decades, it was 48.4 m² in 1960 and 59.1 m² in 1986-88. In spite of the increase, new dwellings in Estonia were still 25 per cent smaller than in Finland at the end of 1980s. In fact the gap has increased during the decades.

During the last few years, the outward appearance of houses, planning of the dwellings, the level of conveniences, and the quality of construction have become better. At the same time, construction costs have increased enormously and the shortage of building materials has become more severe. Table 4.1 illustrates the development of the average costs of construction per square meter of new dwellings.

Table 4.1. Average construction costs for new dwellings by year

Year	roubles/m ²
1960	112
1970	163
1975	180
1980	218
1985	304
1990	451
1991	1,040
1992 (June)	15,000

Housing construction in Soviet Estonia was mainly organized by the state. Various limitations on the construction of houses were valid in the last few decades and the general attitude towards private property was unfavourable for the construction of private houses. The first housing cooperatives were established only in the 1960s. Therefore their share in housing construction has been very small: approximately 20-25 per cent in 1945-1988. The structure was totally different during in 1918-1939 when 93 per cent of residential houses completed during this period were owned by private persons, only 2 per cent by municipalities and the state and 3 per cent by other organizations.

8.4.2. Housing stock

Finland

There were 2,153,000 dwellings in Finland in 1989, 2,130,000 of which were occupied. The number of dwellings per 1000 inhabitants was 441. The dwelling stock has more than doubled since 1950. The number of summer houses, not included in the dwelling stock, was 176,000 in 1970 and 367,000 in 1989.

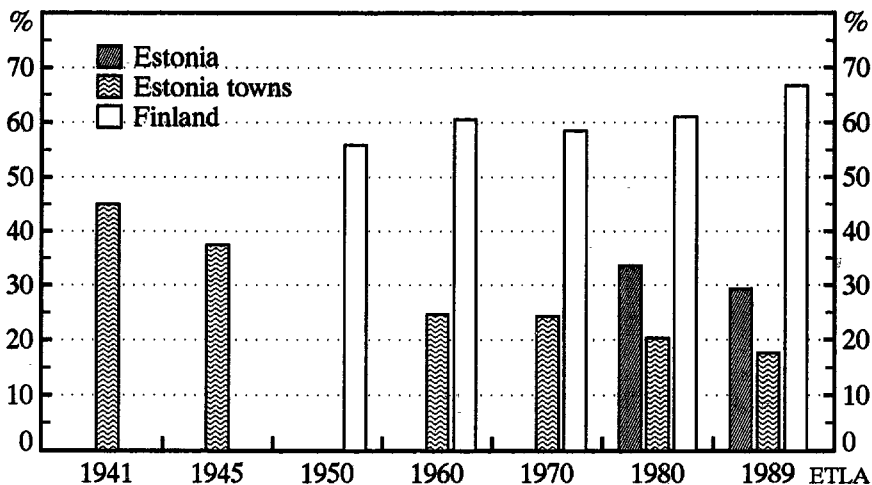
As a consequence of the high production level, especially in the 1970s and 1980s, the housing stock is very young, on average. Over four-fifths of the present stock was constructed after the year 1950 and more than half is less than 20 years old. Consequently, the average quality of the Finnish housing stock is quite high today, at least when quality is measured in crude quantitative terms: 95 per cent of dwellings had drain and water connections, 93 per cent had a WC, 90 per cent had hot water and 89 per cent had central or electric heating in 1989.

As far as quality is concerned, there are other aspects which should be pointed out. Housing production in urban areas, especially in the 1960s and 1970s, created a large number of new suburbs around Helsinki and other big towns in Finland. The quality of construction work, the physical appearance of houses, and the surroundings of the neighbourhood of many new suburbs have been criticized by the public and by many specialists during the past few years.

More than half of the Finnish housing units are in detached or terraced houses and less than a half in blocks of flats. Still, Finnish homes are rather small. The average size of dwellings was 73.5 m² in 1989. Almost half of the dwellings only had one or two rooms (kitchen excluded). Only 10 per cent of the dwellings had more than 4 rooms.

More than two-thirds of dwellings were owner-occupied in 1989 (see figure 3). 24 per cent of dwellings were rented and 8 per cent were unoccupied or unknown tenure. The share of rented dwellings has decreased significantly during the past few decades. In 1950 43 per cent of dwellings were rented. In 1970 the proportion was still 37 per cent. Since 1970 the proportion has gone down very quickly and even the absolute number of rented dwellings has decreased. At the same time a structural change has taken place within the rented stock: the proportion and even the absolute number of privately owned rented units has decreased. Municipalities and other non-profit-making organizations have become the most significant owner groups of the rented stock with the help of the ARAVA loans of the state. There are several reasons for this change. Rents were controlled most of the time since the

Figure 3. Owner-occupied dwellings as a percentage of housing stock in Estonia and Finland



war, until 1992 (see section 3). In the 1970s and 1980s the controlled rent level did not encourage private investors to invest in rental housing. At the same time, there has been a lot of demand for rented dwellings, especially in larger cities. Municipalities have been forced to take care of the provision of rental housing.

Estonia

About one third of the housing stock of Estonia was destroyed during the war. Since 1950 the housing stock has tripled. The number of housing units in Estonia was about 607,000 in 1991 (Riigi Statistikaamet, 1992). The number of dwellings per 1000 inhabitants was 390, compared with 441 for Finland in 1989.

The dwelling stock in Estonia is quite new, like in Finland. Sixty per cent of the stock has been built in 1961-1989. Forty per cent of dwellings are less than 20 years old. Consequently the Estonian dwellings are well equipped. In Estonia 92 per cent of dwellings had water and 91 per cent had a drain connection, 79 per cent had a bath/shower room, 67 per cent had hot water and 77 per cent had central heating in 1991 (Riigi Statistikaamet, 1992).

In Finland the difference between urban and rural areas is rather small as far as the quality or age of the housing stock are concerned. In Estonia the housing stock in rural areas differs much more from that in urban areas. The dwellings in the countryside are older, larger, and significantly worse equipped than in cities, on average. For example, 70 per cent of dwellings had hot water in urban areas while only 58 per cent in rural areas.

The differences between the figures on conveniences in Estonia and Finland are quite small, in general (except for hot water). There are larger quality differences in housing between Estonia and Finland in rural areas than in urban areas.

As noticed earlier, figures on conveniences are only a crude indicator of the quality of housing. There are other qualitative factors, like the quality of construction work, the architecture and appearance of buildings and environmental quality of neighbourhood. The standardized production method of panel houses resulted rather monotonous residential buildings and neigh-

bourhoods. As far as these kinds of aspects are concerned many suburbs in Tallinn and other large towns have been criticized in Estonia, like in Finland.

In reality, there are significant quality differences between average dwellings in Estonia and Finland, for at least three reasons. First, the quality of construction work of new residential buildings in Estonia has been rather poor. Problems in the availability of construction materials are one part of the explanation. Another reason is that the reward system of Soviet Estonian construction companies was basically not based on qualitative but rather on quantitative indicators. Households' demand for housing services and the willingness to pay for housing quality had no role in the building process. Third, too little resources have been allocated to the maintenance and renovation of old residential buildings. The overall condition of twenty-year-old blocks of flats is seemingly poor compared with buildings of the same age in Finland.

The average dwelling size in Estonia was approximately 45 m² in 1990 (based on estimation: 0.8 x 34 milj. m² / 607,000 dwellings), while it was 73.5 m² in Finland in 1989. It may be assumed that the average size of dwellings has increased in Estonia during the past few years, since the average floor space of newly built dwellings has increased - it was 61 m² in 1991.

About 30 per cent of dwellings in Estonia were owner-occupied and 70 per cent were rented in 1989 (see figure 3). The proportions were almost the opposite to those in Finland in 1989. The rental housing stock in Estonia has been mainly owned by the state, municipalities and cooperative organizations.

8.5. Living space and housing costs

The functioning of demand, supply and institutional arrangements of the housing sector all affect actual housing consumption of households. The term "housing consumption" is extremely difficult to define in accurate terms. It can be thought of as a combination of various quantitative and qualitative factors (dwelling size, age, amenities, condition, location, neighbourhood etc.). Alternatively, it can be measured in pecuniary form using

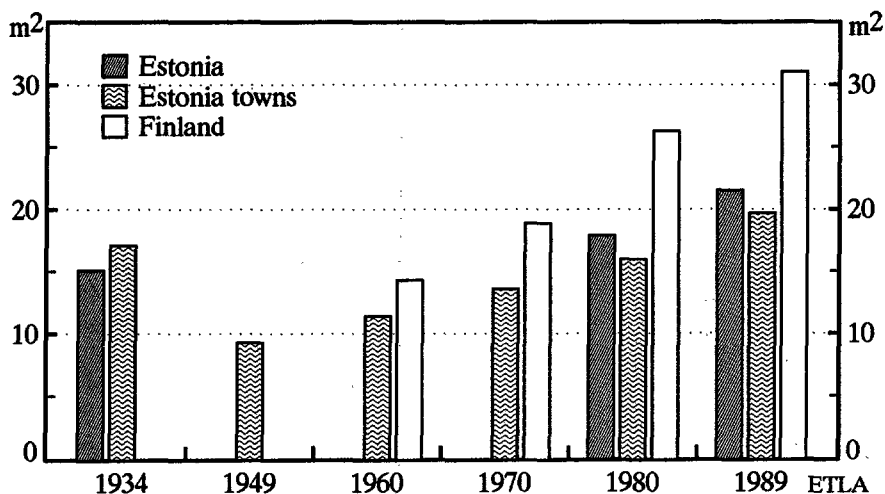
costs or prices of various items of housing. In the following actual housing consumption in Estonia and Finland are compared in simple quantitative terms.

8.5.1. Living space

The average living space per person (floor space of the dwelling divided by the number of household members) is a simple and often used indicator of housing conditions. In the case of Estonia and Finland the floor space is measured approximately in the same way so that this indicator can be used in cross country comparisons.

The average living space per person in Finland was 31.0 m² in 1989. During 30 years living space has more than doubled, being 14.3 m² in 1960 (figure 4). An alternative indicator of housing conditions is the average number of persons per room. This ratio was 0.68 in 1989. The proportion of overcrowded dwellings was 7.6 per cent if the standard "more than one person per room, with kitchen counted as a room" is applied. With this criteria the housing conditions in Finland have improved dramatically since 1960. At that time the respective proportion was 52.5 per cent.

Figure 4. Average floor space per person in Estonia and Finland



In Estonia the floor space per person was 21.3 m² in 1988 (figure 4), which was 30 per cent less than in Finland. Since 1960 the gap between the two countries has increased, in spite of the fact that also in Estonia the average living space has gone up remarkably. It was 11.4 m² in urban areas, and the estimate for the whole dwelling stock was 12-13 m² per person in 1960.

It is interesting to note that in the 1930s housing conditions in Estonia were better than in Finland according to this measuring stick. The average living space per person in Estonia was 15 m², and in Finland approximately 10-11 m² in 1934. (The figure of Finland has been estimated by the help of rooms/inhabitants ratio 1934-1969 (Heikkonen, 1971).) A level of 15 m² per person was reached in Finland in the 1960s and in Estonia for a second time in the 1970s.

There is large variation in living space between household groups in both countries with respect to household size, income, age, tenure and region. In Finland the average living space decreases monotonically with respect to household size: one-member households had 51.1 m² while four-member households only had 24.8 m² per person, on average, in 1989. Respective figures are not available for Estonia.

There is a clear life-cycle pattern of housing consumption in Finland. The living space of young households (the age of the head of the household being 20-29 years) is only two-thirds of that of old households (the age of the head of the household being more than 64 years). Households are forced to increase their dwelling size step by step during a very long period of their life span. The reason is related to the Finnish housing and financial markets and their allocation mechanisms. In the privately financed owner-occupied sector this has been due to credit rationing, short amortization periods of housing loans and internationally high housing prices. In ARAVA rental and owner-occupied housing availability problems and family size related dwelling size limits have caused upgrading by mobility over time. In rent-regulated private rental housing excess demand (shortage) has pushed people to other sectors, especially to the owner-occupied sector.

There has also been a certain life-cycle pattern of housing consumption in Estonia. Only 9.5 per cent of all households had more than 20 m² per person in 1989 while the proportion was 28.5 per cent among pensioner households in urban areas and as high as 45.5 per cent in rural areas. The allocation

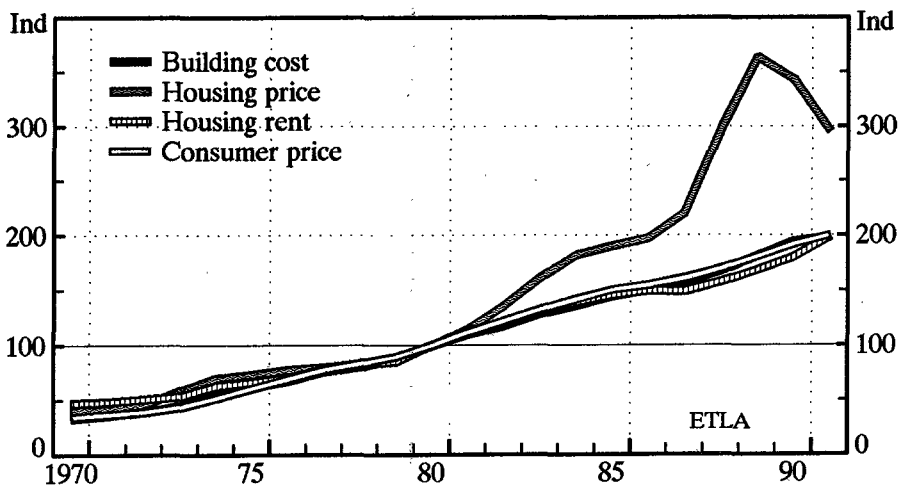
mechanism has clearly not been in favour of young households in Estonia or in Finland.

The living space also increases monotonically with respect to income in Finland. According to a study by Laakso and Loikkanen (1992) on the metropolitan area of Helsinki the average living space was 27 m²/person in the lowest income quartile while in the highest quartile it was 40 m²/person in 1989. Respective figures are not available for Estonia.

There are also regional differences. In Finland the average difference between urban and rural areas is rather small: the living space per person was 28.7 m² in urban and 29.1 m² in rural areas in 1985. In Estonia the difference is much more significant, the respective figures being 19.7 m² for urban and 25.9 m² for rural areas in 1989.

Tenure also matters, at least in Finland, where the average living space per person is approximately 20 per cent lower in rented than in owner-occupied dwellings. In Estonia the difference with respect to tenure form is probably even greater because a significant share of the housing stock in rural areas is owner-occupied while in urban areas it is mainly rented.

Figure 5. Price developments in Finland during 1970-1991 (Ind (1980) =100)



8.5.2. Housing costs

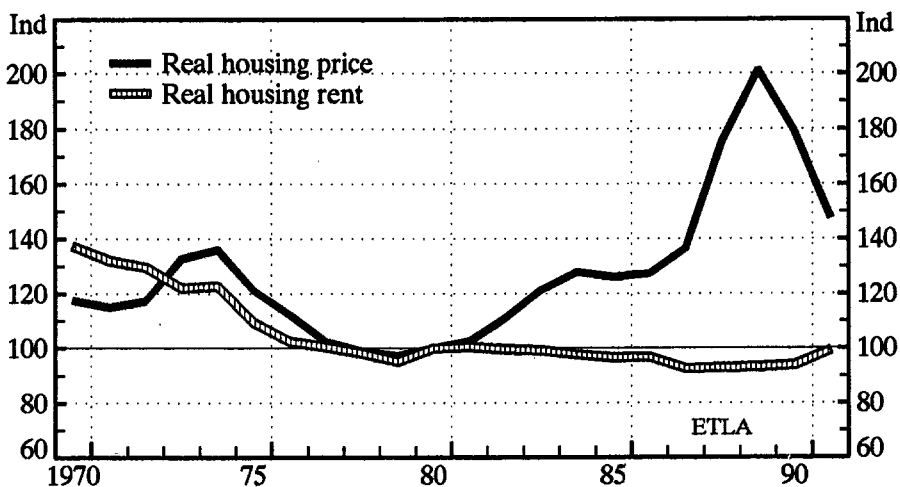
Housing costs are difficult to compare between countries, as well as between subsectors within the same country because of differences in pricing mechanisms, subsidy systems and tax treatment of housing. In the following we present the development of housing prices and rents in Finland. We also describe the income share of housing expenditures among households. For Estonia we present some rent and housing expenditure figures.

Finland

The trends in nominal housing prices and rents from Finland together with the consumer prices and construction costs are presented in figure 5 and the respective real prices and rents in figure 6.

Real rents, which were controlled since 1968 until 1992, declined during the 1970s and were quite stable during the 1980s. The development of real housing prices (measured by prices of condominiums) has been quite different. After a boom in 1972-73 real prices declined in the second half of

Figure 6. Real housing prices and rents in Finland during 1970-1991 (Ind (1980) = 100)



the 1970s. An increase started in 1979. In the second half of the 1980s the financial markets were liberalized and there was a boom in the economy. Starting in 1987 housing prices sky-rocketed until 1989. In two years real prices increased by more than 50 per cent and nominal prices almost doubled. Rising interest rates and mounting economic difficulties caused a collapse in the real estate market, and in 1992 real housing prices fell below the pre-boom level.

Because of rent control the regional differences in rents have been quite small. On the other hand, in housing prices there are strong regional and intra-urban variations. Market prices of dwellings are in general higher in urban than in rural areas. The prices in the metropolitan area of Helsinki were approximately 50 per cent higher than in the rest of the country in 1991. The prices in the "luxury areas" of Helsinki were 60-80 per cent higher than the average level in the metropolitan area.

Housing expenditures of various types of households have been studied in household surveys compiled by Statistics Finland. According to the 1985 survey average housing expenditures for renter households were about 17 per cent of the disposable income in 1985. For owner-occupied households with no housing loans the proportion was 8 per cent, and for owner-occupants with a loan it was 24 per cent. The regional differences in housing expenditures were rather small in Finland. There were nevertheless large differences in the income share of housing expenditures by income quintiles and by the stage in the life-cycle. The share of housing expenditures of low-income households as well as one-member households was significantly higher than that of all households.

Estonia

The rent policy of the Soviet Union, which remained basically unchanged since that adopted in 1928, was also applied in Soviet Estonia. Monthly rent in state housing was either 13.2 kopeks or 16.5 kopeks per square meter of living space depending on the size of the city. Location or quality of the dwelling had no relation to the amount of rent. For the apartment space above the norm (12 square metres of living space per resident plus 6 square meters for the family) the rental rate was tripled.

According to the IMF (1991) housing accounted for only 2.8-3.0 per cent of expenditure of workers and employees in the whole Soviet Union during 1987-89, which was less than spending on alcohol and tobacco. According to Inkinen (1991) housing expenditures in the form of rents were less than 5 per cent of the gross incomes of households in Estonia in 1990.

Because rents were kept low by administrative decisions, the imbalance between the supply of and demand for housing manifested itself by long queuing times in municipal waiting lists and low mobility rates. According to the IMF (1991) 18 per cent of all families have been on the lists for at least ten years in the whole Soviet Union. The annual mobility rate of households has been around one per cent in the Soviet Union (Lounela 1992), while the mobility rate in Finland and other Western countries is typically 10-15 per cent.

8.6. Housing reforms in Estonia and Finland

8.6.1. Estonia

The housing shortage has remained one of the most acute problems in Estonia. The new economic policy of independent Estonia intends to undertake radical changes in housing. Housing reform policy envisages i.a. a gradual transition of housing to commodity-money relations - more flats will be put on the market.

Goals of new housing policy

Related to the process of regaining independence, economic reforms were planned in the so-called IME (national economic programme) plan. Key elements of the new housing policy were also defined as a part of the IME process. The goals of the new policy can be summarized as follows.

First, the basic goal is to create a functioning housing market based on market mechanisms. For this purpose property rights in the society must be redefined which, as regards housing, makes it possible to create new forms of ownership of housing. Privatization of land and the dwelling stock are key elements of this process. On the other hand, housing price and rent

policies, as well as new forms of housing subsidies are essential parts related to the transition to a market-based housing sector.

Second, a housing finance system has to be recreated. The establishment of private housing finance is related to the creation of a functioning banking system. In addition to private housing finance, the role and terms of public housing finance must be redefined.

Third, the new housing policy needs new institutional arrangements in administration, ranging from the level of ministries to local government. Despite the goal of moving to a market-oriented system, land-use planning, public housing finance and subsidy systems and the provision of information in housing require organizational innovations.

In the following we shall briefly describe some key elements of new housing policy which is nevertheless in the process of ongoing reformulation. We shall concentrate on privatization of land and housing, housing finance, rent reform and housing subsidization. Less attention will be paid to administrative reforms.

Privatization of land

The reconstruction and development of the economy during the post-war years was based on the Soviet laws. This lasted until August 20, 1991, when the Supreme Council of the Republic of Estonia adopted the resolution on the political independence of Estonia.

One of the laws adopted by the Supreme Council of the Republic of Estonia on October 17, 1991 was the Land Reform Act, which went into force on November 1, 1991. The law established that the goal of the land reform was to revise the relations based on state ownership of land into the relations based on mainly private ownership of land, proceeding from the continuity of the right of former owners and the interests of the present users of land protected by the legislation. In the course of the land reform the former owners or their legal heirs will regain their unlawfully expropriated land, be relocated or receive other compensation. Land will be sold or given free of charge to new private and municipal owners and the land remaining under state ownership will be defined.

Privatization of housing

As in the case of land, the legal rights of the former owners of housing or their heirs must be taken into account. It has been estimated that such claims of ownership can apply to about 10 per cent of the current housing stock (Inkinen and Tiik, 1991).

The selling of state flats started on a small scale in Estonia in the first half of 1991. Lately there have been organized auctions where one can buy the right to settle in a flat. Voluntary emigrants moving from Estonia to the previous Soviet Union can put their flat (excluding flats in houses which were illegally expropriated after June 16, 1940) up for sale. A part of the money from these auctions is paid to the emigrant for covering expenses in connection with the settling in a new place. A person who buys a flat in that way is not the owner yet. He cannot resell or bequeath it. The flat is still state property. The reason is that since the privatization law has not been adopted yet, the selling and buying of state flats has been temporarily postponed. Initially, the aim was that privatization of housing would be well under way in 1992, but this has not been the case.

The results of the first auctions of flats showed that people are quite willing to settle their housing problems this way and pay large sums of money only for the right to live in a flat. For example, the rights to live in one-, two-, three- and four-room flats were sold, respectively, for 110,000-200,000, 170,000-1,810,000, 410,000-830,000 and 830,000 roubles in February, 1992.¹⁾ The prices vary according to location and floor space of the flat.

An important role in the formation of the price level has been played by the great shortage of housing. In Tallinn there were 45,300 families and single persons registered in the queue for flats, 9500 of them for cooperative apartments in 1989 (Eesti Riiklik Ehituskomitee, 1992). Furthermore, since 1991 there has been no state financing of the housing construction any more and in the same year also the list of applicants for the housing cooperatives was closed.

Alongside privatization of state housing, the property rights related to cooperative housing have changed. Earlier, the occupant of a cooperative

1) "Rahva Hääl", No. 34, February 11, 1992.

dwelling owned only a share in the cooperative, not the apartment itself, it could not be sold/bought, given away or bequeathed. The rights of the members of the housing cooperatives relinquishing their flats to other citizens were essentially increased by a decree the Estonian SSR Council of Ministers in July 8, 1988.

In the future, the privatization of apartments is planned to be carried through by means of vouchers and by sales. The concept of vouchers means that each person 18 years of age who has lived at least five years in Estonia gets for each year of employment, education etc. one calculatory unit, the sum of which determines the number of vouchers. Furthermore, one gets five units for each child born in Estonia and there are also other criteria for getting units. They can also be transferred to relatives. Vouchers cannot be sold.

Dwellings bought by vouchers cannot be sold during the next five years, if the buyer has not lived in the flat.

The value of vouchers (or calculatory units) is determined in each case separately, but the aim is that, for instance, for one calculatory unit, one gets one square metre of floor space in a nine storey apartment building. When the number of acquired calculatory units is smaller than the general floor space, the rest must be bought at the market price. (See Lounela, 1993.)

Determination of rents 1992

On March 6, 1992, the government of the Republic of Estonia passed the decree on changing the procedure for calculating housing rents and on the establishment of rent ceilings in order to gradually abolish housing subsidies and bring the housing rent into line with the actual maintenance costs of dwellings. The first stage of the housing rent reform took place on March 1, 1992 with the aim that rents would cover the maintenance costs of the dwellings. The second was carried out on January 1, 1993 with the aim that rents would in addition cover repairs and a profit margin.

The municipalities have to establish minimum and maximum housing rents on their administrative territories. The lessor in the case of a dwelling under municipal ownership is the local government organ or a juridical person designated by it and in the case of dwellings under state ownership (dwell-

ings of state enterprises and institutions) the occupant by title. The housing rent is established by way of an agreement between the lessor and the lessee, based on the total floor space of the dwelling and differentiated according to the level of the public conveniences.

For example, the City Government of Tallinn established that from January 1, 1993 the maximum monthly housing rents per square meter of floor space in the dwellings under municipal ownership in Tallinn is 1.20 Estonian crowns (Lounela, 1993).¹⁾

Finally, the latest policy measure was to free rent formation totally.

Housing allowance system

According to family budget studies, rent and public utilities accounted for only 2.2-2.4 per cent of the total income of a family in 1989 (Vabariigi 1989 aasta sotsiaalse arengu näitajad, 1990). Now there are great changes envisaged in the housing costs as the Government has adopted the policy according to which the subsidization of housing would be finished. The rent reforms will lead to a manifold increase in living expenses.

In connection with the launching of the housing rent reform the Government adopted a decree delineating compensation for the rise in the housing rents and the price of public conveniences. The decree meant that from March 1, 1992, a housing allowance was to be established for families with low incomes in order to partly compensate for the increase in housing expenditures. These expenditures are compensated for by the housing allowance if they exceed 25 per cent of the family's income. Furthermore, there is a maximum limit on space for which housing expenditures are compensated. The limit depends on family size so that each family member is allowed 18 square meters and in addition one gets 15 square meters per family.

Besides rent, the following public conveniences are compensated for: cold and hot water supply, sewer system, heating, garbage collection, stove fuel in standard cubic metres in accordance with the tariff of thermal energy sold

1) Base rent which does not include costs of heating, water etc.

to the population, gas, electric energy in dwellings with an electric stove - 45 kWh a month per resident.

The initial limit on the income share of housing expenditures (25 per cent) above which housing expenditures were to be subsidized was already later in 1992 increased to 50 per cent. Also thereafter the criteria for housing allowance have been revised. In practice for quite a few households, the income share of housing expenditures, including rent, heating costs and utility charges has been 60-70 per cent. This has led to a new problem: people have begun to leave their rent and other bills unpaid.

8.6.2. Finland

The last few years have also brought significant changes in the Finnish housing market. They have been related to housing finance, tax reforms, rent controls, competition policy and housing administration.

Until the early 1980s the Finnish bank-centered financial system was highly regulated with tightly controlled and rigid lending rates. Under this system real interest rates especially during the 1970s were clearly negative, and even more so when deductibility of interest expenses was taken into account. Low, administratively controlled interest rates in conjunction with controls on capital inflows resulted in credit rationing. On the grounds that grey markets emerged and expanded alongside the official banking system, the Bank of Finland, following similar developments in other countries, gradually deregulated the domestic banking system. In 1986 the ceilings on average lending rates were abolished and capital inflows were freed for industrial enterprises. The next year also non-industrial firms gained unrestricted access to foreign long-term finance. In 1988 the restrictions which applied to municipalities were partly lifted. Including households and related housing companies, inflows of long-term capital were practically altogether deregulated at the end of 1991 (Lehto-Sinisalo, 1991 and Kiema, 1991). Related to these developments, the banking sector began to offer 20-30 year housing loans with very limited or no requirements for a down-payment.

The public housing finance system was also renewed recently. In 1992 a new public housing fund was established outside the national budget where only interest subsidies are included nowadays. Current public funding,

financed by issuing bonds, differs from the old ARAVA loans in many respects. In the case of rental companies, state loans from the housing bank cover all the finance needed. As for owner-occupied ARAVA dwellings, the down-payment structure and other terms of loans have changed substantially. In addition to state loans a new system of interest subsidies for investors was implemented in 1993.

During the 1980s the macroeconomic development of the Finnish economy was unusually stable. The GNP grew by 2-4 per cent per annum during 1982-86 and a soft landing was generally expected at the time when the most important phases of financial liberalization took place. Contrary to expectations the following years turned out to be years of rapid growth. Financial deregulation and expansionary fiscal policies led to the overheating of the whole economy. The previously credit rationed economy, from firms and municipalities to the household sector, utilized the increased access to finance. In the first phase the (ex post) excessive indebtedness was augmented by the fact that banks continued their market share competition without increasing interest rates before 1989. As a part of the overheating of the Finnish economy, housing prices sky-rocketed reaching their peak in 1989.

The collapse of exports to the former Soviet Union, sluggish growth in the Western markets and domestic macroeconomic imbalances - an increase in the balance-of-payments deficit and public debt - led to high interest rates and the economy fell into its worst post-war recession. In 1991-92 GNP decreased by more than 10 per cent. Prices of owner-occupied dwellings fell sharply in the years after reaching their peak in 1989. In 1992 the real prices had fallen to the pre-boom level of 1987 (c.f. figure 6). This decrease in both nominal and real housing prices and the respective collapse in the stock market caused a liquidity trap to which both normal households and firms which had bought at high prices during the boom fell, not to speak of speculators looking for short-term capital gains. In many cases the market values of assets became lower than the amounts of the loans they collateralized. This has led to liquidity problems and bankruptcies throughout the economy from major banks to the household level.

The consequences of financial deregulation were aggravated by the fact that the tax system remained much the same during the 1980s. Despite the modest restrictions on the deductibility of interest expenses of housing loans, real

after-tax interest rates remained low during the first years of the boom. Now, during the recession, the limitation of previous favourable tax treatment of housing has continued. Recent reforms affecting housing include introduction of property taxation in 1993, gradual shift to value-added taxation so that services and construction will be included, and new capital income taxation with a common tax rate of 25 per cent for all unearned income.

Recent and proposed tax reforms aim i.a. at greater neutrality between alternative investments. Related more directly to housing, there is an aim to create better neutrality across tenure forms and especially to promote the supply of private rental housing. As a part of this policy, rent controls on new lease contracts were abolished beginning in 1992. This has not led to rent increases in the current recession. The tax reforms are at least partly related to the ongoing integration process which involves the European Economic Area agreement, and Finland's application for membership in the EC. In addition to tax harmonization, many other fields of legislation are being harmonized. These include competition policies which will make the Finnish construction sector more open in the future. In housing administration, the role of norms has been somewhat reduced and decision making has been partly decentralized from the National Housing Board, which will be closed down in 1994, to the local (municipal) level. On the other hand, some more strategic activities of the National Housing Board will move to the Ministry of Environment.

8.7. Conclusions

Before World War II housing institutions and housing conditions in Estonia and Finland were rather similar. Measured in terms of living space per person Estonians were ahead of Finns. The war-time and post-war developments took the two countries on totally different paths; Finland retained its independence whereas Estonia became a part of Soviet Union.

In Estonia the general standard of living was close to that of Finland in 1938. During the post-war era the income difference became enormous in terms of per capita income comparisons, on the order of 5-8 times in favour of Finland (Hagfors and Kuus 1992). Housing differs markedly from the income comparison. Living space per person is currently about 30 per cent

smaller in Estonia than in Finland. Ordinary measures of the standard of dwellings do not differ markedly either. There is, however, a far greater difference in quality of housing stock although we do not have even crude overall measures which would give a quantitative estimate of this aspect.

During the socialist period Estonia was economically the most developed republic of the USSR. Also its housing conditions were better than in the other republics. In 1961 the average useful space per person in Estonia was 11.5 m² and 16.4 m² in 1982. The respective figures for the whole Soviet Union were 8.8 m² in 1961 and 13.2 m² in 1982 (Andrusz, 1984). The difference relative to the USSR average has increased a little in absolute terms during this period.

After World War II Finland was economically clearly behind the other Nordic countries (except Iceland). During the last forty years the income gap has narrowed markedly, especially during the 1970s and 1980s. Housing has been in discord with this general picture. In absolute terms the difference for example in rooms per person or square metres per person between Finland and the other Nordic countries has remained much the same, contrary to respective income developments. Also housing institutions and housing policies in Finland have been a case of its own, although there has been far less similarity in housing policies than in social policies in general between the Nordic countries.

After regaining its independence Estonian policies have aimed towards applying market principles in all areas of the economy, including housing. Although the actual pervasiveness of this approach remains to be seen, it is in contrast to the longlasting post-war liberalization process that has taken place in most Nordic countries. Housing is still, despite the last wave of liberalization, one of the most regulated areas in these economies. On the basis of Nordic experiences and the general inelasticity of the housing supply, it is probable that housing markets will be subject to more interventions than the present policy approach suggests.

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9. HOURS OF WORK AND TIME USE

by Elmar Aedna and Antti Romppanen

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9.1. Introduction

An analysis of the working time and time-use patterns in different countries constitutes an important aspect of inter-country socio-economic comparisons. This report is part of a comprehensive socio-economic comparative study of Estonia and Finland.

The comparisons presented in this study are naturally influenced by the availability of current and historic statistical data. Working time patterns have been examined on the basis of the actual total hours worked annually, normal working time and deviations attributable to part-time (or shorter hours) working, multi-shift work and other similar work arrangements, overtime working, holding of second jobs, and annual holidays. The comparisons include the changing trends during the post-war period and, where possible, references have been made to the pre-1940 period. The analysis of time-use patterns by employed persons is limited to the comparative trends during the 80s.

The comparability of inter-country data is further limited by the differences in classifications and data collection methods in Estonia and Finland.

The Finnish work time data is mainly based on the Labour Force Statistics published by the Central Statistical Office. The Labour Force Statistics are based on monthly telephonic interviews of a 12,000 random sample of the national working-age population. The time use studies conducted by the Central Statistical Office are based on diaries filled by respondents. Respondents represent a random sample of Finnish population in the 10-64 age group. The size of sample was over 7,000 in 1979 and almost 10,000 in 1987.

The Estonian data has been supplied by the Estonian Academy of Sciences and is largely based on registers of the Department of Statistics. In many cases the labour statistics report the status only at a particular date such as June 1 or August 1 in each year. Thus, unlike the Finnish data, the Estonian data cannot be extrapolated to derive annual averages or to determine seasonal variances.

9.2. Normal working time

A 10-12 hour working day, in European countries, was not an unusual phenomenon at the turn of the century. There were no annual holidays and the only free days were Sundays and some specified public holidays. During 1910 the Finnish labour force averaged 3000 working hours per annum but, by 1990, this had reduced by over 40% to 1716 hours (Annex. 1). In Estonia there was a slightly less reduction to 1927 hours by 1990.

According to 1990 international comparisons within industrialised countries standard annual working time in Finland is among the shortest, while that in Estonia is one of the longest. In Estonia the annual working time, during 1990, was about equal to that in the United States but less than that in Japan. Among the Western European countries only Portugal had a longer annual working time than Estonia (Annex. 2).

9.2.1. Normal weekly hours

The reduction in the length of the working week during 1918-1990, in Finland and Estonia, as shown in Table 1 reflects the working conditions in manufacturing and other manual urban occupations. During the first half of this century the majority of the labour force was employed in agriculture and forestry and their working conditions are not reflected in this table. As late as in 1934, the agrarian sector employment represented 63% of total employment in Estonia and over 50% in Finland.¹⁾ The agrarian sector was based largely on family farming and working time regulations did not have the impact as for employment in urban industries.

By the late 80s agricultural and forestry employment, as a percentage of total employment, had rapidly decreased to 13% in Estonia and to under 10% in Finland. In Estonia the agrarian labour force is employed mainly as wage-earners in collective farming while in Finland wage-earners comprise only 15% of the agrarian labour force. The remaining 85% of Finnish farmers are self-employed entrepreneurs and their family members.

1) Measured in man-years, Hjerpe 1988.

In Estonia a six-day working week with an eight-hour working day (or 48 hours a week) became the norm in 1923. This standard continued till 1956 when normal hours on the eve of holidays, and other off-days, were shortened by 2 hours (i.e. a 6-hour working day was enacted for these days, reducing the working week to 46 hours). In 1960 the maximum length of the working day was reduced to 7 hours (six days a week) for all wage and salary earners except for people working underground for whom the working day was limited to 6 hours. In 1967 a five-day working week was adopted but the length of the normal working week was retained at 41 hours. A 6-day working week (41 hours per week), with one day off, continued to be permissible if the need was justified on the basis of production process or work condition requirements.

In Finland the 48-hour working week was introduced in 1918 and reduced to 47 hours in 1946 and to 45 hours in 1958. The 5 day working week (with 40 hours per week) was gradually introduced in Finland in the late sixties. Annual working time was further reduced by 12.5 days or 100 hours during the late 80s under a special scheme. If this last reduction is included in the definition of weekly hours then in 1990 the normal weekly hours amounted to 37.8.

In Estonia, the normal weekly working time has not been reduced since 1960. The shift from a six to a five day working week in 1967 was, as a rule, realised by increasing daily hours while weekly hours remained at 41. The Central Union of Estonian Trade unions and the Government of the Republic of Estonia signed the first general agreement on social guaranties in 1991 which allows a shift to a 40-hour, or shorter, working week, if possible.

Table 1. Normal weekly hours in Finland and Estonia

Year	Finland	Estonia
1918	48	
1923		48
1946	47	
1956		46
1958	45	
1960		41
1966-69	40	
1990	37.8	

9.2.2. Working time by industries

The standard working week (e.g. 40 hours) applies to most workers but this can vary as a result of legal enactments or other agreements between employers and employees. These variations arise by reference to factors such as age, occupation, industry etc.

Another way of regulating work hours is periodical work, where the number of daily and weekly hours can vary but the total number of hours over a longer period does not exceed limits prescribed by law or by agreement. In Estonia the length of this longer period is fixed by law only for specified occupational groupings.

In Estonia extra work is work done within normal hours established in the contract as a result of more strenuous work. About 6-10% of employees did this kind of extra work in 1989. The extensive use of extra work was caused by centralised wage regulation which did not allow flexible differentiation of basic wages and salaries in harmony with the strenuousness of the work. Since the transition to the wage regulation of the Republic of Estonia in 1990 the share of extra work has decreased considerably.

Finnish technical and administrative employees, in manufacturing industries, and employees in service industries were already enjoying a shorter working week (37.5 to 39 hours) than the standard 40 hours even before 1990. A shorter working week was also practised in shift working. After the 1986-1990 reduction to a 37.8 hour week, the variations in the length of the working time between different job categories have become smaller. However shift workers still have a shorter working week (36 hours) as do civil servants following "office hours" (representing 15% of public sector employment) who have a 35-35.5 hour working week.

In Estonia public sector employees usually work for the normal hours per week. A shorter working week applies to certain professions such as teachers, physicians and paramedics. Additionally, 16-18 year olds have a 36 hour working week; child workers (under 16) have a 24 hour working week; work in environments hazardous to health is limited to 36 hours per week.

Table 2. Normal weekly hours by industry in 1987

Industry	Estonia	Finland
Total	40.1	37.7
Agriculture and forestry	40.9	38.9
Agriculture	40.9	40.0
Forestry	41.0	37.8
Manufacturing	40.8	38.7
Construction	40.9	39.5
Transport and communication	41.0	38.4
Transport	41.0	39.7
Communications	40.7	36.0
Trade, restaurants and hotels	40.9	36.9
Wholesale trade	40.8	38.9
Retail trade	41.0	35.9
Restaurants and hotels	41.0	37.3
Services	..	36.7
Education	32.8	
Science	40.7	34.8
Medical care, social welfare	38.8	38.5

Source: Finland, Labour Force Statistics 1987. Normal hours of wage-earners in main work. Estonia, (data as at June 1, 1987). Tsislennost rabotsih i sluzastsih po polu i vozrastu...Statistitseyski sbornik. Tallinn 1988.

Apart from the shorter working week in education jobs, there is no correlation between industry and the length of the working week (Table 2). In Estonia the shortest working week is found also in health care and social welfare jobs.

In Finland the shorter working week is practised in retail trade and the communications industry; it is these industries which also employ the largest concentration of part-time workers. In Estonia, however, these industries practice a standard 41 hour week.

9.3. Part-time work

Part-time working has not been a common practice in either Finland or Estonia. The proportion of the labour force employed for less than 30 hours per week has been under 8% in Finland and under 3% in Estonia (Table 3).

Table 3. Employees by the normal weekly hours (%)

FINLAND			ESTONIA		
Hours	1984	1989	Hours	1983	1987
41+	5.4	4.7	41	91.3	91.2
40	58.9	11.9			
35-39	24.4	70.6	35-40	6.1	5.6
30-34	3.7	5.5	30-34	0.4	0.6
under 30	7.6	7.3	under 30	2.2	2.6
Total	100	100	Total	100	100

Source: Finland, Labour Survey 1984 and 1989 (autumn of each year). Estonia, June 1 of each year - cf. Table 2.

The main categories of part-time workers in Estonia are mothers of young children, invalids and old-age pensioners. At present part-time employment is also used at the employer's initiative because of shortage of work. In Finland part-time workers are mainly women and students. Involuntary part-time working is now on the increase also in Finland because of the economic recession.

Although the working time differences between the various occupational groups have narrowed in Finland the variance is still greater than in Estonia where over 90% of employees have a 41 hours week. This analysis excludes self-employed workers and entrepreneurs (farmers etc.) who represent about 15% of total Finnish employment. Their working hours are not regulated by the norms applicable to employees and in 1989 the average working week of entrepreneurs was over 45 hours in Finland.

9.4. Working-time arrangements

Working outside the standard day shift is far less common in Finland than in Estonia (Table 4) and this is despite different occupational groups showing a greater variance in the length of the working week (supra). Three quarters of Finnish employees are engaged in regular day work and this share has not changed during the eighties. About 17 percent of employees work 2

Table 4. Employees by working time arrangement (%)

Arrangement	Finland		Estonia	
	1984	1989	1979	1985
Regular day work	74.0	74.0	51.8	55.9
Regular evening, night or morning work	3.8	3.5	3.6	3.6 (night shift)
2-shift work	9.5	10.9	26.3	22.3
3-shift work	5.6	5.9	18.3	17.9
Other	5.5	5.4	-	0.3
Unknown	1.6	0.4	-	-
Total	100	100	100	100

Source: Finland, labour Force Statistics 1984 and 1989. Estonia, Tsislenost rabotsix po professijam... v ESSR. Statistitseski sbornik. Tallinn 1986. Estonian data refer to August 1 of each year.

or 3 shift arrangements and their share has increased marginally during 1985-89. In Estonia regular day work accounted for 56% of 1985 employment (an increase from 52% in 1979) while 2 or 3 shift working accounting for 40% and regular night work for 3%.

In Finland shift working is used mainly in processing industries and in some services such as hospitals. In Estonia shift work is used in these sectors and also in the transport sector. Other work time arrangements used include weekend working and irregular periodical work etc. - these are used in Finland by under 6% of employees employed mainly in transport and other service industries.

9.5. Overtime work and second jobs

Estonian labour codes define overtime work as work done in addition to the hours prescribed by law but the Statistical Office do not record overtime work in all industries. In 1989 the proportion of employees who had worked overtime in different industries was: motor transport 10%, construction 2.5% and manufacturing 0.9%. Overtime working in 1989 was much more extensive in Finland and affected nearly 10% of all employees. Finnish

Table 5. Overtime working and second jobs (% of employees affected - 1989)

Industry	Overtime		Second job	
	Estonia	Finland	Estonia	Finland
Total	..	9.0	7.4	6.6
Agriculture	..	2.0	0.3	10.1
Forestry	..	4.4	0.1	10.8
Manufacturing	0.9	12.0	5.8	5.2
Construction	2.5	9.9	3.8	5.7
Motor transport	10.0	..	..	..
Railway transport	..	10.9	4.5	6.0
Communication	..	..	10.3	..
Trade	..	8.9	13.6	4.8
Restaurants, hotels	..	7.5	5.1	4.3
Education, science	..	6.1	16.7	11.5
Medical care and social welfare	..	7.2	9.6	5.8

overtime usage was highest in manufacturing (12%), transport (10.9%), construction (9.9%) and trade (8.9%).

The lower recorded usage of overtime in Estonia can be partly attributed to inadequate accounting but the main reason is superfluous employment (or over employment). The high usage in Finland was due to over heating of the economy and the consequent shortage of labour in many occupations and regions.

In Estonia holding a second job (usually with another employer) is practised by over 10% of employees in the trade, education and communications sectors and only to a lesser extent in other sectors. In Finland holding a second job is practised more by agriculture, forestry and education employees than in other sectors.

It is probable that holding second jobs has increased in Estonia since 1989. The liberalisation of prices meant that the real wages were reduced. Holding second jobs has increased also in Finland during the eighties (Antila, 1990). This may be explained by the shortening of normal working time, the high demand of labour and the rise in housing prices.

9.6. Annual leave

In Finland the 1922 legislation on working conditions determined a worker's annual leave entitlement at 4-7 days. In 1939 separate legislation was introduced to determine questions concerning annual leave and the entitlement was increased to 5-12 days. This was increased to 3 weeks in 1946, to 4 weeks in 1960, and to 5 weeks around 1980. Under present legislation the leave is computed as 2.5 days per month of employment (during the current year) and an employee who has worked for a year or more for the same employer is entitled to leave of 5 weeks or 30 days, including Saturdays (for purposes of leave calculation one week is equated to 6 days even though the working week is only 5 days). This leave is generallyavailed as a 4 week summer holiday and a 1 week winter holiday. Some employers, including

Table 6. Annual leave in Finland and Estonia, calendar working days (inc. Saturdays)

Year	Finland	Estonia	
		industry	all employees
1922	4-7		
1934		7	
1939	5-12		
1940		6-12	
1946	12-18		
1958		16.9	17.8
1960	18-24		
1968		19.5	20.5
1973	24-26		
1977		20.5	21.1
1981	30		
1987		20.7	21.9
1990		20.9	22.5

Source: Finland, Romppanen, Antti. Työaika ja työllisyys. TASKU 1980. Estonia, Trud v ESSR. Statistitseski sbornik. Tallinn 1962, 1977 and 1982. Tööajabüdzeti ühekordne valikuurimus märtsis 1990. NSV Liidu Statistikapomitee, Moskva 1991. 1934 and 1940 leave data is for wage earners only, other workers are included in the later years. From 1958 the annual leave describes the average length of leave when additional leave is included.

the public sector, allow the basic leave entitlement to be increased after 10 or 15 years of continuous service. The annual leave entitlement is not reduced by the extra 12.5 days availed as off-days as a consequence of the 1986-1990 working time reduction.

Estonian legislation on annual leave was first enacted in 1934 and provided for 7 days of paid leave for employees who had worked for at least one year for the same employer. In 1940 this was changed to 1 week for those who had worked for at least one year and 2 weeks for those who had worked for at least 3 years. Estonian SSR legislation accorded to each employee the right to the basic leave which, till 1968, was fixed at 12 working days when it was increased to 15 working days.

The average actual leave increased from 17-18 days in the late 50s to about 20 days in the late 60s and to 21.9 by 1987. However, in the late 80s, this varied from 20.7 days in industry to 33.5 days in education (see Appendix 3A).

Apart from the basic annual leave, Estonian legislation and practices provided for longer leave entitlement for a number of specified groups such as minors, invalids, workers in scientific, educational and cultural institutions, and for some specified jobs in the forest industry. This additional annual leave entitlement applies also to work under hazardous conditions, for unregulated work hours (executives, specialists, salaried workers) and for long term employees who have been with the same enterprise for a number of years. In 1987 about one-third of workers were entitled to additional leave for work under hazardous working conditions. In road transport the share was 64% (see Appendix 3B). The maximum additional leave for specialists and salary earners is 12 days, while that for wage earners is even longer.

The Estonian basic leave was legislated at 18 days in 1991 while the additional annual leave is determined by collective bargaining agreements between the employers and employee trade unions.

The lengthening of annual leave in Finland and Estonia had followed a similar pattern until the 70s. The leave entitlement in Finland is now about one week more than in Estonia and this is attributed to the concept of winter holidays, or skiing holidays, that started in the early 80s.

9.7. Actual annual working time

A comparison of actual annual working time needs to look at the normal working time, annual leave, public holidays, other absenteeism and overtime working.

In 1990 Finland had 9 public holidays, Estonia had 8 while most industrialised countries had more (Appendix 2).

Normal annual working time in Finland is 20 work days less than in Estonia which is explained by the longer Finnish annual leave and the 12.5 days reduction in normal working time during 1986 - 90.

Absenteeism due to sickness/maternity leave accounts for another 5 days of the difference while other factors reduce the difference by 1 day (Table 7).

Table 7. Annual working time in regular day work in 1990 in Finland and Estonia (manufacturing)

	Finland		Estonia	
	Days	Hrs	Days	Hrs
Total	365		365	
Weekends (Sat/Sun) -	104		104	
Public holidays -	9		8	
Available working time =	252	2016	253	2075
1986-90 reduction -	12.5	100		
Annual leave -	25	200	18	148
Normal working time =	214.5	1716	235	1927
Sickness/Maternity leave -	17.4	139	12.7	104
Other absenteeism -	4.2	34	5.2	43
Net normal hours =	192.9	1543	217.1	1780
Overtime work +	6.9	55	2.1	17
Actual work time =	199.8	1598	219.2	1797

Source: Finland, Central Federation of Finnish Employers. Estonia, Academy of Science, Institute of Economics. Eesti NSV Statistikaakomitee. Statistika aruande vorm C-9. Tallinn 1990. The Estonian calculation assumes a 41 hour working week. Working time is estimated for average annual leave (21 calendar days = 18 working days).

Table 8. Time spent at work by employed persons: manufacturing industries (1989)

	Finland	Estonia
Employed persons (000s)	561	140
Days worked (000s)	121176	31048
Hours worked (000s)	986717	249302
Days per employed person	216	222
Hours per employed person	1758	1786
Hours per employed excl. overtime	1692	1770
Length of working day	8.14	8.05
Length of working day excl. overtime	7.83	7.98

Source: Finland, Labour Force Statistics 1989. Estonia, Academy of Sciences, Institute of Economics. Eesti Riiklik Statistikaamet. Statistika aruande vorm C-9. 1990.

However overtime working was nearly 5 days longer in Finland. The net effect of all these factors is 200 hours shorter actual annual working time in Finland in 1990.

Labour force statistics from the year 1989 report much smaller differences in actual working time between the two countries. This can be explained partly because in Finland all employees do not necessarily avail their leave entitlements, as has been assumed in Table 7. The comparison based on labour force statistics concerns the year 1989 when the working time in Finland was 36 hours longer than in 1990. This is due to the difference in the number of public holidays and the reduction of working time by 20 hours in 1990.

In 1989 the average Finnish manufacturing employee worked 28 hours less than the Estonian (Table 8). If overtime working is excluded the difference however grows to 78 hours. Overtime working also results in the Finnish manufacturing employee having a longer working day than his Estonian counterpart.

The data on work attendance in manufacturing industries (Table 9) shows also that the difference in the actual working time is not so pronounced as might be expected from the institutional features of working time.

Table 9. Attendance in manufacturing industries - 1989
(% of total employment)

	Finland	Estonia
Total	100	100
At work	87.4	85.9
On vacation	8.4	8.0
On sickness leave	3.0	4.6
Absent for other reason	1.2	1.0
Absent for personal reasons/no inf.	0.2	0.3

Source: cf. Table 8.

In Finland average work attendance was a little higher with 12.6% of employees were absent every working day, as against 14.1% in Estonia. The difference is due to sickness leave.

Comparisons of annual working time between Estonia and Finland produce confusing results depending on the data used. Institutional working time schedules show that average annual working time is much shorter in Finland. When actual working time is examined the differences are smaller. In Finland overtime working is more common and the differences in total absenteeism seem to be less significant than the difference in annual leave and other days off.

9.8. Time use of employed people

There are some difficulties originating from different methods and definitions in the comparison of time use in Finland and Estonia. For example, lunch breaks are treated as work-related time in Estonia but as physiological needs in Finland; the time spent on shopping, social work etc varies according to the treatment of the travel time related to these activities. The timing of the interviews can also effect the results; the Finnish interviews were made in autumn while the Estonian ones were conducted in March.

The subsequent analysis looks at diurnal budget of employed people in Finland during 1979 and 1987 and in Estonia during 1980 and 1985

separately for men and women. Estonian data for the year 1990 is also available but this is not fully comparable with the previous years because of changes in classifications (this 1990 data is summarised in Annexure 4).

The proportion of work time among men was almost the same in Finland and Estonia. The share had decreased in Estonia but had increased slightly in Finland. There had been no major changes in official daily working hours and therefor the difference in trends can be attributed to other factors such as changes in part-time working, overtime work or second jobs and from structural changes in employment. It is noteworthy that the proportion of work time is the same in both countries despite Estonia having a longer normal working day and this is probably because of the higher incidence of overtime working in Finland (see table 8).

Work related time in Estonia is double that in Finland but this is due to lunch breaks being classified as physiological needs in Finland. Reclassification of this time would eliminate the differences in work related time and would

Table 10. Diurnal budget of employed men (in %)

	during working days				during holidays			
	Finland		Estonia		Finland		Estonia	
	1979	1987	1980	1985	1979	1987	1980	1985
Working time	33.0	34.3	34.9	34.5				
Work related time	2.5	2.7	5.1	5.0				
Shopping etc	1.1	1.8	3.5	3.3	1.8	2.8	4.2	4.3
Studying and social work	1.0	0.8	1.0	0.5	1.3	1.5	-	-
Domestic work	6.2	4.3	4.1	5.1	11.2	9.3	10.6	9.7
Physiological needs	40.8	39.9	36.0	36.3	49.0	47.9	43.1	45.0
Other uses	15.4	16.2	15.4	15.3	36.7	38.5	42.1	41.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Estonia, Töajabüdzeti ühekordne valikuurimus märtsis 1980 ja märtsis 1985. NSV Liidu Statistikaakomitee. Moskva 1980, 1985. Data compiled by E. Aedna. Finland, suomalaisten ajankäyttö, TK 1979, Ajankäytön muutokset 1980-luvulla, TK 1989. Data on time use during holidays relates only to the urban population.

also reduce the differences in time spent on physiological needs (a half hour lunch break equates to 2% of the daily time budget).

Time spent on shopping in Estonia is also double that in Finland and a probable cause for this is the longer time spent on queues. Finnish men have however increased their time on shopping, especially during holidays, and the difference has narrowed.

There are also differences in the share of time used for recreation (other time use), which is smaller in Estonia in a working day but bigger in a holiday. In Estonia the share has declined when it has grown in Finland. By 1990 the Estonian share of other time use during holidays had dropped from 41% to 30% probably because of a decline in public entertainment facilities (theatres, cinemas, pubs) in Estonia. This drop, which did not affect the working day, corresponds to an increase in the time spent on domestic work (Appendix 4).

The share of domestic work among men during a working day increased from 4.1% to 5.1% in Estonia while it has decreased from 6.2% to 4.3% in Finland. During a holiday the Estonian and Finnish men participated in domestic work to an equal extent during the mid-80s. The participation had however decreased in Finland more rapidly. By 1990 the share of domestic work among men in Estonia had increased from under 10% to over 22% and though there are classification differences (in the 1990 data domestic work includes shopping) the increase reflects the deterioration in the Estonian economic situation. Estonian men spend much more time working at their summer cottages and garden plots.

Differences in women's time use in Estonia and Finland (Table 11) are much more marked than for men. Like in the case of men, some of the difference is related to the classification of lunch breaks. Estonian women use much more of their time on shopping and domestic work and have less time for recreation and other purposes than in Finland. This difference remains also during holidays when shopping and domestic work seem to be done at expense of physiological needs. Share of other time use (recreation etc) is the same in both countries. The major change between 1980 and 1985 in time use of women during a holiday has, in Estonia, been the growth of other use and the corresponding decrease in shopping and domestic work. In Finland the shopping time has increased its share almost twofold.

Table 11. Diurnal budget of employed women (per cent)

	during working days				during holidays			
	Finland		Estonia		Finland		Estonia	
	1979	1987	1980	1985	1979	1987	1980	1985
Working time	28.4	30.5	33.2	32.7				
Work related time	2.4	2.6	4.6	4.5				
Shopping etc	1.7	2.3	5.9	5.2	2.0	3.9	7.6	5.8
Studying and social work	1.0	0.9	0.4	0.5	1.3	1.3	0.8	0.2
Domestic work	12.9	9.2	11.3	10.8	19.7	17.4	24.3	22.0
Physiological needs	40.6	39.5	35.4	36.2	48.0	47.1	41.4	42.0
Other uses	13.0	15.0	9.2	10.1	29.0	30.3	25.9	30.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: cf. table 10.

The share of working time has increased in Finland among men and women but has decreased in Estonia. In Finland this may be explained by the fact that men have more second jobs than before. One explanation to this development for women is also the fact that share of part-timers has decreased and those who do part-time work have lengthened their daily hours (Niemi, Pääkkönen. 1989).

Without prejudice to the reservations concerning differences in the definitions of time use, the studies do show that the total work load (paid work, work related time, domestic work and shopping etc.) in Estonia is heavier than in Finland, especially in case of women. This view, which is reinforced by the Estonian 1990 data, can be linked to a lower labour productivity and an increasing cost of living that compels people to hold second jobs. These same reasons would also account for the hesitance to reduce normal working hours and would suggest that actual working time is not being used rationally.

The higher time cost of travelling time and domestic work in Estonia can be related to the shortage of household appliances and a lower level of development of the services sector. Most of building and repair work is done by

owner himself and domestic work is not mechanized. Urban inhabitants living in large dwelling districts spend much time on travel to work and to service establishments. Public transport system is underdeveloped and expensive in terms of time cost. The number of private cars is smaller than in Finland. In Estonia people spend much more time at their garden plots and summer cottages which increases their travel time. This can also explain the increasing participation of men in domestic work.

The differences in the distribution of time use between Finland on one hand and Latvia, Lithuania and Russia on the other seem to be similar to those between Finland and Estonia. The comparative study carried out during the late 80s showed that the total workload especially among women was heavier in these former Soviet Republics than in Finland (Niemi, Eglite ... 1991).

9.9. Conclusions

Before the second world war the work time differences between Finland and Estonia were small. Both countries had introduced a 48-hours week (Finland in 1918, Estonia in 1923) and annual leave ranged from one to two weeks according to the employment tenure.

The shift from a six to a five day week was made in both countries during the late 60s. The working week was then reduced in Finland from 45 to 40 hours. In Estonia it has remained at 41 hours since 1960. After that the standard working week has remained unchanged. The annual working time in Finland was, however, reduced by 100 hours in the late eighties. If this reduction is included in the normal working week it now amounts to 37.8 hours.

By international standards, the share of part-time work is small in both countries. In Finland it is about 7% and in Estonia it is only 2-3%. Overtime working is more common in Finland but holding second jobs is in Estonia at least as usual as in Finland. In Estonia holding second jobs is more common in urban industries while it in Finland is more usual in agriculture and forestry.

Although the length of working time varies less between industries in Estonia there is more of a variance in working time arrangements. Shift-working is more common in Estonia than in Finland where three quarters of employees are engaged in regular day work. The difference has however decreased during the recent years.

The Finns have a longer annual leave especially after winter holidays were introduced during the early 80s. On the other hand many employees in Estonia are entitled to extra leave due to hazardous working conditions or for other reasons.

When the institutional features of work time are used as basis the annual working time seems to be about 10% shorter in Finland. The Finnish annual working time is among the shortest within the industrialised countries while the Estonian working time is longer than in any other western european country with the exception of Portugal. According to the labour force statistics the actual difference seems, however, to be much smaller. This may be due to the fact that not all workers are entitled to maximum leaves and other days off in Finland and that in Estonia many workers get extra leaves. The greater incidence of overtime working in Finland also reduces differences in actual working time.

Although the picture about actual working time differences is a little confusing the total workload seems to be bigger in Estonia. This is especially so in the case of Estonian women who use more time in domestic work, travelling and in shopping. Time use differences originate from differences in household appliances, in private car ownership, in location of dwelling areas and in the development of the services sector.

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Appendix 1.

Hours of work in Finland in 1910-1990

Year	Weekly hours	Leave(days)	Annual hours
1910	58-60		3010
1917	48		2424
1922		4-7	2380
1939		9-12	2330
1946	47	12-18	2240
1958	45		2130
1960		18-24	2080
1970	40		1840
1973		24-26	1808
1981		-30	1800
1990		-30+12.5	1716

Annual hours vary from year to year depending on the timing of Christmas and other public days. Leave includes Saturdays. During 1986-90 annual hours were reduced by 100 hours (12.5 days) if the working week was 40 hours or over. Those who had shorter working week got a smaller reduction. The method of implementation of this reduction was left to union negotiation.

Appendix 2.

Standard annual working time for workers in manufacturing industry

Country	Weekly hours	Working days off			Annual hours
		Annual leave	Additional time off	Public holidays	
Germany F.R.	37.7	30		12.5	1648
Denmark	37	25		8	1687
Austria	38.6	26.5		12.5	1714
Finland	40	25	12.5	9	1716
Norway	37.5	21		10	1725
Netherlands	39	24	8	7	1732
Belgium	38	20		11	1748
France	39	25		11	1755
United Kingdom	38.8	25		8	1769
Italy	40	26	5	8	1776
Luxembourg	40	27		10	1792
Spain	40	22		14	1800
Sweden	40	25		11	1800
Ireland	39	20	1	8	1810
Greece	40	22		9	1840
Switzerland	40.8	23.5		8	1873
United States	40	12		11	1904
Estonia	41	18		8	1927
Portugal	43/44	22		14	19351980
Japan	-	7.9		14	2143

Source: Estonia see table 7. Other countries, Elisabeth Neifer-Dichman, Working time reductions in the former Federal Republic of Germany: A dead end for employment policy; International Labour Review 1991/4, ILO, Geneva.

Appendix 3A.

Estonia: Average annual paid leave for adult workers (in calendar working days)

Date	Indus-tries	Manu-factur.	Agri-culture	Const-ruktion	Trans-port	Health	Educa-tion
1934		7					
1940		6-12					
01.4.1958	17.8	16.9	14.0	15.1	17.6	17.8	36.5
30.4.1968	20.5	19.5	17.2	18.3	20.3	22.2	35.1
0.1.6.1977	21.1	20.5	18.8	19.9	21.6	22.8	34.1
01.6.1983	21.5	20.7	19.8	20.3	22.1	22.7	33.3
01.6.1987	21.9	20.7	21.0	21.0	22.5	22.7	33.5

1934 and 1940 figures are for the minimum annual leave for industrial workers. Source: Trud v Estonskoi SSR. Statistitsekisbornik, Tallinn 1962, 1977, 1982. Tsislennost rabotsih sluzastsih po polu i vozrastu... Statistitsekisbornik Tallinn 1988.

Appendix 3B.

Estonia: Percentage of workers who get additional leave for working in hazardous conditions (1977 and 1987)

Sector	1977	1987
Agriculture	15.8	28.6
Industry	41.1	38.7
Transport	49.7	48.7
motor transport	69.8	64.0
Construction	20.8	38.4
All industries	31.5	31.5

Source: cf Appendix 3A.

Appendix 4.

Diurnal budget of employed persons in Estonia in 1990 (%)

	during working days		during holidays	
	male	female	male	female
Working time	34.6	33.8		0.2
Work related time	5.4	5.8		
Studying, social work	1.8	1.9	3.7	2.7
Domestic work	5.0	13.6	22.8	25.0
Physiological needs	37.9	36.6	42.9	43.8
Other use	15.3	8.3	30.6	28.3
Total	100.0	100.0	100.0	100.0

Source: Tööajabüdzeti ühekordne valikuuring märtsis 1990. NSV Liidu Statistika Komitee, Moskva 1990. Data compiled by E. Aedna.