MEASURING AND INTERPRETING THE CHANGE OF SOCIAL COHESION WITH INCOME AND SOCIAL STRUCTURE. CASE HELSINKI REGION

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ABSTRACT

The social cohesion of a main urban area in Finland, Capital Region of Helsinki, is under examination. Three different variables: income, socio-economic classification and education level are used. The analysis shows that average income development gives partly different picture than follow-up of socio-economic or education structure. The latter variables form a sounder basis than average income for judgement of the development of housing areas according to social cohesion. The formula and outcomes for measuring the change of certain housing district is presented. The new way to study the household income distribution divided to income deciles is described and a formula for measuring the decile deviation in presented. The decile analysis helps to avoid the distortion caused by the millionaire effect.
FOREWORD

The Helsinki Capital Region consists of about 1 million inhabitants of 5.2 million in whole Finland. The governance structure includes four independent municipalities, of which three of them are remarkable in size. A regional organisation tries to bind this area together with organising public cross-border bus and train transportation, monitoring air pollution and organising waste collection and trying to co-ordinate traffic planning. Yet, the main cities in the Region, Helsinki, Espoo and Vantaa have quite a lot of freedom in taxation, overall planning and zoning, housing production and other important activities featuring the city image. There underlies a prevailing rivalry between these main actors in the region. The changing status of the areas is reflected in the turmoil of nineties - compared to the stability of former fifteen years.

Figure 1. Mean state taxable income in the period 1977-2002 and the annual change in earned income tax revenue in 1994-2002 in the municipalities of the Helsinki Metropolitan Area

Inhabitants: Helsinki 0.560 M, Espoo 0.21 M, Vantaa 0.18 M

It can be read from the figure above a rapid increase of income cleavages between the well-to-do West (Espoo) and poorer Northeast, where Vantaa is loosing ground. Only the beginning of Millennium gave a changing picture. The status of Helsinki has been nearly unchanged over time when compared to the regional income average.
The picture describing the yearly change of municipal taxation revenue base reflects similar types of development, although the main source of the radical income increase especially in Espoo – the capital income – has been cut from the domain of the municipal taxation.

These developments in income rise additional questions concerning differentiation and segregation between cities and inside cities along other variables. A rapid upswing of income can rely on the millionaire effect. The timing and rapidity coincides exactly with the IT-bubble that has hit the same time so many countries present in this conference, also. But some other long run trends can be read from the figure, too. The long run convergence of the outer fringe is a trend much discussed these days. The doubt concerning the stability of Helsinki population structure has been under public discussion during preparation of housing production program for next three years.

There lies the background to this paper. Local questions like that can seem quite minimal compared the huge problems in big cities under pressure of poverty, crime, class, racial and religion-bounded conflicts. The aim of this paper is more in presenting some possibilities of urban statistics sources and methods for using them in longitudinal and cross section studies, than presenting the situation and developments in a certain place. Secondly, the results from the census-based (5 year intervals) classification of the socio-economic status between the three cities are investigated.


This section analyses changes in the socio-economic structure of the labour force in the three biggest cities of the Helsinki Metropolitan Area. It applies a long-term perspective but focuses especially on the 1990s and the great structural change that took place then. The aim is to describe in what direction social differences between and within these municipalities developed under the influence of, especially, the varying trends in the Finnish society in the 1990s.
The 1980s show a long and very consistent trend in the socio-economic development of the Helsinki Metropolitan Area: the proportion of high-ranking officials grew while the proportion of workers decreased. The proportion of low-ranking officials remained fairly stable and roughly equal in all the three municipalities during that decade. In the 1990s, however, trends changed. The economic depression in its early years implied heavy losses in, above all, workers’ jobs, but also in low-ranking officials’ jobs. The proportion of high-ranking officials, including executives, went on growing in Helsinki, but fell in Espoo and Vantaa. In 1995, the unemployed became a category of their own in this classification. Before 1995 the jobless, who had until then been a relatively small category in Finland and especially in Helsinki, had been classified among the “unknown” or according to their former occupation.

The economic recovery after 1995 brought new employment to workers and low-ranking officials. The proportion of workers grew particularly in Vantaa, which had a five per cent increase in this category. In Espoo, the rate was four and in Helsinki three per cent. The proportion of high-ranking officials went on growing only in Helsinki while it stayed the same in Espoo and went on decreasing in Vantaa.

The trend changed in such a way that the proportion of employed grew while unemployment fell back. But the accuracy of the analysis suffers from the fact that the proportion of jobless with an unknown professional background grew meanwhile. A regional comparison for the years between 1990 and 2000 shows that the key indicator, i.e. the proportion of executives and high-ranking officials, grew by 4.1 per cent units in Helsinki, 1.8 in Espoo and 0.8 in Vantaa – as reckoned among the employed. These proportions naturally become smaller if we account for the whole labour force, but the differences remain similar: +2.1 per cent units in Helsinki, +0.5 in Espoo and −0.2 in Helsinki.
Vantaa. These differences in growth rate between municipalities must be regarded as significant, and therefore also a look at absolute change figures is needed:

Table 1. Changes in the numbers of people belonging to different socio-economic groups in the municipalities of the Helsinki Metropolitan Area, in 1991-1995 and 1996-2000

<table>
<thead>
<tr>
<th></th>
<th>Helsinki 91-95</th>
<th>Espoo 91-95</th>
<th>Vantaa 91-95</th>
<th>Helsinki 96-00</th>
<th>Espoo 96-00</th>
<th>Vantaa 96-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneur</td>
<td>-758</td>
<td>2099</td>
<td>220</td>
<td>895</td>
<td>24</td>
<td>693</td>
</tr>
<tr>
<td>High-ranking official</td>
<td>2044</td>
<td>12434</td>
<td>531</td>
<td>6008</td>
<td>-266</td>
<td>1614</td>
</tr>
<tr>
<td>Low-ranking official</td>
<td>-18137</td>
<td>18049</td>
<td>-4174</td>
<td>8337</td>
<td>-5518</td>
<td>5296</td>
</tr>
<tr>
<td>Worker</td>
<td>-18427</td>
<td>16413</td>
<td>-3965</td>
<td>6600</td>
<td>-5838</td>
<td>7555</td>
</tr>
<tr>
<td>Unknown</td>
<td>2414</td>
<td>6413</td>
<td>706</td>
<td>2094</td>
<td>594</td>
<td>1630</td>
</tr>
<tr>
<td>Unemployed</td>
<td>31848</td>
<td>-20239</td>
<td>13065</td>
<td>-6147</td>
<td>14055</td>
<td>-6772</td>
</tr>
<tr>
<td>Total</td>
<td>-1016</td>
<td>35169</td>
<td>6383</td>
<td>17787</td>
<td>3051</td>
<td>10016</td>
</tr>
</tbody>
</table>

All the different categories of employed people grew in these municipalities, but the rate of change varied. For the initial distribution to remain unchanged, growth should occur in the same proportions as in that distribution. In Helsinki, growth between 1996 and 2000 occurred relatively more among high-ranking officials (35%) than among the population as a whole, which accounts for the structural change that we found between municipalities. Judging the data as a whole, this period shows no such structural differentiation between the three municipalities that would make Helsinki a loser and the others winners. Examining the proportion of high-ranking officials tells that the trend has been the opposite.

Another interesting question is: did the economic recovery bring about a redistribution of socio-economic groups within the Metropolitan Area and its different municipalities? A theory according to which successful people who have the means to chose their location would have done so while at the same time the less successful would have stayed where they were has been presented by Vaattovaara & Kortteinen (2001) and Vaattovaara (2002). However, the comparison of developments in Helsinki and Espoo, in particular, give little support to such a hypothesis even at municipal level.

Local differentiation can be approached through a special socio-economic index giving a certain number of points to every neighbourhood. These points are awarded according to the occurrence of various socio-economic groups in the neighbourhood and certain weight coefficients.

\[
D_a = \sum_{s=1}^{6} C_s \frac{P_{sa} P}{P_a Ps} \frac{\sum_{s=1}^{6} C_s}{\sum_{s=1}^{6} C_s}
\]

weight coefficients used

where \( D_a \) = the socio-economic index of the neighbourhood

- \( P \) = labour force in the city as a whole
- \( a \) = city sub-district
- \( s \) = socio-economic group
- \( C_s \) = weight coefficient for socio-economic group \( s \)

entrepreneurs 2.5
high-ranking officials 3.5
low-ranking officials 2.0
workers 1.5
unknown 1.0
unemployed 0.5
A distribution of the neighbourhoods within various score zones is an outcome of the procedure. When the arranged neighbourhoods are weighted by their population figure a graphic description of the trend of total segregation can be described (Lankinen 1982). If the shape of that distribution spreads towards the upper and lower extremes, there is a reason to talk about growing segregation. Similarly, if the distribution emphasises the middle range, it shows a higher degree of social mix. In the following, the change in the distribution using the whole labour force including the unemployed is calculated.

Figure 3. Population-weighted distribution of the socio-economic index for the whole labour force in Helsinki, Espoo, and Vantaa in 1990, 1995 and 2000

The main interpretation from this is that the total segregation within municipalities increased during the economic depression in 1991-95. It manifested itself mainly in the form of an increasing number of high-status areas of increasing size. Yet, their opposites in the lower range of the distribution did not fall downwards correspondingly but moved towards the middle range, similarly to the movement from the upper range.

The lower series of curves from 1996-2000 describe socio-economic differentiation during the economic recovery period. In Helsinki, the upper status zones stood out less clearly while the point of gravity of the distribution moved towards more mixed structures. A similar middle-oriented movement occurs also at the lower end of the distribution. Espoo, on the other hand, saw a more differentiating development, which translates into a broadening of both the lower and upper end of the distribution. In Vantaa, a sort of three-peaked model consolidated itself. It could be discerned ten years ago in an early form. In
the lower end of the distribution, we see a shift towards the middle range, and no consolidation of the upper end can be seen as in Espoo. These internal comparisons of the municipalities are made by matching their neighbourhood structures with their socio-economic distributions.

But what course has neighbourhood development taken in the Metropolitan Area as a whole? The Metropolitan Area as a whole consists of 260 sub-districts. When they are compared with the average structure of the Metropolitan Area, a similar comprehensive picture as we just saw with the separate municipalities will be reached.

Figure 4. The distribution of the neighbourhoods of the Helsinki Metropolitan Area according to the socio-economic index for the entire labour force, weighted with the population number in 1990, 1995 and 2000

A clear trend of local differentiation in 1991-95 and a return towards the middle range of the distribution in 1995-2000 can be distinguished. This return takes place from both the lower and the upper end of the distribution.

The following proportions describe the overall narrowing of the distribution:

<table>
<thead>
<tr>
<th>value of the segregation</th>
<th>% of the neighbourhood’s population in the bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>1990</td>
</tr>
<tr>
<td>max.</td>
<td>84.9</td>
</tr>
<tr>
<td>over</td>
<td>115.0</td>
</tr>
</tbody>
</table>

The socio-economic status index can be formed at municipality level, too. Same weights as in the analysis of neighbourhoods are in use. Comparison to the average structure of the whole Helsinki Metropolitan Area reveals that Espoo deviated from Helsinki up until 1990 whilst Vantaa came closer. After this, Helsinki with its rising index has been closing in on Espoo, whose index has fallen. Vantaa has taken a deviating course again. This result comes from the comparison with the whole labour force. And even if the employed people only are taken into examination, the picture is similar.
This analysis suggests that since 1990, there has been a trend towards smaller socio-economic differences in the Helsinki Metropolitan Area and its two biggest cities Helsinki and Espoo. But Vantaa, on the other hand, has fallen behind in this development. Since 1995, internal differentiation in the municipalities has been decreasing. Espoo has formed an exception: it has seen a kind of return from the differences caused by the economic depression. This interpretation starts from structural properties in the labour force. But is it in harmony with other observations?

In the average income study it was noticed that developments in Vantaa and Helsinki correspond to the findings above, and so does Espoo’s income development in the 1980s. Espoo’s subsequent lead, which lasted until late 2000, does not seem to match the change in socio-economic structure. Now it seems that a mean income is an unreliable indicator of overall development. Increases in capital incomes, which have doubled many times over and, to some extent, in earned income, the bulk of which are received by a minority, influence the comparison of total incomes. The option incomes and salary bonuses which made taxable income peak in Espoo and Helsinki during the economic recovery are included in the annual change in earned income, but their impact ended when economy stopped rising. The talk about a millionaire effect caused by the rapid development of the IT business in the late 1990s is grounded. The fall in income level that then happened is more in line with the observation about the changes in socio-economic structure.

Another way of analysing income development is to compare changes in various income brackets. Following material covers years 1998 to 2001, in which the topmost income bracket includes those earning more than € 50,000.
Table 2. The proportion of the lowest and the two highest income brackets, and their change in 1998-2001

<table>
<thead>
<tr>
<th></th>
<th>ESP</th>
<th>HEL</th>
<th>VAN</th>
<th>ESP</th>
<th>HEL</th>
<th>VAN</th>
<th>ESP</th>
<th>HEL</th>
<th>VAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>€0-7,999</td>
<td>22.3</td>
<td>23.1</td>
<td>20.9</td>
<td>16.3</td>
<td>12.9</td>
<td>13.3</td>
<td>8.2</td>
<td>4.9</td>
<td>3.3</td>
</tr>
<tr>
<td>€30,000-49,999</td>
<td>1998</td>
<td>21.2</td>
<td>21.7</td>
<td>20.0</td>
<td>17.2</td>
<td>14.1</td>
<td>14.4</td>
<td>9.8</td>
<td>6.0</td>
</tr>
<tr>
<td>€50,000+</td>
<td>2000</td>
<td>20.1</td>
<td>20.6</td>
<td>19.0</td>
<td>18.2</td>
<td>15.6</td>
<td>16.2</td>
<td>11.6</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>19.5</td>
<td>19.4</td>
<td>18.0</td>
<td>19.4</td>
<td>17.0</td>
<td>17.6</td>
<td>12.0</td>
<td>7.4</td>
</tr>
</tbody>
</table>

change -2.8 -3.7 -2.9 3.0 4.1 4.3 3.8 2.5 1.9 % -units

All three municipalities show a trend where the number of people belonging to the lowest income brackets decreases. Helsinki has the fastest development in this sense. In both Helsinki and Vantaa, the greatest quantitative growth is seen in the second highest bracket, but in Espoo in the topmost bracket. This particular growth faded in 2001, but the decrease in the lowest income brackets went on and was fastest in Helsinki.

The educational structure is the third crucial indicator of socio-economic differentiation. An uninterrupted time series covers the years 1984 to 1997 on the proportion of 15 year olds or older that have a higher education. The interrupted curves that start from year 1998 are due to a change of classification where about half of the earlier category “upper middle level” was transferred over to higher education, forming the category “lower high level” (SCED, UNESCO 1997). This change lifted Vantaa’s score most of all.

The proportion of people with a higher education in 1984-2002

Growth accelerated in the highest education bracket in all three municipalities. A logarithmic presentation shows that Helsinki had the fastest growth rate up until 2001. Espoo equalled Helsinki’s growth rate only in 2002. The observation of a levelling trend in, especially, the 1990s is in line with findings concerning changing socio-economic structures.
Today, higher education is divided into four categories. In 1999, Helsinki and Espoo had a similar distribution of the four sub-categories, while in Vantaa, the lowest sub-category stood out. The classification change affected Vantaa most, because it suddenly brought many people from the former middle level up into the high level bracket.

Table 3. Internal distribution in the higher education bracket

<table>
<thead>
<tr>
<th></th>
<th>Helsinki</th>
<th>Espoo</th>
<th>Vantaa</th>
</tr>
</thead>
<tbody>
<tr>
<td>lowest</td>
<td>37.16</td>
<td>36.71</td>
<td>50.92</td>
</tr>
<tr>
<td>lower</td>
<td>22.30</td>
<td>21.89</td>
<td>24.87</td>
</tr>
<tr>
<td>higher</td>
<td>36.19</td>
<td>36.95</td>
<td>22.20</td>
</tr>
<tr>
<td>researcher</td>
<td>4.35</td>
<td>4.45</td>
<td>2.01</td>
</tr>
</tbody>
</table>

It seem reasonable that in future analyses, more attention should be paid to the distribution of these separate sub-brackets. And it is good to ask whether the higher education bracket as a whole is a good indicator of socio-economic status any longer. Maybe the sums two or three highest brackets could give more valuable information.

Let’s sum up the analysis by stating that socio-economic differences between the municipalities of the Helsinki Metropolitan Area have decreased, although only partly. This equalisation mainly concerns Espoo and Helsinki, while the trend has been going down in Vantaa. Among the indicators used, socio-economic structure and educational structure gave similar results, whereas the irregular rising and falling curves of total income partly gave diverging results. Social differentiation within one and the same municipality decreased most in Helsinki, and to some extent in Vantaa, too. In Espoo, we discern increasing internal differences.

INCOME DECILES TO MEASURE SOCIAL COHESION IN HOUSING DISTRICTS

Mixed or unmixed?

For decades, Helsinki and many other cities in Finland have applied a planning policy that aims to produce balanced social communities containing many different population groups. A tool has been to mix various tenure statuses in housing. Since 1972 Helsinki, for example, adopted the guiding principle that half of new dwellings produced should be owner-occupied and half rented dwellings in new housing project areas. During last years this strict division has changed to a more many faced direction. An OECD assessment work group has noted that Helsinki has avoided serious segregation and deprivation in housing districts (OECD 2002).

Yet, this principle has been questioned in recent times. It is supposed to have produced less competitive neighbourhoods that do not attract good tax payers: As an example of Finnish discussion we find “Speaking of tax revenue, we may rightly ask why high-income earners should want to live in neighbourhoods with a strong social mix, especially when there are other alternatives available at reasonable car driving distance.” Vaattovaara & Lönnqvist (2003).

Another point of view concerns reducing poverty by social mixing policy: ”By comparing neighbourhoods that already have a 'mixed' housing stock to homogeneous
neighbourhoods, it has been possible to see whether mixing really does correspond to significantly lower poverty rates. It turns out that the empirical facts are quite different from the expected results: mixing does not in fact reduce poverty. It is concluded that the policy lacks an empirical basis. Housing-mix policy requires substantial budgets, while the goal of reducing poverty cannot be reached. As an alternative, we suggest that poverty is a personal characteristic and that it is therefore preferable to approach poverty directly instead of hoping for the results of a dubious ‘neighbourhood effect’. (Ostendorf, W, Mustard S. and de Vos, S. 2001). Here we find the attention directed to the other tail of the income distribution.

Since municipal tax revenue is important to local authorities in Finland, competition for tax payers is likely to occur between the municipalities of one and the same region. In the following, we shall use new data to study how things seem to be according to the renewed income statistics. The essence is to study in which measure the well-to-do accept low-income earners in their vicinity.

**The material studied**

Together with Espoo and Vantaa, Helsinki forms an area called the Helsinki Metropolitan Area. This area has 970,000 inhabitants, among whom 560,000 in Helsinki, 222,000 in Espoo and 182,000 in Vantaa. The material here is the income statistics at district level that have been specified since the year 2000 so as to show not the only average income but division of households to income deciles, too. The reason for this kind of greater detail was the need to clarify the background of growing local differences in income in the late 1990s. It was assumed that a division into deciles would give a more precise idea of where the differences in income developments between municipalities lay.

The decile limits were formed on the basis of household income in the whole Helsinki Metropolitan Area. In practice, the income span of the households in the region was divided into ten equal parts between the maximum and the minimum. Two different kinds of division were made: one based on the household as a unit and, the other, based on the OECD consumption unit concept. According to the latter, the household's reference person gets the weight 1.0, other over 18 year olds 0.7 and under 18 year olds 0.5. This uniform statistical description was applied to all the 278 small areas in Helsinki, Espoo and Vantaa. The following figures show how much each municipality diverges from the Metropolitan Area average, by decile in per cent units.

Figure 7: Divergences of income deciles in Helsinki, Espoo and Vantaa from the income average of the Helsinki Metropolitan Area in 2000
Figures per household show clearly greater differences between, for example, Espoo and Helsinki than figures per consumer unit do. However, in raising the bottom end of the distribution and lowering its top end, figures per consumption unit give Helsinki an income structure quite close to the average for the Metropolitan Area. The figures for Espoo and Vantaa, too, are clearly closer to the average when the income decile concept is applied. Differences in income between Espoo, Vantaa and Helsinki are mainly due to differences in the two top deciles.

The difference between these two ways of reckoning is due to the differences in the proportion of households containing one or two income earners. In addition, the greater proportion of old-age pensioners in Helsinki increases its slight over-representation in the two bottom deciles. Thus, the comparison is more genuine if we use the consumer unit rather than the household as a yardstick.

**Methods and findings of the district analysis**

The material studied was specified at district level, which allowed studying which types of areas had the most even versus uneven income structure. The districts are compared by calculating how much bigger or smaller the presentation of each decile was than it would have been if the income distribution had been totally even, i.e. ten per cent for each. From the difference, the number 10 is then subtracted, and the sum of the absolute values thus received is calculated. The final result is divided by two, since the sum of the negative divergences always corresponds to the sum of the positive divergences, and there would be no point in having the double. The *decile deviation* thus received shows how many per cent of a district’s households should change position on the income decile scale in order for the district’s distribution to be the same as the Metropolitan Area’s distribution. The formula looks like this:

\[
F = \frac{1}{2} \sum_{1}^{10} 10 - 100 \times D_i \div \sum_{1}^{10} D_i \div 2
\]

The similarity with the famous dissimilarity index used by Duncan & Duncan (1955) and Taeuber & Taeuber (1965) can be recognised.
The values of each district’s divergence are calculated. In the following figure, they have been arranged by the size of the divergence in each city (Espoo, Helsinki, Vantaa) so that the mean income is visible, too.

Figure 8: Income per consumer unit in districts when districts have been arranged by decile deviation

In Espoo and Helsinki, those areas that have the highest income, expectedly rank highest in terms of decile deviation. Yet in Helsinki, certain areas with low incomes also range close to the top, which is a sign of unvaried social structure. Helsinki’s profile is characterised by a decreasingly varied income level as we proceed towards a small decile deviation. The same feature can also be seen in Espoo, but not as clearly. In Vantaa, the largest deviation occurs in a district with an average kind of income level. And otherwise, too, local deviations in mean income are not that great in Vantaa.

Types of housing districts

In the following, we shall use a few examples to illuminate differences in income distribution between districts.

Figure 9: Proportion of household belonging to income deciles (by consumption unit) in a few sample areas in Helsinki

Tammasalo, Yliskylä and Santahamina are in their nature different neighbours in the South-eastern Helsinki, each possessing the appreciated coast line of Gulf of Finland. Yliskylä represents an exceptionally even income distribution with a decile deviation of only 1.7 per cent. The habitation type there is multi-storey suburban housing In Santahamina, the male population is employed by the National Defence, which gives the district a great proportion of wage-earners visible as an over-representation of the middle deciles.

Tammasalo represents a more heterogeneous high brow district with terraced or detached housing where the upwards deviation of the top two deciles dominate the distribution. Yet, even in this district, 25 per cent of households belong to the five lowest deciles (by consumption unit).
The other set of curves presents the effects of an unmixed social structure on the income distribution. But although in Jakomäki, for example (one of the low-income multi-storey districts of Helsinki consisting of mainly social housing), the four lowest deciles are well represented, but 28 per cent of households belong to the five highest deciles. Mellumäki has a similar profile, but in a much less accentuated form. Among these three districts, Patola represents the type of even distribution also seen in Yliskylä. But in the bottom decile, it forms a sort of reverse image of Mellumäki. All these belong to multi-storey suburban fringe, where the status is not determined only after the tenure structure of the housing stock.

Figure 7 showed that the local income structure in Vantaa differ from the rest of the Metropolitan Area in being more even. Another special feature was that the greatest decile deviation (27 per cent) occurred in a district whose mean income was just slightly below the city average. In the following, let us have a look at income distributions in those Vantaa districts that have the greatest vs. smallest deviations.

Figure 10: Examples of different income distributions in Vantaa

In both cases, the same basic pattern is repeated: the extremes of the income distribution are weakly represented, whereas those income groups just above the median are strongly represented. It can be stated that Vantaa’s typical wage-earner income profile is repeated with slight variations in almost every housing district there.

Among income distributions in Espoo, some examples are picked including some very uneven versus some more average profiles. Kivenlahti-a typical multi-storey suburban housing district represents the even, average profiles. And again it can be seen that in spite of a very clear over-representation of the highest deciles in the three high-status waterfront districts of, e.g., Nuottaniemi, almost half the population there belong to the other deciles. The difference between housing district patterns in Espoo and Vantaa is thus well illustrated by these examples.

Figure 11: Examples of different income distributions in Espoo

Since the population figure of districts varies strongly, it can be examined how the situation in each municipality is influenced, when the counted decile deviation is weighted by the number of households in each district. Figure 12 shows that 67 per cent of Espoo’s population live in areas with a maximum decile deviation of 15 per cent. The corresponding figure in Helsinki is 84% and in Vantaa 88%. Espoo is characterised by a partly twin-peaked profile, whereas Helsinki has less districts belonging to the upper end of this distribution, and Vantaa none at all. And Vantaa has no area with a decile deviation of less than 5 per cent, whilst in Helsinki 13 per cent and in Espoo 16 per cent of the population lives in such areas.

Figure 12. Distribution of districts weighted by the population figure, according to the decile deviation in examined cities
Discussion

The average income of a municipality or housing district is widely used measure of the status and wealth of an area in Finland. The yearly production rhythm, where the registers of taxation, housing and population are connected, opens possibilities to an intensive study. The income differences between households used to be quite low and stable to the middle of nineties. The income average can be used as a quite reliable measure for status changes, especially after adoption of consumption unit concept. The turbulence of the end of nineties seemed to bring the parts of the Capital Region the differing development paths in this sense. Helsinki itself kept a very stable position in the income scale, but the neighbouring municipalities seemed to move on diverging paths.

The socio-economic structure of labour force is another important indicator that is produced in Statistics Finland every five years by register base, last 2000. The analysis of this material showed a clear convergence of structures of Helsinki and well-to-do renowned Espoo. Here the outcome and interpretation differs from that given by average income follow-up. The diverging development path of Vantaa from these two others goes according to the similar relative income development. The education structure of population is a kind of sister to the socio-economic structure. The correlations between the two, and to income, are quite high. The ratio of high education has risen fastest in Helsinki so that the distance to Espoo in the leading position has diminished.

As a conclusion from previous it can be stated that the structural variables, i.e. socio-economic and educational, provide a more reliable interpretation base than average income. The question of direction of development is important. The more important is to look at different variables and their outcomes in a comparative way.

Another point of view to the income is presented in form, where the households are divided to income brackets by deciles defined by household or consumption unit base. This approach denies the effect of millionaires to the income average, and reveals the
distribution variations among different housing districts. A special formula developed to sum up the decile deviations helps to arrange the districts along the grade of heterogeneity.

It seems to be the rule rather than an exception that people in the Helsinki Metropolitan Area live in districts with a heterogeneous income structure. The degree of homogeneity is highest in Vantaa and second highest in Helsinki. The so-called ecological fallacy may influence these results. We may assume that the larger and more populated a district, the greater the chance of finding different kinds of housing, and that in a smaller area, the likelihood of social differentiation is smaller. In this sense, the findings for Espoo and Vantaa are easy to compare, because their size and population density are similar. And yet, Vantaa’s structure proves to be totally different from Espoo’s. Helsinki has twice as high a population number per district as Vantaa and Espoo, a factor which in theory might reduce the occurrence of highly differentiated areas. On the other hand, some of the districts are relatively small, too, for which reason the rule of large “unit size” does not apply to all districts.

The general conclusion of this part of the study would be that districts as a rule contain inhabitants of many income brackets. Even very small and highly differentiated areas always have representatives of the other extremes on the income scale. The assumption that the well-to-do shun the presence of poor people in their vicinity finds little support in these findings – at least the well-to-do have not “voted with their feet”, i.e. moved to “more attractive” areas to any significant extent. The importance of income source should be taken under study, too. It is known that the income falls to 64% from the previous after retirement, which has its effects to the household income. And it must be admitted that the trend on the basis of the material, which covers only one year, cannot be assessed. But new vintages of statistics are ripening.

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