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The impact of trade liberalisation on adjustment of regional wages in Estonia.

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Abstract

In the present paper regional wages differentiation and regional location development in Estonia during 1993-2002 in the context of trade liberalization and integration with EU have been analysed.
A set of specialisation indices are calculated to study regional industrial dynamics. The analysis of industrial specialization has shown that the level of specialization has increased. We also conclude that integration into the EU have stimulated specialization.
Rest of the paper discussed some estimation results for the model where regional wages are regressed on proxies of transport costs and trade liberalisation. Distance as a proxy of transportation costs has been a significant factor behind variations in regional wages. Our estimates also show that trade liberalization minimizes the negative impact of distance. Econometric analysis of impact of specialisation on regional relative wages revealed strong direct relationship between these two variables on regional level.

JEL Classification numbers: R10, R11

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1. Introduction

Since the beginning of the transition, structural changes in the Estonian economy, because of its extreme openness[1], have been primarily determined by shifts in demand from our foreign trading partners, and substantial inflow of FDI. As a result of integration, the EU has become the main trading partner and source of FDI for Estonia, and accession into the EU has been considered as a mechanism to improve the regional economic well-being, exposing to a potential smoothing of variance in regional income.

The location of manufacturing activities has been a key feature of inconsistency in regional development in Estonia. As in the other transition countries of Eastern and Central Europe regional differences deepened at the initial stage of transition (Traistaru 1999, Altomonte and Resmini 1999). To smooth these dissimilarities, a concept of regional policy was approved by the Government in 1994. In 1998, the Estonian Regional Development Strategy was introduced, which defined regional policy as an explicit activity of the public authorities with the objective of 'creating premises for development for all the regions of the state and balancing socio-economic development proceeding from the interests of the regions and the state as a whole.' However, in order to develop and conduct effective policy it is necessary to understand the processes that occur in the Estonian economy at a regional level. At this level, crucial elements are the development of regional specialization and the location of economic activity, particularly of industrial manufacturing, as well as the factors that determine industrial and regional dynamics.

Conventional growth theory provided analytical framework that underlined the differences in productivity across regions and predicted convergence of regional income levels in the long run. However, a number of empirical studies conducted in Europe confirmed the opposite (see, for example, Karsten 1996, Aiginger 1999, Haaland et al. 1999). A new approach to regional dynamics was suggested by new economic geography theorists. Their

[1] In 2002 exports accounted for 74.1 % and imports 81.2 % of GDP.

models are based on assumption of increasing returns to scale. This inevitably results in greater concentration of production and shifts in industrial patterns.

New economic geography studies revealed the impact of economic integration on industrial location dynamics, measured by regional specialisation indices. This process is generally driven by two opposite forces. On the one hand, a reduction in trade barriers eliminates dependence of production on local consumer, and production is moved close to the regions with higher potential to consume (specialisation increases). On the other hand, when trade barriers vanish, marginal transport cost becomes less important than costs of immobile factors of production such as labour (specialisation decreases). These opposite forces mutually determine an inverse U-shape relation between geographical advantage and level of trade cost. Thus, under a condition of liberalised trade, theory predicts initial shift of activity into the regions with good market access. As integration proceeds, however, the dynamics are reversed: trade costs fall, and firms become more sensitive in terms of marginal cost of labour. These results in an outflow of manufacturing companies from centre to the peripheral regions (see Hallet 1998).

New economic geography also provides an explanation to the empirical evidence of divergence of regional income levels. Various regional studies suggest that economic integration has complex and non-uniform impact on distribution of income. At the earlier stages, the process of integration tends to raise income level in more industrialised regions, as firms exploit economies of scale and concentrate production in the regions with developed consumption and supply networks. Following the argument above, this must widen the differences between rich and poor regions. However, in the longer run, the opposite dynamics are expected to occur, as sufficiently integrated firms face relatively small marginal transportation costs and thus become more sensitive to the cost of labour (less mobile factor of production). This generates demand for capital goods and can stimulate the absolute convergence between the regions.

The purpose of this paper is to verify these new economic geography approaches by analysing the impact of Estonian economic integration into the EU on industrial location dynamics and divergence of regional income.

The rest of the paper is structured as follows. Section two identifies the data used in this analysis. The third section presents a study of regional specialization patterns, followed by an analysis of the impact of economic integration on the regional wage structure in section four. The fifth section analyses the relations between regional specialisation and regional wages. The final section contains some conclusions.

2. The Data

We used regional industrial employment data for 1990-2002 from the Labour Market Division of the Statistical Office of Estonia for the calculation of industrial specialization. The data was based on the Labour Force surveys. We also used data on regional wages for 1992-2002 that was published by the Statistical Office of Estonia.

A substantial problem with the industrial employment data was the low degree of confidence for some industries in some regions due to the smallness of the sample of the employment measure. However, as low confidence was likely to appear only in the least significant industries in regions, it would not change the major tendencies in regional development, and might only cause fluctuations of the indicators by years within particular industries.

3. Development of regional specialization in Estonian manufacturing.

Regional specialization is an important indicator of industrial manufacturing location. The dynamics of this indicator in Estonia is considerably determined by the integration into the EU.

To analyze the development of regional specialization, we calculated three indices of regional specialization for Estonian regions at the NUTS 3 level for 1990-2002. As a measure of absolute specialization in regions, the Herfindahl index was chosen.

The index was calculated according to the following formula:

$$H_j^S = \sum_i (s_{ij}^S)^2$$

where s_{ij}^S is the share of employment in industry *i* in region *j* in total employment of region *j*

$s_{ij}^S = \frac{Eij}{Ej} = \frac{Eij}{\sum_i Eij}$; Eij is the employment in industry *i* in region *j*.

The Krugman (dissimilarity) index and GINI coefficients were taken as measures of relative specialization in the regions.

The dissimilarity index for regional specialization is calculated as follows:

$DSR_j = \sum_i \left| s_{ij}^S - s_i \right|$, where s_i is the share of total employment in industry *i* in total employment $s_i = \frac{Ei}{E} = \frac{\sum_j Eij}{\sum_i \sum_j Eij}$

Gini coefficients for regional specialization are calculated following Devereux et al (1999)

$GINI_j^S = \frac{2}{n^2 \overline{R}} \left[\sum_{i=1}^{n} \lambda_i \left(R_i - \overline{R} \right) \right]$ where *n* is the number of industrial branches; $R_i = \frac{s_{ij}^S}{s_i}$ (for each industry in region j); $\overline{R}$ is the mean of R_i across industries; λ_i is the position of the industry *i* in the ranking of R_i.

The values of the indices are presented in Appendix 1.

As expected, the least specialized regions are the most industrialized: Northern Estonia, and Southern Estonia. Favourable market conditions attract companies in many industries

to locate in these regions. Accordingly, as one might expect, the most specialized regions are the least industrialized region of Western Estonia.

To analyze the dynamics of specialization in regions, we calculated the growth rates of the absolute and relative specialization indices at a regional level (see Table 1 for results).

A general increase in the level of specialization indices can be observed in Northern and Southern Estonia. This allows for the assumption that the optimization of industrial structures has occurred in these regions. In Northern Estonia, stable growth can be observed prior to 1996, followed by a decrease from 1997-1999. In 2000, the level of specialization began to increase. This pattern may be explained by the theory of agglomeration, which states that in the initial stage of transition to the market economy a large amount of investment in the region, as well as the region's having a dominant share of the total FDI, provides for rapid development of infrastructure. These factors induce the largest enterprises to move into the region, thus increasing the diversification of production. As the costs of production rise due to increasing demand for less mobile factors of production (primarily labour and mortgage) along with the development of infrastructure in other parts of a country, an increasing number of companies move their activity to peripheral regions

In Southern Estonia, it is possible to observe an overall increase in specialization also. The development of absolute specialisation is close to the Northern Estonia because of the same reasons. The developments of the relative specialization indexes doesn't show any clear tendency.

The dynamics of the relative specialization index in the third industrial region, North-Eastern Estonia, show an increase in diversification of manufacturing in the considered period for the relative specialization indexes. This indicates a change in the regional industrial structure.

In less industrially developed regions the level of specialization has decreased. Specialization has continuously declined in Central Estonia. In Western Estonia, specialization has fallen since the beginning of the industrial recovery. Such developments are consistent with our previous explanation of the regional dynamics of manufacturing, as additional evidence of the relocation of manufacturing activity to industrially less developed regions.

Overall, specialization dynamics reveal some tendencies towards the homogenization of industrial specialization in Estonia across the regions, and there are some signs that industrial activity is starting to relocate from fairly developed central regions to the relatively less industrialized periphery.

To evaluate specialization dynamics in Estonia as a whole, we calculated the percentage change in specialization indices as a weighted average of regional percentage changes using employment shares of regions as weights (see Table 2. for index values).

The dynamics of all three specialization indices follow similar inverse U-shaped patterns. In 1992-1996, an overall increase in specialization can be observed. However, since 1997 to 2000 these dynamics have been reversed, and industrial specialization in Estonia has started to decrease. Such dynamics reveal similarities with general economic development trends (especially for industrial growth) in Estonia. Before 1995, the Estonian GDP declined. Increasing specialization during that period not only reflected an optimization of the industrial structure, but also accounted for a decline in the number of industrial branches and enterprises in the regions. Accordingly, a tendency towards decreasing specialization in the later years coincided with stable economic growth. Consequently, new industrial enterprises are emerging in more uniform regional patterns. From 2000

specialisation began to rise that indicate the optimisation of regional manufacturing structure.

An important contribution to the present analysis is a study of general trends in specialization levels during the observed period. One of the ways to analyze these trends is to calculate average percentage changes for every index for the given period.[2] For the Herfindahl index of absolute specialization, it is 101,1 per cent; for regional dissimilarity, it is 101.5 per cent, and for relative specialization measured by the GINI index, it is 101 per cent. In conclusion, for the observed period, the level of regional specialization in Estonia has increased on average by 1 to 1.5 per cent a year. In our case, time is a good proxy for the economic integration of Estonia into the EU. Therefore, we can also conclude that integration processes are an important factor in increasing regional specialization, as predicted by the new economic geography hypotheses.

Table 1. Percentage change for specialization indices at the regional level (compare to 1990)

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Northern Estonia: Herfindahl	101,0	99,1	102,6	106,5	116,1	114,4	118,1	105,7	102,0	106,4	130,6	91,4
Dissimilarity	97,7	96,3	102,0	103,5	177,5	166,4	156,9	148,3	147,8	151,0	166,5	127,7
GINI	102,8	98,0	104,6	101,4	143,4	142,1	147,8	125,0	102,3	113,7	128,5	89,1
Central Estonia Herfindahl	97,0	87,5	89,2	86,5	82,1	87,4	87,8	88,5	85,7	82,0	65,7	97,4
Dissimilarity	98,5	92,7	86,8	84,2	72,7	71,1	68,0	66,0	62,8	63,5	59,6	48,6
GINI	100,0	95,0	91,2	95,3	95,0	108,6	93,0	77,6	65,9	74,5	65,9	55,1
North-eastern Estonia Herfindahl	97,2	92,0	90,2	94,7	107,1	106,8	118,9	119,0	116,6	114,4	101,5	116,9
Dissimilarity	97,5	91,6	84,3	83,1	84,7	92,5	86,5	82,8	77,3	86,6	78,6	80,3
GINI	97,8	93,8	101,9	109,6	81,2	88,5	93,2	85,0	89,1	101,4	110,2	114,8
Western Estonia Herfindahl	99,8	96,8	94,0	104,6	132,0	129,9	119,2	104,2	100,5	92,6	93,3	74,6

[2] This indicator was calculated as a geometrical average of percentage changes in chained indices by years.

Dissimilarity	94,8	96,8	89,0	92,2	112,8	109,5	94,8	80,9	90,3	72,9	81,0	72,0
GINI	94,8	96,5	84,9	76,9	113,3	117,7	105,3	97,4	100,8	87,9	89,8	88,6
Southern Estonia Herfindahl	100,3	100,9	104,2	107,9	88,2	93,6	101,4	94,8	101,3	108,3	125,0	92,4
Dissimilarity	96,5	93,9	97,2	100,1	75,9	77,8	86,6	80,7	90,2	89,5	102,1	93,7
GINI	97,5	95,5	97,4	95,5	102,1	110,0	91,2	92,1	91,6	98,6	91,1	103,4

Source: own calculations

Table 2. Percentage change for specialization indices* at the country level (compare to 1990)

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Herfindahl	99,7	96,9	98,6	102,6	106,8	107,4	111,6	103,6	102,2	103,8	113,3	94,5
Dissimilarity	97,3	94,7	95,2	96,2	120,9	117,7	110,4	104,4	108,7	108,4	116,9	98,7
GINI	100,0	96,4	99,8	98,9	114,9	119,4	113,7	102,0	93,8	101,1	105,9	93,0

* calculated as weighted average from regional percentage changes using employment shares of regions as weights

Source: own calculations

4. The impact of economic integration on the regional wage structure

The starting point for an analysis of the impact of economic integration on the regional structure is the assumption that due to integration the share of transportation costs in total production costs becomes less significant. In an empirical analysis, such transportation costs can be captured by the distance between the regional capital and the central capital city. This assumption is quite plausible in case of Estonia since the quality of infrastructure is relatively uniform across the regions and does not vary with distance from the capital. On the other hand, labour costs are region-specific due to relative immobility of labour. Thus, the relocation of production can be reflected in the regional wage structure.

Following Hanson (1994), we use industrial wage differentials (regional wages related to wages in Tallinn) as a proxy for industrial relocation. Estonia consists in 15 counties, including the capital county. The wage variable used in calculations is the average annual

remuneration per employee in industry in county *j* in year *t*. The complete dataset is available for the years 1992-2002 (see Appendix 2).

By employing relative wages, we operate with a complete data set of 154 observations (eleven years x fourteen counties –omitting the capital county; and 140 observations after adjusting the endpoints).

The second factor we study within this model is the effect of integration and distance on western border regions[3]. We introduce border dummies to capture time and distance-invariant factors that are specific to western border regions and that may explain the dynamics of wage differentials. One such factor might be the possibility of cross-border co-operation and work.

Following Hanson (1994), we test several hypotheses within the framework outlined above. Our basic hypothesis attempts to explain variation in relative wages by variation in transport costs measured as distance from the centre. That is, in all regressions, we expect the term β_t to be negative in the pre-liberalisation period. One would also like to know if easier access to foreign industry centres (in border counties) eliminates the dependency of relative wage variation on the distance from the centre. Following Hanson (1994), we test this hypothesis by allowing distance effects for border counties to differ from those for interior counties; that is, in regression (1) we expect $\lambda_t = 0$ for border counties.

The main proposition is following: before trade liberalisation, regional relative wages decrease with distance from the capital city. There should be less negative if at all impact of distance on wages in border regions. We specify the model below:

$$\log (WAGE_{jt}/WAGE_{ct}) = \alpha + \beta_t \log(DIST_j) + \lambda_t (\log DISTj \text{ x } BORDj) + \varepsilon_{jt} \quad (1)$$

[3] In case of Estonia, the main border with the EU is marine. Another important factor to mention is that the biggest border region is Harju county, which includes the capital city.

where

WAGEj = wage in county *j*

$WAGE_c$ = wage in the capital city

DISTj = distance between county *i* (county capital) and capital city

BORD = dummy variable for western border regions. $BORD_j$ is one if county *j* is a western border region, and zero otherwise.

Next, the hypothesis is following: trade liberalisation eliminates distance effects. Using the notation shown above, we re-specify the model:

$$\log (WAGE_{jt}/WAGE_{ct}) = \alpha + \beta_t \log(DIST_j) + \lambda t (\log DIST_j \times BORD_j) +$$

$$+ \mu_t (\log DISTj \times YEAR) + \varepsilon_{jt} \qquad (2)$$

where

YEAR is dummy variable for the years after the entering into force of the trade liberalisation agreements.

In Estonia, a significant step towards liberalisation of trade with the EU was made in 1995 when the Free Trade Agreements with the EU entered into force. We take this into account and introduce impact YEAR95 dummy.

Finally, we test the hypothesis that after the entering into force of the EU agreements distance effects in western border regions and in other regions converge to similar levels. Our basic model is re-specified as follows:

$$\log (WAGE_{jt}/WAGE_{ct}) = \alpha + \beta_t \log(DIST_j) + \lambda t (\log DISTj \times BORDj) +$$

$$+ \mu_t (\log DIST \times YEAR) + \nu_t (\log DIST \times BORD \times YEAR) + \varepsilon_{jt} \qquad (3)$$

If this hypothesis is confirmed, the following relation for the regression coefficients should hold:

$$\mu_t = \lambda_t + \nu_t$$

In order to account for structural shift in trade due to Russian crisis in 1999 we introduce year dummy for this year.

Estimation results are presented in Table 3. In all models we carried out estimation with year dummy 1999. In all cases, this dummy was highly significant and increased explanatory power of the model. This one-off effect should be kept in mind.

As can be observed from the table, the estimation results confirm the hypothesis that relative wages decrease with distance from the capital city. In all regressions, the log distance to Tallinn is negative ($\beta_t = -0.09$) and significant at 1% level. We also find strong evidence that trade liberalisation eliminates the distance effect.

Distance effects for border counties differ from those for interior counties; as expected, in regressions λ_t is closed to zero for border counties (DIST*BORD). However, this result should be interpreted with care, as two biggest ports apart from Tallinn are located in the most distant counties. One should also notice that due to the specific definition of border counties (counties with marine access), not all trade effects could be captured. Therefore, counties that are relatively distant from Tallinn (Pärnu on the south-west and Ida-Virumaa on the east) also have good terrain access to the Baltic market and the Russian market, respectively. This explains a positive sign of the coefficient (0.009).

Trade liberalisation had a positive effect on all regions (coefficient is 0.01 and significant at 1% level). However, there is no evidence that liberalisation affected border counties the most (coefficient in model 3 is not significantly different from zero).

Table 3. Estimation of relationship between regional relative wages and distance (proxy of transportation cost; values of standard errors are given in parentheses)

Variable	Model 1	Model 2	Model 3
LogDIST	-0.09***	-0.09***	-0.09***
	(0.001)	(0.009)	(0.001)
LogDISTxBORD	0.009***	0.009***	0.009***
	(0.002)	(0.002)	(0.002)
LogDIST*year95		0.01***	0.01**
		(0.004)	(0.004)
LogDIST BORD x YEAR95			0.004
			(0.008)
Adjusted R-squared	0.14	0.18	0.18
F-statistic	26.8	17.8	12.1
Prob(F-statistic	0.00	0.00	0.00
Number of observations	154	154	154
Year dummies	No	No	No

*,** and *** denote coefficient estimates significant at 1, 5 and 10 per cent confidence level
Source: own calculations

5. Regional specialisation and regional wages.

Analysis above shows that distribution of industrial activity between the regions of Estonia is quite diversified. Regional distribution of incomes also varies. Below we examine regional specialisation-income relation more closely.

Regional average relative wages (relative to average wage in Tallinn) are taken as a proxy of regional income per capita due to availability of these regional data from 1992 on. This also serves to eliminate the problem of wage deflation. The model is specified as follows:

$\log (WAGE_{jt}/WAGE_{ct}) = \alpha + \beta \log SPEC_{jt} + \varepsilon_{jt}$,

WAGEj = the wage in region j

$WAGE_c$ = the wage in the capital city

Table 3 below shows the results of econometric estimation using pooled OLS model with common intercept (sector-specific effects were smoothed by calculation of relative wages).

Table 3. Econometric estimation of regional specialisation-relative wages model

Independent variable	Herfindahl	GINI
Intercept	-0.598***	-0.649***
t-statistic	-3.886	-8.924
Regional specialisation	-0.275*	-0.263***
t-statistic	-1.901	-5.095
Adjusted R-squared	0.126	0.509
F-statistics	3.615	25.965
Probability F-statistics	0.06	0.00
Observations	55	55

*,** and *** denote coefficient estimates significant at 1, 5 and 10 per cent confidence level

Source: own calculations

These results suggest that most diverse regions have the highest income level; and most specialised regions with small number of industries have the lowest per capita income.

6. Conclusion

The analysis of industrial specialization in Estonian NUTS 3 level regions has shown that the level of specialization has increased, on average, by 1 to 1.5 per cent a year. Because for a transition economy, time is a fair proxy to integration, we may conclude that the initial stages of establishing closer economic relations with the EU and voluminous target investments into the regions have stimulated specialization. The overall increase in specialization was supported by the recent shift of economic activity from the Northern

(central) region to the periphery as a result of improved infrastructure and the persisting wage differential.

However, specialization varied by region. In developed regions (Northern and Southern Estonia), industrial activity developed in an inverse U-shape, as predicted by the new economic geography hypothesis. The level of specialization has decreased in the agricultural regions (Central and Western). Therefore, our study reveals a tendency for industrial specialization in Estonia to homogenize across the regions, and suggests that industrial activity has started to relocate from fairly developed regions to the poorly industrialized periphery.

An econometric analysis of the relationship between relative regional wages and distance to the capital suggests an explanation consistent with the new economic geography hypothesis. Surprisingly, in spite of the small size of Estonian territory, distance as a proxy of transportation costs has been a significant factor behind variations in regional wages. Our estimates show that integration with the EU and trade liberalization minimizes the negative impact of distance. It is also possible to make a distinction between border and internal regions in these terms, since in border regions distance as a proxy for transportation costs is less important.

During the period of analysis, industrially most diverse regions have enjoyed the highest income levels; most specialised regions with small number of industries have the lowest per capita income.

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Appendix 1.

Indexes of regional specialization

Table 1.1 Herfindahl regional specialization index

	Northern Estonia	Central Estonia	North-eastern Estonia	Western Estonia	Southern Estonia
1990	0,098	0,202	0,171	0,204	0,146
1991	0,099	0,196	0,171	0,203	0,141
1992	0,097	0,176	0,172	0,197	0,134
1993	0,101	0,180	0,178	0,192	0,131
1994	0,104	0,174	0,184	0,213	0,138
1995	0,114	0,166	0,151	0,269	0,156
1996	0,112	0,176	0,160	0,265	0,155
1997	0,116	0,177	0,173	0,243	0,173
1998	0,104	0,179	0,162	0,212	0,173
1999	0,100	0,173	0,173	0,205	0,170
2000	0,104	0,165	0,185	0,189	0,166
2001	0,128	0,132	0,213	0,190	0,148
2002	0,090	0,197	0,200	0,152	0,135

Table 1.2 Regional dissimilarity index

	Northern Estonia	Central Estonia	North-eastern Estonia	Western Estonia	Southern Estonia
1990	0,244	0,732	0,698	0,544	0,459
1991	0,238	0,721	0,680	0,516	0,444
1992	0,235	0,678	0,639	0,527	0,432
1993	0,249	0,635	0,588	0,484	0,447
1994	0,252	0,616	0,580	0,502	0,460
1995	0,433	0,532	0,591	0,613	0,349
1996	0,406	0,520	0,646	0,596	0,357
1997	0,383	0,498	0,604	0,516	0,398
1998	0,362	0,483	0,578	0,440	0,371
1999	0,361	0,459	0,539	0,491	0,414
2000	0,368	0,464	0,604	0,397	0,411
2001	0,406	0,436	0,549	0,441	0,469
2002	0,312	0,356	0,560	0,392	0,430

Table: 1.3 Specialization GINI

	Northern Estonia	Central Estonia	North-eastern Estonia	Western Estonia	Southern Estonia
1990	0,211	0,511	0,459	0,425	0,317
1991	0,217	0,511	0,448	0,403	0,310
1992	0,207	0,486	0,438	0,411	0,297
1993	0,221	0,466	0,447	0,361	0,323
1994	0,214	0,487	0,438	0,327	0,347
1995	0,302	0,486	0,469	0,482	0,257
1996	0,300	0,555	0,505	0,501	0,280
1997	0,312	0,475	0,418	0,448	0,295
1998	0,264	0,396	0,423	0,415	0,269
1999	0,216	0,337	0,421	0,429	0,282
2000	0,240	0,381	0,453	0,374	0,321
2001	0,271	0,337	0,418	0,382	0,349
2002	0,188	0,282	0,527	0,377	0,328

Appendix 2.
AVERAGE MONTHLY GROSS WAGES BY COUNTY, kroons.

County	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Harju	550	1385	2184	2936	3620	4294	4979	5434	5918	6570	7413
Hiiu	476	903	1494	2201	2858	3123	3327	3564	4081	4830	5006
Ida-Viru	656	1017	1670	2247	2791	3144	3367	3489	3873	4498	4703
Jõgeva	446	809	1221	1812	2313	2724	3201	3215	3885	3878	4264
Järva	479	925	1371	1992	2490	2909	3405	3539	3841	4450	5017
Lääne	447	881	1390	2032	2606	2974	3372	3332	3689	4040	4209
Lääne-Viru	455	993	1579	2202	2664	2994	3658	3529	3920	4465	4838
Põlva	403	878	1405	2025	2533	2840	3405	3263	3480	3885	4193
Pärnu	421	902	1439	2094	2659	2928	3347	3627	4253	4626	5024
Rapla	463	901	1480	2103	2582	3114	3468	3979	4408	4702	5047
Saare	462	913	1431	2052	2549	2886	3475	3614	3931	4282	4708
Tartu	421	917	1519	2130	2668	3088	3540	3742	4167	4745	5423
Valga	446	930	1451	2036	2379	2613	3117	3428	3825	4086	4552
Viljandi	414	814	1372	1951	2465	2814	3226	3369	3694	4158	4496
Võru	395	798	1303	1846	2306	2627	3022	3271	3517	4006	4737
Tallinn	665	1403	2207	2960	3657	4391	5061	5553	6002	6716	7553