#### Summary

#### Investigation of the determinant spatial inequality processes in the Northern Great Plain Region in international context

The *problem of core-periphery dichotomy* deserved special attention during the overview of the international and Hungarian literature. Two different approaches can be separated regarding the core-periphery relationships – on the one hand, the first approach puts the emphasis on the process of cumulative causation (e.g. Myrdal's theory) (MYRDAL, G. 1957), on the other hand, the second approach highlighted the process of territorial equalization (e.g. Friedmann's and Richardson's theory) (FRIEDMANN, J. 1966; RICHARDSON, H. W. 1980). A theory explaining the recent inequality trends occurred in the U.S. has also been presented (FAN, C. C. - CASETTI, E. 1994).

The *state border* significantly influences the spatial processes in the Northern Great Plain Region. First of all, the methods for delimitation of the border zone were reviewed, as the first step to define the border problems. The positive and negative effects of state borders on the regional development were summarized: James Peach's hypotheses about the income disparities of border areas deserved special attention, as these statements became key element for the investigations carried out in the dissertation as well (PEACH, J. 1997).

The most important *theories on the relationship between regional development and spatial inequalities* were also reviewed. The presentation of spatial inequality methods used in the investigation logically fitted to this part. The arguments for and against the relevance of the Kuznets-Williamson inverted-U hypothesis were comprised by the different theories. Generally, my results confirmed the most important statements of the hypothesis, however newer conceptions rethinking the original hypothesis should also be taken into consideration. This is especially relevant in the case of the post-socialist countries in transition, where the inequality tendencies differ from the European trends.

#### Methods of the delimitation of peripheral areas

In this chapter of the dissertation, the most important resources on *the delimitation* of the Hungarian peripheral areas were reviewed focusing on the procedures, methods and indicators applied in the studies. The comparative analysis regarding the backward areas of the Northern Great Plain Region gave ambiguous results by the literature – however, there is no significant difference between the results of each method, similar methods with some constraints could result completely different spatial pattern of development.

Since the mid 1980's the Hungarian regional development has listed the underdeveloped settlements within the framework of legislation practice of the government. A criticism of the applied methods, the socio-economic indicators taken into consideration and the underdeveloped settlements in the investigated region designated by the code for regional development are involved in my overview. Summarising the results of different approaches the peripheral areas of the region can be identified, however significant and causeless differences appeared by one year to the next. It can be stated that the territorial delimitation using the code for regional development is not appropriate to allocate the peripheral areas on the settlement level.

The taxable income per capita and the ratio of taxpayers correlated significantly with several socio-economic indicators by the calculation applied for the settlements of the North Great Plain Region. The distribution and temporal changes of peripheral areas are well expressed by the group of settlements labeled backward based on income per capita. The relevance of income and employment indicators is supported by more Hungarian regional analyses.

# Regional income processes and the development of regional income inequalities in Hungary after the political transition

On the level of LAU-1 microregions the examination of income value in comparison with the national average revealed the most important characteristics of spatial pattern and their changes. After the political transition the spatial income structure is primarily characterized by *polarization*. The situation of Budapest, developed even before, and its agglomeration, of North-western Hungary and the largest towns improved, while the mining and heavy industrial axis and North-eastern, South-western Hungary were faced with long term crisis.

These changes generated *serious increase in spatial disparities* by the mid 1990s and long stagnation occurred in the intra-regional income inequalities by the millennium. Income convergence began after 2000 in the case of the regional inequalities. However, *the Northern Great Plain Region has the lowest level of income and the highest level of inequalities* among the Hungarian NUTS-2 regions.

The analysis of settlements, regarded as peripheral, with the lowest income per capita, proved that:

- the number of peripheral settlements decreased significantly in the developing counties after the political transition;
- the number of settlements with extremely low income level grew in the counties with permanent crisis;
- > peripheral settlements tend to concentrate geographically;
- backward areas like the outer periphery along the state border and the inner periphery in the Middle-Tisza-Basin in the Northern Great Plain Region – can be detected with the help of this method.

### Determinant factors of income processes in the Northern Great Plain Region

Most of the settlements in the region suffered decrease in the relative level of income in comparison with the national average between 1988 and 2007. *The categories of settlements according to the number of inhabitants are characteristically reflected by the change.* The county-seats (Debrecen, Nyíregyháza and Szolnok) showed growth in their income level, the towns with more than 10,000 inhabitants had a small decrease on the average, but villages with population less than 2000 suffered a serious drop-off in their income level:

- increasing level of income can be detected in the surroundings of the largest towns as the result of the suburbanization process;
- the largest decrease occurred in the case of peripheral settlements in inner and outer periphery;
- due to this polarization, the gap between the poles of the development rank became enormous;
- the closing up of settlements with the lowest income values in spite of the convergence at the regional level has not yet started.

### Application of potential-model in the investigation of income processes

The characteristic features and changes of the spatial income pattern can be represented with the application of potential-model. The three components of the model and their summarized value indicated that:

- areas with the largest income potential the surroundings of the countyseats and the axes between them, the Jászság area and the significant urban centres of the region – were able to hold and improve their income potential values after the political transition;
- large fluctuation of the potential-field was observed during the first period following the political transition in 1989;
- the most significant decrease can be found in the case of the inner and outer periphery;
- the process of suburbanization is also shown by this model;
- > the spatial sphere of short-term income changes can also be detected;
- the method has the capacity to show the effect of Budapest or other centres located outside the region.

## The development of regional income inequalities

The calculation of income inequalities was carried out in terms of the LAU-2 microregions. The results can be summarized as follows:

- regional income inequalities showed a more equal pattern before the political transition;
- the median values of the inequality trends exhibits similar tendency as in the case of the national and regional values;
- however, *different trajectories* can also be found:
  - *divergence* appears in more microregions (e.g. Baktalórántháza, Tiszafüred, Záhony microregion);
  - *long-term, high-level stagnation* can be detected in the case of the peripheral areas (e.g. Berettyóújfalu, Fehérgyarmat, Mátészalka, Nyírbátor and Vásárosnamény microregion);
- decreasing income inequalities can be evaluated as negative processes, the falling income level of the centre might cause income convergence within the microregion (e.g. Tiszavasvári microregion)
- *b the influence of suburbanization may appear in two ways:* 
  - microregions containing the county-seats show *convergence* (e.g. Nyíregyházai and Szolnoki microregion);
  - *divergence* can be detected in the territorial units containing suburban settlements, but not the centre (e.g. Derecske-Létavértes and Hajdúhadház microregion)

# Core-periphery processes within the region

The economic recession after the political transition entailed the dramatic fall in the employment and commuting, which differs in extent according to the size of the settlements. The tendency of change basically reflects that of the income level. The core-periphery problem of the region outlines the decrease in the employment. In order to investigate this phenomenon I delimited commuter belts, out of which I only considered those that attract at least 10 settlements. The following characteristics can be observed:

- the relative income level of the centres is above or a little bit below the national average;
- income level tends to decrease with the increasing distance from the centres;
- the relative income level of the centres increased or decreased less between 1988 and 2007;
- the decrease of the income level tends be higher with the increasing distance from the centres;

- the larger the centre is, the more extended sphere of influence it has;
- exceptions generally appear as a result of a significantly high (mainly in the case of settlements along an axis between two centres) or an *extremely* low *income value*.

This investigation gave evidence that the illustrated core-periphery processes should be considered as the most important element in the income inequalities within a region. The polarization primarily taking place in this dimension resulted in the increase of disparities. It characteristically occurred during the economic recession, therefore it can be named "polarization during recession".

The *backwash effects* have become dominant in the commuter belts after the political transition. The strengthening employment role of the centres accompanied with the decrease of commuting in the peripheries. Spread-effects can be found only in the surroundings of the county-seats and the process of suburbanization is their most spectacular manifestation.

The spatial tendencies observed in the Northern Great Plain Region can be explained as an inverse process of Richardson's polarization reversal theory. High level of spatial income inequalities is unambiguously characteristic of backward areas, so Williamson's inverted U theory can be regarded as relevant.

#### The effect of state borders on the regional income disparities

*Comparative analysis* of the Western Transdanubia Region was completed in order to investigate the effect of state borders on the regional income disparities. James Peach's statements gave the basic hypotheses in this case (PEACH, J. 1997). The effect of state borders on regional income inequalities can be summarized as the following:

- income inequalities can be lower in the border areas than in the nonborder territories – in spite of Peach's hypothesis;
- Williamson's hypothesis seems relevant in the case of the Hungarian border areas, i.e. a higher level of development entails less income inequality;
- the traditionally higher level of development, the more appreciated environment and the successful economic transition are (beside other factors) the causes of the different income distribution in the case of the investigated regions;
- in the Eastern border area the positive effect of state borders can mainly be attributed to the higher state employment connected to the border crossing stations
- in the Eastern regions the low economic potential on both sides of the state border cannot boost economic development, as a consequence. the dividing functions of the state border prevail.

The existence of local core-periphery processes has been pointed out by the dissertation, however further investigations are needed to prove its relevance in an extended geographical space. It still remained unanswered whether the process can be observed in case of developed areas or it is characteristic only in the backward territories. The territorial consequences of short-term and less critical crises and the potential waving of spatial inequalities according to economic cycles are also interesting problems.