

**SZENT ISTVÁN UNIVERSITY, GÖDÖLLŐ**  
**Doctoral School of Management and Business Studies**



**The examination and the possible application of economic development strategies in regional  
development**

PhD thesis

Made by: Nagy Henrietta

Gödöllő  
2006.

**Name of**

**doctoral school:**

Doctoral School of Management and Business Studies

**Field of science:**

management and business

**Head of school:**

Dr. Szűcs István  
professor, doctor of Hungarian Academy of Science  
SZIU, Faculty of Economics and Social Sciences,  
Institute of Economic Analysis and Methodology

**Supervisor:**

Dr. Káposzta József  
university lecturer, candidate of economics  
SZIU, Faculty of Economics and Social Sciences,  
Institute of Regional Economics and Rural Development

.....  
Approved by  
head of doctoral school

.....  
Approved by  
supervisor

## INTRODUCTION

By now we can say that the accession of Hungary to the Union is not a dream any more. Negotiations before the accession, their results and the accession itself realized during my Ph.D. studies, so the Hungarian accession has greatly influenced my research. My aim originally was to deal with the regional norms, economic development objectives of the Union, since it was already clear to everybody a few years ago that the countries who would like to join the European Union must adopt the Union's system, requirements and experience.

The creation and application of economic development strategies are vital elements in the process of making our economic and institutional system **EU-conform**. Since different factors have influenced the creation of development zones in Europe and the experts mention these zones in different ways so there is not agreement among them yet, that is the reason why I intended to clarify the major coherences in the field of economic development strategies. We need to see clear the things related to the Union to be able to adopt the patterns and consequences.

During my research I have focused on – among others – the „**blue and yellow bananas**”, and „**sunbelt**” zones, as well as the objectives of regional policy, regional development documents of Europe (**EUROPE 2000, EUROPE 2000+, ESDP**). It is important to examine the spatial policy of the Union because the general regulations must be adopted by us and due to our accession we can form these regulations too. On the other hand we need to draw up the national regional strategies with keeping an eye on the European ones.

It is not enough to meet the requirements but we need to understand the background behind the operation of the economy in an integration which comprises most of the European countries. We need to understand that we have become the member of a larger European unit which has been trying to comprise the countries that are able for the integration for decades. This integration is a system which is based on continuous and mutual relations preserving the local characteristics.

We must study the practices, experiences that were applied by the former member states, we need to choose the elements that can be applied in Hungary considering the local endowments, because it is the only way to realize the long-term development programs successfully. As a result, balanced economic development can be realized which is the primary objective of EU regional policy.

In my dissertation I have made an overall **historical overview** on the change in spatial structure and also the **legal background**. I have paid special attention to the regulatory background of regional policy. I have detailed **the long-term objectives and the funds of regional policy** proving that the Union provides financial support for the aims set for the member states.

I have overviewed **the expansion theories of regional economics** which form the basis for the creation of **development strategies**. Then I have presented the **recommended development guidelines, development documents and development strategies**.

In order to make economically established development strategies for the territorial units, we need to apply development methods that are suitable for spatial examinations. There are statistical-mathematical methods that can be well applied in regional examinations too, so I tried to focus on these methods in the chapter „Material and method”. For these methods such **input data** are necessary that are able to characterize the **competitiveness and development of the regions**. Thus I have intended to highlight that there is not a consensus existing among the experts concerning the indices themselves. A regions’s competitiveness cannot be examined with the same methods and indices we apply for the countries, since regions are not autonomous units.

After presenting the methods I have listed up the **objectives and results of my research**. My concrete objective was to determine the regions of **blue and yellow bananas**.

**My research was based on the following aims:**

- To overview the geographical determination of blue and yellow bananas and to build up the geographical zones from NUTS II regions
- To examine the economic importance of geographical zones
- To determine the zones based on different methods
- To compare the economic role of geographical and economic zones
- To draw up the recommendations concerning the future strategies and developments.

## 1. MATERIAL AND METHOD

The most well-known comprehensive index reflecting the effects of several factors at the same time is the **gross domestic product (GDP)**. GDP has been used to compare the developments of individual countries for long, but its application for regions only started in the past few years. However it must be emphasized that GDP is not the only index for economic development, so it must not be declared as the only one index for counties and regions, but it is recommended to apply other statistical indices also in territorial analyses (PUKLI 2000).

**Though GDP is not the only one index of regional development or the control of development actions' effects, but it is fundamental.** It has gained key importance in regional analyses and regional policy to be a special index for the allocation of community development supports (NEMES NAGY 1995).

Defining the regional/territorial amount of GDP raises several questions in theoretical, information and institutional fields (FISCHER, 1994). It is an international experience that **relatively reliable regional GDP can only be defined with estimates and on larger territorial units** (BAIGGORI 1994). Consequently, if it is defined as exactly as possible, it is not enough to orientate spatial development itself, since it is not suitable for reflecting the multiple characteristics of spatial development (crisis) and its application at the level of sub-regions is especially unsafe.

### *The content of GDP*

**Gross Domestic Product (GDP)** is the domestic added value and it is one of the most important elements of national economic balances. It means the new values produced in the whole economic activity in one year and measured in money value (namely in the national currency). The added value produced by the players of the economy can be **calculated in two ways**. On one hand it is the **gross production value minus the current usage for production**, on the other hand it consists of the **gross income from work, profit and loss before tax and depreciation**. While national income includes only the new values produced in material sectors (industry, agriculture, producing services), GDP also includes the activities in the non-material service sectors (tertiary and quaternary).

GDP in current values and in national currency characterizes economic processes of only a given date and territorial unit. If we want to compare different data from different time, we need a GDP calculated on unchanged basis, and in international comparison we need to calculate it in the same currency. International standardization can be carried out in two ways: standardization on **valid foreign currency courses** or on **purchase power standards**.

GDP is only one index of the **national accounts**. It is the balance of production accounts. It is the difference between the production value of products and services and the values of applied materials and services during their production. In theory, **regional accounts** are the tallies of national accounts for regions. In practice, however, they cannot be aggregated in a totally detailed format due to the economic units existing in more than one region. Most of the financial and income distribution transactions (taxes, income of the owners, loans) of these multi-regional units cannot be divided among the regions.

Because of all these obstacles, in the European Union only production accounts and the accounts of household incomes are compulsory to be compiled (ESA 1995). The latter one has great significance, because thanks to it, the differences between the regions can be measured not just from the production side but also from the side of population consumption.

The differences in regional GDPs and in regional incomes strengthen the statement that **GDP can be considered a comprehensive index, but it is not able to reflect all the major factors of economic development** (PUKLI 2000).

The quality of regional GDP data basically depends on 2 factors:

- the method applied
- the quality of data applied

Regional GDP can be calculated in different ways. **Bottom-up** calculation method is based on an assumption that we have all the necessary information about all the production units in the region to calculate the GDP. With the addition of data we can get the regional GDP and as the sum we get the data for the country. With **top-down method** we divide the total GDP among the regions with the help of such numbers that have been calculated from territorial data reflecting the GDP's territorial distribution at most. These helping data can be **the active population, the number of employed people, the sum of wages** etc.

The **mixed method** is the combination of the two methods mentioned, reflecting the finding that there are no countries where the bottom-up summing could be applied in all the fields of the economy. Concerning territorial homogeneity we can distinguish 3 types of economic associations. **Units of one region**, whose activity covers mainly one region only. **Enterprises**, whose sites are situated in more regions. Such **institutional units** whose activity covers more than one region or even the whole country (PUKLI 2000).

**As a general principle**, GDP must be calculated on the region, where the producing unit is residential. In the case of companies which have several sites, the sites must be considered individual producing units. The problems listed above and other problems occur if GDP is calculated **territorially desaggregated**. As calculating in territorial way, „domestic area” is equal to a region. For territorial GDP other terms are also usually used, like **Gross Regional Product (GRP)**.

Today majority of countries do not have territorial GDP calculations and official publications of this topic. In many countries there are not territorial economic indices which could be used, in other countries GDP is not the most important index. Without detailing the reasons and the factors behind, we only mention as a reminder that in the former socialist countries the growth index of **industrial gross production** was the most spreaded economic index that was calculated on regional level too. In the USA **personal income** is the index about which there are data collected for more than 100 years for each state.

Theoretical difficulty is that not every economic activity can be localized punctually. Thus, it is difficult to localize even theoretically the income returns of the activity of financial institutions. From statistical and accounting point of views localizing the added values of companies with several premises is basically unsolved. In the case of activities, especially those which are linked to „space” like telecommunication or transportation, value production can only be distributed with „estimation”.

There are further problems in measuring the regional competitiveness because e.g. **it is difficult to measure the region's foreign trade** with calculations based on GDP. The problem is that the income and profit of foreign capital is also included in gross output, which is not always spent in the same region. The comparison based on **average wages** gives a more appropriate picture, since the attractiveness of a region can be well represented by the spendable incomes of the people of that region (RÉTHELYI – TURY 2003).

Because of all these problems estimations as well as the uncertainties cannot be avoided during calculations (NEMES NAGY 1995).

Concerning the quality of figures used for the calculation of the regional GDP we can state that the changes in the economy and society mean serious challenges for the economic statistics. *To the question: „How safe are the regional GDP figures?” we can answer – based on the abovementioned – that due to the estimates in the case of national or multi-regional economic associations and the territorial obstacles of data-collecting, the quality of data is poorer than that of the national data.*

*Methods applied during the division of GDP*

A) The following multiplying factors were used in the EUROPEAN COMPETITIVENESS REPORT 2003:

- **productivity of work:** GDP per 1 working hour
- **choice between work and relaxing:** working hour worked per 1 employee
- **rate of employment:** share of employed people within the active population
- **demographic factor:** share of active population within the total population

The formula for GDP per capita is as follows (ILLÉS – MEZEI – ZUBÁN 2004):

**GDP/Population = (GDP/Working hours) x (Working hours/Employed people) x (Employed people/Active population) x (Active population/Population)**

B) A The triadic division of GDP per capita is the following:

**GDP/Population = (GDP/Employed people) x (Employed people/Active population) x (Active population/Population)**

So development can be divided into **productivity of live labour force, employment and the rate of age structure.**

The differences between regions concerning the rate of active population is quite small, so with the other two indices we can present the differences between the regions' and countries's competitiveness (LENGYEL 2003).

Work productivity is the output **per working hour** and in statistics we usually estimate it with **GDP per employed people** (LENGYEL 2000/b).

C) The „traditional” approach of competitiveness applies the **dual** division:

**GDP/Population = GDP/Employed people x Employed people/Population**

In this case the development is divided into **productivity of live labour force and employment.**

We can get the logarithm of both sides to see the weights of them and **we can calculate the share of each factors:**

$$\log(J/P) = \log(J/F) + \log(F/K) + \log(K/P)$$

We can get the logarithm of the dual division too and the variables can refer to any observation units (countries, regions, settlements) (NEMES NAGY 2004). In the European Union the competitiveness of regions is analyzed before each **planning periods**, during the preparation of regional policy. **1998 was the first year when regional competitiveness indices were compiled for NUTS 2 regions** (PINELLI et al 1998).

There are several approaches concerning the competitiveness of countries. We can distinguish two different approaches: one provides complex ranks on the basis of comparative examinations, while the other analyzes only the difference in the development level of individual countries. I give details about two different approaches providing **complex competitiveness ranks**: the results of IMD and WEF. **IMD (International Institute for Management Development)** takes into consideration statistical (hard) data and data from questionnaires (soft), evaluating 4 groups of factors with 243 indices: economic performance, efficiency of government and business sector and infrastructural supply. **WEF (World Economic Forum)** makes 2 ranks for the 80 countries examined: GCI-index (Economic Development Index) examines the basic factors of economic development. MICI-index (Microeconomic Competitiveness Index) evaluates the business environment.

But if we would like to analyze the regions based on only one factor – **income per capita** –, we may use three basic indices (dual-index, weighted relative standard deviation, Hoover-index), out of which we only give detailed information on dual-index.

### Dual-index

Dual-index created by **ÉLTETŐ and FRIGYES** integrates these divisions into the examination of income differences by making two groups out of the territories: one of them includes the territories with development below the average and the other includes the territories with development above the average (group 1: GDP per capita below the average and group 2: GDP per capita above the average). Dual-index measures the territorial inequalities by the ration of the two groups.

#### Signs:

Factors in the group with higher development than the average:

$(J/P)_m$	development (j)
$(J/F)_m$	productivity (t)
$(F/K)_m$	employment (f)
$(K/P)_m$	age structure (k)

Factors in the group with lower development than the average:

$(J/P)_a$	development (j)
$(J/F)_a$	productivity (t)
$(F/K)_a$	employment (f)
$(K/P)_a$	age structure (k)

**The dual index measures the territorial inequalities with the rate of these two groups:**

$$d = (J/P)_m / (J/P)_a = [(J/F)_m / (J/F)_a] \times [(F/K)_m / (F/K)_a] \times [(K/P)_m / (K/P)_a]$$

$$d_j = d_t \times d_f \times d_k$$

Logarithm can be done on dual index too, so the weight of each factors can be calculated ( $\log(d_j-t)$  is equal to 100):

$$\log(d_j) = \log(d_t) + \log(d_f) + \log(d_k)$$

If we use the approach focusing on the inequalities in regional development, the weights of the factors compared to the others come primarily to the focus of interest.

**In a dynamic analysis** (e.g. comparison between two data) we can find out the change of inequalities in the different components. It is not trivial that while the development inequalities measured by the level of income increases, and it is true for productivity, employment or demographic structure, it easily happens that one or some of them move in the adverse direction, the territorial differences decrease (NEMES NAGY 2004).

In regional analyses there are often tasks that aim the **complex social-economic evaluation** of territorial units (NUTS). These are for example comparison examinations on different endowments, economic development/underdevelopment, standard of living, living conditions that are essential elements of surveys preparing the spatial development decisions. The major characteristic of these tasks is that due to their complexity they can only be examined with multiple indices, since they are multidimensional terms.

At the same time the effects between the indices defining the major relationships are often not taken into account, though they have great influence since those are mutual, hidden and indirect. Since the 1950s beside the application of traditional statistical methods (groupings, calculation of average and deviation etc.) the application of more simple mathematical-statistical methods has started in spatial analyses. But nowadays it seems that old, traditional methods are more and more often used (e.g. method on points).

### **Method on points**

One of the simplest method is **Bennett-procedure** which has been used since 1951. Its essence is that we need to choose a few characteristic factors, we need to give them points and after summing them a **rank** may be created for regions, counties, counties. It can be used in 4 variations. They are based on comparisons to the maximum, minimum, the mathematical average and the weighted average (DOBOSI 1985).

### **The formula:**

$$P_i = \sum_{j=1}^m \frac{e_{ij}}{e_{jc}} \cdot 100, \quad i = 1, \dots, n$$

Bennett-method has gain many critics since its appearance. These critics refer to the following problems:

- the selection of factors includes subjective elements
- the significance of each index is different and it raises the problem of weighing
- it does not take into account the correlation between the factors.

However the method is suitable for ranking the territorial units. In spite of its negative characteristics more and more people use it nowadays.

### **Main component analysis**

Due to the cases when the conditions of factor-analysis do not exist we usually apply main component analysis instead. It is more specific than factor analysis from one point of view, but it is more general from other point of view. It is more general in the sense that the number of observations can be fewer than that of the variables (MORRISON 1967).

## 2. MY RESEARCH ON GEOGRAPHIC AND ECONOMIC BLUE- AND YELLOW BANANAS

Having read regional economic and economic development materials we have found several advanced development zones in Europe mentioned with special names and which refer to the economic driving force of Europe. In several cases we have found cities, regions and multi-regional zones mentioned in the publications. We have also found maps presenting these development zones. But in none of the cases we have found the NUTS 2 regional determination of the zones.

### *My objectives in the research*

This was the reason why we tried to determine the development zone called **blue banana** building up from NUTS 2 regions on the basis of the most commonly used index of economic development – GDP per capita – with taking into account other factors and figures. The territory examined is the 15 member states of the EU and also the 10 new member states.

On the basis of maps presented in these publications we have drawn the possible territory of blue banana, which is a comprehensive whole in geographical terms (though we need to mention that when the different literature mention the zone, they refer to mostly the same big cities but some of the territory show minor differences. Thus, even the geographical determination is not based on agreement). Our goal was to determine the group of developed regions based on **economic-social indices**, in contrast with determination based only on geography. In the European Union there are several – more or less comprehensive whole – developed zones, but looking at their size, blue banana can be considered the biggest one and it almost covers the whole Union from North to South.

On the other hand, experts say that there is a development zone in **Central-Eastern-Europe** compared to blue banana that can have the same role as blue banana does have. The situation is same with this zone so called **yellow banana**. We can only find its geographic definition not its economic one.

My aim was to make **analyses on the regions of Central-Eastern-Europe** to see if there is an inducing effect of the zone of Western-Europe on the newly acceded countries. Though *it can be stated that due to the economic transformation of countries the zones must be reviewed over the years.*

### *The details of examinations, the source of data and the methods applied*

I have gathered the data from the Union's official statistical service (EUROSTAT) and from Hungarian Central Statistical Office (KSH). I have examined economic and social factors of 213 NUTS 2 regions of the European Union to try to determine the blue banana on regional basis with the help of data available. During the selection of indices it was difficult to treat that there were hardly any data available for all the regions and the latest data are for the year 2002. When it was necessary, I compared the data of the member states to that of the EU 15 average. In order to see tendencies, I tried to gather data for the years 1999, 2000, 2001 and 2002. GDP data are in purchase powers (PPS) which allows the comparison between regions.

### **I have collected and calculated the following major indices for 213 regions of EU 15:**

- regions' territory (km<sup>2</sup>) 2001
- regions' share in total EU territory (%) 2001
- population (1000 people) 2000-2001
- regions' share within the total population of EU15 (%) 2000-2001

- population density (person/km<sup>2</sup>) 2000-2001
- regions' GDP (PPS) 1999-2002
- regions' share within the total EU GDP (%) 1999-2002
- regions' GDP per capita (PPS) 1999-2002
- regions' GDP per capita compared to the EU15 average (%) 1999-2002
- share of employed people within the active population (%) 1999-2002
- unemployment rate (%) 2002
- share of unemployed having been unemployed for more than 12 months within the total unemployed people (2002)
- number of people with university/college degree 1000 people (2002)

On the basis of the selected economic and social indices we have compiled complex tables for all the regions of EU 15, where we have given points to the regions after weighting. During the application of the method we focused on the criteria of **Bennett-procedure**. We have compared the data to the most favourable data of that specific group. In some cases the maximum, in other cases the minimum was the most favourable. We have chosen the indices in **subjective way**, but we have experienced from reading publications of this topic that in economic analyses, on regions or other territorial units, mostly the same indices were used that we had used too.

#### *Analyses on the geographic and economic blue banana*

I have made a regional rank with **25 EU members** from which it can be seen that there are regions which are among the most developed ones in terms of all indices, but it can also be seen that the simple ranks do not reflect the real development level of regions. That was the reason for using further methods. I have also examined **the role of the leading 25 regions on the basis of GDP per capita in 2002 for the last 50 years**, and I have also overviewed how the compounds and the location of the leading 25 group has changed. Are there regions that had/have leading role in Western-Europe in the 5 decades examined?

My aim was to examine the different groups of the leading **25 regions in Western-Europe** in the last 50 years. It can be stated that the really developed regions have kept their leading role in the past 50 years. But we must not forget that the result of the examination is modified by the fact that the data for 1950 are measured in **current prices** and in ECU, while the other data are measured in **PPS and in euro**. On the other hand, we need to note that the definition of NUTS II regions has changed in the past 50 years. Thus it may be difficult to define to which countries the regions belong.

Based on the selected economic and social indices I have made **complex tables for the regions of EU15**, where I have given points to the regions after having weighed them. During the application of the method I have focused on the criteria of **Bennett-procedure**. The data were compared to the most favourable data of each group. The most favourable could be either the highest or the lowest data.

I have selected the indices into the tables in a **subjective way**, though I have found that in economic analyses these data are more or less applied for characterizing the territorial units, so I tried to examine the **GDP per capita (PPS)**. Since there is a close relationship between **GDP per capita** and the size of population, I thought that I also examine the **regions' share in the total EU GDP**. In the developed regions where there is opportunity for a higher standard of living and the number of employment opportunity is high, more and more people move to that place. Thus high population density can be characteristic to these regions. I have also examined the share of **active population**, and also the unemployment rate, especially the rate for unemployed people being for more than **12 months**. In a region, the basis for the R&D and innovation potential can be the population with **university/college degree** that is why I have included it into my examinations.

### Indices included in the method on points on 213 NUTS II regions of EU15:

- Region's share from GDP of EU 15 (%), 2002
- GDP per capita (PPS) in the EU 15 average (%), 2002
- Population density (person/km<sup>2</sup>), 2001
- The share of people employed from the active population (%), 2002
- The share of people being unemployed for more than 12 months from the total unemployed (%), 2002
- The number of people with diploma from higher education (1000 people), 2002
- The difference between the regions' GDP per capita of years 2002 and 1999 (PPS)

Since the indices examined do not have the same level of influence on the creation of economic development of a region, I weighted the indices. I gave „1” to the GDP indices, „0,75” to the employment, unemployment and education figures and „0,5” to the population density data. I have put an „x” next to the regions whose GDP per capita growth was higher than that of the average between 2002 and 1999. Due to weighing and giving points a complex rank was created, which shows the place of each region in the rank reflecting the effect of several indices at the same time.

*I have compiled a summerizing table for 213 regions from which I have selected the regions whose share from the total GDP is higher than 1%, or whose GDP per capita is higher than the EU15 average, or where the population density is over 500 person/km<sup>2</sup>, or the share of employed people is at least 60%. After all this, 84 regions could be considered developed on the basis of one or more indices.*

Of course there are regions which are above the limits in more than one cases. I have made a table for the 84 regions so that it could help me to define the advanced regions and so that I could compare the results with the geographic blue banana's data. The maximum point was: 30,75. I have selected the regions with points over 50% (15,375 point) as possible members of the advanced zone, which meant 25 regions.

In the 84 regions all of the member states are represented but not in the same proportion. According to my calculations, **United Kingdom** has the highest number of developed regions: 27%. At the second place with 10 regions stand **Italy and the Netherlands**, they are followed by **Spain and Germany** with 9 and 8 regions, respectively. Among the countries with the fewest developed regions stand Denmark and Luxemburg (as being the country itself one NUTS region), and with one region Greece and Ireland.

I have selected the 84 regions not in a complex way, so regions could become the member of the group where the unemployment may be low, employment may be high but according to the GDP indices they cannot be considered developed. Moreover there are regions whose GDP per capita do not reach even the critical 75% of the EU average.

Based on the regions' **share in the total GDP** we can state that out of the 84 regions **22 have a share over 1%**. Out of these, on the first rank is **Ile de France** (4,70%), it is followed by **Lombardia** and **Inner London**. It is important that these three regions give almost **10% of EU15's GDP**. The last one is ALAND region (1527 km<sup>2</sup>) producing 0,01% of EU15's GDP.

Looking at the **GDP per capita** in the EU15 average we can see that there are **30** really developed regions out of 84 (whose GDP per capita is over 125% of EU average). The first is **Inner London** (305,79%, i.e. its GDP per capita is more than three times higher than EU 15 average), it is followed by **Brussels** and the third is **Luxemburg** whose GDP per capita is at least 200% of the average.

The Portuguese **Centro** is the last one, whose GDP per capita is just over 61% of the EU 15 average and thus it also belongs to the group of 15 regions whose GDP per capita do not reach even the average.

Taking all these into consideration **complex development analyses** were necessary resulting in a variety consisting of 25 regions. The zones determined on economic factors do not form a comprehensive whole in geographic sense in any of the cases, i.e. they are homogenous economically, but they do not form a territorial unit. Though it can be stated that economically developed territories are related to **capitals, former industrial centers, metropolises or ports** in every case. Cities like this are e.g. **Paris, London, Amsterdam, Stockholm, Milano, Frankfurt, Stuttgart** etc.

In Table 1 I try to present the major characteristics of both the geographic and economic varieties of zones.

Table 1. Blue banana

	Blue banana variations		
	Geographic		Economic
	Dicken	Cséfalvay	25 region
Number of regions	47	54	25
Share within the total GDP 2002 (%)	30,89%	33,98%	29,08%
GDP per capita average 2002 (%)	119,32%	117,16%	151,08%
Dual-index (2002)	4,2	4,2	2,92
Number of regions whose GDP per capita increased more than the average (1999-2002)	28	29	11
Number of countries	7	7	11
Territory examined	EU15	EU15	EU15

Source: own calculation based on EUROSTAT data 2005.

If we compare the different variations we can see that the **economic zone consists of fewer regions than the geographic ones**. The number of regions in the economic zone is half of that of the geographic one, however **their share in the total GDP is much higher**. If we calculate GDP per capita average in each group of regions we can see that **it is much higher in the economic zone than in the other ones**. This means that beside the developed regions in the geographic zone there are large number of regions lagging behind, which are members of the zone just because of geographic unity and not because of their economic development level in the period examined (1999-2002).

I have calculated **dual-index** also for the highest and lowest GDP per capita of each zone. It is clear that this index is much higher in the case of geographic zones than in the economic one. It also means that the geographic zone consists of less homogenous regions, so the **territorial inequalities are larger** in this zone (though we need to note that one of the objectives of regional policy is to moderate these inequalities). The index showing how many regions' **GDP per capita increased** more than the average between 1999-2002 reflects how many regions' dynamism was higher than that of the average GDP per capita. The data show that the regions lagging behind could not take over the more dynamic regions during the period examined.

*Based on the abovementioned we can see that I have managed to determine a zone based on economic factors with fewer regions than in the geographic one, but with greater economic significance. However I need to note that the economic zone is not a coherent territory in the European Union but examining long-term tendencies we hope that the regions lagging behind can catch up with the developed ones due to their vicinity. We hope that the development of richer regions, the appearance of innovation, the technological development and the settlement of services induce dynamic development in the economies of regions in the surrounding too.*

In order to justify the results of method applied I have done a main-component analysis for the same data with the help of **MINITAB-program** (HARNOS 1993). I wanted to show that in spite of subjective factors during giving points or weighing, I have selected the really developed regions into the economic zone of the EU, thus the majority of regions is common in the two different methods.

Table 2. The most developed regions selected by the two methods

Method on points (25)	Main component analysis (22)
Ile de France (FR)	Ile de France (FR)
Inner London (UK)	Inner London (UK)
Darmstadt (DE)	Darmstadt (DE)
Lombardia (IT)	Lombardia (IT)
Oberbayern (DE)	Oberbayern (DE)
Dánia	Dánia
Stuttgart (DE)	Stuttgart (DE)
Emilia-Romagna (IT)	Emilia-Romagna (IT)
Southern and Eastern (IR)	Southern and Eastern (IR)
Wien (AT)	Wien (AT)
Noord Holland (NL)	Noord Holland (NL)
Outer London (UK)	Outer London (UK)
Madrid (ES)	Madrid (ES)
Bruxelles (BE)	Bruxelles (BE)
Etela-Suomi (FIN)	Etela-Suomi (FIN)
Stockholm (SE)	Cataluna (ES)
ALAND (FIN)	Rhone-Alpes (FR)
Utrecht (NL)	Zuid Holland (NL)
North Eastern Scotland (UK)	Luxemburg
Gloucs., Wilts and Somerset (UK)	Greater Manchester (UK)
Surrey, East and West Sussex (UK)	West-Midlands (UK)
Bedfordshire and Hertfordshire (UK)	Veneto (IT)
Cheshire (UK)	
Berks., Bucks. and Oxfordshire (UK)	
Hamburg (DE)	

Source: own work 2005.

In this table I have marked with red colour those regions that were selected by both methods. *Since 60% of the regions were selected by both methods, I think that those 25 regions, I selected, can form the complex developed zone in the European Union.*

After these researches I also have examined other indices on employment. I was curious **what percent of people work in the region where their residence is and what percent commute to another region to work**. Based on the data it can be stated that **80-90%** of the employed people worked in the same region in 2002 which refers to the local concentration of economic activities. An exception is **Outer-London**, where **57,4% of the employed people work in the region and 42,6% commute** (probably to Inner-London).

The highest rate of locally employed people is in **Southern and Eastern Ireland**, where **99,8% of the employed people work in the region**, thus almost nobody commute to another region.

Examining the 25 regions we can see that in 2002 the share of people working in the **service sector** is over **50% in the case of every region, but rather between 60-80%**. There are regions, e.g. **Inner London**, where this rate reaches even **88,5%**. Due to the economic structure **the highest rate of industrial employment** was in **Stuttgartban**, where **41,7% of people employed worked in the industrial sector**. Concerning the role of agriculture in employment we can say that Finish **Etela-Suomi** region and Irish **Sothern and Eastern** region are at the first place with **5,5-5,5%**.

#### *Analyses on geographic and economic yellow banana*

During the definition of geographic yellow banana I have made my decision based on the maps of DICKEN and NEFEDOWA. So according to these maos and my opinion the geographic yellow banana is built up from **18 regions**. On the maps mentioned there are **three Austrian and one German region** mentioned as members of the yellow banana. The data for these regions are also included in my calculations.

#### **I have collected, calculated the following indices for the regions of newly acceded countries:**

- regions' territory (km<sup>2</sup>), 2001
- share of regions' territory within the total area (%), 2001
- regions' population (1000 people), 2000-2001
- share of regions within the new member states' population (%), 2000-2001
- population density (person/km<sup>2</sup>), 2000-2001
- regions' GDP (PPS), 1999-2002
- regions' share in total GDP (%), 1999-2002
- GDP per capita (PPS), 1999-2002
- GDP per capita in the % of member states' average (%), 1999-2002
- share of employed people within the active population (%), 1999-2002
- unemployment rate (%), 2002
- share of unemployed being unemployed for more than 12 months within the total unemployed people, (2002)
- number of people with university/college degree, 1000 people (2002)

Like for the EU 15 investigations I have compiled **ranks** for the new member states. I have compiled ranks for the first 10 regions based on the main indices. The ranks are of course not the same in the case of every index. However we can say that **4 regions are among the first ones in more cases**, but of course not in the same order. These regions are **Prague, Bratislavsky, Közép-Magyarország and Mazowieckie**. At this point it is connected to the opinion of GORZELAK saying that **Bratislavsky, Budapest and Prague** are the **core areas of Central-Eastern Europe**. The highest share within the total GDP is in **Mazowieckie** region from Poland with **9,26%**. The second is **Közép-Magyarország with 7,06%**, the third is **Slaskie** region from Poland with **6,23%**. **Prague** has also a share over 4% (4,6%). The lowest share is in a country which is one NUTS II region: **Malta** with 0,75%. The first 4 regions produce **27,15% of the total GDP produced in the 41 regions**.

Concerning the GDP per capita compared to the average of the regions of 10 new member states we can state that the first region with the highest GDP per capita is **Prague with 289,94%**. The second is **Bratislavsky with 227,16% and the third is Közép-Magyarország with 182,16%**.

The lowest GDP per capita is in a Polish region called **Lubuskie where the GDP per capita is 60,61% of the average of 41 regions**. It can also be stated that only 14 regions (30%) are over the average GDP per capita.

I have also applied **the method on points** for the determination of yellow banana. I have examined the same indices as in the case of the blue one with only one exception. I have compared the regions' data not to the EU15 average, but to the average of the new 41 regions (or in the case of the geographic zone I have made comparison to the 41 and the other German and Austrian regions together).

**Indices included in method on points on 41 NUTS II regions of newly acceded countries:**

- regions' share in GDP EU15 or ACC 10 (candidate/newly joined countries – Accession Countries) (%), 2002
- GDP per capita (PPS) in the average of EU15 (in the case of Austrian regions)/ or the average of ACC10 (%), 2002
- population density (person/km<sup>2</sup>), 2001
- share of employed people within the active population (%), 2002
- share of unemployed having been unemployed for more than 12 months within the total unemployed, 2002
- people with university/college degree (1000 people), 2002
- the difference between the GDP per capita in 2002 and 1999 (PPS)

I have given points and weights to the data to be able to determine the most developed regions. I have used the same weights as for the blue banana. I have used 1 for the GDP data, 0,75 for the employment and unemployment data and 0,5 for the population density. Maximum point was **22**. I have selected the regions whose points were over 50% (11 point) to be the possible members of the yellow banana. Out of those regions I have taken into account the regions located in Central-Eastern Europe, so I did not consider Cyprus. Thus I have got **10 regions**. The map of these 10 regions shows that they are located from NorthEast to SouthWest, but they **do not form a territorial unity**. These regions selected on economic basis are located East to the geographical zone.

During the definition of economic yellow banana I have examined **two varieties**. One variety includes regions from the new member states, i.e. economically more homogenous regions. The other includes three Austrian regions too, because experts often put Vienna and its surroundings into the yellow banana.

Table 3. Yellow banana **Yellow banana variations**

	Geographic	Economic	
		Without Austria	With Austria
		10 region	13 region
Number of regions	18	10	13
Regions' share in GDP 2002 (%)	46,34%	44,81%	50,50%
Average of GDP per capita 2002 (%)	129,79%	144,62%	138,26%
Dual-index 2002	3,67	3,87	4,38
Number of regions whose GDP per capita increased more than the average (1999-2002)	6	5	4
Number of countries	6	6	7
Territory examined	ACC10 + 3 AT + 1 DE	ACC10	ACC10+3AT

Source: own calculations based on EUROSTAT and KSH data 2005.

Table 3 shows clearly that the **dual-index** of geographic zone is lower than that of the economic zones, especially if we calculate with the Austrian regions too. It means that the difference between the regions is smaller in the geographical zone. This zone includes more homogenous regions but their economic significance is more moderate in total.

Based on the major indices I would recommend the variety with 10 regions because **the share within the total GDP** is not significantly higher in the other one. The average GDP per capita is much higher in the zone built up from fewer regions. So, in my opinion and based on the data for 2002, Vienna, Burgenland and Niederösterreich regions should not be included in yellow banana because they only increase the differences between the regions. The number of regions where the GDP per capita has increased more than the average between 1999 and 2002 is almost the same in all the zones.

In the case of the geographic variety it is not really shown that I have included the three developed Austrian regions into my calculations. They could not even improve the average. Although after having selected the developed regions from the new member states and I added the Austrian regions, the advanced economic importance of the zone could be clearly observed. At the same time the difference between the regions has increased significantly. If we look at the countries of the 10 regions selected we can see that only 6 countries are represented. The Czech Republic and Poland give three regions.

I have done main-component analysis for the yellow banana too to see if I have selected the right regions into the developed zone of the new member states.

Table 4. The most developed regions based on the two methods

Method on points (10)	Main component analysis (13)
<b>Praha (CZ)</b>	<b>Praha (CZ)</b>
<b>Severovýchod (CZ)</b>	<b>Severovýchod (CZ)</b>
<b>Jihovýchod (CZ)</b>	<b>Jihovýchod (CZ)</b>
<b>Lietuva</b>	<b>Lietuva</b>
<b>Közép-Magyarország (HU)</b>	<b>Közép-Magyarország (HU)</b>
<b>Mazowieckie (PL)</b>	<b>Mazowieckie (PL)</b>
<b>Slaskie (PL)</b>	<b>Slaskie (PL)</b>
<b>Slovenija</b>	<b>Slovenija</b>
<b>Bratislavsky (SK)</b>	<b>Bratislavsky (SK)</b>
Malopolskie (PL)	Stredni Cechy (CZ)
	Jihozápad (CZ)
	Nyugat-Dunántúl (HU)
	Közép-Dunántúl (HU)

Source: own work 2005.

The number of regions selected by both regions is 9, so 90% of the regions selected by the first method is selected by the second methods.

I have examined **the proportions of people working in the region where their residence is and of people who commute to work to another region**. In general we can state that the share of people who work in the region where their residence is **90%**. The highest share is in **Közép-Magyarország**, where **98,6%** of employed people work in the region and only **1,4%** commute. It is followed by **Bratislavsky** with **98,2% and 1,8%**, and the third is **Prague** with **97,3% and 2,7%**. These shares refer to the fact that regions including the capitals play really central role in their countries.

The role of **agriculture** in employment is the highest (**23,7%-os**) in the Polish region, **Malopolskie**, where the role of **service sector** is the least (**49,3%**) among the regions. The share of people employed in **industry** is the highest (46,3%) in the Czech region **Severovychod**, but it is over **40%** in another Czech region (**Jihovychod**). The share of people employed in **service sector** is the highest in **Prague (78,2%)**, and it is almost the same in **Közép-Magyarország, with 71,9%**. It is only a little difference if we think of the fact that Prague, the capital, is a region itself, while – beside the capital – **Közép-Magyarország** includes Pest county too.

*Since the results of the two methods have a lot in common concerning the selected regions, in my opinion the zones defined in my dissertation may mean the complex developed zones (blue and yellow banana) in the Union and the new member states.*

*In my dissertation I have used the expression „banana” for the developed zones, but the results of my research refer to the fact that these regions are not next to each other, so they do not form a shape of a banana. So I recommend to modify the term used for the developed zones to a term which reflects better the territorial location of regions.*

### 3. NEW SCIENTIFIC FINDINGS

During my research I have intended to apply several economic indices and methods which could help to prove my hypotheses. Based on these indices I have tried to use economic approach in the determination of development zones. Thus I could list up these new scientific results and findings:

1. I have done the **NUTS II regional determination of geographic zones and I have distinguished two development zones in close relationships. Due to this determination there is opportunity for the exact economic examination of these geographical zones.**
2. I have determined **new economic development zones with the help of several economic data and two methods. These zones show significant differences compared to the zones found in earlier publications.** Thus instead of the former blue banana determinations with **47 or 54 NUTS II regions I have found a zone built up from 25 NUTS II regions.** Beside this, instead of a yellow banana with **18 regions, I have determined an economic zone of 10 NUTS II regions.**
3. As a result of my research it can be stated that the **economic zones, determined by me, belong to more countries than the former ones, but consist of fewer regions and play more serious economic role in Europe.**
4. **Geographic zones include NUTS II regions that should react on the inducing effects of more developed regions more actively.** With my examinations I have proved that **the economic driving forces of developed regions cannot be observed, but the continuous increase of dual-index shows the increase in territorial differences.** Thus I can state that **it is impossible to build up development zones in the European Union which are unities from both geographical and economic point of views.**
5. Based on my research I could state that **the structure of economic development is not uniform even within the NUTS II regions.** Those NUTS II regions can be considered developed in the zones of EU 15 and the new members, where a development center can be found (capital, metropolis, port etc.). These centers generate **such labour-force migration** in the given region or in the surrounding regions which have great influence on the development opportunities of the surrounding NUTS II regions. Based on all this I can state that the **attractive feature of centers causes the stagnation or increase in the economic differences.** So in these regions I recommend to review the long-term priorities of spatial development.
6. Based on my research I can state that the regions next to the developed ones must follow the **demand-oriented (focusing on internal and local resources) strategy** in regional development, since the supply-oriented strategies do not create the basis for moderating the inequalities between regions.

#### 4. CONSEQUENCES AND RECOMMENDATIONS

1. In my research I tried to determine the most developed regions of the European Union and Western-Europe. **As a consequence I can state that simple ranks do not show real picture of levels of development.** It is the case because economic development and competitiveness are complex and comprehensive terms themselves and there is still no agreement on the methods applicable. **Complex, multidimensional examinations can lead us to the right result.**
2. On the basis of the rank on **GDP per capita** and the geographical location of leading regions we can say that though the group of the most developed regions has modified in the last 50 years but it did not changed fundamentally. While in **1950 almost the total area of United Kingdom** belonged to the most developed regions, by **2002** it has changed very much, and only **London and its agglomeration and Northern-Scotia** belong to the group. **Northern France territories** have lost their importance, though there are areas that have kept their advantageous positions. These areas like **Northern-Italian regions, the region fo Paris, London and its surrounding, some regions of Benelux-states and Denmark.** We can find „new” territories emerging, and they are successfully catching up due to their dynamic development. These territories are e.g. **Madrid and its surrounding and Southern part of Ireland.**
3. Only the Western-European zone created in 1950s can be considered a whole. For the period since 50s can be stated that the **territorial inequalities between regions have gradually increased,** and only those regions have kept their leading positions where the industry has settled. If we look at the map of 2002 we can see that the really developed regions are quite far from each other geographically.
4. Since the developed regions are usually linked to great cities, capitals and ports, thus the long-term objective of regional policy (*decreasing the demographic pressure on the overpopulated cities*) is really justified. I recommend to pay continuous attention to the negative consequences of exaggerated development and to make steps to moderate them.
5. At the same time the strategic guidelines of rural policy should be thought over, since *keeping the population in the rural areas and providing them alternative income sources* are expected to be realized hard and hard in the future. Furthermore, strategies should be made which could treat the tendencies in special MARKOV-chains.
6. We need exact **balances of labour migration** to follow the direction and intensity of migration on which we need to define the employment creation and unemployment reducing strategies.
7. Based on my research it can be stated that the development of regions with capital-, port-centers is expected to increase further, while the other regions will hardly be able to follow this development pace. Consequently, the long-term objective of regional policy saying that *the differences between regions must be moderated* imposes especially difficult tasks on the future's structural policy.
8. Based on all this, I can state that the directions and priorities of economic development strategies must be reevaluated and the supporting policy of **Structural Funds** must be reviewed.

9. Analyses are necessary to examine if **Vienna** can be called the coordinator of Eastern development zone or a bridge between the blue and yellow banana.
10. While forming the economic development strategies the Union's plans on infrastructural developments must be taken into account, with **Helsinki-corridors** they can help the new member states to catch up with the former ones and to moderate the inequalities between these territories.

## SUMMARY

I have chosen the **topic** of my dissertation primarily based on my studies in regional economics and regional policy. But as choosing the topic I must not have forgotten all the preparations from both sides made in order that Hungary could join the European Union. I managed to determine the concrete topic when having studied several regional publications I have found an exciting area which has been only skimmed before. This topic is *the creation and application of economic development strategies in development zones which can be considered quite homogenous*.

Since this approach towards economic development exists in all the well-industrialized powers of the world, I needed to mark a smaller area, an integration to focus my attention on. Since the presentation of the creation of economic development strategies would have been an enormous work if I had done it for the whole world, so I considered the **European Union** as the primary objective of my research, but I have extended my work to the **accession countries**.

It is well known that a development strategy, a development zone has its **own characteristics**. The geographical characteristics, the economic and the human qualities are different. Therefore, detailed strategic examinations must be carried out on specific areas. Beside this, certain general conclusions can also be drawn from the conscious spatial development actions which can be applied in other cases also, thus can be helpful for the experts in working out long-term strategies. We need to notice that not only the **natural and economic environment** are different in the different areas, but the **historical and political background too**. Every strategy must only be evaluated in its period of creation, with the historical and political background. Certain factors must not be picked out with ignoring the abovementioned. These considerations were the ones that I have kept in mind during the compilation of the dissertation.

Firstly I have provided a **historical review** on the changes in the spatial structure of Europe, on the date of the appearance of a conscious spatial policy, on the actions to change the spatial structure, on the areas in Europe whose development has great influence on the European future.

Since my attention primarily focused on the regional processes I considered necessary to present how the **legal background** of the regional policy has been changing, touching the need for reforms and conclusions. I have briefly touched the **aims, objectives, instruments of regional policy**, and all the **structural funds** that are available for the realization of objectives. I have also mentioned the structure and the areas of application of spatial administration system of **NUTS**.

To be able to understand the creation of development strategies I considered necessary to list up the different **development theories** and the related critics. It is true for these theories that they must not be picked out from the historical time of their appearance.

The theories reflect the economic processes of given periods well, but at the same time they were determined with the involvement of increasing number of factors and due to this they can be helpful for today's experts.

To be able to understand the regional policy decisions made in the Union we need to know the main direction that is written down in documents like **EUROPE 2000 and later in EUROPE 2000+ and in the European Spatial Development Prospective**. The former ones referred to the period before 1999, the latter referred to the period 2000-2006. These documents include the objectives and the directions which eyes are kept on in the European integration, and to which we need to adapt as being the member of its. EUROPE 2000 and 2000+ have included those development zones on which I have also focused during the compilation of my thesis.

If we would like to develop a **development strategy** for a region, we need to make an evaluation on the situation. To be able to see clearly the level of development and competitiveness of a region to measure these factors. However, it is not an easy and clear task since the business relations over the regions' borders and the companies with several branches in different regions make the „clear” measurability difficult. Since this problem is quite complicated, there is still not a consensus on one single indicator that can reflect **the economic development and competitiveness**. Thus the **GDP per capita** is applied for measuring the abovementioned factors.

In my research, beside GDP per capita, I have listed up other economic-social indicators too (though it was not easy since there are only few data at NUTS II. regional levels even in the European Union), because I wanted to show the development levels of the regions from several points of views.

In the next step out of the 213 Union regions I tried to indicate the regions that belong to the „**blue banana**” for which many researchers had quoted in their maps, but their regional definition has not done by anyone before. Paralelly I have presented such zones that only include developed regions from both economic and social aspects. I have carried out the same research concerning the 41 regions of the 10 new members and I have presented a zone in Central-Eastern-Europe called „yellow banana”.

**As a consequence** it can be drawn that the economic performance of geographically sound zones are important as a whole, but if we look at the performances per region, it is not so high, because many regions – being also members of the zones – and neighbouring the developed ones do not have high development potentials. The regions showing complex development based on the indicators do not form one territorial zone neither in the EU 15 nor in the 10 new members. The zones formed in two ways have only little territory in common.

*Therefore, our long-term objective is to moderate the inequalities between the regions with the help of aimed, specific economic development strategies in a way that the regions lagging behind catch up with the developed ones. And to enable that all the regions – currently included in the geographical zones – may dinamically develop and may be looked at as the driving forces and the greatly important territories of the European Union.*

## Publications published during the doctoral studies of the candidate

### a) Scientific articles

#### *Published in foreign language*

1. **Henrietta Nagy** – M. Malomsoki: Applying mathematical and statistical methods in territorial analysis. 9th Congress of Polish Association of Economists of Agriculture and Agribusiness, Bydgoszcz, Lengyelország 2002. Roczniki Naukowe, Volume 5, No. 3. ISSN 1508-3535 p. 151-154
2. **Henrietta Nagy** – L. Villányi –T. Tóth – B. Péter: Integration on branded beef product line. 9th Congress of Polish Association of Economists of Agriculture and Agribusiness, Bydgoszcz, Lengyelország 2002. Roczniki Naukowe, Volume 5, No. 3. ISSN 1508-3535 p. 216-220
3. **Henrietta Nagy** – J- Káposzta: A new challenge to be faced: Regional inequalities. Bulletin of Szent István University, 2003., ISSN 1586-4502, p.163-173
4. **Henrietta Nagy** – J. Káposzta: The role of multifunctional environmental policy in the agricultural development. 10th Congress of Polish Association of Economists of Agriculture and Agribusiness, Kosalin, Lengyelország 2003. Annals of the Polish Association of Agricultural and Agribusiness Economists Volume 5, No. 6, ISSN 1508-3535 p. 28-34

#### *Published in Hungarian*

1. **Nagy Henrietta** – Káposzta J: A mezőgazdaság fejlesztési lehetőségei megyei vizsgálatok alapján, tudományos cikk, Gazdálkodás 47. évfolyam, 4. szám, 2005. ISSN 0046-5518

### b) Lectures at scientific conferences published in proceedings

#### **In foreign language**

1. **Henrietta Nagy**: Examining the economic spatial structure and its inherence concerning the regions in Hungary. VIII. Nemzetközi Agrárökonómiai Tudományos Napok, Gyöngyös, 2002., p. 13-18, A mezőgazdasági termelés és erőforrás hasznosítás ökonómiája, ISBN 963 9256 75 7 Ö, ISBN 963 9256 88 9
2. **Henrietta Nagy**: The task of a few elements of regional strategies (innovation zones, networks, clusters) in the regional development of the Union and Hungary, VIII. Nemzetközi Agrárökonómiai Tudományos Napok, Gyöngyös, 2002. p. 19-22, A mezőgazdasági termelés és erőforrás hasznosítás ökonómiája, ISBN 963 9256 75 7 Ö, ISBN 963 9256 88 9
3. **Henrietta Nagy** – L. Szabó – K. Surányi Tóthné: The examination of potassium-fractions in a few Hungarian grape growing areas. (4th International Scientific Conference, Foreign Substances in the environment, 2002. szeptember 12, Nyitra) (ISBN 80-8069-065-0) pp.194-199
4. **Henrietta Nagy**: Problems and questions in the Hungarian regional policy. MendelNet 2002/3 ISBN 80-7302-045-9, ISBN 80-7302-046-7 p. 213-219 Brno, 2003.

5. **Henrietta Nagy:** The role of small- and medium sized enterprises in the regional processes. Agrárgazdaság, vidékfejlesztés és agrárinformatika az évezred küszöbén nemzetközi konferencia, Debrecen. 2003. konferencia kiadvány (CD ROM)
6. **Henrietta Nagy:** Multifunctionality in the agriculture and in the rural development. Nemzetközi Agrárökonómiai Tudományos Napok, Gyöngyös 2004. márc. 25-26. (CD-ROM Konferencia\_2004, ISBN 963 214 313 2)
7. **Henrietta Nagy – A. Lukács – Cs. Fogarassy – A. Boday:** Externalities and market failures in the waste management – connection with the different waste management charges. Waste – The Social Context Conference, Edmonton, Alberta, Kanada 2005. május 11-14. (megjelenés alatt)

### **In Hungarian**

1. **Nagy Henrietta:** Innovációs zónák, klaszterek szerepe a regionális fejlesztésben, előadás, Szent István Egyetemi Napok, Gödöllő, 2001. „Helyünk a Régiók Európájában” tudományos konferencia (ISBN 963 9256 87 0)
2. **Nagy Henrietta:** Regionális versenyképesség. IX. Ifjúsági Tudományos Fórum, Keszthely. 2003. CD ROM\Agrargazdasagtan\_regionalis\_politika\508.pdf
3. **Nagy Henrietta:** Pénzügyi források Magyarország területfejlesztésére. „Gazdálkodók esélyei az Európai Unióban”, Európa-napi konferencia, Mosonmagyaróvár, 2003. CD ROM/Nagy Henrietta.pdf

### **c) Books and parts of books**

- Nagy Henrietta:** A Közösségi marketing lehetőségei, Agrárinformációs kézikönyv, 55-59. o, szerk.: Vasa László, könyvrészlet, 2002. Pest Megyei Vállalkozásfejlesztési Alapítvány (ISBN 963 206 076 8)
- Nagy Henrietta:** A védjegyekről, Agrárinformációs kézikönyv 61-71. o, szerk.: Vasa László, könyvrészlet 2002. Pest Megyei Vállalkozásfejlesztési Alapítvány (ISBN 963 206 076 8)

### **d) Other publications published or other electronical publications**

#### **Booklets, parts of booklets**

##### **In Hungarian**

1. **Nagy Henrietta:** Agrárgazdaságtani praktikum II. szerk: Dr. Fogarassy Csaba, egyetemi jegyzet, SZIE-GTK, Gödöllő, 2001.
2. **Nagy Henrietta:** Mezőgazdasági vállalkozások gazdasági környezete. SZIE GTK Gödöllő. 2003.
3. **Nagy Henrietta:** Regionális gazdaságfejlesztés jegyzetrészlet (szerk: Tóth Tamás), SZIE GTK Gödöllő. 2002.
4. **Nagy Henrietta:** Az EU Közös Agrárpolitikája és rendtartásai fejezet, In Agrárgazdaságtani alapismeretek jegyzet (szerk: Dr. Fogarassy Csaba), SZIE MKK Gödöllő. 2003

## Research reports

1. **Nagy Henrietta:** Zöldség és gyümölcs árszerkezete fejezet, In Egyes élelmiszeripari termékek vertikális költség-, ár-, jövedelem- viszonyainak vizsgálata; (szerk. Dr. Villányi László), Szent István Egyetem Agrár- és Regionális Gazdaságtani Intézet, 2002.
2. **Nagy Henrietta** – Fogarassy Cs. - Káposzta J et al: FVM K+F 34133/2003 Alternatív gazdálkodási stratégiák közgazdasági vizsgálata, SZIE ARG I APT, REGAT, Gödöllő 2003.
3. **Nagy Henrietta** – Fogarassy Cs.: Az alternatív földhasználat hatása a globalizációval kapcsolatos externáliák modellezésére. Részjelentés – OTKA – F 042611 – 2002/2006 SZIE ARG I APT, Gödöllő 2004.