

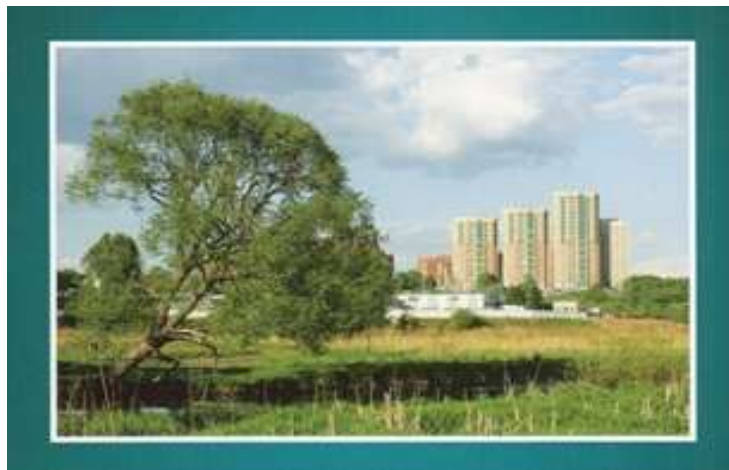
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WD-55-07-1

Regional disparities in regional development of the Czech Republic

– their occurrence, identification and elimination



Alois Kutscherauer at al.

REGIONAL DISPARITIES

**Disparities in country regional development - concept,
theory, identification and assessment**

(Shortened English version)

Ostrava 2010

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Chapter 1

Introduction

The monograph presents results of research project WD-55-07-1 Regional disparities in the territorial development of the Czech Republic tackled within the period 2007 to 2010 under research programme of Ministry for Local Development of the Czech Republic WD – research for regional disparities solution needs.

Besides the theory and methodology of disparities, the monograph includes also their classification, searching and assessment principles, disparities information integration and methods of their comprehensive assessment by integrated indicators and model regions. The suggested searching and assessment system of regional disparities in the Czech Republic and their calculation methods are verified by many cases proving their practical use.

The problems of concept and approach to regional disparities in neighbouring Central European countries and comparison of disparities development in Visegrad Four countries and in Austria forms rather autonomous part.

The monograph is thereby devoted not only to theoreticians, university sites and university students studying regional economy but also to general technical and professional public, namely to staff of state authorities and regional offices engaging in regional policy or regional development and to technical managers of cities with technical departments or staff specialised in regional problems.

The monograph is divided into eleven chapters.

The second and third chapter following the first introduction chapter are focused on theory and methodology of disparities, their information value, research aspects and their attributes.

Chapters four and five contain classification and identification of regional disparities. There is suggested searching and assessment system of regional disparities in the Czech Republic, defined three spheres of disparities – social, economic and territorial ones and they are decomposed to the level of primary and secondary indicators.

The Chapter six brings some user views on exploiting examined regional disparities information. There is proposed fourteen integrated indicators and seven model regions as a system superstructure over the basic set of monitored indicators.

The Chapter seven deals with instruments for regional disparities development influencing in accordance with main development paradigms and instruments usable for regional disparities development influencing by regional management, namely by using regional disparities information in elaborating strategic and programme documents.

The Chapter eight deals with regional disparities measuring and assessing. There are provided calculation and assessment methods used in the Czech Republic and abroad. Methods usable by regional practice and usable by general users are developed in more details, thanks to their user-friendliness and good informative ability.

In chapters nine and ten, the is attention paid to approaches and concept of disparities in European Union and neighbouring Central European countries. They deal with regional disparities concept within the policy of economic and social cohesion of European Union and also with possibilities of using Eurostat regional statistics. There is also analysed and compared regional disparities development in Visegrad Four countries and in Austria.

Research findings and conclusions are summarised in Chapter eleven.

Regional disparities finding resulting from disparities theory including regional disparities monitoring and assessment system brought up to evidence of their practical usability have not been yet published in the Czech Republic or European Union countries as a one complex and that's why the monograph composite authors are persuaded that this publication will be beneficial and will find many readers.

CHAPTER 2

THEORY AND METHODOLOGY OF DISPARITIES

The term of **disparity** is very frequent term in the last ten years. It comes from Latin *disparitas*, and this means *divided*.

There exist a lot of definitions of terms of disparity and regional disparity in theoretical literature but also in encyclopaedias and explanatory dictionaries. In encyclopaedias we can find mostly nearly the same general characteristics of this term, in technical literature the disparity is usually of territorial dimension or is objectively applied according to needs of given branch.

2.1 Disparities terminology and definition

Imagine several general definitions of the term of disparity:

Large explanatory dictionary:

Disparity = *inequality or disproportion of different phenomena*

The Free Dictionary:

Disparity:

1. *The condition or fact of being unequal, as in age, rank, or degree; difference: "narrow the economic disparities among regions and industries" (Courtenay Slater).*

2. *Unlikeness; incongruity.*

The American Heritage® Dictionary:

Disparity:

1. *inequality or difference, as in age, rank, wages, etc.*

2. *dissimilarity*

Regional disparities by ILO:

Regional disparities – *differences between economic performance and welfare between countries or regions.*

Definition by OECD (OECD 2002, 2003):

Regional (spatial) disparities *express the scope of difference of intensity manifestation of economic phenomena under investigation observed within regions of given country.*

Territorial disparity indicates the scope the intensity of given economic phenomena differs to between regions within given country.

The OECD definitions are significantly limited in focusing only on economic phenomena and concentrating to regional disparities only inside countries.

Definitions we can find in theoretical technical and professional literature :

Regional disparities by Karin Vorauer (2007):

Under „Regional disparities we understand deviations from any conceptional reference division of characters taken as relevant, in association with different spatial benchmark levels (region borders)“.

„Regional disparity means unbalanced spatial structures in some region or in different regions“.

„Regional disparities are manifested in different conditions of life as well as in unequal economic and development potential. Contrast between city and rural area can be also understood as a form of spatial disparity“.

The Molle (2007) approach significantly contributes to objective concept of regional disparities. He says that the key question the policies of European Union come from is the question of cohesion (coherence) and a lack of cohesion is measured by disparities size.

Cohesion development in time and by this also answering the basic policy question is : has been cohesion improved or worsened ? It is usually measured by disparities development in living level in member countries, social groups and regions. Two questions should be answered :

- What type of regions is bad off in comparison with EU average or is misconducting from convergence point of view and where a political intervention is necessary thereby?
- Does the system lead up to convergence, and that's why is it possible to focus the policy on natural tendencies support, or does the system lead up to divergence and politicians give very heavy fighting?

An objective explanation of the term of disparity is also presented by GaREP on internet pages „Regional development methodical support“ (GaREP, 2009):

Ministry for Local Development of the Czech Republic determines regional disparities as „groundless regional differences in the level of economic, social and environmental development of regions“. Disparities to be dealt with are „differences evoked by subjective human performance and not differences resulted from objective reasons, e.g. based on natural conditions“.

Disparities as a phenomenon that is one of basis of human knowledge must be defined as in general level so in concrete application level.

Terms of **disparity** and **regional disparity** defined by us:

Disparity is *divergence or inequality of characters, phenomena or processes, the identification and comparison of which make some rational sense (cognitive, psychological, social, economic, political, etc.).*

Regional disparity *means divergence or inequality of characters, phenomena or processes having specific territorial allocation (can be allocated in defined territorial structure) and occurring at least in two entities of the territorial structure.*

We do not accept above-mentioned ad hoc concept of regional disparities and we work with the concept of regional disparity within neutral general characteristics of disparity with it that the given phenomena can be studied in different space levels (region boundaries).

To get disparity as unsubstantiated or unreasoning differentiation we should define such justness or unsubstantiality in more details and this is very complicated as this a priori suggest following disparity development influencing towards convergence.

The problem of differentiation justness or unsubstantiality is not mentioned in any available literature. We start from it that differences or inequalities, between regions in our case, do exist and result from different reasons. It will be never possible or reasonable to minimize some of them, and on the other side there will exist unfavourable differences or inequalities that should be affected towards their reduction.

2.2 Disparities philosophic and system basis

By the dictionary the disparity is an inequality or difference. Usually it concerns inequality or difference as a result of society development tendency and this is a high level of its variability resulting in development inequality. Thus, the social subjects and their parts, or phenomena and processes running within them are unequally developed and this results in their inequality or difference, i.e., among these subjects or their parts are developing disparities.

Our philosophic base is to accept disparity as a phenomena the searching and assessment of which make rational sense. We concentrate our interest to complicated social subjects functioning under given social and economic conditions. The development of these subjects runs in time and space and is unequal.

To take disparities as a manifestation of complicated social subjects demands to leave single approaches and to see problems of disparities as a complicated problem demanding to accept multidimensional approach to its studying.

Such approach means, above all, holistic (system) view on research subject. That's why is needed to enlarge research to other dimension, i.e. social, territorial, political and administrative, institutional, landscape-environmental, civilisation-infrastructure, social-area ones, etc. (Gajdoš 2006) instead of traditional approaches based on one prevailing dimension – economic dimension. Such approach accept, though mostly implicitly, also authors like (Molle 2007), (Nijkamp 2007), (Wishlade, Yuill 1997) and others.

Multidimensionality and holistic character of regional differentiation problems searching concern namely identification of their factors and determinants and diagnosing their content and scope.

Above mentioned system basis (multidimensionality, integrity, multidisciplinary) result in necessity to use plural research methodologies by using different research methods and techniques. By Gajdoš (2006), this concerns combined research methods and techniques, it means, when mostly quantitative methods examining by grouping data from different branches of science when classifying and looking for coherences and comparisons of different regions or by using multidimensional statistic analyses will be supplemented by qualitative methods, such like expert methods, content analyses of regional and local press or secondary analyses of selected researches in the field of regional problems .

A significant system base of regional disparities problems is to use regional disparities measurement results in the future in regional or municipal management. The regional and municipal policy traditional approach takes disparities mostly as negative ones and is focused on regional disparities reduction. Impacts and results of such approach have been in long term unclear. That's why Viturka (2007) suggests to accept approach based on increasing so called regional competitiveness stimulating positive effects diffusion as a main tool for regional disparities reducing. This results in quite another regional disparities measurement concept. The author proposes to measure entrepreneurial environment quality and thereby conform indicators

selection. It is possible, in association with it, to identify **groundless** differences based on comparing theoretically appropriate and real values of entrepreneurial environment.

The Aydalot (1985) approach to disparities is another, he says that disparity is a deviation from standard. But what standard to choose? The author rejects identity standard. If we will choose equality, we must say what unit or what indicator to take for equality assessing. What implicit reference to choose? And in general, is the equality a goal that can be confronted with the whole community? What equality will it concern? There is suggested an identity of incomes per inhabitant, incomes equality per active inhabitant, identity of ways of live and many others (Aydalot, 1985).

2.3 Disparities character

There are two basic reasons why we want to identify relevant characters of subjects as bearers of given properties, to compare each others and to examine them as an subject of our knowledge, our activity or our interest.

The first reason is a need to identify and to examine differences in subject relevant characters, generally it is finding what different subjects are, within defined (given) set of – states, countries, regions, municipalities, enterprises, etc., behind in and what is an impact on their changes, namely system changes in structure and behaviour. Generally this is so dominant approach that finding the **negative** characters is often said to be a **disparity approach**.

The second, less frequent reason up to now, is examining difference of subjects (their relevant characters), leading to understanding their uniqueness, capability to differ specifically and efficiently from other subjects under examination and also e.g. to their comparative advantages efficient use. It means capability to play certain **positive** role (generally in defined set of subjects, specifically in community of countries, regions, municipalities, etc.).

The two different views result in distinguishing disparities as **negative and positive** ones. At the same time it is possible to accept an analogy with two aspects, usually used in regional analyses, they are weaknesses and strengths of some object under examination. Negative regional disparities can be thereby taken as weaknesses and positive regional disparities as strengths.

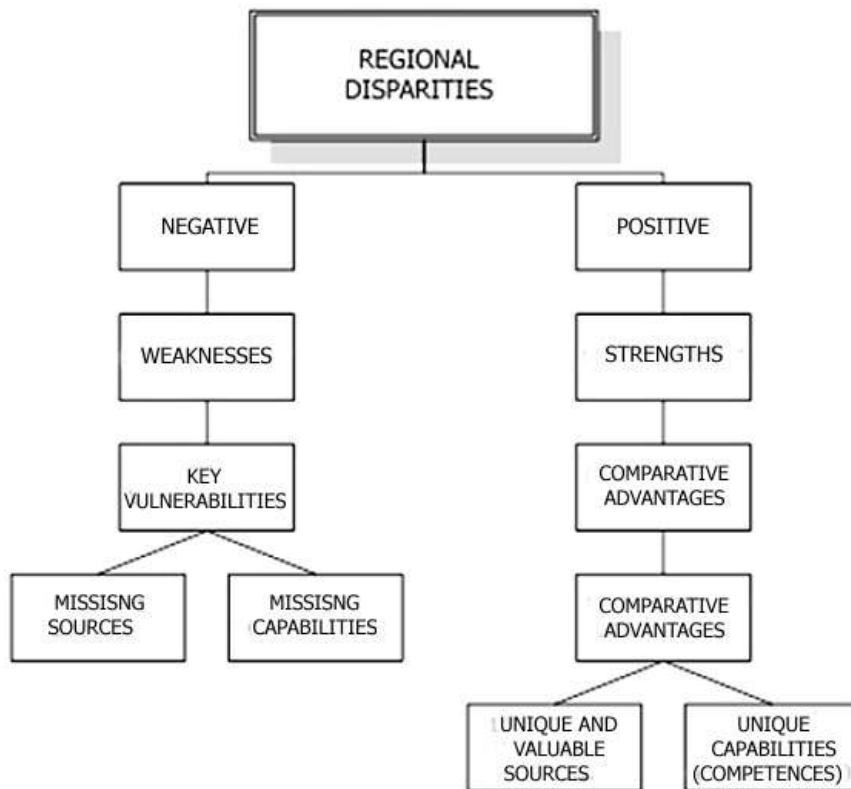
Weaknesses can usually result in key vulnerability of examined object generally consisting in missing sources and missing capabilities (competences) how to make use of available sources.

Strengths usually result in comparative or competitive advantage of examined object generally consisting in unique and valuable sources¹ and unique capabilities (competences) to make use of these sources.

Above considerations can be seen on Figure 2.1.

¹ Sources are usually broken up to natural, human, capital, physical infrastructure, administration infrastructure, information infrastructure, research infrastructure, etc.

Figure 2.1: Negative and positive regional disparities



Source: own work

The regional policy taken in this sense tries to reduce disparities in territory of interest (political equalizing goal) and at the same time to make efficient use of diversified space development potential (growth goal).

Though from long-term view are both goals rather in conflict, from short-term view we can recognize that relation between both goals can be complementary, i.e. supporting economically weak regions contributes at the same time to strengthening general economic growth.

All regions are assessed from effects view as potentially equivalent ones (it means there are not distinguished growing regions and regions with less significant growth) and it is based on it that all territories have, relating to their size and conditions, similar development chances and react similarly to subsidiary means.

2.4 Information value of disparities

For choosing an approach to identification, disparities grouping and assessment is dominant to what degree they bring to information user new knowledge and how can be this knowledge used, i.e. what is information value of found and assessed disparities.

Actual disparities information can be for recipient (user) of below information value :

- ***recognition*** - information increasing user knowledge level,
- ***decision*** - information developing basis for decision making for user,

- ***motivation*** - information motivating user to some concrete activity,
- ***operation*** - information providing user impulse for operative performance.

Information recognition value of disparities

Information recognition value of disparities consists in informing user about wider context of relevant characters of examined subject, in increasing knowledge level of information user without any concrete requirements for how to make any other direct use of information.

In social practice, it can concern e.g. comparing countries and their grouping or differences in development of different parts of the world without any ambitions for direct intervention into the development, etc.

Increasing the knowledge level is the most often reason why various disparities are analysed and assessed.

Information decision value of disparities

Information decision value of disparities consists in it that evaluating changes in relevant characters of subjects under examination and anticipating their desired development in the future conduce information recipient to make decision.

The most often it relates to basis for regional strategies and programmes setting, regions identification for setting concentrated state support to problem regions but it can also relate to e.g. identification of subjects for long-term partnership or principal decision relating to investment allocation.

Providing information for decision making is the second the most often reason for disparities analysing and assessment.

Information motivation value of disparities

Occurred disparities information can establish grounds stimulating information recipient, based on changes in relevant characters of examined subject, to some activity, motivate recipient to certain line of action.

Frequent goals of examining and evaluating disparities relating to their motivation effects can be:

- searching localities for high quality life and living,
- searching territories for development investments allocation,
- searching and developing tourist attractions, etc.

This form of information use usually does not result in regulatory intervention but results in principle in developing certain behaviour of subject (information user), evoking some activities usually with long-term effects.

Information operation value of disparities

Information operation value of disparities can be got in the sense that the character of changes in relevant attributes of examined subjects arouses immediate discussion or elicit reaction to actual or changing conditions.

As examples of regional disparities operation value can be used:

- changing conditions and subjects common relations in financial markets,
- routine government interventions into private sector,
- population migration *jump* growth from or to given region,
- increasing appearance of social pathology and racism.

The form of developed disparities information use will result, in principle, in operative intervention aimed ad hoc at actual situation anticipating immediate result of this intervention.

When using searched and assessed disparities of examined subjects, we can never forget that the borderline between different forms of their use is not clear and the ways of use can coincide with.

Different information value of assessed disparities is not presented by quite different indicators but it relates rather to assessment context – by subject-matter, time, size, risks size, etc.

2.5 Information value of regional disparities

Above mentioned generally formulated theory of disparities information value we apply to searching and assessing disparities between regions and to ways of their use in regional management practice.

What can be information value on disparities between CR regions for users?

We can also describe a benefit from received regional disparities information for regional management at four levels:

- ***At recognition level***

Gathered and assessed information of regional disparities increases the general level of regional management (and also technical, scientific and general public) knowledge of region and its position towards other regions, of differences between region subjects (businessmen, households), their performance, structure, activities.

What is the total level of the region and what conditions for people life does it offer from social, economic and environmental aspects, what can be expected to be offered them in the future and what is region position in such defined parameters in comparison with other Czech regions or with EU countries regions, this is what it will generally concern.

Prevailing regional disparities information use consists at present just in it.

- ***At decision level***

Identified, assessed and ad hoc grouped disparities information form the base for decision making for regional management and also for other users. Generally it concerns long-term strategic or middle-term programme decision making by regional

management. The way to use it looks to be the most significant aspect of disparities recognition between regions.

All relevant disparities of crucial importance for strategic or tactical decision making must be included here. E.g. central decision making relating to regions, cohesion regions, regions in problems, etc. , regional decision making relating to territorial units in the region – territories managed by municipalities with enlarged sphere of authority, districts, etc.

There is double user *position*. The first is not formalized, it relates to information necessary ad hoc for decision-making - by government, ministries, regional councils, etc. It is not easy to find a form of sufficiently informative and adaptable data (reflecting sufficiently given situation or need). The general set of monitored and assessed information should evidently derive from simulated and probable model situations.

A little bit less complicated situation can be expected at second formalized level concerning disparities expression, the recognition of which is needed as a base for strategic and programme documents aiming, namely for their analyses and general orientation setting.

- ***At motivation level***

Regional disparities motivate user to actions generally having long-term effects (impacts) for user or user activities. It concerns finding information motivating information user to given positions, activities, behaviour.

The most often it may concern aiming user long-term activities at the region. For information user in the region the matter can be if to stay with his/her family in the region or to move out from it, if to undertake in the region or/and to develop more the business. For information user out of region the question could be if to move in the region, to continue his/her business there, to start up new business or, at least, to locate here his/her investments (if significant comparative advantages in comparison with other regions are offered to him/her).

- ***At operation level***

Regional disparities make user do some operative (immediate) activity, generally with the aim to reach some immediate effects in short-time horizon; but under certain conditions this effect can be even longer. Generally it will be reaction to immediate development of some events or processes running in the region in the other way then in other regions or not according to standards, etc.

They can be such events or processes, the diversity in development in different regions can play significant role for them: regional unequal immigration, jump growth in regional unemployment rate (e.g. because of dominant employers failure), actual explosive problems how to solve situation of inadaptable groups of population, etc.

Theoretically is this way how to use information reasonable and has to be included into the structure of disparities information use. But this presents quite a lot of difficulty. Since these are situations developing in real time and it is necessary to react to them immediately, a lot of question-marks remain there. Is it possible to define in advance indicators having character of disparities that would include the most situations that can

happen in the life of region or city? How to provide the information by what form? How to seek information users? Or, will it depend on users if they will ask such information (if they will know of it)?

2.6 Research aspects and attributes of regional disparities

Research aspects of regional disparities

Characteristics, development and forms of regional disparities closely depends on research aspects. There exist a lot of aspects of regional disparities research and that's why we can take disparities as multidimensional problem. Research aspects are not systematically and globally presented in any literature. Some authors indicate them rather symbolically.

Approaches of many authors are specifically focused on to lead directly to the selection of indicators the regional disparities will be measured by. Disparities measuring by sub- indicators is suppressed and approaches are usually focused on selected indicators of aggregated nature. Regional disparities cognitive aspect is accentuated only a little bit but the approach, when identified regional disparities are the basis for being accepted by politicians is accentuated a lot of.

The most authors used the subject-matter aspect in research according to which the most authors prefer to divide disparities to economic, social and territorial disparities (sometime also physical ones). This aspect will be enlarged under classification of regional disparities in the next chapter.

Some authors marginally mention three other aspects - time aspect, measurability aspect and territoriality aspect. The other possible research aspects like regional disparities controllability, the way how have regional disparities risen and their impacts, are not analysed in available theoretical sources.

Used research aspects are of great importance for identification and assessment of regional disparities. Aspects, according to which is possible and rational to examine regional disparities or to classify them, can be grouped into two groups:

- **aspects, demonstrated as attributes of polarity nature**, it means such attributes having only two qualitative different dimensions,
- **aspects, demonstrated as attributes specifying possibilities**, it means attributes with more dimension levels.

Attributes of regional disparities of polarity nature

Among attributes of polarity nature are included (see Tab. 2.1):

- regional disparities nature
- regional disparities factuality rate
- regional disparities complexity rate
- tendency of regional disparities change
- regional disparities controllability
- way the regional disparities have risen.

Table 2.1: Attributes of regional disparities of polarity nature

<i>Attribute</i>	<i>Polarities</i>	
RD nature	material	intangible (mental)
RD factuality rate	specificity	generality
RD complexity rate	partiality	integrity
tendency of RD change	divergence	convergence
RD controllability	noncontrollable	controllable
way the RD have risen	spontaneous	by human activity

Source: own work

The nature, complexity, change tendency and the way the regional disparities have risen are considered to be the key attributes.

Regional disparities nature

Regional disparities nature can get two polarity dimensions – material and intangible ones.

Regional disparities of material nature are disparities reflecting reality and they used to be associated with measurable indicators.

Measurable indicators can be both objective and subjective. Objective indicators are taken generally from statistics and they can represent e.g. income data, sickness rate, sick leave, population education level, number of cars, telephones, TV sets per thousand inhabitants, etc. Subjective indicators are generally taken from survey data.

Regional disparities of intangible nature are disparities reflected in people heads and they used to be associated with soft localization factors.

Among soft localization factors are included e.g. quality of environment, social quality of population, namely territory image, it means the reputation the given region enjoy. The territory image is demonstrated as outwards so also inwards. Outwards, the region reputation defines joint attitudes and behaviour of external subjects relating to given territory. Inwards is formulated inhabitants attitude to the region and how they perceive the region.

Regional disparities complexity rate

We will distinguish two dimensions as follow:

- **regional disparities partiality**, representing the level of partial view on regional disparities,
- **regional disparity integrity** , representing the level of integrated view on regional disparities.

Regional disparities changes tendencies

Regional disparities changes tendencies can gain following polar dimensions:

- **regional disparities convergence**, representing tendency in regional disparities development towards their minimizing, or elimination, leading to balanced state,
- **regional disparities divergence**, representing tendency in regional disparities development towards their deepening, enlarging unbalanced state.

Way the regional disparities have risen

It looks to be purposeful to distinguish two polarity dimensions of regional disparities rise :

- spontaneously rising (spontaneous) disparities,
- disparities resulting from human activity.

Among rising disparities are ranked namely disparities evoked by geographic or source asymmetrical shocks, like floods, windstorms, calamities, etc. are.

Among disparities generated by human activities are ranked disparities generated by economic activity, political influences, external economy (oil crisis), etc.

Attributes of regional disparities specifying possibilities

There are included attributes with more dimension levels. Among these attributes are included:

- sphere of regional disparities occurrence,
- territoriality (geographical level) of regional disparities,
- regional disparities measurability,
- regional disparities time dimension.

Sphere of regional disparities occurrence

Regional disparities concepts are changing from country to country, but we can find three types of spheres of regional disparities occurrence the most authors agreed with and we also accept them:

- ***social sphere***, relates to population and quality of life and its effect we can see namely in incomes (pensions) and living level of population and in social facilities,
- ***economic sphere***, is associated with the economic and development potential level and its effects we can see namely in regional outputs and employment level,
- ***territorial sphere*** , relates to geographical, natural and technical conditions and its effects we can see namely in availability of markets, education, services and infrastructure and in quality of living and natural environment .

Territoriality (geographic level) of regional disparities

Spatial **disparities we can find in different geographical levels**, starting with countries up to municipalities. Nijkamp (2007) points out, the lower geographical dimension the larger geographical change in appropriate prosperity variables. Because of dependency of spatial

disparities on dimension we must be very careful when comparing countries or regions functioning.

Choice and **size of territorial units** significantly change e.g. GDP measuring. Disparities of GDP per head are increasing at high levels of spatial disaggregation. Similarly, differences between regions are equalizing at high levels of aggregation (Wishlade, Youill, 1997).

By Aydalot (1985) we can state the important role of space division, where results depend on chosen division. We must always seek *right division*, such division that manifests mechanisms the functioning of which we want to understand.

Summarizing findings to territoriality of regional disparities, we can say:

1. Regional disparities must be assessed for territorial units of appropriate size and at the same time there must be assessed also broader territorial relations.
2. A significant role in association with territoriality of regional disparities can play also a fact if there is any representative (authority) at the level of region who can e.g. affect disparities (in this case we rather talk of *region*) or if it is only a *territorial unit* without own representative .
3. Choice of regional (or territorial) level of disparities searching will be influenced by type or nature of disparities. Disparities territoriality assessment should follow two aspects:
 - how (based on what) is evaluated region *size* ,
 - to what degree it is possible to assess disparities relating to size of different regions.

Regional disparities measurability

Regional disparities measurability expresses regional disparities feature to be subject matter of measuring and assessing their size, i.e. approaches to gathering data characterizing disparities, to their assessment, comparison, etc.

Regional disparities can be measured based on **objective and subjective indicators**. Objective indicators must be quantifiable and measurable like income, health, education, living, number of cars, number of telephones, TV sets or doctor per thousand inhabitants. Subjective indicators are developed by questioning people; e.g. what do they think about their situation, or how would they describe satisfaction level with their life (Molle, 2007).

When measuring disparities also a ***decentralization level*** must be taken in account. By Felsenstein and Portnov (2005), there exists negative relationship between decentralization and regional inequality.

Summarizing findings to regional disparities measuring we can state:

1. When measuring disparities the primary and secondary indicators can be applied.
2. Choice of methods for disparities measuring and evaluating method (absolute, ratio, etc.) must be adapted to disparity and an aim that is pursued.
3. Objectivity of measuring is a significant measurement factor.

Regional disparities time dimension

Time aspect is of great importance for regional disparities studying, searching and assessing. But it depends on it how this aspect is conceived.

By Aydalot (1985), every regional disparity comparison requires to use the same indicators for starting and final years. Even this can have misleading effect for analysis, as indicator *status* is also changing in time.

We can illustrate it with some cases:

- Migration movements are considered to be approximate measurement of wealth as population is moving towards rich regions. Since the end of sixties this relation shifted round and it looks that migration does not measure the same phenomena as before.
- Industrialization level measured once in the past a welfare and development level. But ongoing crisis of old industrial regions changed it, their prosperity is over but *new* prosperity is developing step by step (information technologies, biological engineering, etc.).
- in the past, the ratio of households with TV sets and income per head reached in French regions high positive value. Ten years later this ratio dropped to negative value.

Based on above mentioned following levels of regional disparities time dimension can be distinguished:

- **regional disparities time horizon** , distinguishing
 - regional disparities with short-time effects
 - regional disparities with mid-term effects,
 - regional disparities with long-term effects,
- **regional disparities dynamics**, distinguishing
 - disparities immediate state,
 - disparities changes in time.

Presented aspects of regional disparities research represent variety of views on regional disparities and illustrate system basis to take regional disparities as multidimensional problem. These various views on regional disparities must be converted into *seizable* form for other analyses but namely for possible influencing regional disparities by regional policy instruments.

In association with this it is, above all, necessary to determine if some aspects will be used for regional disparities classification and which ones or if these aspects will be taken as attributes of identified regional disparities.

Chapter 3

DISPARITIES AND REGIONAL DEVELOPMENT THEORIES

Regional disparities are quite frequent topic of regional development theories. The same like the regional development theories the approaches to regional disparities differ each other. For our research needs proved to be suitable to classify these theories based on it what relevance is given to **convergence** and what to **divergence** tendencies within spatial development. Such pragmatically simple dichotomous classification helps methodical work with many problems associated with regional inequalities.

The whole problems of regional disparities under spatial development is crucially impeded by the fact that we are seeking up to now (and it looks that we will seek for a long time) an answer to basic question, if regional system tend rather to convergence or on the contrary to divergence. But we must state that the number and quality of theories considering spatial development to be divergence is higher that those of theories considering spatial development to be convergence.

Furthermore, observing regional development tendencies depends on many other factors, like:

- Existence of **different definitions of convergence and divergence** (see Barro, Sala and Martin, 1995, Sala and Martin, 1996 or Blažek, Uhlíř, 2002).
- To what degree is **different or resembling the social – economic level** between compared territories. E.g. economic growth level at poor countries provides us, because of their low economic level, another information than that at advanced countries.
- To what degree are **used data reliable and comparable** . **Character of used data** is of the same importance. There must be made distinction between **aggregate and partial data** and neither **absoluteness** or **relativeness** aspects of territorial inequalities may be ignored.
- **Territorially ranked level**, the given analysis is performed at. Decreasing territorially ranked level leads to general tendency of spatial differentiation to grow.
- **Choice of regions and concrete indicators monitoring regional differences development**. Representation level of different indicators is differentiated regarding regional development tendencies record.
- **Time period character**, the analysis is performed in, and **the time period duration** the analysis is performed . The certain development paradigm is characteristic for each time period leading to prioritizing certain indicators. The time period duration is important namely considering convergence development tendencies of regional systems.
- **Time** plays an important role in analyses also in association with step by step minimizing the inequalities of observed phenomena.
- There exist **marked differences in spheres hardly quantifiable** but in spite of it their impact on regional development is high. Blažek and Uhlíř (2002) refer e.g. to differences in the field of social reputation, renown, power or influence on society performance.

Regional development theories and together with them also appropriate approaches to regional disparities were very strongly affected by social-economic paradigms typical for given periods. Given paradigms reflected experience of politicians and representatives of main social and economic directions, development theories from previous periods but also shorter or longer time of feeling social and economic need.

If we will use a ***pragmatics principle*** at differentiation of approaches to regional development and regional disparities we can identify ***four main development paradigms***:

- liberally endogenous development approach,
- exogenous Keynesian approach,
- extremely intervention Marxist-socialist approach,
- modern neo-endogenous approach.

At the same time the partial theories of regional development are satisfactory classifiable under those paradigms (see also Table 3.1).

Under ***endogenous approach to regional development*** we understand a type of regional development insisting on exploitation of own economic, social and natural sources of region. An endogenous type of development primary relies on inner development potential of region and pursues fully use and productivity of these intraregional sources. An external aid, namely governmental one, can be used only then e.g. in form of subsidies, tax allowances, etc.

Exogenous regional development is a type of regional development primary insisting on exogenous, external aid, as e.g. governmental subsidies or subventions (Malinovský, Sucháček, 2006).

Spatial view on development of approaches to regional development and regional inequalities showed us that ***liberal, endogenous development paradigm or regional development*** chronologically having dealt with regional problems as a first, ***considers spatial tendencies in long-term horizon to be convergence***. That's why this is a non-intervention approach not recommending larger interventions into market processes but on the contrary relying on inner potential of different localities and regions.

All following paradigms of regional development, i.e. Keynesian, Marxist-socialist and modern neo-endogenous approaches to regional development consider a spatial development to be the divergence. But these paradigms differ a lot of relating to recommendation for creation of general social-economic conditions and relating to their intervention level.

Keynesians expressed indeed the necessity of interventions into market mechanism, nevertheless they did not deny a key role of market processes that have to be according to their opinion regulated in such way to avoid disparities growth between regions.

Unlike Keynesian approach the ***Marxist – socialist paradigm*** prefers spatial development central planning and control. So interregional disparities that existed even in this system arose from political decisions and imperfect planning not from market processes.

Table 3.1: Development of approaches to regional development

General paradigm	Spatial tendencies	Regional development sub-theories	Regional policy
Liberal /non-intervention/ endogenous development	Spatial development tends to equilibrium, convergence and that's why there is no need to intervene into market processes. Non-intervention approach.	Neoclassical mono and bisectoral growth models, new theory of endogenous growth, new growth theory	„Workers towards work“, instruments increasing workforce mobility.
Keynesian /intervention/ exogenous development	Spatial development tends to disequilibrium, divergence and that's why there is a need to intervene into market processes.	Cumulation causes theory, unbalanced development theory, theory of poles growth, growth centres and growth axes, export basis theory, core-periphery theory, theory of production cycles and profit cycles, theory of spatial divisions of labour, mezzoeconomics theory	„Work towards workers“, instruments encouraging investments inflow into regions in problems.
Marxist-socialist /extremely intervention/ development	Development tends to regional imbalance , need to plan and control spatial development.	Spatial dimension of Marxist-socialistic doctrine, crisis theory, imbalanced development see-saw theory	Spatial development central planing and control ignoring regional-market signals. Application in Central and Eastern-European countries.
modern/„transformed“/ neo-endogenous development/creation of general conditions for endogenous initiatives /rather non-intervention approach/.	Development tends to regional unbalance , need to use regional potential.	Learning regions theory, production districts theory, QWERTY theory, path dependency theory	Support of environment good for future networking, small and middle-size companies, innovations, educations. Local and regional institutions quality increasing, coop-competition (competition and cooperation).

Source: own

Neo-endogenous paradigm, preferred at present, points out namely inner potential of different regions and also bodies located there but gives rather less attention to divergence spatial development processes. Whereas regional disparities have to be a signal about quality of environment and bodies in different territories.

Territorial disparities can be monitored in regional development theories not only from spatial aspects but also from **time** aspect. A fact, that short and long time periods are not defined more exactly is not good namely from methodical point of view. But nevertheless, the criterion of short

time or long-time can be applied at least for defining if regional system is tending to convergence or divergence.

The regional development theories considering spatial system to be divergent practically do not deal with question of short time or long time period. There exist only few theories assuming that spatial development is tending to convergence and it is typical for them that they work namely with long-time periods.

Regional development theories can be divided from time perspective also according to time of their validity in ***permanent and episode, or temporary***. In above text we dealt with theories expressing to tendencies in spatial development and pointing out explicitly their temporality. E.g. regulation theory and concepts of flexible accumulation and flexible specialization can be ranked among them.

Chapter 4

CLASSIFICATION OF REGIONAL DISPARITIES

Regional disparities are classified from two related perspectives:

- **vertical perspective**, based on knowledge that disparities are changing in accordance with geographical dimension: if we assess disparities in the context of different geographically based frameworks (world, Europe, countries) or different territorial dimensions (country, region, municipality), a resultant view on such disparities rate will differ a lot of. Disparities tend to increase by territorial dimension decrease.
- **horizontal perspective**, associating with subject sphere of their occurrence. Horizontal perspective includes as tangible so intangible disparities. Horizontal perspective division can be the same as for tangible so for intangible disparities. Classification within horizontal perspective will be done according to one attribute that is the basis for all classifications that can be found in literature, and this is a sphere of regional disparity occurrence (subject-matter aspect).

4.1 Vertical perspective basic classification

Vertical perspective, representing geographical dimension is more generally specified as follows (Regional Disparities and Cohesion 2007):

- disparities at European level,
- disparities at national level,
- disparities at local level.

Within conditions of regional and municipal systems at the level of the Czech Republic and lower result from it following levels of vertical perspective :

- The Czech republic and disparities between its regions
- regions and disparities between its municipalities with wider competences (or municipalities)
- municipalities with wider competence and disparities between its municipalities.

4.2 Horizontal perspective basic classification

Horizontal perspective basic classification at classification level 1

As basic attributes for horizontal perspective classification have been chosen:

- disparity nature: material and non-material
- disparity occurrence sphere: social, economic, territorial.

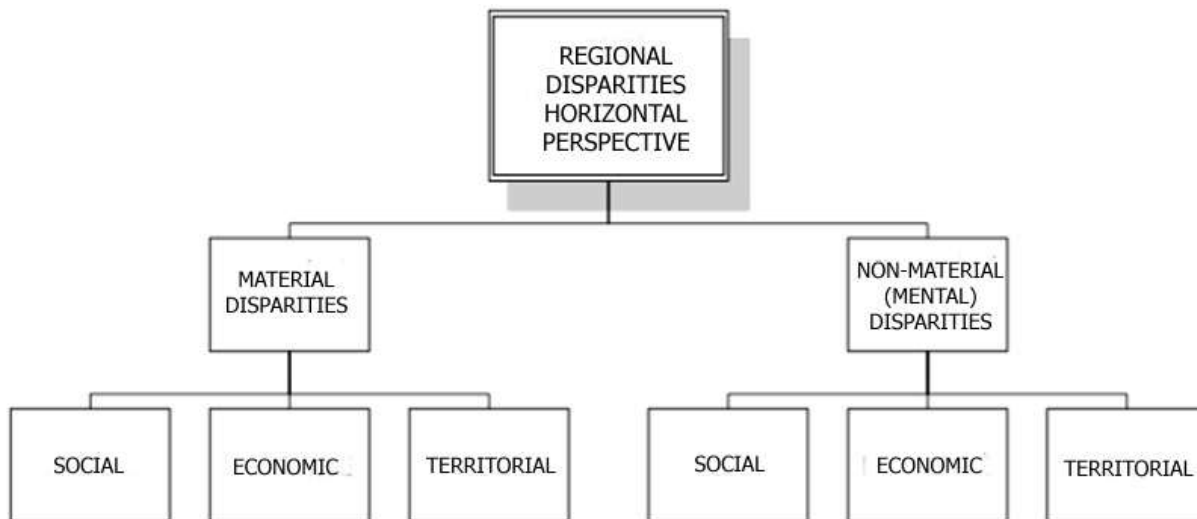
This classification is illustrated in the figure 4.1.

Social disparities relate to population in wider context of life quality, living level, social inequality and social pathology. But they do not relate to manpower as an economic category that is included among economic disparities.

Economic disparities relate to regional output in wider context of economic performance, structure, development and manpower.

Territorial disparities are associated with locational conditions in wider context with geographical, natural and technical conditions.

Figure 4.1: Horizontal perspective at classification level 1



Source: own work

Horizontal perspective basic classification at classification level 2

Horizontal perspective basic classification at classification level 2 comes from above mentioned definition of social, economic and territorial disparities (classification level 1). This classification has been created based on small number of subclasses, their logical arrangement and keeping homogeneous level of details in decomposition.

Basic classification at classification level 2 is presented in tab. 4.1.

Social disparities (classification level 1) are based on this proposal structured at level 2 to:

- **population**, including living level (incl. households accessories), schooling level, health, migration and segregation,
- **social infrastructure**, including health service, educational system, social services, culture and housing,
- **social pathology**, including social exclusion, criminality (incl. safety) and accident rate.

Economic disparities (classification level 1) are structured at level 2 as follows:

- **economic performance** including performance, productivity and external relations of economy,
- **economic structure**, including sectoral structure and structure according to subjects,
- **development potential**, including research and development, foreign capital and investments,

- **manpower**, including economically active population, employment, unemployment and mobility.

Table 4.1: Basic classification at classification level 2

Classification level 1 – occurrence sphere	Classification level 2
Social	Population Social infrastructure Social pathology
Economic	Economic potential Economic structure Development potential Manpower
Territorial	Physical-geographic potential Living and natural environment Traffic infrastructure Technical infrastructure

Source: own work.

Territorial disparities (classification level 1) are structured at level 2 as follows:

- **physical-geographic potential** including mineral resources, climate, settlement structure and intensity, locational conditions and region localization;
- **living and natural environment**, including air, wastes, water, nature and biodiversity, forests, landscape and land;
- **traffic infrastructure**, including road, railway and air infrastructure, water transport and transport availability;
- **technical infrastructure**, included water supply, sewerage and waste water treatment, power supply, information and telecommunication technologies and tourist industry infrastructure.

System decomposition at classification levels 2, 3 and 4 representing proposal of problem entities and proposal of system of descriptors and indicators is given in Chapter 5.

Chapter 5

IDENTIFICATION AND DECOMPOSITION OF DISPARITIES

5.1 Identification bases of regional disparities

Identification and measurement of regional disparities is the basic condition for taking space-oriented economic-political instruments by which it would be possible to minimize these disparities or to eliminate them (Wishlade – Yuill, 1997). Discussion relating to regional disparities is usually concentrated on following questions (Wishlade – Yuill, 1997, p.4):

- what type of disparity does it concern,
- what indicator can be used for identified disparity measuring,
- what factors determine this disparity,
- are there any wider relationships of disparity in national or international context?

Based on answering above mentioned question Wishlade – Yuill (1997) structured disparities into three main areas:

- **Disparities of physical nature**, they are associated with geographical and natural conditions. Measuring these disparities is complicated task according to authors opinion, as they are of natural character. Indicators, the authors used for expressing disparities of physical nature, are primary focused on their effects, namely on density of housing and migration aspects.
- **Disparities of economic nature**, relating to differences in quantity or quality of regional issues. Authors use for expressing disparities in this area traditional gross national product indicator together with tax income, industrial performance, demographical trends, economic outlook and traffic infrastructure and services.
- **Disparities of social nature**, relate to incomes and population living standard. At the most countries the largest emphasis is placed on unemployment indicator. Authors mention as possible indicators the unemployment structure, employment trends, future development of employment, active population, qualification structure of population and housing standards.

The similar approach apply Fazio – Piacentino – Vassallo (2006), who distinguish two basic groups of factors – factors of economic nature and factors of social nature. But second group is because of its stroke turning aside from classical concept of indicators of social nature.

One of determinant bases for system construction and for forming the content of regional disparities searching and assessing system is the System **of regional differences searching** approved by the Czech Government in 2000 as a part of activities of Strategy of regional development of the Czech Republic, decomposing disparities into five description areas as follows:

- total characteristic of region,
- economic potential,
- manpower
- territory technical infrastructure,

- environment

The other documents important to forming system are **Strategy of sustainable development of the Czech Republic** including six development pillars:

- economic,
- environmental,
- social, education,
- research and development,
- European and international context,
- public administration.

Strategy of economic growth of the Czech Republic is aimed at five priority areas, pillars, the bases for competitiveness of the Czech economy. They include:

- institutional environment,
- financing resources ,
- infrastructure,
- human resources development,
- research, development and innovation.

Criterion of real nature was chosen for decomposition of regional disparities monitoring and assessment system. But the disparity subject nature is formed in the most cases by synthesis of several indices (events) characterizing it and, in some cases, enables to classify disparity into several spheres (economic, social, territorial). The decomposition done demanded not only „external “ disparity identification but also to identify and evaluate even some indices characterizing it.

Decomposition of indicators for regional disparities identification, monitoring and assessment is performed in classification order as follows:

1. distinguishing level – sphere of disparities: 3 spheres,
2. distinguishing level – problem unit: 11 units,
3. distinguishing level - descriptor: 45 descriptors,
4. distinguishing level- indicator: 164 indicators.

5.2 Disparities decomposition in social sphere

Quality of life in regions is affected by many factors conditioned each other. It is very complicated to separate economic and social factors not only in theory but even in practice. Each event includes usually both dimensions and it depends on point of view which of them will be predominant for given purpose. Social sphere co-generates conditions for undertaking. Undertaking incomes are reflected in population living level and effect the total social climate of the society.

Disparities decomposition in social sphere was executed into three problem units - subsystems of second degree (see Table 5.1).

Table 5.1: System of descriptors for disparities assessment in social sphere

<i>Sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>
Social	Population	Age structure
		Health conditions
		Education
		Living level
		Migration
	Social infrastructure	Health services
		Education system
		Social services
		Culture
		Sport
		Housing
	Social pathology	Poverty threat
		Criminality
		Accident rate

Source: own work

Population

Information about population is crucial relating to monitoring disparities in social sphere. Population is the basic subject and object of all activities running in the region. Region development took place in this problem unit with the aim to satisfy social needs of its population (in selected segments even population of other regions). Population characteristics can be examined from many views. Population is characterised by five descriptors for the purpose of regional disparities monitoring in social sphere:

- Character of population **age structure** is important both from view of educational needs and labour market and in relation to social system.
- Development of **health conditions** results in need in capacities of health services, personal and institutional ones.
- **Education level** of population indirectly effects the quality of life in the region and is important also on the labour market. Education level can be monitored only from formal view; i.e. by the highest reached level of education.
- **Living level** of families or households includes a wide set of indices. There is included not only size of income but also a scope and value of property, quantity and quality of consumption, the scope and leisure time spending and quality of environment (social, labour market, living environment).
- **Migration** is an important indicator predicating of social economic level of regions it relates to and shows evidence of attraction or non-attraction of given territorial unit.

Social infrastructure

Social infrastructure is a fundamental condition for providing services to maintain and develop manpower in the region and a tool for satisfying needs and securing the population basic rights (right to abode, to health service, to education). Provides conditions for leisure time activities.

Social infrastructure is described by six descriptors.

- In **health service** are monitored health services at the level of ambulatory and dental cares and bed capacity in hospitals and number of doctors.
- Social infrastructure includes also **schools**. Considering the different number and structure of population in regions the best indicator about the level of school capacities in the region is the indicator of average classes occupancy in school network of so called regional educational system, including private and church schools.
- From **social services** broad-spectrum disparities monitoring is focused on number of places in social care facilities to number of population living in the region .
- For **cultural infrastructure** monitoring from large scale of cultural facilities is recommended the network of public libraries and children and youth leisure centres;
- **Sports facilities** infrastructure is also represented from number of different types of facilities and forms of sports by synthetic indicator monitoring a total number of sports facilities to number of population.
- **Housing** level can be also characterised from many aspects. We will learn more about housing level if we link housing parameters with households.

Social pathology

In every society exist events considering to be undesirable to pathological. They may include poverty and also behaviour nonconforming to system of standards acceptable in the society. While unemployment exceeds natural level, it becomes also an event requiring a targeted attention on the part of society (but unemployment is included into economic sphere). Three descriptors have been included into this problem unit.

- **Poverty threat** has substantial individual and social effects. Among basic indicators for disparities monitoring in regions are ranked the share of households with net monthly incomes less the subsistence minimum level and poverty level.
- **Criminality** is broadly structured set of events. Number of crimes in the region gives us a picture about its safety or unsafety for living and undertaking and about quality of living in the region.
- **Accident rate**, the same as criminality, is very serious phenomenon. Traffic accidents are considered to be an indicator requiring to be monitored; not only regarding to number of inhabitants in the region but also considering the length of roads in the region.

5.3 Disparities decomposition in economic sphere

Economy of the region is not only key attribute for evaluating its actual level and perspectives of future development but also one of decisive aspects of its comparison with other regions. This

also indicates weight, or position of economic sphere in identification and assessment of regional disparities. When comparing economies of regions the most frequent questions are: how potent the economy of the region is, how „health“ is and to what degree is able to efficiently participate in interregional labour division. Even next question is associated with it, namely to what degree the economy is able to generate sufficient number of job opportunities or jobs for its population. Disparities decomposition in economic sphere is done into four problem units - subsystems of 2nd degree (see Table 5.2).

Economic potential

Economic potential of the region is described by three descriptors.

- **Economic performance** can be described by many indicators ; for interregional comparison three indicators are considered to be relevant – product, value added and tax yield.
- **Labour productivity** is compared not only based on production per capita but also by labour unit costs, characterising better the average costs per unit of output and enabling interregional comparison of relation between productivity and costs .
- **External relations** characterise export performance of subject of the region and enable interregional comparison what industries are the main exporters in different regions.

Economic structure

For potential of the regions the development in last fifteen years demonstrated by sectoral structure and stability of subjects building is important for the region.

Economic structure of the region is described by two descriptors:

- **Sectoral structure** of regions is evaluated based on structure of production of regions by classifying sectoral structure according to CZ-NACE.
- **Structure by subjects** enables to evaluate regions from different aspects of stability of economic performance, flexibility to react to economic changes, etc. and covers structure of the region based on aspects like: division of economic subjects according to selected legal forms, groups of NACE sectors, according to number of employees, number of entrepreneurs, number of enterprises.

Development potential

Development potential of regions is one of crucial aspects when assessing backward regions aid efficiency. Proposed set of indicators monitors both long-term aspect, i.e. what conditions are created in regions to develop science and research and medium-term aspect, i.e. how runs development of domestic fix capital and how much are foreign investors interested in regions.

Development potential is described by three descriptors:

- **Science and research** within regions illustrate potential of the region relating to development and based on the newest findings also like precondition of future development of the entire region. Science and research are assessed based on science and

research costs. Costs are monitored by areas of science, but share of innovating enterprises is monitored too.

- **Foreign capital** is a factor of development potential of region influencing not only volume of investments in the region but can also e.g. increase technological level of production in the region.
- **Investments** illustrate conditions for development of the region in short-time and namely in medium-time horizon. Such development can derive from the size of these investments but even their structure has some effects.

Table 5.2: System of descriptors for disparities assessment in economic sphere

<i>Sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>
Economic sphere	Economic potential	Economic performance
		Productivity
		External relations
	Economic structure	Sectoral structure
		Structure by subjects
	Development potential	Research and development
		Foreign capital
		Investments
	Manpower	Active population
		Employment
		Unemployment
		Mobility

Source: own work

Manpower

People always play in economy the fundamental role. Proposed set of indicators enables to compare active population of regions, its age structure and education structure and labour market condition measured by employment rate and unemployment rate and structure.

Manpower is described by four descriptors:

- **Active population** illustrates labour potential of the region. From regions point of view their economic potential is influenced by population and population structure or percentage of active age population and there can be seen disparities between regions through population age structure.
- **Employment** and its structure affects economic performance of the region. Different aspects can be applied for employment or its structure monitoring (by sectors of economy, by industries, in enterprises under foreign control).
- **Unemployment** belongs to basic characteristics of economy evaluating in the region. For monitoring disparities in unemployment are monitored in addition to basic indicator of registered unemployment rate also other characteristics (long-term unemployment, number of job seekers per one vacancy, structure of job seekers by age and education).

- Importance of **mobility** of population is still growing up. In the past the subject of comparison was namely mobility of labour, namely interregional differences in commutation. Now and for the future immigration and emigration of population between regions and regional difference in foreign immigration become more and more important.

5.4 Disparities decomposition in territorial sphere

Disparities in territorial sphere covers physical-geographic potential of territory and describes areas of regional disparities like traffic infrastructure, technical infrastructure or environment. Disparities in territorial sphere complete components enabling to describe some characteristics of disparities in social and economic spheres, closely associated with physical-geographic character of territory. Disparities decomposition in territorial sphere is done into six problem units - subsystems of second degree (see Table 5.3).

Structure of the region

Area, altitude, height zoning, percentage of forestland, percentage of agricultural land, climatic conditions, etc. illustrate physical and geographical potential of territory that has been not changed for a long time and possible disparities between regions belong to category of minimum influenceable ones.

Structure of the region is described by:

- **Percentage of city population, municipality area, total density of population in the region** illustrate region structure and intensity of settlement characterized namely by number of municipalities, cities and number of population.
- **Altitude and height zoning** are indicators expressing zoning of the territory.
- **Built-up areas, share of agricultural land, share of forest land, percentage of forests per head** are the main features of area and structure of territory.
- **Climatic conditions**, their indicators are associated with two basic climatic factors, it means temperature and precipitations.

Traffic infrastructure

High quality traffic infrastructure is limiting factor of national economy development and thereby also regional development as it enables mobility of production factors. It's sure that its importance will grow up together with globalization.

Traffic infrastructure is described by three descriptors:

- **Roads** can be assessed by density of motorways and fast highways and illustrate territory traffic accessibility by given physical unit of road of higher traffic level and technical parameters. It's completed by characteristic of density of other roads, i.e. territory traffic accessibility by given physical unit of common roads.
- **Railway traffic** in the context of market economy indicates a decline but still plays an important role in conveyance of goods and in passenger transport, namely in long-distance and international transportation.

- **Air traffic** represents today one of important components of traffic infrastructure of the region and its importance in the region is given namely by number of airports.

Table 5.3: Set of descriptors for disparities assessment in territorial sphere

<i>Sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>
Territorial sphere	Structure of the region	Share of city inhabitants
		Municipality area
		Total density of population in the region
		Altitude
		Height zoning
		Built-up areas
		Share of agricultural land
		Share of forest land
		Share of forests per head
		Climatic conditions
	Traffic infrastructure	Roads
		Railway traffic
		Air traffic
	Traffic servicing	Integrated traffic systems
	Technical infrastructure	Water management
		Electric power
		Gas supply
	Environment	Air
		Wastes
	Nature	Nature and biodiversity

Source: own work

Traffic servicing

Traffic servicing provides population with possibility to get to work, education, shopping, culture and sports. Traffic accessibility generally grew up by mass car ownership but mass transport still plays its unsubstitutable role.

Traffic servicing is described by one descriptor:

- **Integrated transport systems.** To express level of territory servicing by mass transport there are applied data on territory traffic servicing by public bus service, city mass transportation and an important role in region development play integrated traffic systems interconnecting city mass transportation in large cities with transportation within their catchment area.

Technical infrastructure

Technical infrastructure indicators describes availability of infrastructural elements to territory or population.

Technical infrastructure is described by three descriptors:

- **Water management** deals with water supply and population connection to sewerage. For region assessment population percentage using given infrastructure from total number of population of the region is used.
- **Electric power** is generally fully available and for evaluating regional servicing indicators illustrating its total scope, selected types of lines and density of networks within the region are used.
- **Gas supply** is evaluated by indicators of number of gas serviced municipalities, as this number expresses namely conditions for potential use of this power media within the region.

Environment

Environment assessment is focused on air quality assessment and on problems of waste generating and waste management. Disparities in environment have its corporeality; they reflect the actual conditions and they are measurable by objective or subjective indicators.

Environment is described by two descriptors:

- **Air** quality is affected the most by emissions of main pollutants generated by industry, traffic, power industry and households. It relates namely to pollution level caused by emission of sulphur dioxide, carbon monoxide, carbon dioxide, nitrogen oxide, solid pollutants, volatile organic compounds and methane.
- Problems of **wastes** can be connected with different types of wastes generated by population and enterprises at the territory of regions together with assessment of quality and quantity of recycling and hazardous wastes management .

Nature

Nature enables to compare regions in the field of exhausted and potential natural resources, in the field of perspective and behaviour of region towards biodiversity at its own territory. Structure of ecosystems is still more and more changing within the Czech Republic by anthropogenic activities of men.

Nature is described by one descriptor.

- **Nature and biodiversity** show differences between regions of the Czech Republic relating to number and size of existing and establishing large-scale specially protected areas, small-scale specially protected areas and areas of system NATURE 2000.

CHAPTER 6

INTEGRATED INDICATORS AND MODEL REGIONS

One of the problems of regional theory and practice is the verification of possible user scope of the spectrum of indicators for identification and evaluation of regional disparities on concrete data about regions.

Designed basic set of 165 indicators enables detailed assessment of monitored phenomena or running processes but it has some significant limitations. Long-term empiricism shows that in basic indicators 10 to 15 indicators can be transparently assessed. The higher number of indicators used for analysis and assessment, the less transparency, less capability of their contextual perception as well as less informative level of analysis. There is a need for an „information superstructure“, it means some more comprehensive view on expressing analysed problems without unacceptable reduction of the value of final expression.

That´s why even when evaluating regional disparities there is a need to create integrated indicators having the sufficient informative level for inter-regional comparisons, being easy calculated and sufficiently intelligible to information users.

Difficulties of ad hoc integration (where the largest mistakes happened) can be avoided by grouping basic the indicators into well-considered groups (subunits) objectively homogeneous, system acceptable, methodically logical and intelligible.

Two ways are offered to such integration of basic indicators of regional disparities: The first way is based on indicators objective grouping and the next one is based on user indicators grouping.

The first way is based on indicators integration to as far as possible homogeneous units by content – integrated indicators, such as economic potential, living standards, social infrastructure or environment in the region. Fourteen of such integrated indicators were designed for monitoring and evaluating disparities between the regions of the Czech Republic.

The second way is based on indicators grouping according to the potential way of information usage in model regions. Typologically it is derived from identification of economic and social potentials of individual regions.

6.1 Integrated indicators

Integrated indicators are indicators composed of several primary or secondary indicators providing them with the given weight. Similarly to structuring the indicators for regional disparities assessment into three spheres (social, economic and territorial), it is also possible to use integrated indicators for social sphere, economic sphere and territorial sphere. We can also integrate the perspective running through all of the spheres mentioned and we get sectional integrated indicator.

Design of the regional disparities monitoring and assessment system in the Czech Republic is subdivided into social, economic and territorial spheres and includes:

- 13 problem units,
- 46 descriptors,
- 165 indicators.

From them 14 integrated indicators was created, in it 5 integrated indicators characterising social sphere, 4 integrated indicators for economic sphere, 4 integrated indicators for territorial sphere and 1 sectional integrated indicator.

Integrated indicators in social sphere

Social sphere is described by five integrated indicators (INI hereinafter).

Their brief descriptions:

INI 1 – Living standard

Includes level of incomes and property, consumption quantity and quality, leisure time scope and enjoying and quality of environment (social, labour market, environment). For searching disparities in living standards indicators of Households net disposable income per head, households owning car and households owning computer have been selected.

INI 2 -Health conditions

Health conditions can be also assessed from many aspects – from medical aspect, from the view of human life length and quality, from the view of work ability/disability, etc. As a basic have been selected indicators of Life expectancy, Tumors incidence (standardized to world standard) and Disability for work.

INI 3 – Social infrastructure

The largest preference is given to health and social care considering health and needs to secure services for ageing population. This is represented by indicators of Number of Doctors, Number of clinical beds, Number of room in social service facilities per number of population and Conditions for leisure time activities.

INI 4 - Housing

Includes indicators referring namely to „spatial“ quality of housing – Number of residents in permanently occupied flats per 1 room, Living floor space per head and Number of census households per permanently occupied flat.

INI 5 – Social pathology

Social pathology expresses set of phenomena undesirable in society; they can lead to social exclusion or directly threaten health, life or safety of people. It is described by indicators of Percentage of households with net monthly incomes below subsistence minimum, Number of crimes per 1000 inhabitants and Number of traffic accidents per 1 km or roads.

Overview of integrated indicators of disparities in social sphere is in the Table 6.1.

Table 6.1: Integrated indicators in social sphere

<i>Integrated indicator</i>	<i>Indicators</i>
LIVING STANDARD	Households Net disposable income per head
	Households owning a car
	Households owning computer
HEALTH CONDITIONS	Life expectancy (men)
	Life expectancy (women)
	Average percentage of disability for work
	Tumours incidence in total per 100 ths. inhab.
SOCIAL INFRASTRUCTURE	Number of doctors per 10 ths. inhab.
	Number of clinical beds per 10 ths. inhab.
	Number of rooms in social service facilities per 10 ths. inhab.
	Number of leisure time centres for children and youth per 10 ths.
HOUSING	Number of census households per permanently occupied flat
	Number of residents in permanently occupied flats per one room
	Living floor space per head in m ²
SOCIAL PATHOLOGY	Number of households with net monthly incomes below
	Number of crimes per 1000 inhabitants
	Number of traffic accidents per km of roads

Source: own work

Integrated indicators in economic sphere

Disparities in economic sphere are described by four integrated indicators.

INI 6 – Economic potential

Integrated indicator is structured from three indicators covering economy of the region, or/and its main characteristics from the view of region own performance and region performance towards other regions - GDP per head , Labour productivity per 1 employed, Export volume per head of the region.

INI 7 - Economic structure

Is constructed from indicators tending to cover economy of the region relating to its preconditions for future development and conditions of entrepreneurial activities in international context. It is formed by indicators of Number of unemployed in tertiary sector per 1000 inhabitants, Number of private entrepreneurs per 1000 inhabitants, Number of enterprises with number of employees 25 and more per 1000 inhabitants, Number of enterprises under foreign control with number of employees 250 and more per 1000 inhabitants.

INI 8 – Unemployment

Indicator provides general view of labour market conditions in the region. Is structured from indicators describing unemployment in the region - Registered unemployment rate, Long-term unemployment rate (longer than 12 months) and Number of job seekers per 1 job opening.

INI 9 – Development potential

Integrated indicator is based on the precondition that favourable conditions of development of the region result namely from science and research expenditures, investments and fixed capital formation. It is composed of two indicators of Science and research expenditure per one employee, Science and research expenditure per one head, Volume of direct foreign investments per 1 head and gross fixed capital formation per 1 head.

Overview of integrated indicators of disparities in economic sphere is in the Table 6.2.

Table 6.2: Integrated indicators in economic sphere

<i>Integrated indicator</i>	<i>Indicators</i>
ECONOMIC POTENTIAL	GDP per capita
	Labour productivity per one employed
	Volume of export per head of the region
ECONOMIC STRUCTURE	Number of employed in tertiary sector per 1000 inhabitants
	Number of private entrepreneurs per 1000 inhabitants
	Number of enterprises with 25 and more employees per 1000 inhabitants
	Number of enterprises under foreign control with 250 and more empl. per 1000 inhabitants
UNEMPLOYMENT	Registered unemployment rate
	Long-term unemployment rate
	Number of job seekers per 1 vacancy
DEVELOPMENT POTENTIAL	S & R expenditure per 1 employed
	S & R expenditure per head
	Volume of direct foreign investments per head
	Gross fixed capital formation per head

Source: own work

Integrated indicators in territorial sphere

Territorial sphere can be described by four integrated indicators.

INI 10 - Settlement

Is characterised by four indicators illustrating structure of settlement and urbanization level - Percentage of urban population from population of the region, Total density of population per km², Percentage of built-up areas from the territory of the region and Density of population per hectare of built-up area.

INI 11 - Environment

Is composed of indicators of air pollution, waste management and surface water pollution – Emission of sulphur dioxide per km², Emission of solid pollutants per km², Generation of municipal wastes per inhabitant and Length of water courses classified into the water purity classes 4 and 5 (km).

INI 12 – Traffic infrastructure

Is composed of ratio indicators of traffic facilities level in railway, road and air traffic and exploitation of public transport – Density of motorways and roads (km/100km²), Density of railway lines (km/km²), Number of public airports from total number of airports for international transportation and Number of public transport passengers per km².

INI 13 – Technical infrastructure

Technical infrastructure indicator illustrates level of water supply and sewerage facilities and waste water treatment plants as a basis for surface and ground water protection against polluting by undesirable pollutants. It is formed by indicators of Percentage of inhabitants connected to public water mains and Percentage of population connected to sewerage with wastewater treatment plant.

Overview of disparities integrated indicators in territorial sphere is in the Table 6.3.

Table 6.3: Integrated indicators in territorial sphere

<i>Integrated indicator</i>	<i>Indicators</i>
SETTLEMENT	Percentage of urban population from population of the region
	Total density of population per km ²
	Percentage of built-up areas from territory of the region
	Density of population per 1 ha of built-up area
ENVIRONMENT	Emission of sulphur dioxide per km ²
	Specific emissions of solid pollutants per km ²
	Municipal waste specific generation per head
	lengths of water courses classified into water purity classes 4 and 5 (km)
TRAFFIC INFRASTRUCTURE	Density of motorways and roads (km/100 km ²)
	Number of public transport passengers per km ²
	Density of railway lines (km/km ²)
	Number of public airports for international transportation from total airports number
TRAFFIC INFRASTRUCTURE	Percentage of population connected to public mains
	Percentage of population connected to sewerage with WWTP

Source: own work

Sectional integrated indicator

This sectional indicator goes through the whole sphere of regional disparities. It includes five indicators covering namely the characteristics of the quality of life in the region.

INI 14 – Quality of life

Illustrates differences in quality of life in regions. It is formed by indicators of Net disposable income of households per 1 head, Number of crimes per 1000 inhabitants, Life expectancy and Generated emissions of SO₂/km².

Sectional disparities integrated indicator and its composition is shown in the Table 6.4.

Table 6.4: Sectional integrated indicator of quality of life

<i>Integrated indicator</i>	<i>Indicators</i>
Sectional indicator of QUALITY OF LIFE	Net disposable income of households per head
	Number of crimes per 1000 inhabitants
	Hope to survive at birth (men)
	Hope to survive at birth (women)
	Generated emission of SO ₂ /km ²

Source: own work

6.2 Model regions

Defining basic type of model regions as highly structured and complicated social economic entities requires namely to define criteria the regions will be standardized by.

There are suggested below criteria:

- social or socio-cultural (level of life),
- economic (economic or innovation performance level),
- territorial (locational conditions),
- environment (quality of life).

The other criteria can be a stage or character of development, and in such a way we can distinguish stagnant, declining or developing regions.

Types of model regions and their characteristics

If we search for the patterns in theoretical literature or in normative documents it is evident that classification of regions by economic potential is a dominant typological approach .

E.g. Harrop (1996) introduces below structure:

- insufficiently developed peripheral regions,
- declining and old industrial regions,
- central regions,
- quickly developing regions.

European Commission structured regions according to the level of their development with the aim to specify what regions require direct support.

According to above aspect it relates to:

- backward regions,
- regions affected by industrial decline or economic recession,
- peripheral regions suffering from geographical isolation,
- border regions (as a special type of peripheral regions),
- regions with urban problems,
- rural regions (as a special type of backward regions).

Regional development support law No. 248/2000 describes four types of regions :

- structurally affected,
- economically weak,
- rural regions,
- other regions desirable to be supported by the government.

In the Bulletin of competitiveness (2009) is presented the classification of regions based on basic characteristics of competitiveness according to the following aspects:

- performance and innovations,
 - economically efficient highly innovating region,
 - economically efficient innovating region,
 - innovating region,
 - region lagging behind from economic and innovation perspectives,
- character of the region,
 - metropolitan region,
 - adaptable region,
 - peripheral region,
 - old industrial region.

Viturka (Viturka, Klímová 2006, Viturka 2007) prefers another approach splitting regions by criteria of:

- interactivity – integration potential and competition level,
- innovation profiles – position in innovating activities and in specialisation of innovation firms.

Comparison of above mentioned approached is given in Annex 2.

Model regions for disparities assessment among the regions of the Czech Republic

When defining model regions for disparities assessment between regions of the Czech Republic so within basic aspects of economic and social potential of the region is chosen such structure of indicators to cover the best four defined user values of regional disparities information, i.e. user value of information important for:

- increasing knowledge level,
- strategic decision making,
- motivation to some concrete activity,
- operative performance.

For above four user level of regional disparities information is defined seven groups of information representing standardized potentially applicable ways of use, formatting relatively autonomous units (model regions), typologically resulting from economic or social potential of the region and corresponding at the same time with certain type of use.

It relates to these types of model regions:

- Economically backward region,

- region affected by industrial decline or recession,
- rural region,
- economically efficient region,
- region with universal conditions for living,
- region with highly developed social services,
- highly innovating region.

Under mentioned characteristics of indicators attributes illustrating different types of model regions are to be considered as marginal ones. Values of all indicators are in reality never completely good or completely bad. The intensity of given phenomena or processes always differs and a synergy of their effects is decisive.

Various types of defined model regions can be characterized as follows:

1. Economically backward region

It is characterized namely by long-term low performance of economy and by its unfavourable structure as well as by low incomes of households with high unemployment rate, namely long-term one.

Manpower quality in this region is low and this is associated with higher share of primary sector and secondary sector in branches with small value added. General level of business activities is low, in region is small number of significant companies, low portion of innovating enterprises and from it results low level of business activities in knowledge-based sectors.

Indicators:

- 1 GDP per capita
- 2 Gross value added per employed
- 3 Percentage of employment in secondary sphere
- 4 Registered unemployment rate
- 5 Economic entities with 25 and more employees per 1000 inhabitants
- 6 Percentage of innovating enterprises
- 7 Registered entities with 1000 and more employees per 1000 inhab.
- 8 Percentage of households with net monthly incomes below subsistence minimum
- 9 Percentage of employed university graduates within age group 15 years and older
- 10 Net yearly disposable income per head

2. Region affected by industrial decline or recession

Characterized by dramatical decline in economy performance, fundamental changes in structure of economy and employment. Unemployment rate is high as well and manpower employment is low namely because of its structure.

Significant firms in the region are in decline and this results in large number of non-utilized facilities and sites.

Indicators:

- 1 GDP per capita
- 2 Percentage of employment in secondary sphere
- 3 Percentage of region GDP proportion in secondary sphere of GDP of the region
- 4 Unemployment rate
- 5 Number of job seekers per 1 job opening
- 6 Brownfield area
- 7 Net annual disposable income per head
- 8 Percentage of households with net monthly incomes below subsistence minimum

3. Rural region

Characterised by low performance of economy and its one-sided orientation to primary sector. Employment structure is unfavourable too and reflects structure of economy. Households incomes are relatively low and region suffers from high unemployment rate. Manpower quality is affected by low percentage of university educated.

Characteristic feature of the region is absence of significant firms and low level of business activities in knowledge-based sectors.

Positive feature of this model region is good environmental quality of territory.

Indicators:

- 1 GDP per capita
- 2 Percentage of gross value added in primary sphere of gross value added of region
- 3 Percentage of employment in primary sphere
- 4 Net annual disposable income per capita
- 5 Registered unemployment rate
- 6 Number of enterprises with 25 and more employees per 1000 people
- 7 Percentage of employed university graduates in age group 15 years and older
- 8 Percentage of agricultural land

4. Economically efficient region

This is the region with good performance of economy, high labour productivity and production in branches having good status on domestic and foreign markets.

Characterised by low unemployment level, good quality of manpower and high education level. Business activities level and innovating firms portion are high. Significant firms and investments are concentrated into the region.

Region disposes of sufficient offer of development sites and high quality traffic services.

Indicators:

- 1 GDP per capita
- 2 Gross value added per employed
- 3 Percentage of employment in secondary sphere
- 4 Registered unemployment rate
- 5 Number of economic entities with 25 and more employees per 1000 inhabitants
- 6 Innovating firms portion
- 7 Registered entities with 1000 and more employees
- 8 Percentage of households with net monthly incomes below subsistence minimum
- 9 Percentage of employed university graduates in age group 15 years and older
- 10 Net annual disposable income per head

5. Region with universal conditions for living

Characterised by high level of households incomes, population high scholarship level and availability of manpower. In the region exists sufficient offer of high quality social services and occasions for leisure time activities. Criminality level is low and housing level is high.

Region disposes of high environmental quality and attraction of territory. In the region is a good quality of traffic infrastructure and high level of traffic services.

Indicators:

- 1 Long-term unemployment rate
- 2 Net disposable income per head /year
- 3 Percentage of university graduates of age group 15 years and older
- 4 Number of rooms in social service facilities per 10 ths. inhabitants
- 5 Number of public libraries with branch libraries per 10 ths. inhabitants
- 6 Number of centres for children and youth leisure time per 10 ths. inhabitants
- 7 Number of sports facilities per 10 ths. inhabitants
- 8 Number of crimes per 1000 inhabitants
- 9 Number of residents in permanently occupied flats per room
- 10 Sulphur dioxide emission per km²
- 11 Forested area portion of region territory
- 12 Total length of roads and motorways per 100 km²
- 13 Density of railway lines in km per 100 km²

6. Region with highly developed social services

Basic characteristic of the region is high level of services provided by social infrastructure facilities. Namely it relates to health services and social services.

High level of social services in the region contributes not only to increasing the quality of living of its inhabitants but contributes also to formation of conditions for manpower development. By this is indirectly supported social inclusion and that's why it is one of factors contributing to low level of social exclusion.

Indicators:

- 1 Number of doctors per 10 ths. inhabitants
- 2 Number of clinical beds per 10 ths. inhabitants
- 3 Number of rooms in social service facilities per 10 ths. inhabitants
- 4 Number of centres for children and youth leisure time per 10 ths. inhabitants

7. Highly innovating region

Basic characteristics of this region are high value added in technologically demanding industry and service, high employment level in research and also high education level supported by good level of educational system namely that of university.

Innovating firms portion is high, science and research level is high and also foreign investment level is high. This is associated with the high level of fixed capital formation and high portion of business activities in knowledge-based sectors.

Indicators:

- 1 GDP per capita
- 2 Gross value added per employed
- 3 Percentage of employed university graduates in age group 15 years and older
- 4 Research and development expenditures per head
- 5 Number of employees in R and D per 1000 inhabitants
- 6 Percentage of innovating firms
- 7 Gross fixed capital formation per head

CHAPTER 7

INSTRUMENTS INFLUENCING REGIONAL DISPARITIES

Chapter 2 illustrates how different theories of regional development deals with territorial inequalities. These theories have been split according to what relevance they give to convergence and what to divergence tendencies of spatial development.

Ideological orientation of above mentioned theories serves as a basis to derive contents of different types of regional policies. These regional policies are concentrated on influencing or reducing regional disparities. And just concrete instruments relating to these regional policies and generating instruments for achieving objectives of regional policy will be analysed in this chapter. These instruments can be taken as certain subset and at the same time an essential part of already rich set of regional policies (see also Klaassen, Vanhove, 1987 or Hall, 1992).

Differentiation and classification of different instruments, the regional disparities can be influenced by, are necessary precondition for dealing with and applying them later. Regional policy instruments are then presented according to type and intensity of their influence and addressees they are designed for (see also Maier and Tödting, 1998) and other possible approaches to differentiation of instruments designed for regional disparities influencing and minimizing (Armstrong and Taylor, 1993, Klaasen and Vanhove, 1987 or Wokoun, 2003).

7.1 Instruments influencing regional disparities development by main development paradigms

If we exert the *special-purpose principle*, there can be identified **four main development approaches**: liberal endogenous development, exogenous Keynesian interventionist development, extremely interventionist Marxist-socialist development and modern neo-endogenous one. Particular theories of regional development and individual types of regional policies can be satisfactorily ranked under these paradigms.

Instrument influencing regional disparities development from chronological perspective

Presented typology shows us rather clearly prevailing philosophy of regional policy in different periods. For each type of regional policy is characteristic a broad spectrum of instruments or methods and techniques leading to influencing and reducing regional disparities.

Instruments influencing regional disparities inspired by neo-classical and neo-liberal approaches

First instruments influencing and minimizing regional disparities have occurred in less interventionist environment of Great Britain of twenties and thirties of 20th century. Applied instruments of regional policy corresponded also to the concept, called by some authors „workers to the work“ (see Prestwich and Taylor 1990). Namely it related to commuters support, lump-sum financial support when moving, assistance in housing provision in immigration region with lower unemployment rate, retraining to profession demanded in immigration region, etc.

Thus it related namely to manpower mobility support. So the task of these instruments of regional policy was to stimulate manpower under the labour market. Regional policy was at that time concentrated on territories with lack of manpower the unemployed from other territories can immigrate into. Blažek and Uhlíř (2002) stated that the support of emigration from regions with high unemployment rate is usually considered to be a passive type of policy as it does not strive to solve the causes of problems but tries only to mitigate their consequences.

Instruments influencing regional disparities development inspired by Keynesi

It did not happen by chance that within the period between fifties and seventies of the last century has been established and often also applied broad-spectrum of instruments minimizing regional disparities; at that time a lot of finances were given to regional policy and related instruments.

For example, percentage of regional-political expenditures on GDP in Great Britain reached nearly 1 % in ninety sixties (Preswitch and Taylor 1990). But regional problems were not considered to be momentary disturbance but long-term phenomenon. The basic philosophy of approach to regional problems tackling can be expressed at that period by association „work to the workers“. The concept points out that it is the government that is responsible for tackling regional economic problems, the government has to strive for spatially more balanced distribution of job opportunities.

Among typical instruments belonged at that time different financial stimulus to firms expanding in backward regions. This related to granting different types of subsidies, convenient loans with lowered loan rates, tax allowances, accelerated write-offs but also to e.g. contribution to manpower.

In a large scope have been used within that period also restrictive administration measures like ban on expansion of large firms in the largest agglomerations (e.g. In London or Paris), or there was even applied special type of input or production taxation at private firms with the aim to restrict excessive growth in these regions (e.g. Paris region). Reason for these restrictive measures was an endeavour to restrict further pressure on overloaded infrastructure of large agglomerations (traffic congestion, problems with water supply, etc.) including effort to reduce environmental problems. One believed at that time that restrictive measures applied towards large agglomeration and metropolitan areas will contribute to enterprise willingness to develop their business

in backward regions, where, on the contrary, many advantages were offered to firms (Blažek and Uhlíř, 2002). Large attention was also paid to help to regions with insufficiently developed infrastructure.

The efficient instrument of regional policy was relocation of state enterprises or bodies, e.g. central authorities or research institutes, into backward regions (applied e.g. in Netherlands, Norway, France, Italy or Great Britain). Spatially selective allocation of public investments and tenders took place very often.

Some modification of relocation measures consisted in obligation to localise, in case of production enlargement in enterprises owned by state, some portion of new generated jobs in problem regions, as it was applied e.g. in Italy for the benefit of backward South. Typically Keynesian way of managing interregional differences in unemployment represents also supplements wages provision to cut down entrepreneurs labour costs in problem regions (Martin, 1985).

At first were regional policy instruments inspired by Keynesian theory concentrated mostly on economy, but later has been found that problems in backward regions are much more comprehensive and it resulted in paying more attention also to social or institutional spheres.

But at the same time the regional policy did not abandon a "top - down" principle. It has to be added that coordination of activities via market has been still considered to be a main mechanism of economy performance and in Keynesian oriented countries no deformation of basic components of life took place as it happened in concurrently existing system of central planning in Central and Eastern Europe.

Instruments influencing regional disparities in centrally controlled economy

For centrally controlled economy hierarchically organised system of national, regional and local planning was typical. This system covered economic sphere and settlement system too. The role of physical planning consisted in spatial implementation of aims defined in economic plans.

Economic planning in Czechoslovakia was at first focused namely on mass industrialization and so sectoral economic policies became the most important for regional development. Attention has been paid namely to industrialization of Slovakia but also to regions with prevailing heavy industry.

Since sixties joined industrialization also intensive housing construction and civic amenities construction pursuing the control of spatial distribution of the labour. Plans of region development and development of selected urbanized units joined national planning.

Normalization process at the beginning of seventies brought also re-consolidation of central planning role. Concept of urbanization and settlement system was developed from simpler form of hierarchically organized centres to defining regional agglomerations, urban regions and other areas of principal importance. The concept tended to management and control of urbanization process within the whole country up to the year 2000.

In 1977 so called regional planning decree was accepted and regional planning was shifted under regional and local authorities as subsystem of central planning. But central planning continued to declare as its main goal the spatially rational spreading of manpower and optimum utilizing the natural, social and economic conditions of all territories with the aim to increase population living standards. First regional plans have been developed at the end of eighties but because of changes after 1989 and abolition of regional national committees in 1990 they were not executed (Sýkora, 1999).

Physical/spatial planning was executed namely on local level even despite of it that no standard instruments and mechanisms of spatial planning were used and investments were executed on political base. Since sixties the spatial planning has been taken namely as an instrument for planning in urban areas. Among typical regional-political instruments of that time, influencing namely regional allocation of the labour belonged:

- housing construction,
- civic amenities construction,
- new industry construction,
- traffic infrastructure construction.

The role of above instruments remained with smaller or larger modifications up to 1989 (Sucháček, 2008).

Instruments influencing regional disparities affected by neo-endogenous paradigm

Present period of regional policy has started approximately in second half of seventies of the last century and is quite specific as it combines a lot of heterogeneous approaches.

Above concepts are influenced by innovated endogenous approaches and also by several others concepts. Blažek and Uhlíř (2002) call present period of regional policy the eclectic one. Among typical regional-political topics of today belong by Skokan (2004), Adamčík (1997) and Blažek and Uhlíř (2002) e.g.:

- small and middle-sized firms support,
- promoting innovation development and spreading ,
- promoting clusters development,
- promoting application of marketing and management in territorial development,
- deregulation and decentralization measures,
- promoting public private partnership,
- foreign investors after care programmes and follow up programmes,
- investment in human resources,
- living and social environment quality support.

The common factor of these measures is strong endogenous orientation characterized by visible endeavour to initiate local and regional potential.

The other frequent feature is material and financial participation of private and public sector reflecting post-Fordistic rationalization tendencies and pointing out uniqueness of each locality or region.

As was already indicated, regional inequalities play rather motivation role and should stimulate less successful territories to development and following decreasing the difference between more successful ones. From this point of view the regional inequalities are admitted and represent beside motivation element also an important source of information about analysed territories, as for development so investment needs. Endeavours to depress existing inequalities are not in this context much intensive.

Successful implementation of above measures requires adequate conditions of regional development at the level of the whole country. Namely it relates to institutionally-territorial balance between state administration and self-government but also e.g. to balanced infrastructure in all regions following the spatial distribution of population. Localities and regions can use endogenous approach for their own development to have at least the same or similar conditions for development.

Instruments by type, intensity of influence and by addressees

As illustrated by Maier and Tödting (1998), broad scale of instruments of regional policy can be distinguished by type and strength of influence and also by addressees and intent .

By type and strength we distinguish following groups of instruments of regional policy (see Table 6.1):

- **Information measures and consultancy** - have the smallest intervention intensity as they effect on any actor through influencing his/her attitudes and at the same time they give him/her free hands in acting. From this reason it relates rather to „soft“ routing of activities of given entity. Nevertheless information does not affect in any way market mechanism effect and that why is accepted also by neoclassical and neo-liberal streams.

In this way are composed e.g. catalogues of localization advantages describing advantages of different localities or regions. Beside enterprises also population of given territory and municipalities, or regions themselves can make profit from information.

- **Financial motivation** – exists in many forms of subsidies, over tax allowances up to cheaper loans. This group of instruments differs quite a lot of from above mentioned information measures and consultancy as influences decision making of different enterprises and households via individual cost-yield decisions.

Localization oriented financial aid is historically one of the most significant instruments of regional policy tending namely to supporting enterprises transfer to given regions. Significant is also motivation to enlarge investments or created jobs premium. In last decades the innovation and technological motivations become more and more important.

- **Measures in infrastructure development** – partly works in the same way as financial motivation. For example, some localities become, thanks to infrastructural projects, more advantageous from cost point of view and more attractive for firm

localisation. Infrastructural measures thus effect margin of manoeuvre as for enterprises so for households.

Therefore a higher attention has to be paid to spatial differentiation in infrastructural level. But it is not easy to focus infrastructural measures (unlike financial motivation) on given target group as they affect all subjects in given territory and increase its whole quality. Infrastructural measures are unlike financial motivation usually more reliable and durable.

- **Administrative and regulation measures** – they allow some forms of behaviour and restrict another ones. Thus it is possible to hamper undesirable development in environmentally sensitive or extremely exposed regions, namely by investment control.

Administrative measures usually inhibit socially undesirable development. These measures can also partly stimulate positive development nevertheless only in limited scope.

7.2 Other views on instruments influencing regional disparities

Klaassen and Vanhove (1987) structured regional policy instruments helping to influence and regulate regional disparities by objective views.

They distinguish seven groups of regional policy instruments:

- **infrastructural aid**, intended namely for problem regions with insufficient or low developed infrastructure,
- **financial stimulus**, the reason of which is economic development stimulation in problem regions and they can be represented by:
 - subsidies,
 - interest reduction,
 - tax relieves,
 - contribution to the workforce,
 - easy loans, etc.
- **disincentive measures**, tending to reduction of excessive concentration of economic and other activities in given territories, as e.g.:
 - specific measures against overpopulation,
 - special traffic tax (applied in France),
 - spatially selective regulation of investments (applied in the Netherlands),
 - special permits and certificates for development of industry and office facilities (so called Industrial Development Certificate (ICD) and Office Development Permits (ODP) etc. - applied in Great Britain),
- **decentralization of state institutions** into non-metropolitan territories (applied in Great Britain, Netherlands, Italy),
- **regional allocation of public investments and tenders** that is specially efficient if certain sector must be regionally supported or gaps in regional

economic profiles must be filled in. This regional policy instrument can be implemented in several forms:

- public companies launching,
 - opportunities of firms to participate in public governmental tenders,
 - ensure minimum share of region on public investment programmes ,
 - agreed regional minimal contributions from governmental funds for restructuring,
 - agreed minimum contributions from research development governmental funds.
- **regional development agencies**, supporting regions they executed their activities in . Their activity can have following forms:
 - database administration on sources and different bodies needs,
 - rendering assistance to existing firms,
 - rendering marketing assistance to firms,
 - gaining new projects for region,
 - informing local population,
 - safeguards interests of region on national level,
 - development of different studies, etc.,
 - **macroeconomic policy instruments** that **can** have regionally differentiated impact. It relates e.g. to:
 - regionally differentiated system of national subsidies,
 - regionally differentiated credit policy,
 - regional transfers.

Following approaches derive rather from economic policy level whereby a little bit reducing spatial dimension of applied instruments of regional policy. By Wokoun (2003) the instruments of regional policy can be structured as follows:

As mentioned by Wokoun (2003), the most competent proved to be soft interest conditions and investment subsidies or some types of subventions.

- **macroeconomic instruments, application of which is much limited by other goals of economic policy as e.g. inflation reduction or balanced payment . It relates to:**
 - fiscal policy (e.g. Rationalization of taxes and deductions, reduced tax rate in selected supported regions),
 - monetary policy (e.g. easier access to loans in selected regions),
 - protectionism (e.g. Imposing import limits and duties on products produced in declining regions),

Table 7.1: Regional policy instruments

<i>Addressee, direction</i>	<i>Type of effects</i>			
	<i>Information and consultancy</i>	<i>Financial motivation</i>	<i>Infrastructure</i>	<i>Administration measures</i>
ENTERPRISE				
Mobility	Information on locality, regional marketing	Localisation support	Economic infrastructure development, supply, waste removal, transport, telecommunication, education, research facilities, scientific parks, technological and business centres	Localization orders and restrictions
Investment		Investment motivation		Investments regulation
New jobs		Jobs creation premium		-
Technology, innovation	Technological and innovation consultancy	New technologies and R&D support		New technologies regulation
Starting firms	Entrepreneurial consultancy	Risk capital, start-up aid		Regulation in starting firms
Cooperation	Cooperation consultancy	Cooperation motivation		-
POPULATION				
Education	Information on education possibilities	Education allowances	Infrastructure development:: housing, education, Social, cultural and infrastructural amenities	-
Mobility	information on jobs offer	Mobility allowances		-
Supply	Information on housing offer and facilities	Subsidies to close suppliers		-
MUNICIPALITIES – INSTITUTIONS				
	Consultancy for municipalities and regions	Contributions to communal and regional development projects	Infrastructural aid to inhabitants	Coordination of municipalities and regional facilities

Source: Maier and Tödting (1998)

- ***microeconomic instruments, influencing economic bodies decision making relating to their location. Namely it relates to:***
 - labour reallocation (e.g. partial recovery of moving costs, real estates buyout or subvention in buying new flat),
 - capital reallocation (e.g. Capital subventions, subvention to manpower, cheap loans, reduced taxes, subventions to traffic),
- ***other instruments utilizing rather exceptionally:***
 - administration instruments (e.g. administrative decision to stop economic activities that are bad relating to territory development needs),
 - institutional instruments (e.g. Regional development agencies).

Relation of regional policy instruments to positive and negative disparities

Regarding to relation of regional policy instruments to positive and negative disparities, so one can say that some applied instruments relate to both, positive and negative regional disparities. Regional policy instruments have comprehensive impacts and that's why their effect can be taken as solidarity effect (in terms of minimizing disparities of negative type), so as utilizing positive disparities for further development.

Suitably applied population mobility allowances can help to metropolitan areas suffering from lack of labour but they can also mitigate unemployment in backward regions. New established regional development agency can have positive effect on backward region but at the same time its representatives will take information from main centres and because of their frequent staying in decision making centres they will support e.g. their services, etc.

Only some instruments or policies have impacts exclusively on positive or exclusively on negative disparities. E.g. decentralization of state authorities into backward territories is typical measure towards spatial disparities minimizing. Similarly can be also taken infrastructure development in problem or backward regions.

Quite less numerous is a group of regional policy instruments market-conformal oriented, it means in accordance with positive disparities. As an example there can be stated different consulting or information initiatives that can help to discover positive aspects of existing disparities.

CHAPTER 8

REGIONAL DISPARITIES MEASURING AND ASSESSMENT

8.1 Regional disparities assessment methods

Present regional practice assesses regional disparities or by methods based on interregional comparison, under which are selected regions compared based on experience and knowledge, or based on statistical methods, the practical use of which, at the level of different institutions dealing with territorial differences problems, is nevertheless very limited.

Among these methods can be included:

- *interregional comparison method* – by this method are compared, based on previous analyses, different regions and processes running within these regions with the aim to find common and different features in their development,
- *methods utilizing Geographical information system* – within which computer systems oriented to geographical data processing, later presented as maps, are used for regional disparities assessment,
- *variability level* – when using it, the regional disparities are more often assessed by standard deviation and variation coefficient ,
- *multi-sized statistical methods* – this is a set of methods among which belong method of main components and factor , cluster or discrimination analyses ,
- *cluster analysis* – this is quite broad group of methods applied for structuring certain set of objects into several relatively homogeneous entities that used to be called clusters ,
- *factor analysis* – this is statistical method enabling analysts to find indirectly observed purposes of variability of different indicators describing regional disparities ,
- *simplistic model* – the aim of which is to enrich methodology used in strategic situation analysis of regions ,
- *method of real convergence* – this is a method by which is at first assessed development of different indicators characterising territorial differences and then is defined, if these differences are decreasing (converging) or, on the contrary, increasing (diverging),
- *modified territorial Gini coefficient* – this is a coefficient designed by OECD for regional disparities assessment needs and that unlike the classical Gini coefficient works with differences in gross domestic product per capita considered to be an indicator of incomes differentiation between inhabitants of different regions ,

- *method of artificial neuron nets* – is based on immediate interpretation of analysed data by Kohonen map – artificial neuron nets with teaching algorithm without teacher .

Among the most applied methods in regional disparities assessment belongs in the Czech Republic the **interregional comparison method**, under which are, based on previous analysis, compared different regions and processes running within these regions, with the aim to find common and different features in their development. Thus, this regional disparities assessment method is focused as on comparison of different regions structures so on comparison of selected economic, social and environmental indicators pointing out possible territorial inequalities. Difficulties of application of this method consist namely in time and objective comparability of information, in information quality and availability, side factors and objectivity of analyses.

Together with interregional comparison method used to be also applied method based on application of **geographical information systems** .

8.2 Regional disparities assessment methods applicable in regional management practice

From more detailed analysis of calculation difficulty factor and informative level of mathematical and statistical methods resulted that there exist seven basic methods applicable by regional management for disparities measurement:

- method based on scaling techniques,
- traffic-lights method,
- average deviation method,
- point-by-point method,
- standard variable method.

At their deeper analysis one can conclude that each of these methods has its pros and cons while their application depends not only on difficulty level of applying above methods in practice but also on set of statistical indicators used for this assessment, as at some methods only indicators of quantitative nature can be used.

But at the same time we must say that the most important views for selecting method can be considered informative level of acquired results and not much demanding calculation level of method.

Scaling techniques

Scaling is defined in special literature dealing with problems of measuring the economic variables either as a set of methods, procedures and techniques or as a real measurement process.

If we will derive from above mentioned so we will come to the conclusion that for regional disparities assessment look to be more applicable **scaling techniques**, by which we are able to compare data based not only on metrical but also on non-metrical

basis. Scaling procedures play the same role in regional disparities measuring like measuring procedures in physical measuring do. This approach is namely jointed with numbering procedure that can be applied or to different indicators or to their groups.

By numbering techniques we assign concrete numbers to different values of indicators selected by us, between which no numerical relation exists. Thus we can say, if we will assign number 1 to value of given indicator in region A but to the value of the same indicator in region B number 6, so it does not mean that given indicator in region B is 6 time worse or better then in region A. On the contrary, these numeric values only signalize that within regions examined by us has been assigned to indicator in region A the number 1 but to indicator in region B number 6.

We can say that an advantage of this approach is its quite good transparency and trouble free extensibility of analysed group given by it that when increasing number of examined indicators no additional calculations of values of different indices are needed to be executed. But we must point out that this technique cannot be taken as a form of measurement, it means it cannot help us to attain concrete quantitative data.

Albeit it is not possible, according to our opinion, to attain concrete indicator, quite opposite opinions take place in special literature among which we can include e.g. Stevenson concept suggesting that numbering is not only fundamental feature of definition of concept but also its significant characteristics. But on the other side appear a lot of expert opinions joining problems of scaling only with utilizing topological, i.e. non-metrical scales from which results that they do not consider the numbering method to be a scaling method.

Unlike above-mentioned we can consider scaling techniques to be individual scientific procedure jointed with both, quantitative aspects and topological elements. These problems we will take to be certain measurement pre-stage for defining topological conditions. But at the same time we must say that from group of scaling procedures can be used in regional disparities assessment only such procedures enabling to establish non-metrical scales of indicators selected by us. Provided that we would use in interregional differences assessment the numbering method, so the final result would be only some kind of pseudo-quantification of regional disparities. In case of concrete quantification of disparities we should rather apply any of below mentioned mathematical-statistical methods and the scaling method we should used only for building such classification scales enabling better quantification of selected criteria.

Under classification scale we understand a survey of modifications of classification character defining depth of classification and features of future groups of indicators the analysed regions will be decomposed into. In case that we will use for this indicators classification quantitative indices so groups resulted from it will be called classes but if we will use for their classification qualitative indices so we will not speak about classes but about categories.

If we will derive from above mentioned when building own classification scale, so not only a list of different indicators must be developed but these indicators must be precisely and unambiguously defined regardless of it if they are included in a category or a class.

In case that only quantitative indicators are classified in regional disparities assessment, we are speaking about quantitative spectrum or scales. Different indicators are under them classified into appropriate classes by classifying intervals of selected scale. These intervals are usually given by borders defined in such way to avoid any doubts of classification of marginal values into appropriate scale.

If using quantitative indices in scales formation so it is recommended in special literature to build 10 to 12 classes whereas this number should not fall below six classes on one side and should not exceed twenty classes on the other side.

While at quantitative scales exist unambiguously defined general rules for depth and details level in classification of analysed indicators, at quantitative scales are such rules defined only very hardly. But at the same time we must say that absence of these rules won't be any loss as useless large number of elementary groups usually leads to significant atomization of system and reduce transparency of different results. So we can say that defined groups should be characterized by as small as possible variability and homogeneity of classification ensuring so classification of indicators into different classes.

Traffic-light method

Specific form of scaling is the **traffic-light method**, drawing by its conception significantly near numbering method. But unlike numbering procedure in this case are not assigned to different indicators value concrete numbers but specific symbols reflecting, in addition to it, certain percentage level of examined indicator. The most often form of these symbols are three circles of colours of traffic-lights, and from it derives the name of this method.

The same like in case of scaling techniques a significant advantage of this method is also namely its good transparency, speed and trouble free application in analyzing variable-broad groups of indicators.

An efficient instrument for practical use of traffic-light method in regional disparities assessment looks to be a tabled processor Microsoft Office Excel, the essential part of which is a function of conditional formatting based just on principle of traffic-light method. This software can be used for quite simple and rapid composition of two-colour or three-colour scale, data line or scale expressed by set of icons.

Traffic-light method is taken as a specific form of scaling techniques and from it results that this method is a good instrument for non-metrical scales construction.

Average deviation

Average deviation method shows variability defined as an arithmetic mean of absolute deviations of different values of examined indices from chosen value. If going from this definition we will come to the conclusion that within this technique of cumulative indicator calculation we go from principle of absolute deviations, i.e. deviations the sign plays no role in. It can look to be purposeless, to certain scope, to use this approach but in fact it is not true as we will remove in this way problems from analysed system generating by mutual compensation of positive and negative deviations.

Own value of average deviation we can define by three way. Or as unvalued absolute average deviation:

$$\overline{d}_i = \frac{\sum_{i=1}^p |x_i - \bar{x}|}{n_i} \quad (2)$$

where: d_i – deviation of i-th indicator

\bar{x} – indicator arithmetic mean

x_i – i-th indicator

n_i – number of available values of i-th indicator ,

or as valuable absolute average deviation :

$$\overline{d}_i = \frac{\sum_{i=1}^p |x_i - \bar{x}| n_i}{\sum_{i=1}^p n_i} \quad (3)$$

or as relative average deviation:

$$\overline{d}_i^r = \frac{\overline{d}_i}{\bar{x}} \cdot 100 \quad (4)$$

This method can be later used for defining value of integrated indicator calculating by below formula:

$$INI_p = \frac{\sum_{i=1}^p |\overline{d}_i|}{n_i} \quad (5)$$

where: INI_p – integrated indicator calculated by average deviation

If there are available [k] different values of different indices of frequency [n_i], so we will not used for calculation the formula (5) but formula (6):

$$INI_p = \frac{\sum_{i=1}^k |\bar{d}_i| n_i}{\sum_{i=1}^k n_i} \quad (6)$$

Disadvantage of above approach consists namely in impossibility to define average value of the whole system from average deviations defined for different sets of indicators, i.e. from average sub-deviations.

Though the above mentioned approach is the most often used in statistical practice for average deviation calculation, i.e. setting a deviation from arithmetic mean, we must say that statisticians themselves mostly prefer method based on calculation of average deviation from median. Thus in this case is used value of quantitative statistic sign dividing appropriate statistic line into two parts of the same size relating to number of items, it means that values of one group are smaller or the same as median is and in the other group they are the same or larger than median is. So if to use this procedure in calculation of average deviation value so e.g. the formula (2) should be modified as follows :

$$\bar{d}_i = \frac{\sum_{i=1}^p |x_i - \tilde{x}|}{n_i} \quad (7)$$

where: \tilde{x} – median

Point-by-point method

The **point-by-point method**, the author of which is American mathematician M. K. Bennet, starts with seeking region attaining in case of analysed indicators maximum or minimum value. While the minimum value started to be considered in the moment when decreasing of given indicator is taken to be progressive so maximum values are used by analysts when it be to the contrary, i.e. when growth in value of given indicator is considered to be a progression. Such region is then evaluated under point-by-point method by 1,000 points whereas the other regions are evaluated by points within interval from 0 to 1,000, depending on per mille range given by value of their own indicators from criteria value given in advance. If minimum value is considered to be a criterion so then is, absolutely in accordance with the logic of matter, used under calculation a reciprocal value of this ratio. So we will define a point value of given indicator by formula:

$$B_{ij} = \frac{x_{ij}}{x_{i\max}} \quad (8a)$$

but in case of minimum by formula:

$$B_{ij} = \frac{X_{i \min}}{X_{ij}} \quad (8b)$$

where: B_{ij} – point value of i-indicator for j- th region

X_{ij} – value of i- indicator for j-th region

$X_{i \max}$ – maximum value of i-th indicator

$X_{i \min}$ – minimum value of i-th indicator

By adding up points calculated by this way the analysts get final value of cumulative indicator illustrating monitored level of the region and that can be used for setting disparities rate generating between different regions.

So we can say that the main advantage of this method is its ability to summarize under one synthetic characteristics, and this is dimensionless figure, indices included in different units of measure. Unlike this characteristics that we will take as an integrated indicator calculated based on point-by-point method (INI_B), is without any real sense, so we can say that in our case this minus is not a trouble.

By synthetic indicator acquired in this way we can then set as order of different regions so we can define total or only partial regional differences and thanks to it we will come to the conclusion that or region A generally falls behind region B, or their level is the same but region A reaches better result at indicator x, while region B at indicator y.

Instead of simple sum of points we can calculate given integrated indicator also by weighted arithmetic mean of points number the different regions acquired for given indicators. In this case following formula will be used for cumulative indicator calculation:

$$INI_{B,j} = \frac{1}{p} \sum_{i=1}^p B_{ij} \quad (9)$$

where: p – number of indicators

Based on integrated indicators defined in such way we can then define an order of regions according to regional disparities rate or define differences between different years.

When applying point-by-point method in practice there are, besides above mentioned procedure, applied also different modifications of this technique, the most significant of which are modifications based on finding a region with optimum development or setting criteria value based on expert judgement.

At the end of this part is good to mention that e.g. Czech statistician Jaroslav Jílek thinks that appropriate selection of indicators and appropriate defining their number can set weights in fragments of index and so there is no need to specify weight of different indicators. The author came to this conclusion based on suggestion that given cumulative indicator will be composed from several groups of indicators the different numbers of indicators will be included in.

Standardized variable method

Third statistical-mathematical method applicable in calculation of cumulative indicator is the **standardized variable method** that can be expressed by following formulas:

$$u_{ij} = \frac{X_{ij} - X_{i \max}}{s_{x_i}} \quad (10a)$$

or.:

$$u_{ij} = \frac{X_{i \min} - X_{ij}}{s_{x_i}} \quad (10b)$$

where: u_{ij} – standard variable of i -th indicator for j -th region

s_{x_i} – standard deviation of i -th indicator

In this case too we can consider a standard variable to be dimensionless variable having as zero so unit average from which results that variables calculated in such way can be summed up without any problems.

For needs of measuring interregional differences looks to be good to use **average value of standard value**, as by this way we will remove problems arising in the moment when we use in comparing results a different number of indicators. The integrated indicator calculated based on method of standard variable (INI_N) can be calculated by following formula :

$$INI_{N;j} = \frac{1}{p} \sum_{i=1}^p u_{ij} \quad (11)$$

If comparing this method with above mentioned point-by-point method we come to the conclusion that its main advantage consists namely in it that this method takes account of variability of indicators included into appropriate index and thanks to it subdue absolute variability the point-by-point method takes account of.

Positives and negatives of selected methods are summarised in Table 8.1. From performed comparison results that for regional disparities looks to be the most suitable to use point-by-point method and method of standard variable by which is possible quite quickly and in high quality acquire sufficiently valuable information on regional disparities development.

Table 8.1: Positives and negatives of regional disparities assessment methods

<i>method</i>	<i>Positives of methods</i>	<i>Negatives of methods</i>
scaling methods	<ul style="list-style-type: none"> • Comparison of data based on metrical and non-metrical basis, • transparency and trouble free enlargement of analysed group of indicators. 	<ul style="list-style-type: none"> • Methods cannot be considered to be a type of measurement and that's why it is not possible to attain concrete quantitative data, • pseudo-quantification of disparities in numbering method application.
Traffic light method	<ul style="list-style-type: none"> • Visual display of differences between different regions level, • good transparency, speed and trouble free application when analysing variable-broad groups of indicators. 	<ul style="list-style-type: none"> • Impossibility to set concrete value of regional disparity index and thus to quantify differences between different regions.
Average deviation	<ul style="list-style-type: none"> • Removes from analysed system mutual compensation of positive and negative deviations. 	<ul style="list-style-type: none"> • It is impossible to define average value of the whole system based on partial average deviations.
Point-by-point method	<ul style="list-style-type: none"> • Ability to summarise data attained in different units into one synthetic characteristic – dimensionless figure. 	<ul style="list-style-type: none"> ○ absolute variability of indicators, impossible to grasp their relative variability
Standardized variable method	<ul style="list-style-type: none"> • Ability to summarise data attained in different units into one synthetic characteristic – dimensionless figure, • variables calculated in this way can be summarised without any problem, • method takes in consideration relative variability of indicators included into given index, • subdues absolute variability the point-by-point method takes account of. 	<ul style="list-style-type: none"> • Impossibility to apply it in the moment when analysts suggest to use in comparison shared variables, • thus by this method is impossible to come to conclusion that the region A falls behind the region B.

Source: own work

8.3 Regional disparities evaluation by integrated indicators

For practical checking the applicability of integrated indicators one integrated indicator (INI) was chosen for each sphere of regional disparities – social, economic, territorial . For social

sphere **Social infrastructure level of regions**, for economic sphere **Unemployment** and for territorial sphere **Settlement**.

Indicators selection was quite a lot of influenced by basic indicators data availability within the whole analysed period between 1995 and 2008, or, at least, for its significant part. Nevertheless, a comparison of basic indicators and their aggregated form, namely informative level, are sufficient proof of practicability of this way of aggregate expression of relevant disparities between regions of the Czech Republic.

Point-by-point method was used for calculation of disparities between regions of the Czech Republic, characterised by integrated indicators, in first case with the same weight of all indicators and in second and third cases with knowledge-based weights. By value of 1,000 points was evaluated at different indicators their average for the Czech Republic.

Social infrastructure level of CR regions

The sense of integrated indicator of **Social infrastructure level of regions** is to express in aggregate form level and development of disparities among regions of the Czech Republic and social infrastructure level in four attributes - indicators:

- Number of doctors per 10 ths. inhabitants,
- Number of clinical beds per 10 ths. inhabitants,
- Number of rooms in social service facilities per 10 ths. Inhabitants,
- Number of centres for leisure time of children and youth per 10 ths. inhabitants.

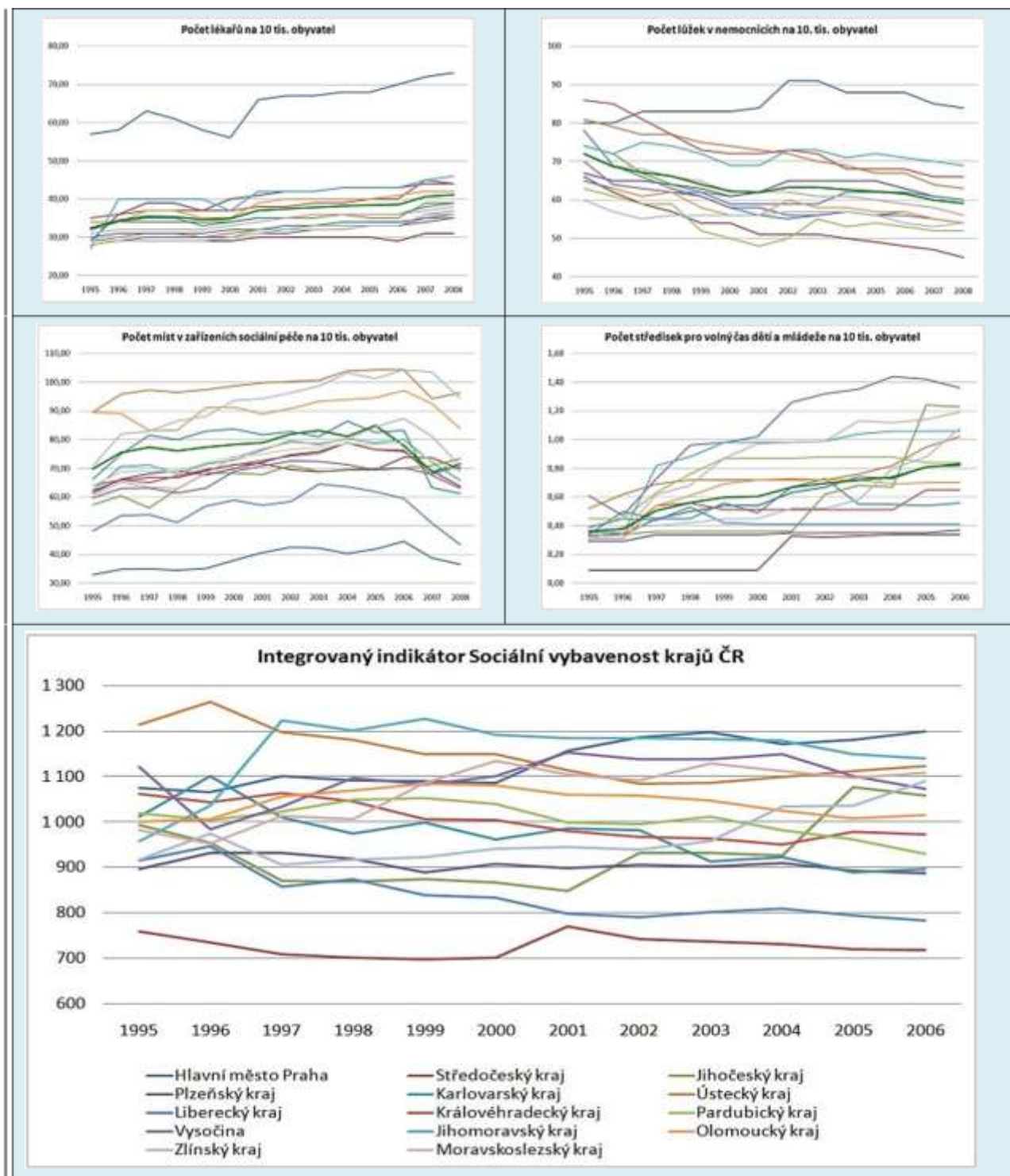
Table 8.2: Integrated indicator Social infrastructure² (point-by-point method)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Hlavní město Praha	1 075	1 065	1 101	1 092	1 090	1 085	1 157	1 186	1 197	1 171	1 181	1 200
Jihomoravský kraj	958	1 035	1 223	1 201	1 227	1 192	1 185	1 184	1 182	1 178	1 149	1 140
Ústecký kraj	1 215	1 265	1 198	1 180	1 148	1 149	1 113	1 083	1 086	1 098	1 111	1 124
Moravskoslezský kraj	981	953	1 014	1 007	1 086	1 135	1 104	1 092	1 128	1 111	1 098	1 108
Zlínský kraj	916	974	907	917	922	941	945	939	958	1 035	1 036	1 089
Vysočina	1 121	984	1 035	1 096	1 083	1 102	1 152	1 139	1 138	1 150	1 100	1 073
Jihočeský kraj	993	955	870	870	875	867	848	933	933	926	1 076	1 059
Olomoucký kraj	x	1 005	1 056	1 069	1 084	1 081	1 060	1 059	1 047	1 025	1 008	1 016
Královéhradecký kraj	1 062	1 043	1 064	1 046	1 007	1 005	981	968	964	950	979	973
Pardubický kraj	1 019	1 005	1 022	1 049	1 052	1 039	1 000	994	1 012	982	963	929
Karlovarský kraj	1 012	1 102	1 010	975	999	961	987	983	913	923	890	898
Plzeňský kraj	897	931	932	920	890	907	899	906	902	910	894	887
Liberecký kraj	915	947	858	875	839	834	799	791	803	810	795	784
Středočeský kraj	759	736	710	702	698	702	771	743	737	731	720	719

Source: Czech statistical office, RIS, own work

² Capital of Prague, South Moravia region, Ústí region, Moravia Silesia region, Zlín region, Vysočina region, South Bohemia region, Olomouc region, Hradec Králové region, Pardubice region, Karlovy Vary region, Plzeň region, Liberec region, Central Bohemia region

Figure 8.1: Composition of integrated indicator Social infrastructure level of CR regions³

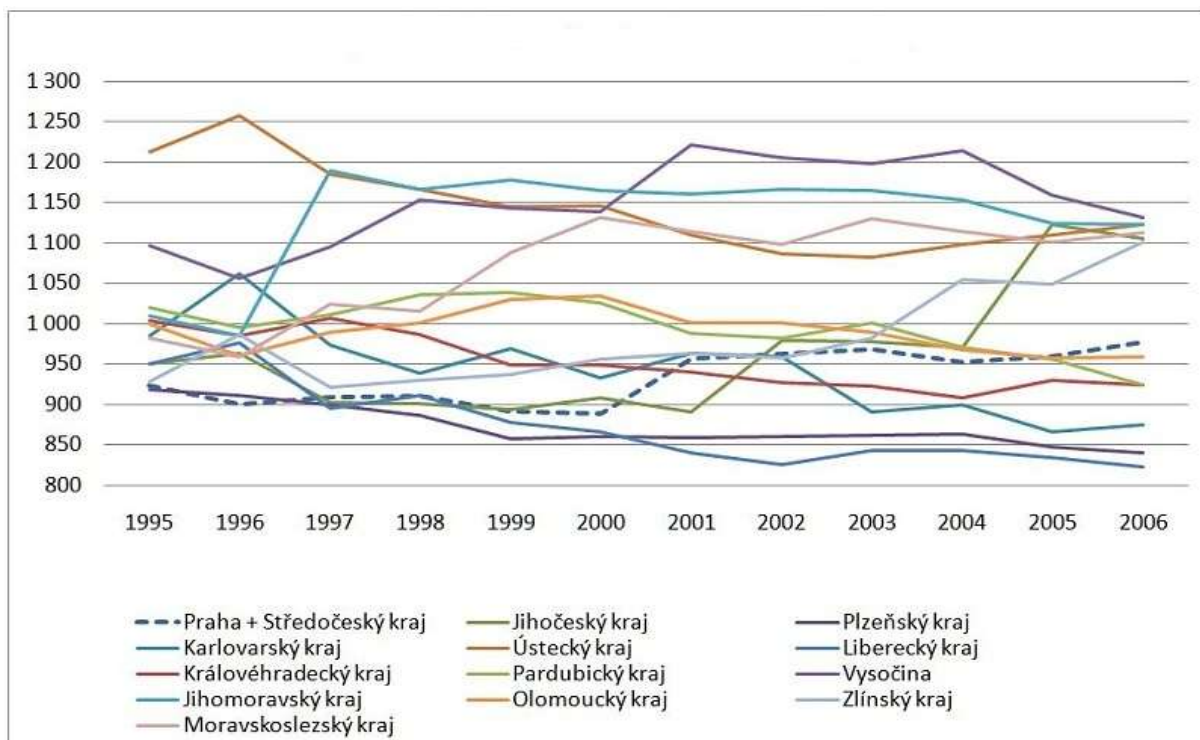


³ Number of doctors per 10 ths. inhabitants, Number of clinical beds per 10 ths. inhabitants, Number of rooms in social service facilities per 10 ths. inhabitants, Number of centres for leisure time of children and youth per 10 ths. inhabitants, Integrated indicator Social infrastructure level of CR regions.

Analysed period covers twelve years time line from 1995 to 2006. Dispersion of disparity in social infrastructure level between regions of the Czech Republic is quite high within the whole period. In 1995 was difference between region with the best level of social infrastructure (Ústí region) and region with the worst level (Central Bohemia region) 456 points, in 2006 was difference between region with the best level (Capital of Prague) and region with the worst level (Central Bohemia region) 480 points, which represents from development trend point of view only very moderate divergence development but a large disparity in social infrastructure level between regions of the Czech Republic is not decreasing (see table 8.2).

The largest negative disparity in social infrastructure level in comparison with the average of the Czech Republic shows within the whole analysed period the Central Bohemia region, second the largest negative disparity the Liberec region shows since 1998, far from other regions of the Czech Republic. As for the region with the best level of social infrastructure, with the largest positive disparity, so three regions changed at this position within twelve years. In 1995 the largest positive disparity showed Ústí region, at the turn of decade occupied this position South Moravia region, but since 2004 the capital of Prague has taken over this position. Prague occupies this position in spite of it that shows within the whole period the lowest values in number of rooms in social service facilities. But this is in general assessment compensated by largest number of doctors and number of clinical beds per 10 thousands inhabitants.

Diagram 8.1: Social infrastructure level of CR regions (joined regions of Prague and Central Bohemia)



Source: CSO, RIS, own work

But position of Prague and that of Central Bohemia region can be quite misleading. Considering the character of social services so their utilization depends on some geographical factors, namely on acceptable commuting to them. In this sense, the level of social

infrastructure in Prague and Central Bohemia region can be considered to be quite complementary. To find changes in their disparity and position towards other region of the Czech Republic there was built up the diagram 8.1, in which the both regions are joined (this is illustrated by dash curve).

We can read from the diagram 8.1 that by joining social infrastructure level of these regions their position is changing a lot of and is getting near average of the Czech Republic (at the beginning of analysed period 923 points, at the end 977 points). Compared with CR average they show also the smallest disparity of all regions of the Czech Republic. After this modification of the highest value and also the largest positive disparity the region of Vysočina reaches the worst value of negative disparity then Liberec region and a little bit lower the Plzeň region.

The heaviest worsening in social infrastructure level happened within analysed period in Karlovy Vary region, this region fell down from second the best value in 1996 to third the worse value in 2006.

Unemployment in regions of the Czech Republic

Integrated indicator **Unemployment** expresses aggregate situation at labour market in different regions.

This indicator is composed of three key indicators illustrating intensity and structure of unemployment. They are:

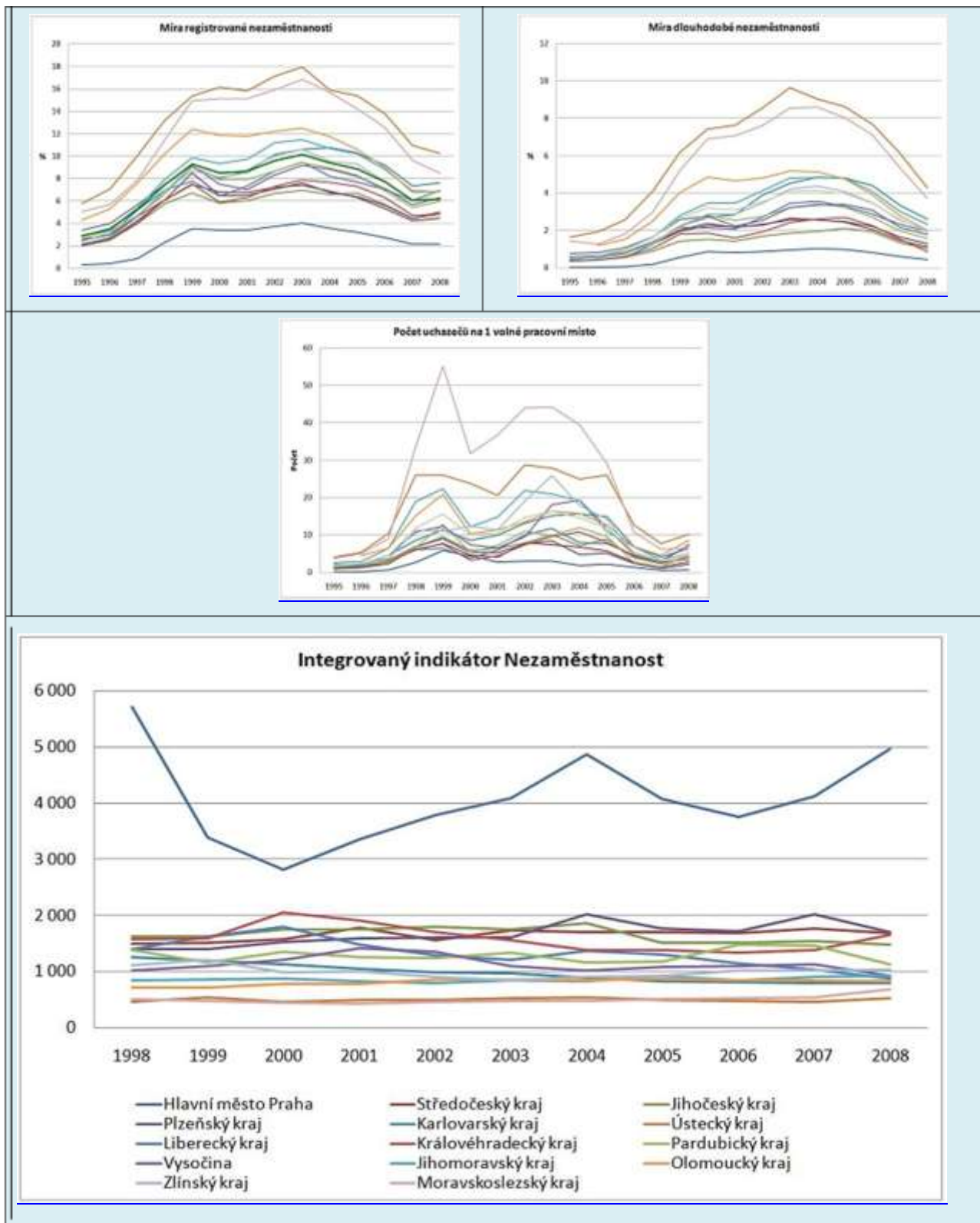
- Registered unemployment rate,
- Long-term unemployment rate,
- Number of job seekers per 1 job opening.

Table 8.2: Integrated indicator Unemployment (point-by-point method)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Hlavní město Praha	17 952	12 666	9 270	5 453	3 311	2 779	3 277	3 671	3 931	4 642	3 943	3 664	3 983	4 749
Plzeňský kraj	1 452	1 404	1 309	1 386	1 364	1 504	1 559	1 583	1 574	1 954	1 727	1 678	1 960	1 656
Středočeský kraj	1 166	1 301	1 236	1 466	1 493	1 547	1 726	1 539	1 692	1 670	1 674	1 664	1 739	1 653
Královéhradecký kraj	1 707	1 578	1 517	1 539	1 551	1 994	1 850	1 671	1 529	1 368	1 373	1 324	1 375	1 620
Jihočeský kraj	1 727	1 635	1 683	1 595	1 605	1 720	1 715	1 767	1 728	1 823	1 497	1 499	1 522	1 455
Pardubický kraj	1 173	1 117	1 251	1 366	1 143	1 323	1 236	1 227	1 309	1 149	1 168	1 449	1 426	1 126
Zlínský kraj	1 144	1 167	1 207	1 108	1 202	995	1 009	913	862	921	926	1 024	1 024	1 032
Vysočina	846	956	945	1 022	1 095	1 207	1 398	1 341	1 094	1 019	1 086	1 104	1 126	936
Jihomoravský kraj	945	1 022	908	861	871	884	839	801	843	836	925	841	904	917
Liberecký kraj	1 325	1 316	1 150	1 362	1 582	1 752	1 453	1 269	1 197	1 354	1 284	1 148	1 035	872
Olomoucký kraj	592	599	682	719	722	773	771	859	862	839	868	848	851	834
Karlovarský kraj	1 492	1 378	1 284	1 235	1 181	1 130	1 041	988	977	884	834	809	795	794
Moravskoslezský kraj	514	556	580	528	488	458	447	481	495	495	521	543	552	692
Ústecký kraj	455	441	454	480	551	465	495	501	529	550	507	488	471	533

Source: CSO, RIS, own work

Figure 8.2: Composition of integrated indicator Unemployment⁴



⁴ Registered unemployment rate, Long-term unemployment rate, Number of job seekers per 1 job opening, Integrated indicator Unemployment

To calculate this integrated indicator following weights have been used: $v_1=0.4$, $v_2=0.3$ and $v_3=0.3$. Values and development of these indicators and their transformation into integrated form of integrated indicator Unemployment and its disparities between regions of the Czech Republic are illustrated in Table 8.2 and in the Figure 8.2.

Analysed period covers fourteen years line from 1995 to 2008. Disparities Dispersion in unemployment between regions of the Czech Republic is large within the whole period. In 1995 the difference between the region with the best values (capital of Prague) and region with the worst values (Moravia Silesia region) was 17,445 points (see Table 8.2), which is within the context of evaluation of all regional disparities in the Czech Republic quite unique phenomena. But within 1995 to 2000 a strictly convergent development of this disparity take place and Dispersion of disparity between Prague and Moravia Silesia region was reduced to 2.321 points.

Development of disparities in unemployment between regions is divergent from 2000, except deviation in 2005 and 2006, with the dispersion of 4,216 points between Prague and Ústí region in 2008, Ústí region shows from 2002 the largest negative disparity in comparison with CR average .

If we will put capital of Prague away from evaluation of this integrated indicator so the evaluation of development of its disparities between regions is much more better. In 1995 the dispersion of disparity of integrated indicator Unemployment between South Bohemia region (second the best after Prague) and Moravia Silesia region was 1,213 points and in 2008 between Plzeň region and Ústí region it was 1,123 points. Thus the development of disparities between regions in this integrated indicator (without Prague) is of a little bit convergent, nearly stagnant character.

Settlement in regions of the Czech Republic

Integrated indicator ***Settlement*** expresses settlement structure and urbanization level of CR regions. Generally it is an indicator the value of which will not much change within analysed time horizon but in its aggregated form it should express what disparity exists between different regions of the Czech Republic.

This indicator is characterised by four indicators as follows:

- Percentage of urban population from population of the region,
- Total density of population per km²,
- Percentage of built-up areas from territory of the region,
- Density of population per hectare of built-up area.

To calculate this integrated indicators following weights have been used: $v_1=0.2$, $v_2=0.2$, $v_3=0.4$, and $v_4=0.2$. Values and development of these indicators and their transformation into integrated form of integrated indicator Settlement and its disparities between regions of the Czech Republic are illustrated in Table 8.3 and in the Figure 8.3.

Analysed period covers fourteen years line from 1995 to 2008.

Table 8.3: Integrated indicator Settlement (point-by-point method)

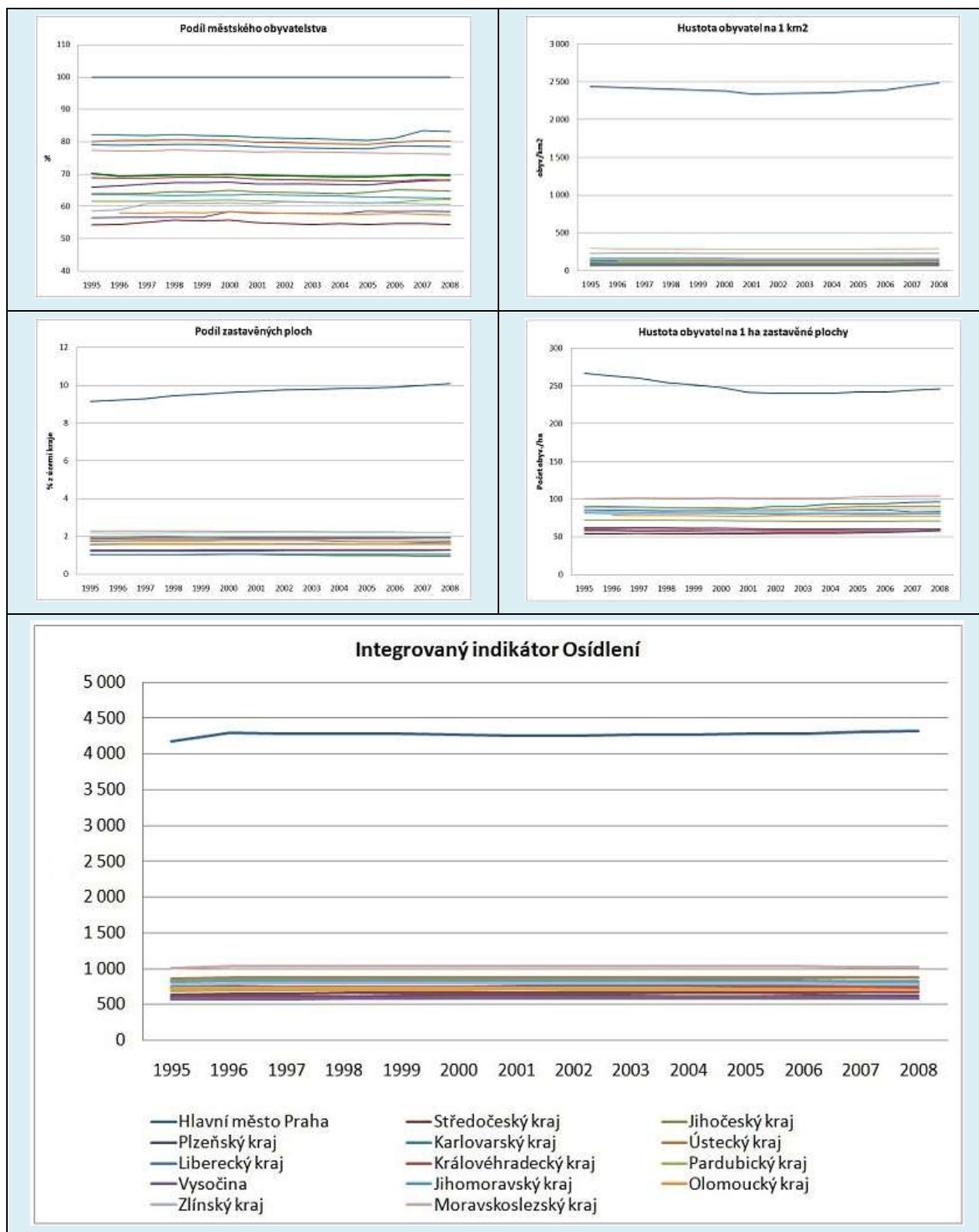
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Hlavní město Praha	4 176	4 289	4 285	4 279	4 274	4 269	4 254	4 258	4 264	4 271	4 283	4 286	4 305	4 323
Moravskoslezský kraj	1 008	1 032	1 031	1 032	1 032	1 030	1 031	1 031	1 030	1 028	1 032	1 028	1 021	1 016
Ústecký kraj	861	878	877	879	879	878	878	877	877	878	877	877	877	875
Liberecký kraj	815	829	828	829	830	829	831	830	828	828	830	828	825	824
Jihomoravský kraj	815	830	829	828	829	829	831	829	828	827	820	818	815	813
Zlínský kraj	775	791	797	798	797	798	799	801	799	798	795	792	787	784
Karlovarský kraj	738	749	748	748	748	746	749	752	752	755	753	754	763	762
Královéhradecký kraj	732	744	743	743	744	743	744	743	742	741	739	737	736	734
Olomoucký kraj	x	726	725	725	725	726	727	725	724	723	717	716	712	708
Pardubický kraj	694	705	705	705	707	707	709	707	706	705	704	703	704	704
Středočeský kraj	641	652	654	656	657	658	660	661	662	664	665	669	670	673
Píseňský kraj	603	614	615	616	616	616	617	616	617	616	615	617	618	621
Vysočina	577	587	587	586	586	592	592	591	591	590	594	592	590	588
Jihočeský kraj	566	575	575	577	577	578	579	579	578	577	578	580	578	576

Source: CSO, RIS, own work

As can be seen from diagrams of basic indicators and integrated indicator (see Figure 8.3), the settlement disparity in regions of the Czech Republic has three evident levels. At the highest level is far from other the capital of Prague, with positive disparity compared with average of the Czech Republic more than 3,000 points, closely above the CR average varies also Moravia Silesia region and all other regions vary within quite close scope of 300 points below the CR average. The lowest values showed within whole analysed period South Bohemia region, with negative disparity about 570 points.

Positions between regions did not changes within the whole fourteen years period. Disparity scope in settlement between regions of the Czech Republic was 3,610 points in 1995 and 3,747 points in 2008, so its development was only a little bit divergent, if compared with Prague so stagnant.

Figure 8.3: Composition of integrated indicator Settlement⁵



⁵ Percentage of urban population from population of the region, Total density of population per km2, Percentage of built-up areas from territory of the region, Density of population per hectare of built-up area, integrated indicator Settlement.

8.4 Regional disparities evaluation according to model regions

Integrated indicators represent aggregated form of disparities from objective (content) view, striving for the largest homogeneity of basic indicators. Model regions are from user view an aggregated form of disparities with higher level of aggregation than that at integrated indicators.

In Chapter 6 are described seven types of potentially applicable model regions. Three types from them, suggested to be of the largest user interest, will be further quantitative examined at the level of regions of the Czech Republic.

They are below types of model regions:

- Economically efficient region,
- Economically backward region,
- Region with universal conditions for life.

Standard variable method described in Chapter 8.2 was used for models calculation.

Model of economic potential of the region

Assessment of economically efficient or backward regions can be executed at one model (model of economic power of the region), as both types are represented by the same basic indicators and their character is given by disparity trend (positive, negative) they show towards the CR average.

Quantitative examination of model of economic power of regions is based on eight indicators including indicators from economic, social and territorial spheres. Values of this model are calculated by the method of standardized variable with basic indicators weights based on expert estimations:

	<i>Indicator</i>	<i>Weight</i>
1	GDP per capita	0.15
2	Gross value added per employed	0.15
3	Percentage of employment in secondary sphere	0.08
4	Registered unemployment rate	0.15
5	Economic entities with 25 and more employees per 1000 inhabitants	0.10
6	Percentage of households with net monthly incomes below subsistence minimum	0.10
7	Percentage of employed university graduates in age group 15 years and older	0.12
8	Net annual disposable income per 1 head	0.15

Because of absence of data for analysed period it was not possible to use two indicators of the model specified in Chapter 6.2, they are Percentage of innovating firms and Registered

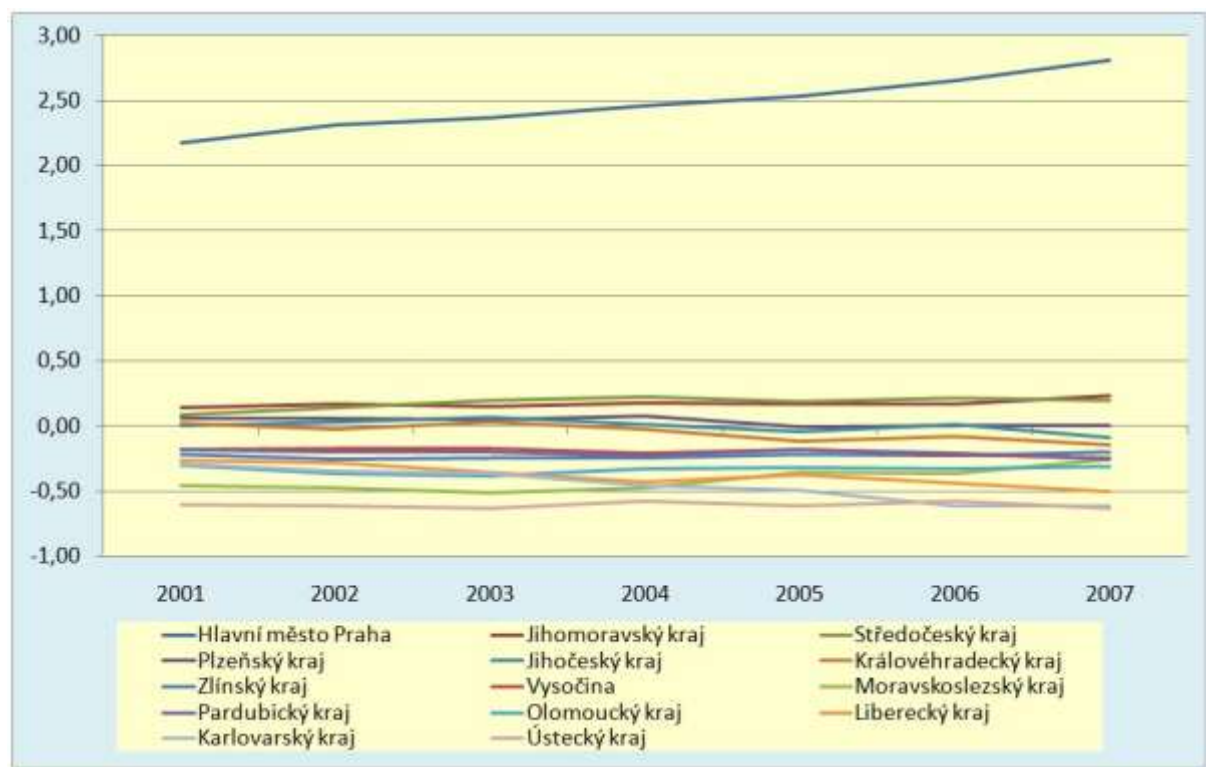
entities with 1000 and more employees. In spite of it the informative level of the model remains good.

Table 8.4: Values of model of region economic power for the CR regions within the period 2001 to 2007 (Standard variable method)

	2001	2002	2003	2004	2005	2006	2007
Hlavní město Praha	2,18	2,32	2,37	2,46	2,53	2,65	2,81
Jihomoravský kraj	0,14	0,17	0,15	0,18	0,17	0,17	0,23
Středočeský kraj	0,09	0,15	0,19	0,23	0,19	0,21	0,20
Plzeňský kraj	0,06	0,06	0,05	0,08	-0,01	0,00	0,01
Jihočeský kraj	0,00	0,03	0,06	0,01	-0,04	0,01	-0,09
Královéhradecký kraj	0,03	-0,02	0,03	-0,03	-0,12	-0,08	-0,14
Zlínský kraj	-0,22	-0,26	-0,25	-0,24	-0,21	-0,22	-0,20
Vysočina	-0,18	-0,17	-0,17	-0,20	-0,18	-0,22	-0,25
Moravskoslezský kraj	-0,46	-0,48	-0,51	-0,47	-0,35	-0,37	-0,25
Pardubický kraj	-0,18	-0,20	-0,20	-0,23	-0,18	-0,21	-0,26
Olomoucký kraj	-0,30	-0,37	-0,38	-0,33	-0,32	-0,32	-0,31
Liberecký kraj	-0,26	-0,28	-0,36	-0,43	-0,37	-0,43	-0,50
Karlovarský kraj	-0,29	-0,34	-0,36	-0,45	-0,49	-0,61	-0,61
Ústecký kraj	-0,60	-0,61	-0,63	-0,58	-0,61	-0,57	-0,63

Source: CSO, RIS, own calculation

Diagram 8.2: The CR regions economic power development within 2001 – 2007



Source: CSO, RIS, own calculation and work

Determining aspect in determining weights of basic indicators applied was the level of their direct effect on model region efficiency and level or closeness of their correlation with other indicators relevant for expressing its power.

Result of aggregated form of model of region power calculation is given in table 8.4. As namely actual situation and prognosis of development are significant from user point of view, the position of regions in the model are ranked by values reached within the last year of analyses and emphasised by utilizing Traffic light method (see Chapter 8.2). The future development can be suggested by development trajectories of different regions that we can see in diagram 8.2.

We can see from the table 8.4 that economically the most efficient region is capital of Prague and economically the most backward region is Ústí region. Position of other regions requires broader commentary.

Table 8.5: Zones of prosperity and of economic backwardness of the CR regions

	2001	2002	2003	2004	2005	2006	2007
Hlavní město Praha	2,18	2,32	2,37	2,46	2,53	2,65	2,81
Jihomoravský kraj	0,14	0,17	0,15	0,18	0,17	0,17	0,23
Středočeský kraj	0,09	0,15	0,19	0,23	0,19	0,21	0,20
Plzeňský kraj	0,06	0,06	0,05	0,08	-0,01	0,00	0,01
Jihočeský kraj	0,00	0,03	0,06	0,01	-0,04	0,01	-0,09
Královéhradecký kraj	0,03	-0,02	0,03	-0,03	-0,12	-0,08	-0,14
Zlínský kraj	-0,22	-0,26	-0,25	-0,24	-0,21	-0,22	-0,20
Vysočina	-0,18	-0,17	-0,17	-0,20	-0,18	-0,22	-0,25
Moravskoslezský kraj	-0,46	-0,48	-0,51	-0,47	-0,35	-0,37	-0,25
Pardubický kraj	-0,18	-0,20	-0,20	-0,23	-0,18	-0,21	-0,26
Olomoucký kraj	-0,30	-0,37	-0,38	-0,33	-0,32	-0,32	-0,31
Liberecký kraj	-0,26	-0,28	-0,36	-0,43	-0,37	-0,43	-0,50
Karlovarský kraj	-0,29	-0,34	-0,36	-0,45	-0,49	-0,61	-0,61
Ústecký kraj	-0,60	-0,61	-0,63	-0,58	-0,61	-0,57	-0,63

Source: CSO, RIS, own calculation and work

The intent of the model was to express in aggregate form economically efficient and backward regions. It is suggested to define in table of the model three zones : economically efficient (draught) regions – economically stabilised regions – economically backward regions. But resulting reality of the CR regions within 2001 and 2007 requires for following analyses of calculated results of the model a little bit more detail description of given problems.

We can see from model results that within whole six years from 2001 have been economically the most efficient regions, showing the largest disparity compared with the CR average, capital of Prague and South Moravia and Central Bohemia regions, the positive disparity of which increased within this period.

In central zone, represented in the model by economically stabilised regions, the disparity of which varies around the CR average, lie regions of Plzeň, South Bohemia and Karlovy Vary, but their parameters worsened a little bit within last years of analysis.

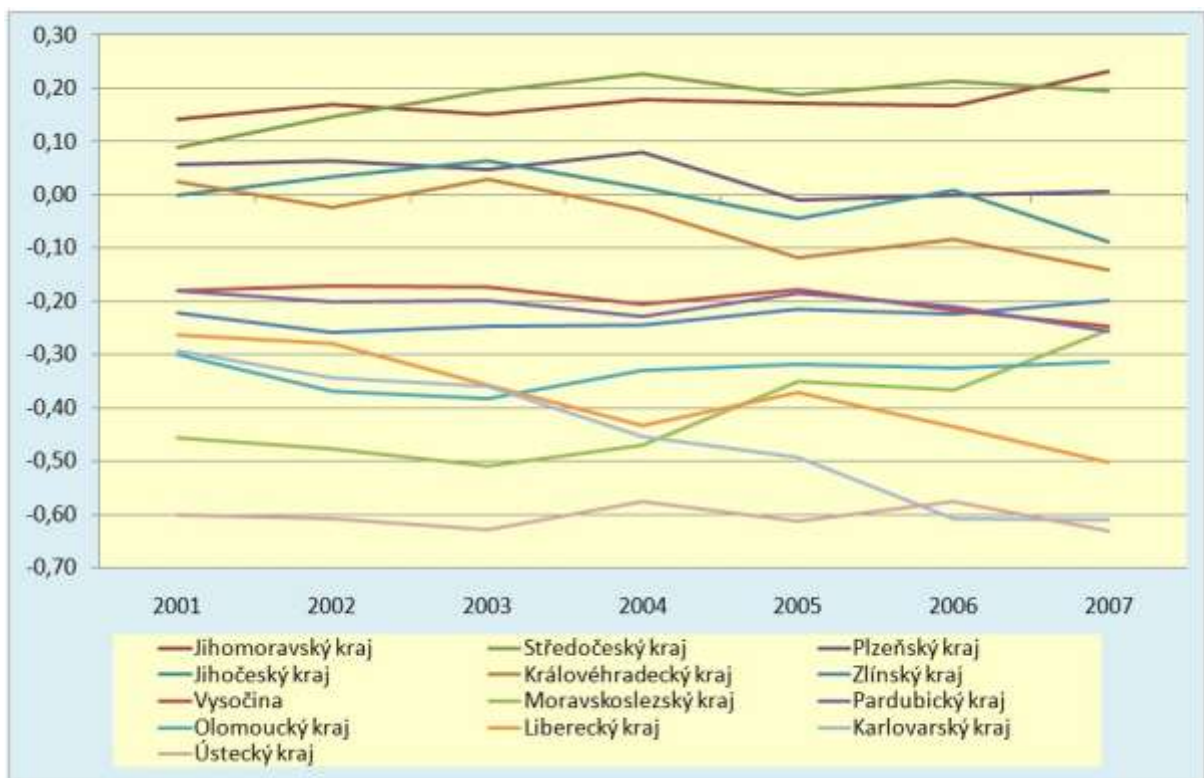
In the third zone lie eight regions, that should be divided into two groups based on calculated values.

One group consists of economically the most backward regions, showing the largest negative disparity in comparison with the CR average (with the value of index below -0.3), they are regions of Olomouc, Liberec, Karlovy Vary and Ústí. Parameters of economic power continue to worsen within analysed period in all mentioned regions.

The second group form regions showing indeed parameters of backwardness but with less intensity than four above mentioned regions (value of index varies at them between -0.2 to -0.3) and development of their parameters was specific. There are included regions of Zlín, Vysočina, Moravia Silesia and Pardubice. Two regions – Zlín and Moravia Silesia regions – improved economic parameters and their future development tends to zone of economically stabilised regions, but, on the contrary, remaining two regions – Vysočina and Pardubice regions worsened their economic parameters and their development tends to zone of economically the most backward regions.

As for dynamics of changes, we can read in in diagram 8.3. The distance of parameters of Prague is in diagram 8.2 so large that we can only hardly read there a development in other regions. That´s why data line of Prague was deleted from diagram 8.3 and thus the data line spacing of other regions increased and is good traceable.

Diagram 8.3: Development of parameters of economic power of the CR regions within 2001 – 2007 (without capital of Prague)

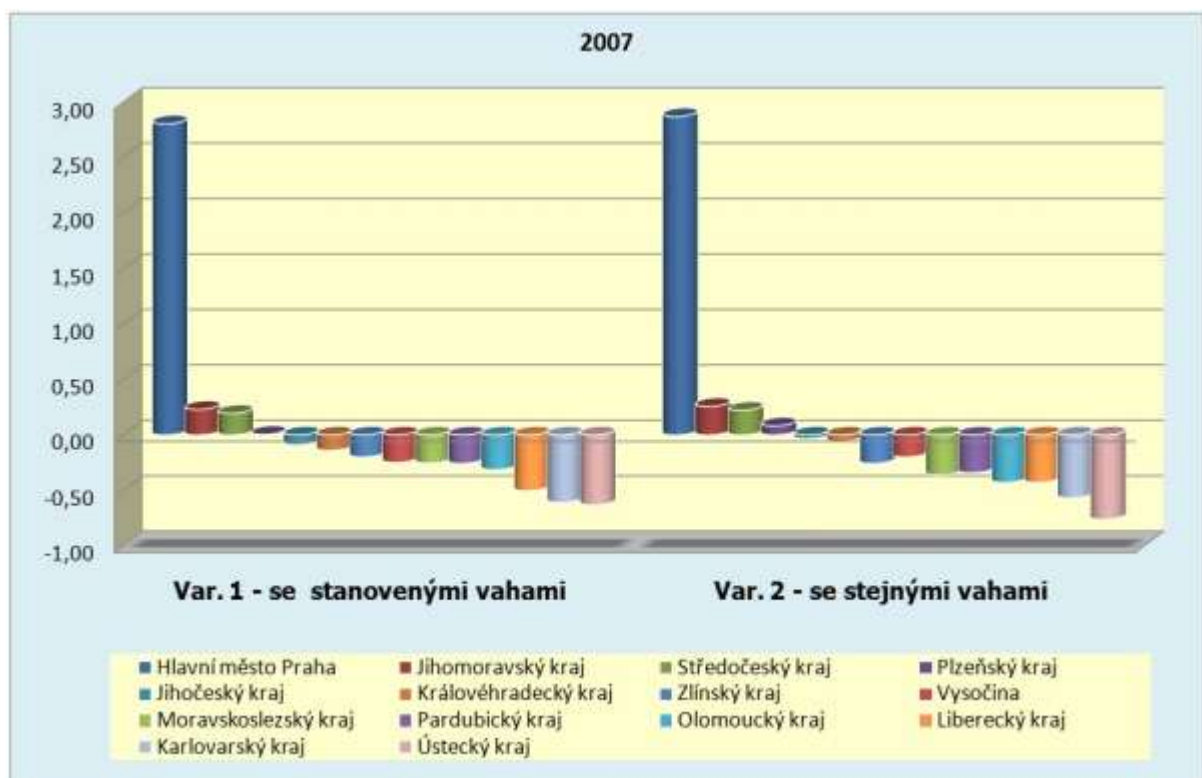


Source: CSO, RIS, own calculation and work

The largest dynamics in changes in positive direction (parameters improvement) can be seen except Prague in Moravia Silesia region, in negative direction (parameters worsening) in regions of Liberec and Karlovy Vary.

As above mentioned, the model was calculated by method of standard variable with utilising knowledge-based weights of basic indicators. But a question arises, would be model result still acceptable if there were not conditions for weights defining, in other words, whether model results calculated with the same weights of indicators would be practically usable. Calculation results acquired by both variants are compared in diagram 8.4.

Diagram 8.4: Comparison of results of regions economic power model calculation variants with given weights and with the same weights of indicators⁶



Source: CSO, RIS, own calculation and work

As we can see from values of regions in diagram 8.4, the model calculated in variant 1 with actually set weight of indicators looked to be in examination much more credible, namely from quantitative view. As for positions of economically efficient and economically backward regions (first three and last three places), it means that the users are the most interested in, the results are practically the same. Partial changes in positions happen mostly in central zone of the model.

Of course, this finding is true if weights dispersion is not too large. As the model is based on indicators relevant for characterising phenomena or processes the model synthetically

⁶ Var. 1 – with given weights Var. 2 – with the same weights

expresses, it would be not logical to reduce importance of any indicator by extremely low weight. Simpler should be not to include such indicator into the model.

Model of region with universal conditions for life

This model shows in aggregate form the region developing for its inhabitants good conditions for housing, work and undertaking, with sufficient job offer, low criminality level, high quality infrastructure and health environment.

Quantitative examination of model of the region with universal conditions for life is based on twelve indicators including social, economic and territorial spheres. Calculation of values of this model was performed by method of standard variable, with knowledge-based set weights of basic indicators. There was analysed a period between 2001 and 2006.

Model is presented by below indicators :

	<i>Indicator</i>	<i>Weght</i>
1	Long-term unemployment rate	0.11
2	Net disposable income of households per one head	0.11
3	Percentage of employed university graduates	0.11
4	Number of rooms in social service facilities per 10 ths. Inhabitants	0,08
5	Number of public libraries with branch libraries per 10 ths. Inhabitants	0.06
6	Number of leisure time centres for children and youth per 10 ths. Inhabitants	0.07
7	Number of sports facilities per 10 ths. inhabitants	0.07
8	Number of crimes per thousand of inhabitants	0.10
9	Sulphur dioxide emissions per km ²	0.11
10	Percentage of forested area of region territory	0.06
11	Total length of roads and motorways per 100 km ²	0.08
12	Density of railway liens in km per 100 km ²	0.04

Because of absence of data for analysed period one idicator of the model, specified in Chapter 6.2 could not be used , it relates to Number of residents in permanently occupied flats per 1 room. Informative level of the model is not much reduced by this.

Result of calculation of the model or region with comprehensive conditions for life can be seen in table 8.6. Regions position in the model are ranked according to values attained in the last year of analysis (2006) and highlighted by using Traffic-light method. Changes having taken place within different years of analysed period can be seen in Diagram 8.5.

From Table 8.6 we can see that region creating for population comprehensive conditions for life at the highest level nearly within the whole analysed period (except the year of 2005) was Hradec Králové region. On the contrary, the region having created within the whole this period the less favourable conditions for population was Ústí region.

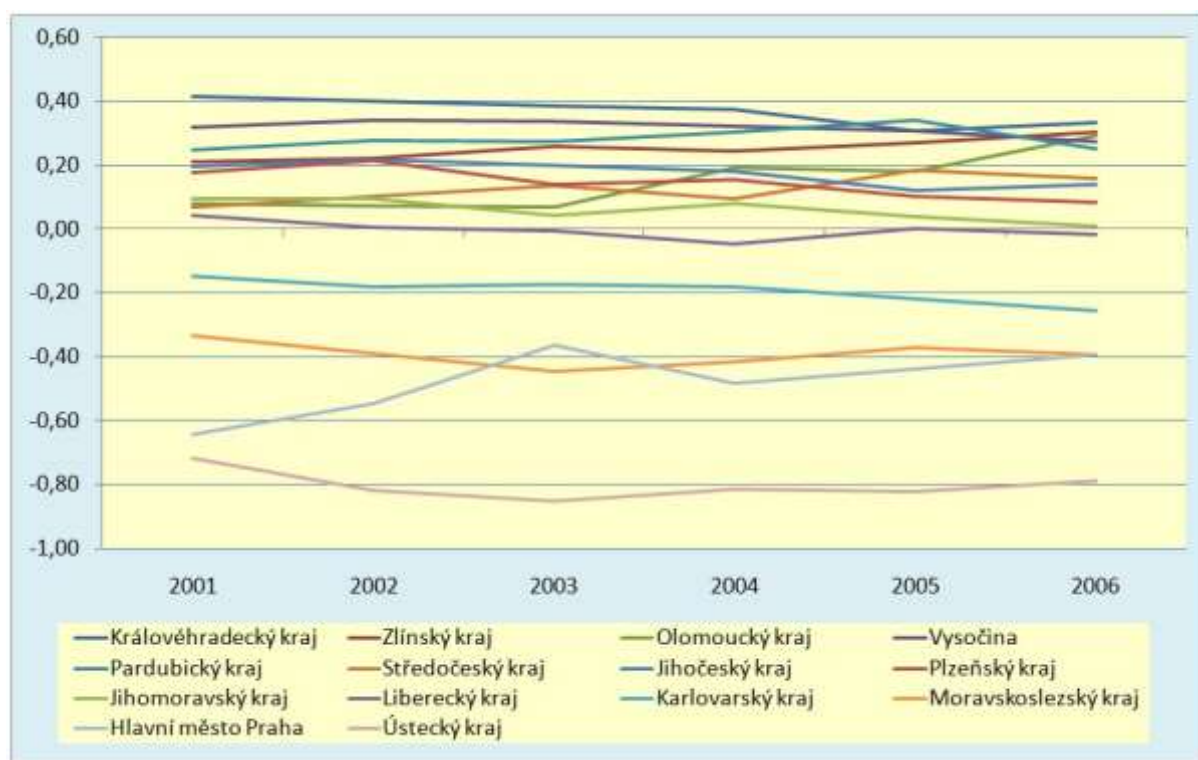
Dispersion of disparity values of this model between the CR regions is large (see Diagram 8.5) and balanced regional development of the Czech Republic demands its reduction.

Table 8.6: Value of the model of region with comprehensive conditions for life for the CR regions from 2001 to 2006 (standard value method)

	2001	2002	2003	2004	2005	2006
Královéhradecký kraj	0,41	0,40	0,39	0,37	0,31	0,33
Zlínský kraj	0,21	0,22	0,26	0,24	0,27	0,30
Olomoucký kraj	0,08	0,07	0,07	0,19	0,18	0,29
Vysočina	0,32	0,34	0,34	0,32	0,31	0,27
Pardubický kraj	0,25	0,28	0,27	0,30	0,34	0,25
Středočeský kraj	0,07	0,10	0,14	0,09	0,18	0,16
Jihočeský kraj	0,19	0,22	0,20	0,18	0,12	0,14
Plzeňský kraj	0,18	0,21	0,14	0,16	0,10	0,08
Jihomoravský kraj	0,09	0,10	0,04	0,08	0,04	0,01
Liberecký kraj	0,04	0,01	-0,01	-0,05	0,00	-0,02
Karlovarský kraj	-0,15	-0,18	-0,17	-0,18	-0,22	-0,25
Moravskoslezský kraj	-0,33	-0,39	-0,45	-0,42	-0,37	-0,39
Hlavní město Praha	-0,65	-0,55	-0,37	-0,48	-0,44	-0,39
Ústecký kraj	-0,72	-0,82	-0,85	-0,81	-0,82	-0,79

Source: CSO, RIS, own calculation

Diagram 8.5: Development of comprehensive conditions for life in the CR regions



Source: CSO, RIS, own calculation and work

From more detailed analysis of results of this model results that the CR regions can be zoned into three high quality zones, very distinctive because of their attained values (Table 8.7).

The first zone of regions, creating for their population universal conditions for life at very high level form regions of Hradec Králové, Zlín, Olomouc and Vysočina. The second zone of regions, creating average conditions, form regions of Central Bohemia, South Bohemia, Plzeň, South Moravia and Liberec. The third zone of regions, creating for their population universal conditions with clearly below-average values (compared to the CR average), form regions of Karlovy Vary, Moravia Silesia, Capital of Prague and Ústí.

Aggregated values of this model have been calculated by knowledge-based weights of applied basic indicators. Result of comparative analysis of model results attained with given weights and the same weights of indicators we can see in Diagram 8.6.

When comparing both variants we can see that, except one exception, the regions zoning into three qualitative zones did not changed. Only Hradec Králové region shifted into zone with average conditions and South Moravia region shifted, because of worsened values, to the last place of middle zone. Within first and third zone regions position partially changed.

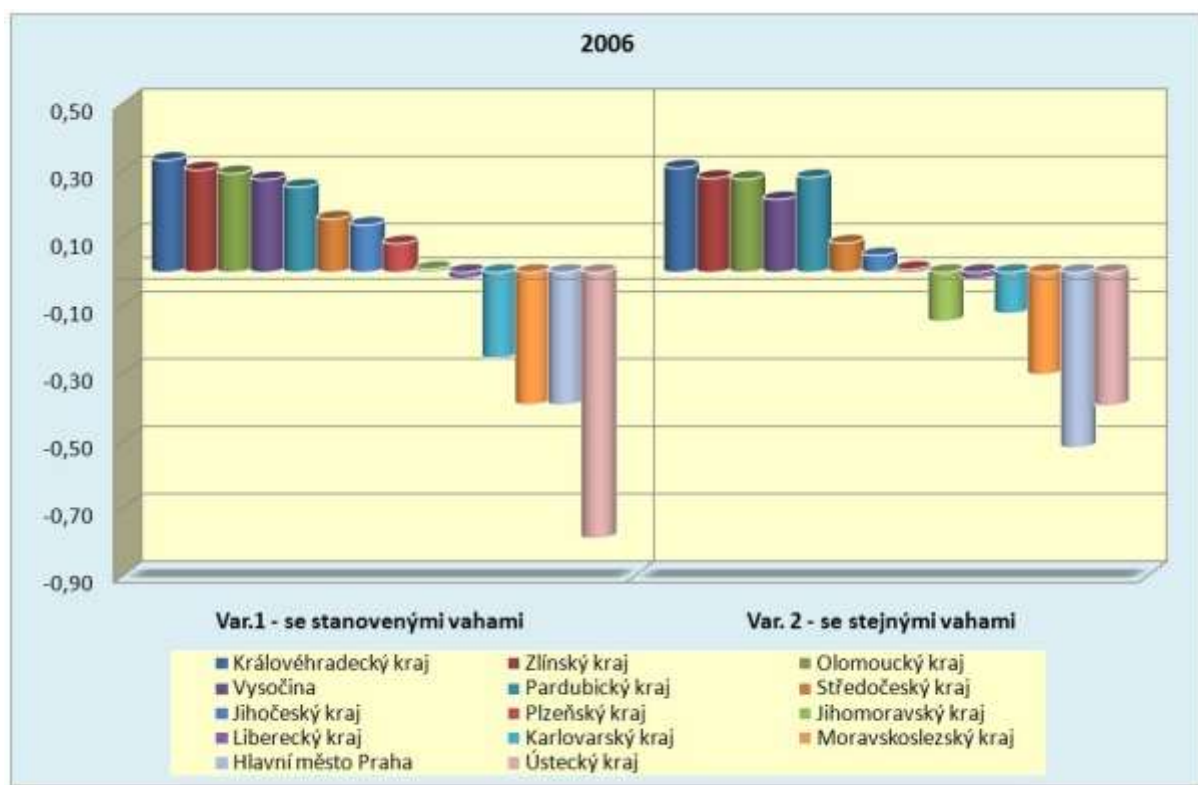
Table 8.7: Qualitative zones of universal conditions for life created in regions of the CR

	2001	2002	2003	2004	2005	2006
Královéhradecký kraj	0,41	0,40	0,39	0,37	0,31	0,33
Zlínský kraj	0,21	0,22	0,26	0,24	0,27	0,30
Olomoucký kraj	0,08	0,07	0,07	0,19	0,18	0,29
Vysočina	0,32	0,34	0,34	0,32	0,31	0,27
Pardubický kraj	0,25	0,28	0,27	0,30	0,34	0,25
Středočeský kraj	0,07	0,10	0,14	0,09	0,18	0,16
Jihočeský kraj	0,19	0,22	0,20	0,18	0,12	0,14
Plzeňský kraj	0,18	0,21	0,14	0,16	0,10	0,08
Jihomoravský kraj	0,09	0,10	0,04	0,08	0,04	0,01
Liberecký kraj	0,04	0,01	-0,01	-0,05	0,00	-0,02
Karlovarský kraj	-0,15	-0,18	-0,17	-0,18	-0,22	-0,25
Moravskoslezský kraj	-0,33	-0,39	-0,45	-0,42	-0,37	-0,39
Hlavní město Praha	-0,65	-0,55	-0,37	-0,48	-0,44	-0,39
Ústecký kraj	-0,72	-0,82	-0,85	-0,81	-0,82	-0,79

Source: CSO, RIS, own calculation and work

When comparing both variants of the region with universal conditions for life we can see that the model is quite insensitive to change in weights (if they are not too big) and for general orientation of user provides quite good informative level even at the same weights of indicators.

Diagram 8.6: Comparison of calculation variants results of model of regions with universal conditions for life with given and the same weights of indicators⁷



Source: CSO, RIS, own calculation and work

⁷ Var. 1 – with given weights Var. 2 – with the same weights

Chapter 9

REGIONAL DISPARITIES IN EUROPEAN UNION

European Union is a heterogeneous economy with outstanding economic and social differences between countries and regions and with unbalanced territorial allocation of economic activities resulting in different standard of living of their population. For a long time the development of European Union has been directed by couple of complementary goals – competitiveness and cohesion. While direction to competitiveness determines EU position in a global world, the cohesion policy is evoked by the existence of disparities between countries, regions and social groups and its main goal is to reduce these disparities. Size, structure and level of disparities, expressed by selected indicators, is even taken as a scope or measure of cohesion. Cohesion policy that has to ensure a convergence between rich and poor countries and regions within European Community, is one of the main goals of European integration from its beginnings in the 50th of twentieth century.

9.1 Regional disparities and cohesion in EU

Cohesion is expressed as balanced development of the entire Community and reducing differences in development of member countries and regions. The level of unevenness or disparities is measured and compared by numerous indicators, e.g. by GDP per capita between countries (national cohesion) or between regions (regional cohesion).

Conception of Cohesion in the European Union

The term economic, social and territorial cohesion expresses solidarity between member countries and regions of EU. It appears step by step in all basic treaties of European Community and European Union (EUR-Lex, 2010). The objective of cohesion is balanced development within EU minimizing structural differences (disparities) between countries and regions and supporting equal opportunities for all. Beginnings of cohesion policy in Europe we can see in so called Treaty of Rome (1957), referring in its preamble to ensuring harmonic development by reducing regional disparities between different regions and reducing backwardness in less developed regions. National policies started to be coordinated at the level of Community in 70ies of the twentieth century and other financial resources are granted by European Regional Development Fund to support the poorest regions (Faludi, 2004).

In spite of the fact the term of cohesion is generally used in European Community and European Union treaties, it is not precisely and unambiguously defined in them. By Molle (2007), the cohesion can be expressed by such level of differences between countries, regions of groups that are politically and socially sustainable. The lower these differences are the higher is the level of cohesion. Thus at present we distinguish in EU documents three dimensions of cohesion: economic, social and territorial and their content sometimes overlaps.

Economic cohesion evaluates economic convergence and can be expressed by minimizing of disparities between development levels of different regions (countries) by economic indicators such as e.g. gross domestic product GDP/head, employment, productivity, etc.

Social cohesion is focused to the achievements of objectives in employment and unemployment, education level, social exclusion of different groups and in demographic trends in EU.

Territorial cohesion is a supplementary term to economic and social cohesion. Territorial cohesion conception develops economic and social cohesion by transferring the basic objective of EU, i.e. balanced and sustainable development, into territorial context. It represents balanced distribution of human activities within the territory enabling efficient exploitation of territorial potential to increase competitiveness. This is a general term integrating social and geographic dimensions of territory and its potential.

Economic and social cohesion represents the solidarity between states and regions and in principle is implemented by regional policy of EU. Territorial cohesion is a result of economic cohesion expressed by minimizing regional or national disparities in economic area and inequalities in wealth and social cohesion defined by shared values, absence of mechanisms of social exclusion, existence of social nets, territorial solidarity and identity. Territorial cohesion has been discussed at inter-governmental level in EU since 90ties of the last century and last conclusions to it have been summarized in so called Green Book on territorial cohesion (EC, 2008). By acceptance of new Lisbon Treaty territorial cohesion became the matter settling one of the basic topics of EU policies.

Concept of regional disparities in the EU from the view cohesion

If accepting the thesis that disparities express cohesion level we can speak, in this context, about economic, social and territorial disparities.

Economic disparities

Economic disparities reflect level of economic cohesion that used to be explained according to context applied in. By Molle (2007, 37) „economic cohesion exists if all economic segments (namely regions) are included into European economy in such way to be able to face international competition“. Economic cohesion grows or improves, in case of decrease of disparities between competitiveness segments (factors); in other words, in case that the weakest regions are able to catch up with advanced ones. The main indicator of economic cohesion is considered to be a gross domestic product per head, enabling its comparison between different countries or regions.

GDP is a synthetic indicator. It can be affected by changes in different segments (economic factors) determining competitiveness. Competitiveness is generally measured by productivity level, the economy makes use of its resources with. And the productivity forms the main part of indicator of GDP /head. Whole fraction GDP/head can be divided into three coefficients (EC 1999). The first coefficient, i.e. GDP per employed person, approximately expresses labour productivity level; the second coefficient expresses employment rate by percentage of employed persons and people in working or active age. Third coefficient expresses

population performance level by percentage of working people and total number of population. Each of above actors can be subdivided and applied to certain cohesion dimension. Productivity relates to economic cohesion, employment rather to social cohesion.

In spite of the fact the GDP/inhabitant indicator is considered to be the main cohesion indicator, we must be aware of its limited informative level that can come to light namely in regional evaluation. The GDP is based on local or regional production generated by those, working in given site, while population is taken according to domicile and not to workplace. The GDP/inhabitant at regional level is further set not by activity of firms but also by regional transfers and non-market gross value added (i.e. by public sector activities), and this can be important, namely at lagging regions. Because of insufficient statistic data for other indicators thus the GDP/inhabitant remains prominent indicator of economic cohesion.

Social disparities

Issues of social cohesion relate to balanced participation of different groups in social life (Molle, 2007). Social cohesion relates very often to existence of harmonious relations between different social groups. Social cohesion prevails if disparities in many social indicators are politically sustainable. Social cohesion tends to achieving objective in unemployment, education level, social exclusion of different groups, in demographical trends within EU, etc.

Unemployment rate, employment rate, poverty risk rate we considered to be operative indicators that are mostly used for identifying social problems, but there should be also included a job availability or job quality and in knowledge-based community also qualification of manpower and education level. Contrary to economic cohesion one integrated indicator is not sufficient.

The other important indicators of social cohesion within EU after opening Schengen space can be also an integration level of immigrants and their descendants or social exclusion problems joined with social deprivation and poverty.

Territorial disparities

In association with territorial cohesion one very often uses for expressing territorial differences not only term of disparity but also a term of territorial unbalance. Nevertheless in EU exist many aspects of territorial balance impeding harmonic development of Union economy in future years (EC, 2004):

- at EU level this concerns high concentration of economic activity and population in central area or so called pentagon determined by cities of London, Paris, Milan, Munich and Hamburg,
- at national level this concerns large unbalances persisting between main metropolitan areas and the rest of the country, relating to economic development,
- at regional level this concerns growing number of territorial differences beside those that can be measured by GDP value or by unemployment rate, as e.g. growing traffic-jams and polluted air and prevailing social exclusion in main conurbations, while many rural areas suffer from insufficient economic connection with

neighbouring small and middle-sized cities, fall in number of population and decreasing availability of basic services,

- within regions and cities it concerns development of nests of poverty and social exclusion, etc.

Territorial disparities very often reflect strong inequalities in competitiveness factors level in the territory leading step by step to asymmetrical distribution of physical and human capital. There exist differences between periphery and centre relating to population, wealth, access to services of public interest, to traffic, power, telecommunications and information society, or relating to research and capacity for innovations. We cannot ignore these differences as they influence the whole competitiveness of EU economy.

9.2 Assessment of disparities in EU members countries

Assessment of disparities at national and regional levels we can find in different issues of Union policies. They are e.g. reports assessing cohesion policy and structural funds exploiting at national level or at the level of the whole European Union. Detailed assessment of disparities and of efficiency too was also performed within 2000 and 2010 in assessing fulfillment of goals of so-called Lisbon strategy, but there it concerned namely national disparities assessment.

Economic and social cohesion reports

Article 175 of EU functioning agreement (before article 159 on EU) sets that Commission presents every three years to European Parliament, Council, Economic and Social Committee and Committee of regions the report about progress attained in consolidating economic, social and territorial cohesion and about the way, the different means set in this article contributed in (policy of member-countries and Union, Structural funds, European investment bank). Survey of reports published yet is given in the Table 9.1.

Assessment of social and economic conditions in development of Community regions has taken place in so called periodical reports already since 1980, when so called First report was issued, the last Sixth periodical report was issued in 1999. Reports about cohesion evaluation (see Table 9.1) has started to be issued by Commission since 1996, 5 reports have been issued to the year of 2010. In addition to it, the Commission has started since programming period 2000 to 2006 to issue annual progress reports about economic and social cohesion. These reports represent shorter analytical studies focused thematically. Six progress reports have been issued from 2002 to 2009.

The content of basic reports is similar. For a given period is assessed actual reached level of cohesion and differences between countries and regions, EU cohesion policy impact on EU territory and inhabitants, national cohesion policies impacts. Reports also set cohesion policy intent in next period. Report main intent is expressed in their title. From assessment reports text results certain fragmentariness of composition of indicators for disparities assessment. Nevertheless there exist assessed disparity indicators at national level, i.e. between member-countries and between regions within the whole EU 27. Data for regional disparities assessment within EU are provided from regional statistic databases of European Statistical Office Eurostat.

Table 9.1: EU economic and social cohesion reports

<i>Report</i>	<i>Operating report</i>	<i>Publishing</i>	<i>Report title</i>
1.		1996	<i>First cohesion report</i>
	6.	1999	Sixth periodic report about social and economic situation and development of European Union regions
2.		2001	<i>Unity, solidarity, diversity for Europe, its population and its territory</i>
	1.	2002	First progress report about economic and social cohesion
	2.	2003	Second progress report about economic and social cohesion
3.		2004	<i>New partnership for cohesion , convergence, competitiveness, cooperation</i>
	3.	2005	Third progress report about economic and social cohesion. To new partnership for growth, employment and cohesion
	4	2006	Fourth progress report about economic and social cohesion „Growth and employment strategy and reform of European cohesion policy “
4.		2007	<i>Growing regions, growing Europe</i>
	5.	2008	Fifth progress report about economic and social cohesion „Growing regions, growing Europe“
	6.	2009	Sixth progress report about economic and social cohesion „Creative and innovating regions“
5.		2010	<i>Investments into future of Europe</i>

Source: EC 2010a, own work

Regional statistics Eurostat

Comparable forms of regional statistics are an important part of European statistical system. Data gathering relating to quantity of assessed data and characteristics of different regions and even to number of these regions is a long-term work. Assessment and following development of databases are complicated by quality and integrity of data gathering at the territory of different Union member-countries. From above mentioned results that relevant and high quality data on regions are available after longer time. So the required data can be often acquired with two years delay, in the best case, up to four years delay.

Regional statistics is included within Eurostat in the chapter General and regional statistics, including (Eurostat, 2010a): detailed classification of regions NUTS; statistic data in two forms – in form of pre-defined tables and in form of on-line databases; regional statistics methodology; selected regional statistics publications. Eurostat provides in on-line mode an access to two groups of regional databases in form of pre-defined tables and complete databases. Regional on-line database enable own required information creation in similar but enlarges scope.

Regional data creation requires specific determination of regional territorial units by classification of above mentioned NUTS. The Eurostat deals the most precisely and in the most detail with data gathering for levels of NUTS 1 and NUTS 2. For these levels are available statistics the most complete. For level of NUTS 3 are available only selected basic

data and very often for limited time period. The Eurostat has dealt since 2004 also with urban statistics (Urban audit), including data for about 270 indicators.

The Eurostat includes in its regional statistics the most significant indicators of European Union economic development, of social life, demography, immigration, regional accounts, employment and unemployment, health, tourist industry, agriculture, research and development and education, the last but not least. More detailed methodical division of Eurostat regional statistics is given in Table 9.2.

Beside databases the Eurostat issues Eurostat basic publications dealing with regional statistics (Eurostat, 2010a):

- European regional and urban statistics – Reference guide;
- Regions in European Union;
- Eurostat regional yearbook.

Table 9.2: Eurostat regional statistics basic methodical classification

<i>Basic classification</i>	<i>More detailed classification</i>
Regional agricultural statistics	Agricultural accounts Structure of agricultural plants by NUTS
Regional demographic statistics	Inhabitants Population projections
Regional migration statistics	
Regional education statistics	
Regional economic accounts ESA 95	GDP indicators in different units Derived indicators ESA 95 Households accounts ESA 95
Regional education statistics	
Regional statistics of science and technology	Expenditures and employees R&D Human resources in science and technology (HRST) Employment in high-tech sectors Applications for European patents EPO
Regional structural business statistics	
Regional health statistics	Causes of deaths Medical care: sources and patients
Regional statistics of transport and energy	
Regional statistics of information society	
Regional labour market statistics	Regional economically active population Regional employment Regional unemployment Regional social demographic statistics of manpower Regional labour market
Regional labour cost statistics	

Source: Eurostat 2010a, own work (to April 1, 2010)

As above mentioned, provided data are restricted by time delay, incompleteness of time series and prevailing orientation to level of NUTS 2.

Disparities development assessment in Central European countries of EU by structural indicators

Structural indicators developed within Lisbon strategy assessment and their number reached 79 in 2010. They are divided into six basic areas (spheres) of evaluation (Eurostat, 2010b): general economic environment (9); employment (11); innovation and research (16); economic reform (15); social cohesion (10); environment (18). To simplify evaluation there is elaborated so called short list of 14 main structural indicators covering all three pillars of Lisbon process, i.e. economic, social and environmental. They are defined namely for national level, for 9 of them there are in Eurostat database also data for regional level of NUTS 2. They are surveyed in Table 9.3.

Table 9.3: Short-list of structural indicators and their specification

<i>Structural indicator</i>	<i>Available data</i>
<i>General economic background</i>	
GDP per capita in PPS	Country, NUTS 2
Labour productivity per person employed	Country, NUTS 2
<i>Employment</i>	
Employment rate by gender	Country, NUTS 2
Employment rate of older workers by gender (55-64 years)	Country, NUTS 2
<i>Innovation and research</i>	
Youth educational attainment level	Country, NUTS 2
Gross domestic expenditure on R&D (GERD)	Country, NUTS 2
<i>Economic reform</i>	
Comparative price level	Country
Business investments in % of GDP	Country, NUTS 2
<i>Social cohesion</i>	
At-risk-of-poverty rate after social transfers	Country
Dispersion of regional employment rates	Country, NUTS 2
Long-term unemployment rate	Country, NUTS 2
<i>Environment</i>	
Greenhouse gases emissions	Country
Energy intensity of economy	Country
Volume of freight transport relative to GDP	Country

Source: Eurostat 2010b

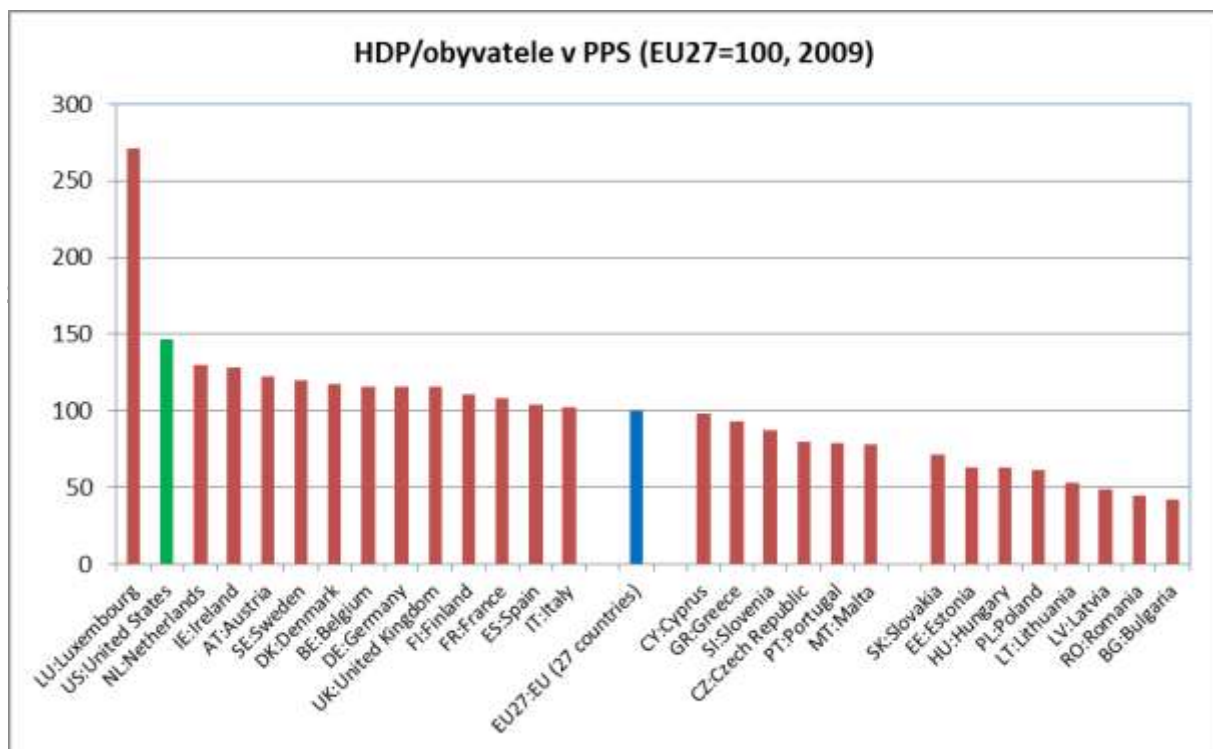
In spite of it that Lisbon strategy did not reached its initial goal and as a result of world economic crisis in the period between 2008 and 2009 dramatically fell down the economic performance and grew unemployment in all countries of EU, the system of structural indicators created for its assessment is suitable instrument for disparities assessment. Since the delay of available data in Eurostat statistics is about two years, the surveys and comparison elaborated based on available data, cover the most the period between 2001 and 2008, or 2009.

Convergence assessment in the EU

In present European Union exist significant differences as at the level of member-countries so at the level of regions. The value of GDP per capita indicator in Purchasing Power Parity (PPP) in percentage (EU27=100) was e.g. in 2009 for Luxembourg 291 %, for Bulgaria.

By the value of GDP/inhabitant we can split countries of EU27 into 3 groups: advanced countries with values above 100% of EU27 average, medium-advanced countries with values varying between 75% and 100% and backward countries with values below 75% of GDP. Situation in 2009 is illustrated in the Figure 9.1.

Figure 9.1: GDP/inhabitant in EU countries in PPP (EU27=100, 2009)



Source: Eurostat 2010a, own work

Between different regions within member-countries exist significant differences. The GDP per capita expressed in PPP (EU27=100) varied in 2007 in 271 regions of NUTS 2 from 26 % of EU 27 average in region of North-West in Bulgaria to 334 % of the average in region of Inner London in Great Britain. But only every seventh region reached value above 125 % of average and the whole quarter of regions was below 75 % of EU27 average. Interesting was fifth place in the ranking for Prague. But we must emphasize that the value of GDP/inhabitant is in some regions, namely in regions of capitals of countries, affected very much by commuters number from neighbouring regions, so the actual value of indicator is overestimated.

Differences in economic level of the most advanced and the most backward EU regions are shown in Table 9.4.

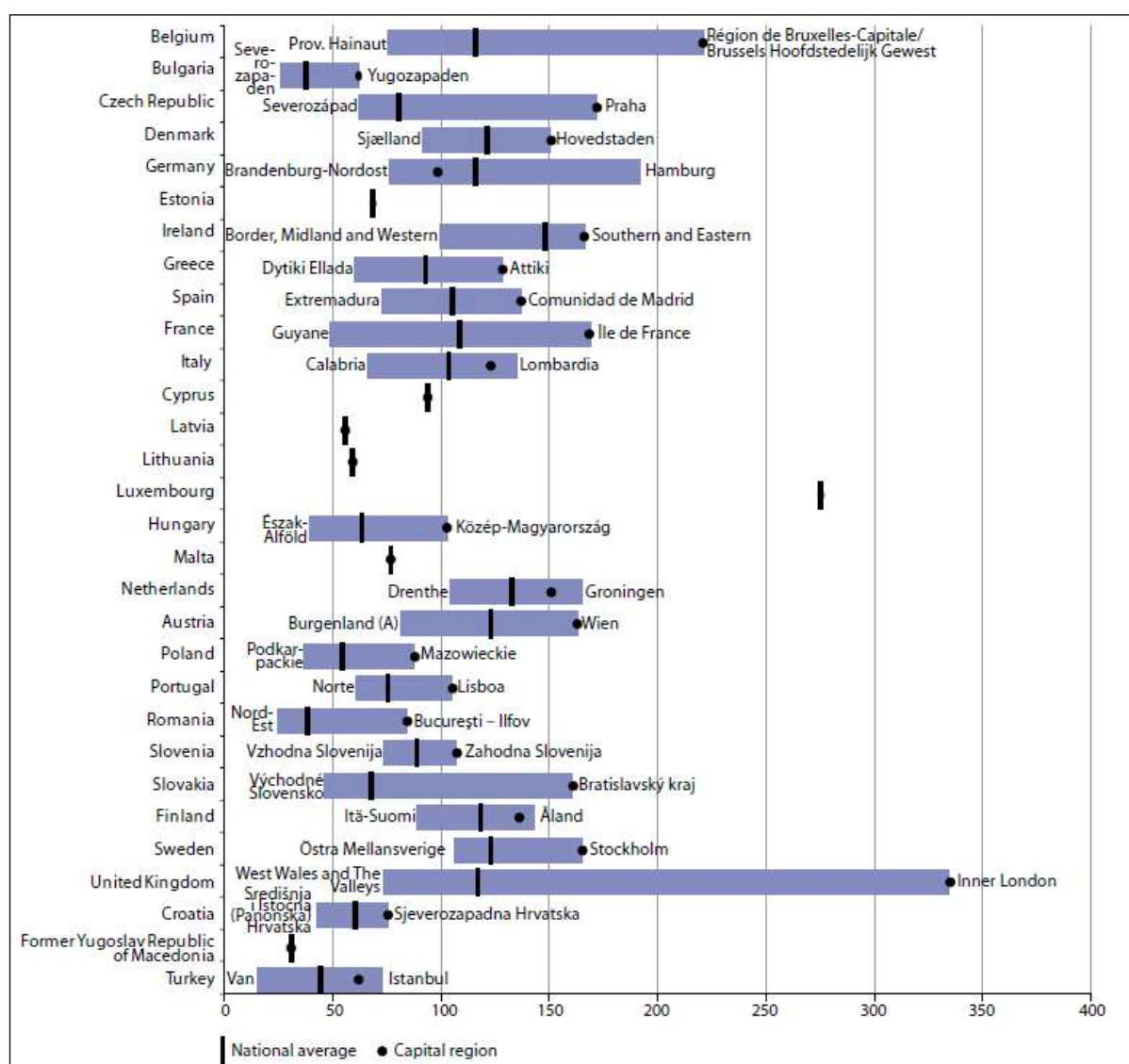
Table 9.3: The GDP/inhabitant development in selected EU countries

Five the highest (2007)			Five the lowest (2007)		
1	Inner London (UK)	334	1	North-West (BG)	26
2	Luxembourg (LU)	275	2	Nord-Est (RO)	27
3	Brussels Hfdst. (BE)	221	3	Severen tsentralen (BG)	27
4	Hamburg (DE)	192	4	Yuzhen tsentralen (BG)	27
5	Prague (CZ)	172	5	Yugoiztochen (BG)	31

Source: Eurostat 2010a, own work

Regional disparities from the view of GDP per capita in different EU27 countries is shown in diagram below. For every country is presented region with the lowest and highest values, then value the capital of the country reaches and average value of given country drawn by perpendicular.

Figure 9.2: The GDP per capita in PPP by NUTS2 (EU27 = 100, 2007)

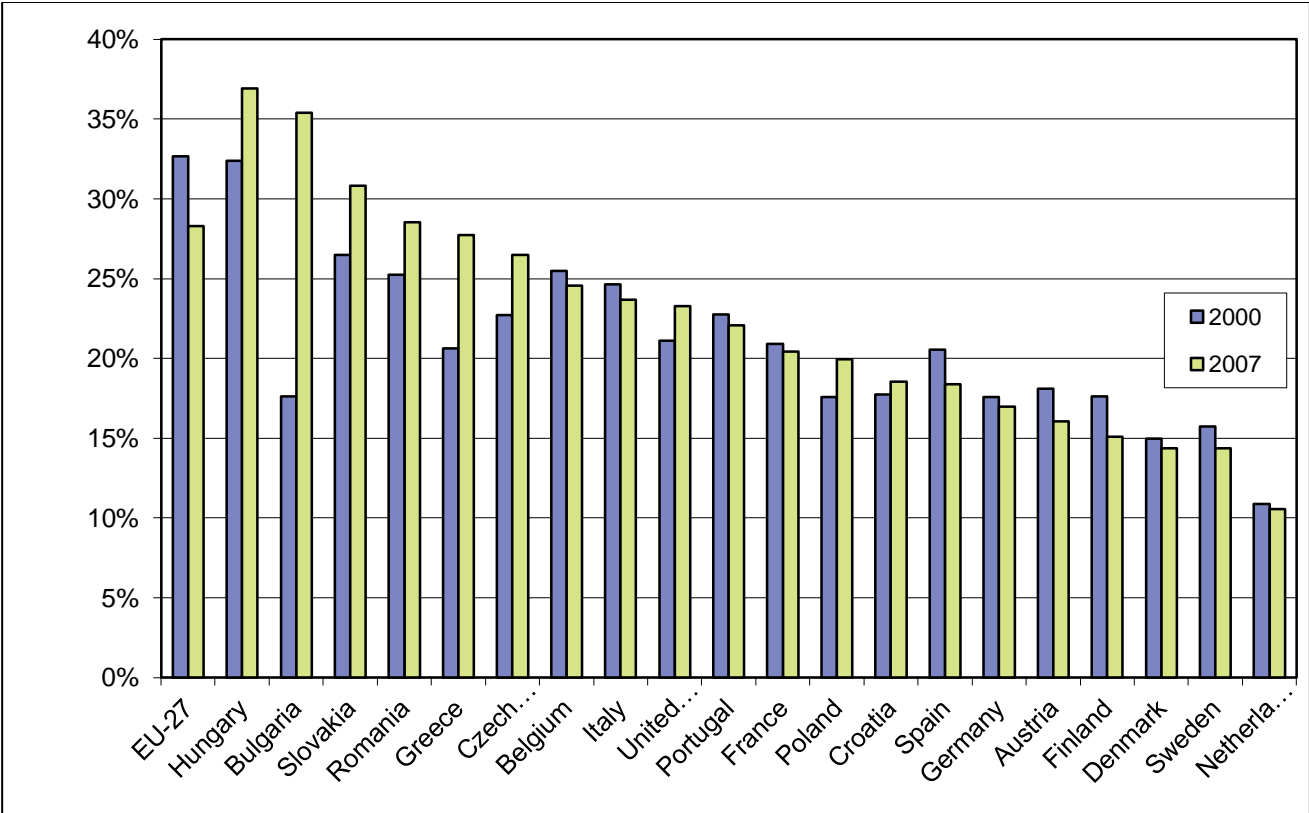


Source: Eurostat, 2010c

Also the convergence level of countries and regions in EU is evaluated most often by value of GDP. From economic and social cohesion reports results, including the fifth report that the convergence process at national level is provable. Economic growth in new member countries has been within last ten years, i.e. years of so called pre-accession period and the first period following the accession to EU, much higher than in countries of EU15. But positive trend was stopped because of world economic crisis within the years from 2008 to 2010. It is impossible to draw clear conclusions at regional level. Regional disparities have grown up in the most EU new member countries within the period from 1995 to 2009, namely at indicator GDP per capita and unemployment.

For development assessment in regions within member countries we can use indicator of dispersion of regional GDP per inhabitant defined as a sum of absolute differences between regional values (level of NUTS 2, or of NUTS 3) and national GDP per inhabitant (measured in common market prices and weighted by regional percentage of inhabitants from total population). Value of dispersion of GDP per inhabitant is zero, if regional GDP values are the same in all regions of the country or economic zone (like EU27 is) and grows up, if differences between values of regional GDP per inhabitant between regions grow up. E.g. dispersion value of 30 % means that GDP of all regions of given country weighted by number of population in regions differs in national value by 30 % in average (Eurostat 2010a). Trends in dispersion indicator movement are given in Figure 9.3.

Figure 9.1: Dispersion of regional GDP at NUTS 2 level



Source: Eurostat, 2010c

The value of dispersion indicator of regional GDP/inhabitant has fallen down in the whole EU27 within 2001 and 2007 and this signalize a convergence process. Regional disparities

have grown up in the most new member countries (this concerns the Czech Republic, Hungary, Poland and Slovakia too). On the other hand, the most significant reduction in this indicator have happened in Austria, Italy and Spain.

The increase in regional differences at the level of NUTS 3 is at new member countries much more significant as we can see namely in the case of Poland, Slovakia and Hungary from data in Table 9.4. E.g. the dispersion value of regional GDP per inhabitant has grown up in Hungary for NUTS 2 regions within 2001 and 2006 by 5,7. The growth in Slovakia has been 2,8 at NUTS 2 regions and 7,1 at NUTS 3 region and in Poland the dispersion growth has been 1,3 at NUTS2 regions and 18,2 at NUTS3 region. Detail survey is given in Table 9.5.

Table 9.4: Dispersion of regional GDP/inhabitant in regions of NUTS 2 and NUTS 3

<i>Country/ years</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2006-2001</i>
Regional GDP dispersion at the level of NUTS2							
The CR	24,3	24,8	24,9	24,2	25,1	25,4	1,1
Hungary	33,0	35,4	34,2	33,4	35,7	37,6	4,6
Poland	18,2	18,1	18,3	18,7	19,4	19,5	1,3
Slovakia	27,3	28,3	27,8	28,3	31,7	30,1	2,8
Regional GDP dispersion at the level of NUTS3							
The CR	24,4	24,7	24,9	24,3	25,1	25,3	0,9
Hungary	36,7	38,9	37,2	37,2	40,0	42,4	5,7
Poland	16,2	17,3	17,4	31,3	32,3	34,4	1,2
Slovakia	27,4	28,1	28,7	29,2	33,6	34,5	7,1

Source: Eurostat 2010a, own work

Similar analysis could be performed for values of employment and unemployment dispersion indicator in regions of NUTS 2, the Eurostat searches data for.

9.3 Actual approaches to regional disparities in European Union countries

With regional disparities deals regional policy. In European Union countries, the regional policy is implemented based on two principal approaches as national policy or as coordinated EU cohesion policy. Different countries implement their own, national regional policy using their own, national sources. The EU cohesion policy makes use of structural funds and Cohesion fund financed from EU budget. Level and range of structural funds interventions predefine in the most cases the level and range of national regional policy and EU cohesion policy in the country. The national regional policy is practically the same as in the most new member countries of EU 12 or is substituted by EU cohesion policy.

Regional policy in EU countries has been within last years strongly affected by new programming period of EU cohesion policy for the period 2007 to 2013. The EU enlargement resulted in change in many parameters, the regional policy is performed in, and this we can see at the largest beneficiaries of structural aid. E.g. cohesion policy financing from EU resources in Poland has grown up from about 2,6 bil. € per year within the period 2004-2006 to more than 6,5 bil. € per year within the period 2007-2013. On the other hand, in Spain EU financial resources were reduced by more than two fifths in new programming period and

in Ireland they were reduced from 3,9 bil. € within 2000 – 2006 to mere 900 mil. € per year (Yuill, 2007).

In this new period takes place a significant shifting also in goals and priorities of EU cohesion policy as a result of Lisbon strategy. Higher emphasis is still placed on growth goals and competitiveness pointing out innovation support. The EU enlargement brought also changes in regional policy management. In new EU member countries is as a result of available resources for regional policy and increasing capacity for its performance pursued decentralization and „rationalization“ in management, on the other hand, in countries with limited financing from EU resources was reduced a number of regional programmes and administration in the area of regional policy was centralised. National documents development (National strategic reference framework and operational programmes) brought also better coordination of policy not only between centre and regions but also between ministries and national level.

Actual character of regional issues and their perception

When assessing regional issues we can divide EU countries into several groups (Yuill 2007, 2008).

- The first group form countries, the regional disparities in which are limited as in national so in European context and they do not require any significant regionally directed interventions. Among these countries belong Denmark, Holland, Luxembourg and to a certain degree even Austria.
- The second group form Belgium, France, Ireland and Great Britain. There are significant regional disparities reflecting various problems and requiring specific interventions of regional policy.
- Finland, Sweden and Norway form the third group of countries, having, on one side, regions with low density of population but on the other side, regions with growth-oriented fragments of regional policy.
- In the fourth group there are Germany and Italy, showing significant regional differences in large part of the territory the main aim of regional policy is concentrated on. There are differences between east and west in Germany and south and north in Italy.
- Policies in the fifth group, Greece, Portugal and Spain are included in, deal namely with development support at national level.
- The last group form new member countries of EU 12. There are significant internal regional differences, namely between capitals and backward regions, namely at eastern borders. And in addition to it, these countries mostly show large differences in comparison with EU average. Thus the main emphasis place policies on development at national level.

Generally true is that disparities expressed by main economic indicators still prevail and are taken as a problem. In all countries an opinion is declared that to reach more balanced territorial development requires interventions. On the other side, as a result of growing international competition, one discusses about adequate means and measures of regional policy. In many EU countries disappears traditional orientation towards so called problem

region and there is provided a space to differentiated approach to regional policy at the territory of country.

There is still larger and larger concentration on settling of sub-regional issues. This requires tailored solutions and at the same time co-participation of subregions in economic renewal process according to their individual needs and possibilities. On one side the regions want more autonomy to set their own goals and priorities, and on the other side grows internal competition for resources within regions. But at the same time grows interest and need in increasing economy competitiveness as a whole. After EU enlargement it is a significant topic in the most member countries, new or old ones. National competitiveness and economic catch-up is the main goal of policies in member-countries with economic development level below average. Nevertheless, traditional interest in weaker and backward regions remains a part of programmes of the most regional policies. That's why it is necessary to find in regional policy a balance between two goals, i.e. cohesion goal (equality) and competitiveness goal (efficiency).

Reaction of regional policy to solving the regional problems

As a result of running globalization, Lisbon strategy acceptance and namely preparation on new programming period, the changes in regional policy of different EU countries are taking place after 2000 manifested in change in character of regional policy, in change in goals of regional policy, in territorial or spatial orientation of regional policy and in the way of regional policy management (Yuill, 2007).

Within EU we can find different character of regional policy.

- In the first group of countries the regional policy functions namely under EU cohesion policy programmes. Among them belong so called cohesion countries of EU 15 and new member countries of EU 12.
- In the second group the regional policy is focused mostly on use of domestic regional programmes, even if it is very often joined in certain degree with EU programmes. Among them belong e.g. Austria (at level of federal countries), Denmark, Sweden, Finland, Ireland.
- In the third group like France or Great Britain, the regional policy was always more focused on territory or space and structural funds do not play there any significant role.
- Finally there exists a group of countries (Germany, Norway, Luxembourg), traditional approaches to regional policy are highlighted there based on regional aid to weaker regions and the regional policy is a mix of both approaches, i.e. national and Union ones.

Main changes associated with the character of regional policy relate to so called programming approach, initially applied namely in EU cohesion policy, that is now reflected even in national regional policy. While, namely in EU15 countries, EU programmes play complementary role because of gradual financing reduction, so the key role they play in regional policy of new member-countries of EU12 and in cohesion countries (Greece, Spain and Portugal).

Recently under Lisbon priorities new policy goals focused on competitiveness and knowledge-based economy were formulated. But the fragment of equity and equality remains to be a broader objective considering territorial balance and poly-centric development support. Regional disparities settling is not always the objective explicitly expressed in strategic part of programming documents, in spite of it that it is taken as a basis. Under Lisbon strategy is pointed out concentration on employment, new jobs creation and economic growth.

We can also see in regional policy movement of aims from general regional aid to larger regional business environment development aid in form of infrastructure for undertaking, innovations support, etc. In domestic regional policy is pointing out endogenous development support concentrated on offer side and solving restrictions resulted from market failure.

Generally following topics prevail in approaches to regional policy (Yuill 2007, 2008):

- General trend consists in concentration on preparation of regional programming and on regional strategies that have to increase an emphasis on endogenous development of regions own potential. The aim is to maximize contribution of different regions to total national growth. Namely at EU 15 countries weight of regional policy based on regional support is decreasing and individual projects support is replaced by improvement of general entrepreneurial environment .
- The main development priority is practically in all cases to increase regional (and thus even national) competitiveness. But, on the other hand, nearly everywhere is still pointed out equity and equality and in the most countries are still fundamental questions of regional balance, or balanced regional development having to ensure equitable services provision in all regions.
- Policy priorities are influenced by sustainable development. Regional policy spatial focusing is changing because of increasing importance of so called access „for all regions“. Regional policy geographical tendency is changing not only according to regional typology (urban, rural, mountainous and coastal regions), but there are also solving issues inside these regions. Larger emphasis of policy on productivity and growth requires also different level of territorial interventions.

Two main trends have been identified in regional policy execution. On one side regional level of regional policy is pointed out. On the other side, at the same time remains strong or even growing up national role in some countries. We can see there an endeavour to improve coordination of regional policy at national level, in regions and between centre and regions.

9.4 Future trends of EU cohesion policy in dealing with regional disparities

Other trends in cohesion policy when dealing with regional disparities and general inequalities in EU in new planning period 2014 – 2020 are presented in conclusions to fifth report on economic, social and territorial cohesion.

Economic and financial crisis pointed out necessity of policy investing into competitiveness of all regions and at the same time continuing to support development of backward ones. In Commission statement to fifth report conclusion is stated (EC, 2010b, p. 10):

Cohesion policy aims to promote harmonious development of the Union and its regions by reducing regional disparities (Article 174 of the Treaty). It also underpins the growth model of the Europe 2020 strategy including the need to respond to societal and employment challenges all Member States and regions face. The policy supports such development with a clear investment strategy in every region by increasing competitiveness, expanding employment, improving social inclusion and protecting and enhancing the environment. The multilevel governance system for the policy helps to make the EU more visible to its citizens.

All regions and Member States would be eligible to cohesion policy and able to tailor their strategy in an integrated manner to their specific strengths and weaknesses. As today, support would be differentiated between regions based on their level of economic development (measured by GDP per capita), drawing a clear distinction between 'less' and 'more' developed regions. To soften the transition between these two categories and ensure a fairer treatment for regions with similar level of economic development, the question could be asked as to whether a simpler system with a new intermediate category of regions could replace the current phasing-out and phasing-in system. This category would also include regions currently eligible under the 'convergence' objective but whose GDP would be higher than 75% of the Union average according to the latest statistics. The Cohesion Fund would continue to benefit Member States whose GNI per capita is lower than 90 % of the Union average. Finally, cohesion policy would continue to foster territorial dimensions of cooperation (crossborder, transnational and inter-regional)."

Chapter 10

Conclusions

Presented monograph shows that basic research of problems of disparities and regional disparities under the task *WD-55-07-1 Regional disparities in territorial development of the Czech Republic* contributed to significant deepening of actual knowledge on these issues in all its relevant spheres – in theory, methodology, classification, system decomposition and practical application ability.

Conclusion to regional disparities theory, methodology and classification

Spatial changeability in social economic development leads to unbalanced development of regions characterized by generation of spatial inequalities. Unbalance in spatial structures in different regions is called regional disparity and is taken as difference or disproportion of different events or processes strictly territorially allocated and occurring at least in two entities of this territorial structure.

As was highlighted above, disparities issues are complicated and to manage them requires to apply multidimensional and multidisciplinary approach, integrating view and plural investigating methodology.

One of applied approaches consisted in variety and complexity of view on regional disparities. One-sided and traditionally applied view on regional disparities as on negative phenomena dealing with searching the different subjects are behind in was rejected. One suggests to take, besides mentioned view, disparities also as positive phenomena, it means searching differences between subjects leading also to understanding their individuality, or uniqueness in positive sense.

Regional disparities new searching was also applied when selecting approach to identification and assessment of disparities. This consisted in it to what scope brings information on disparities that have been found, new knowledge to information user and in what sense this knowledge can be used. Disparities information value is distinguished to cognitive, decisive, motivation and operation.

Disparities searching aspects and attributes have been significantly deepened. There is suggested to break searching into two groups, to aspects expressing disparities with attributes of polarity character (only two dimensions) and aspects expressing disparities with attributes of character of possibilities specification (more dimensions).

A significant methodological fragment of disparities studying is their division in disparities with material basis, reflected in reality (material disparities), and with non-material basis reflected in people heads (non-material or mental disparities). This division remains even in regional disparities classification.

For regional disparities system decomposition and classification is suggested selection of their attributes. There are characterized key issues of regional disparities identification, measurement and assessment. Two main perspectives of decomposition and classification of disparities are suggested, namely it is vertical perspective, where disparities are

distinguished by geographic level, and horizontal perspective, where disparities are distinguished by the sphere of their occurrence (social, economic and territorial).

Conclusions to decomposition and regional disparities indicators proposal

For decomposition of regional disparities searching and assessment system in the Czech Republic three identified spheres of occurrence (social, economic and territorial) 1st level of classification - class (subsystem of 1st order) are represented.

Second level of classification defined as subclasses (subsystems of 2nd order), represents 11 problem entities decomposed at 3rd level of classification into 46 descriptors. Descriptors are expressed at 4th distinguishing level by 164 indicators.

Decisive criterion for indicator selection was their informative level for given application purpose, i.e. catchment of relevant interregional differences - disparities. The second criterion by order was real possibility of statistic monitoring. In case of more rather equivalent alternatives offered in indicator selection the priority was given to those indicators already included in statistic searching.

Suggested system of 46 descriptors and 164 indicators represents broad set of information enabling very detailed views on regional disparities. At the level of different indicators this relates to very detailed views enabling settling concrete autonomous partial issues but to use them for decision making is usually very complicated because of their quantity and too much details.

Decision making, namely strategic one, usually requires more synthetic view, showing problems of disparities existence and development in regions in different stage of integration and in correlations. That's why is needed certain level of user integration of indicators and this led to elaboration of proposal of integrated indicators and model regions for monitoring and assessment of regional disparities. There are identified fourteen integrated indicators and seven types of model regions.

Conclusions to instruments influencing regional disparities development

As for regional policy instruments, coming from regional development theories, we can argue that regional policy has created within its existence a large set of instruments to be able to attain its goals. Experience shows that namely such regional policy instruments proved to be competent that do not contest market attributes of economy. This fact, together with actual needs of territory, the instruments are applied in, should be a guideline for decision making bodies deciding about selection of regional policy instruments.

As above mentioned, instruments for influencing regional disparities can be distinguished by objective point of view but also by type and intensity of influence (from counselling and information up to administration and regulatory measures), the same as according to addressees they are addressed to (enterprises, population, municipalities, etc.).

Transparent and functional categorization of these instruments is important as from theoretical, or theoretical-cognitive aspect so also for practice. Adequate information and knowledge on instruments the regional policy can use, can be later used as convenient basis for applying these instruments.

Thus, instrumentation, the regional policy manages, can be used at disparities of positive types that are usually taken as territorial opportunities and also at disparities of negative type requiring minimizing or elimination. But we must point out that many instruments of regional policy relate, when using them, as to positive so negative disparities .

Conclusions to regional disparities assessment methods

Research works deals also with proving „ability to manipulate with“, ability to manage and practical usability of suggested indicators. It was proved that from analyzed set of methods the best usable method by regional management is that of traffic light, method off standard variable and point-by-point method.

Elaborated case studies proved good informative level of suggested indicators, integrated indicators and model regions and low difficulties, it means ability to manage, using all three recommended methods by regional management.

Conclusions to international comparison of regional disparities

Regional policy of EU countries and EU cohesion policy represent complex of policies the aim of which is to contribute to balanced development of regions in EU countries. Current regional policy is not more focused only on regional disparities management but accents development support in wider context as support of growth, employment, efficiency and competitiveness of regions that have to contribute to competitiveness of national economies and European Union as a whole.

The aim of this part of this publication was to analyze and compare concepts, approaches and application of regional disparities in regional policy and regional management of five selected Central European countries, that of Austria as the EU15 country belonging among advanced countries of EU and the Czech Republic, Hungary, Poland and Slovakia, as new member-countries.

This group of countries is very heterogeneous as to size aspect – the Czech Republic, Hungary, Slovakia and Austria are ranked among small countries , Poland belongs according to number of population among large countries so from the aspect how advanced they are . In spite of the fact that in countries of V4 have been similar development goals within last decades, relating to transfer to market economy, they have had and they also have created different development conditions and attained different level of their economies. Nevertheless, in all examined countries there are significant disparities between regions in similar rate (except Slovakia, where are higher) even if their perceiving is different.

In spite of that in cohesion policy assessment we find at EU level convergence between countries, the situation at regional level is not unambiguous. In advanced countries as is Austria, regional disparities do not increase a lot of but in spite of it this country has own disparity problems. All analysed new countries of EU12 showed in last period clear growth in disparities namely between capitals or regions of capitals and the rest of the territory, further deepening of disparities can be also seen at lower regional levels and inside these levels.

Regional disparities management at national level in comparing countries depends on regional policy control system, determined strategies and regional structure of state.

Approaches to disparities at regional level show similar indices in form of priority areas, the supporting programmes in regions are focused on regardless financial resources. Priority areas trend corresponds with nature of regional disparities describing conditions in priority areas that have to be improved by regional policy interventions.

We can summarised that the period after accession to EU up to world financial crisis, it means period between 2004 and 2008 has brought to countries of V4 significant economic growth, unemployment reduction and employment growth. But these good conditions were not sufficiently used for stabilizing public finance neither to research and innovations support.

Analysis proved that structural aid has good impact on growth in backward regions but no reduction in disparities between leading region in the state with the capital and other regions does not happen. Tendency toward competitiveness and growth factors use at regional level leads to increase of disparities even between regions in the group of catching regions within different Central European countries.

Chapter 11

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ANNEXES

Annex 1: Database of indicators of system for monitoring and assessment of regional disparities in the Czech Republic

Annex 2: Types of model regions

Annex 3: Characteristics of model regions

Annex. 1: Database of indicators of system for monitoring and assessment of regional disparities in the Czech Republic

SYSTEM OF INDICATORS					
<i>Disparities sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>	<i>Indicator</i>		<i>Source</i>
Social sphere	Population	Age structure	S1	Age index	CSO
			S2	Average age	CSO
		Health	S3	Chance of survival at birth (men)	CSO, RIS
			S4	Chance of surv. at birth (women)	CSO, RIS
			S5	Average percentage of sick leave	CSO, RIS
			S6	Average length of one sick leave	CSO, RIS
			S7	Tumours incidence in total per 100 ths. inhab. (world standard)	MZ, UZIS-NOR
		Education	S8	Secondary educ. people percent. from peop. num. in the age of 15 and older (%)	CSO, SLDB
			S9	University graduated people percent. from peop. num. in the age of 15 and older (%)	CSO, SLDB nebo VŠSP
		Living level	S10	Net household disposable income per 1 inhabitant	CSO
			S11	Households owning a car	CSO, SLDB
			S12	Households with PC	CSO, SLDB
			S13	Households with telephone and mobile phone	CSO, SLDB
		Migration	S14	Growth by migration per 1000 middle class inhab.	CSO, RIS
	Social facilities	Health service	S15	Doctors number per 10 ths.	CSO, RIS
			S16	GP self contained offices num. for adults per 10 ths. inhab.	CSO, RIS
			S17	GP self contained offices num. For children per 10 ths. inhab.	CSO, RIS
			S18	Self contained dental surgeries for adults per 10 ths. inhab.	CSO, RIS
			S19	Clinical beds num. Per 10 ths. inhab.	CSO, RIS
		Educational system	S20	Children number enrolled in maternity schools per class 1	CSO, RIS
			S21	Child. num. in primary sch. per class 1	CSO, RIS

SYSTEM OF INDICATORS

<i>Disparities sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>	<i>Indicator</i>		<i>Source</i>	
			S22	Students num. in gram. schools per class 1 (full-time study)	CSO, RIS	
			S23	Students num. in secon. tech.sch. per 1 class (full-time study)	CSO, RIS	
			S24	Students num. at universities in total in CR(attendance, combin. and distance form of study)	CSO	
			S25	Students num. at universities in the region	CSO	
			S26	Percentage of university students in the region from total num. of university students in the CR	$S25 / S24 \times 100$	
		Social services	S27	Number of rooms in social service facilities per 10 ths. inh.	CSO, RIS	
		Culture	S28	Number of public libraries with branch libraries per 10 ths. inhab.	CSO, RIS	
			S29	Number of centres for children and youth leisure time per 10 ths. inhab.	CSO, RIS	
		Sport	S30	Total number of sports facilities per 10 ths. inhabitants	CSO, RIS	
		Housing	S31	Num. of census households per 1 permanently occupied flat	CSO	
			S32	Number of residents in permanently occupied flats per permanently occupied flat room	CSO	
			S33	Living floor space per 1 pers. in m ²	CSO	
		Social pathology	Poverty risk	S34	Households percentage with net monthly incomes below	CSO*
				S35	Poverty risk rate – poverty rate	CSO (only for
			Criminality	S36	Crimes numb. per 1000 inhab.	CSO, RIS
			Accident rate	S37	Traffic accidents number per 1000 inhab.	CSO, RIS
				S38	Traffic accidents number per 1 km or roads	CSO, RIS

SYSTEM OF INDICATORS						
<i>Disparities sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>	<i>Indicator</i>		<i>Source</i>	
Economic sphere	Economic potential	Economic performance	<i>E1</i>	Population number in total	CSO	
			<i>E2</i>	Gross domestic product (GDP)	CSO	
			<i>E3</i>	GDP growth rate (in %)	$((E2(R)/E2(R-1)) - 1) * 100$, R=year	
			<i>E4</i>	Region GDP percentage in CR GDP	E2(for region)/ E2(for CR)	
			<i>E5</i>	Gross value added	CSO	
			<i>E6</i>	Region GVA share in CR GVA	E5(for region)/ E5(for CR)	
			<i>E7</i>	Tax incomes of municipalities and regions	CSO, regional year-books	
		Productivity	<i>E8</i>	GDP per head	E2/E1	
			<i>E9</i>	Labour productivity (GDP/employed person)	E2/E63	
			<i>E10</i>	Gross value added per one employed person	E5/E63	
			<i>E11</i>	Labour productivity growth rate (in %)	$((E9(R)/E9(R-1)) - 1) * 100$	
			<i>E12</i>	Labour costs in total	CSO, regional year-books	
			<i>E13</i>	Unit labour cost	E12/E63	
			<i>E14</i>	Unit labour cost growth rate (in %)	$(E13(R)/E13*(R-1)) - 1$	
		External relations	<i>E15</i>	Export of different CR regions into EU and selected countries	CSO	
			<i>E16</i>	Export percentage of GDP of the region	E15/E2	
			<i>E17</i>	Region export volume by sectors	CSO, regional year-books	
			<i>E18</i>	Export percentage of different sectors of export of the region	E17/E15	
			<i>E19</i>	Region export percentage of CR export	E15/E15(CR)	
			<i>E20</i>	Export volume per head	E17/E1	
			Sectoral structure	<i>E21</i>	Gross value added structure by sectors (region)	CSO
				<i>E22</i>	Economic subjects by selected legal forms	CSO
				<i>E23</i>	Economic subjects by groups of sectors NACE (OKEČ)	CSO, regional year-books

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Disparities sphere	Problem unit	Descriptor	Indicator		Source		
			<i>E24</i>	Economic subjects by category of employees number (0 -24 employees)	CSO		
			<i>E25</i>	Economic subjects by category of employees number (25 and more employees)	CSO		
			<i>E26</i>	Economic subjects by category of employees number (25 and more employees) per 1000 inhabitants	E25/E1		
			<i>E27</i>	Private entrepreneurs number	CSO		
			<i>E28</i>	Num. of small and middle-sized firms up to 250 employees	CSO, regional year-books		
			<i>E29</i>	Registered subjects by employees num. – above 1000 employees	CSO, regional year-books		
			<i>E30</i>	Numb. of private firms and corporations under foreign control	CSO		
			Development potential	Science and Research	<i>E31</i>	R&D expenditures by regions	CSO
					<i>E32</i>	R&D expenditures per 1 inhabitant	E31/E1
					<i>E33</i>	R&D expenditures in CR region by areas of science	CSO
	<i>E34</i>	R&D expenditures(in % GDP)			E31/E2		
	<i>E35</i>	Employees in R&D by regions			CSO		
	<i>E36</i>	Employees number in R&D per 1000 inhabitants			E35/E1		
	<i>E37</i>	Employees number in R&D per 1000 employees in the region			E35/E63		
	<i>E38</i>	Percent. of innovating firms			CSO		
	<i>E39</i>	R&D expenditures per one employed			E34/E63		
	Foreign capital				<i>E40</i>	Volume of foreign direct investments in the region	CzNB
			<i>E41</i>	Region contribution in total foreign direct investments in the	E40/E40(CR)		
			<i>E42</i>	Volume of foreign direct investments in the region by groups of NACE branches	CzNB		

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		Investments	<i>E43</i>	Volume of foreign direct investments per one inhab.	E40/E1		
			<i>E44</i>	Foreign direct investment share in gross fixed capital formation	E40/E45		
			<i>E45</i>	Fixed gross capital formation in CR regions	CSO		
			<i>E46</i>	Fixed gross capital formation in the region per one inhab.	E45/E1		
			<i>E47</i>	Structure of gross value added by NACE sectors	CSO, regional year-books		
			Human potential	Active population	<i>E48</i>	Population by basic age groups 0 - 14, 15 - 64, 65 and elder	CSO
					<i>E49</i>	Percentage of population of age groups from region population	E48/E1
	<i>E50</i>	Employment in NE by education level (basic, secondary,			CSO, regional year-books		
	Employment		<i>E51</i>	Employment in firms under foreign control	not found		
			<i>E52</i>	Percentage of employment in firms under foreign control from region employment	E51/E63		
			<i>E53</i>	Percentage of employees in firms below 25 employees from total employment in the region	E24/E63		
			<i>E54</i>	Economic subjects by selected legal forms (private entrepreneurs)	CSO, regional year-books		
			<i>E55</i>	Number of private entrepreneurs per 1000 inhab.	E54/E1		
			<i>E56</i>	Economic subjects by employees number (25 and more)	CSO, regional year-books		
			<i>E57</i>	Number of firms with 25 and more employees per 1000 inhab.	E56/E1		
			<i>E58</i>	Number of firms under foreign control with 250 and more employees per 1000 inhab.	not found		
			<i>E59</i>	Employment rate in primary sector of NE (sectors A to B)	calculation from E62		
			<i>E60</i>	Employment rate in secondary sector of NE (sectors C to F)	calculation from E62		
	<i>E61</i>	Employment rate in tertiary sector of NE (sectors G to U)	calculation from E62				
	<i>E62</i>	Employment in NE by NACE sectors	CSO, regional year-books				

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			<i>E63</i>	Average registered employees number	CSO, regional year-books
		Unemployment	<i>E64</i>	Unemployment by municipalities with higher competency (for	CSO
			<i>E65</i>	Unemployment rate	CSO
			<i>E66</i>	Registered unemployment rate (longer than 12 months)	CSO, regional year-books
			<i>E67</i>	Vacancies	CSO, regional year-books
			<i>E68</i>	Job seekers not-placement	CSO, regional year-books
			<i>E69</i>	Number of job seekers per 1 vacancy	E68/E67
			<i>E70</i>	Not-placed job seekers by age	CSO
			<i>E71</i>	Not-placed job seekers by education	CSO
			<i>E72</i>	Percentage of not-placed job seekers by age from unemployment rate	E70/E64
			<i>E73</i>	Percentage of not-placed job seekers by education from unemployment rate	E71/E64
		Mobility	<i>E74</i>	Foreigners (by districts – region)	CSO
			<i>E75</i>	Emigrants abroad by nationality	CSO
			<i>E76</i>	Immigrants	CSO
			<i>E77</i>	Emigrants	CSO
<i>E78</i>	Commuting to work by commuting destination		CSO		

SYSTEM OF INDICATORS					
<i>Disparities sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>	<i>Indicator</i>		<i>Source</i>
Territorial sphere	Structure of the region	Citizens percentage	U1	Citizens percentage	CSO, RIS
		Municipality	U2	Average area of municipalities in	CSO, RIS
		Total density of popul. in region	U3	Number of inhabitants per 1 km ²	CSO, RIS
		Altitude	U4	Average altitude in m	CSO, RIS
		Territory altitudinal articulation	U5	Altitudinal articulation (difference between the highest and the lowest point)	CSO, RIS
		Built-up areas	U6	Percentage of built-up areas%	CSO, RIS/ region area x 100
			U7	Density of population per 1 ha of built-up area	CSO, RIS
		Percentage of agricultural land	U8	Percentage of agricultural land in the region %	CSO, RIS/ region area x100
		Percentage of forest land	U9	Percentage of forest land in the region %	CSO, RIS/ region area x100
		Percentage of forests per head	U10	Forest area in m ² per 1 head	CSO, RIS
		Climatic conditions	U11	Average yearly temperature °C	CSO, regional year-books
			U12	Yearly amount of precipitation	CSO, regional year-books
	Traffic infrastructure	Roads, motorways	U13	Total length of roads and motorways per 100 km ²	CSO, RIS
			U14	Motorways density	CSO, RIS
		Railway traffic	U15	Service length of railway lines km	Transport year-book
			U16	Density of railway lines (km/km ²)	CSO, RIS
			U17	Percentage of municipalities with railway station or stop % from	SŽDC + CSO, RIS
			U18	Container transship points	SŽDC
		Air traffic	U19	Number of public airports from total number of airports for international transportation	ÚCL

SYSTEM OF INDICATORS					
Disparities sphere	Problem unit	Descriptor	Indicator		Source
Territorial sphere	Transport services	Integrated traffic systems	U20	Number of cities and municipalities connected in integrated traffic systems of mass transport	Different IDS in regions
			U21	Area covered by IDS:	Different IDS
			U22	IDS area percent. from region area	Different IDS CSO, RIS
			U23	Number of inhab. using public transport per 1 km ²	CSO, regional year-books
			U24	Public transport passengers density per./km ²	CSO, RIS
			U25	People number per 1 car	CSO, RIS
	Technical infrastructure	Water economics	U26	Percent. of people supplied from public water mains	CSO, regional year-books
			U27	Percent. of people connected to sewerage with WWTP	CSO, RIS
		Electric power	U28	Length of el. transfer network (400 kV, 220 kV lines and selected lines of 110 kV) km	ČEPS
			U29	Density of transfer networks km/km ²	CSO, RIS
			U30	Length of channels of distribution km	ČEZ and EON
			U31	Density of channels of distribution	CSO, RIS
	Gas supply	U32	Percent. of municipalities connected to gas lines I	CSO	
	Environment	Air	U33	Generation of emissions of SO ₂	CSO, RIS
			U34	Generation of emissions of SO ₂ /km ²	CSO, RIS
			U35	Region share in	U 33/
			U36	Specific emissions of CO	CSO, RIS
			U37	Specific emissions of CO ₂	CSO, RIS
U38			Specific emissions of solid pollutants	CSO, RIS	

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<i>Disparities sphere</i>	<i>Problem unit</i>	<i>Descriptor</i>	<i>Indicator</i>		<i>Source</i>	
			<i>U39</i>	Specific emissions of NOx	CSO, RIS	
			<i>U40</i>	Percentage of regions with worsened air quality	ME air quality	
		Wastes	<i>U41</i>	Municipal waste specific generation	CSO, regional year-books	
			<i>U42</i>	Industrial wastes by place of business and selected way of	CSO, regional year-books	
			<i>U43</i>	Industrial wastes specific generation	CSO, RIS	
			<i>U44</i>	Percentage of waste incineration and disposal within region	CSO, regional year-books	
			<i>U45</i>	Percentage of waste recycling from waste disposal within region	CSO, regional year-books	
			<i>U46</i>	Brownfield area	not found	
		Character of nature	Nature and biodiversity	<i>U47</i>	Percentage of large protected	CSO, RIS
				<i>U48</i>	Percentage of forested area from	CSO, RIS
	<i>U49</i>			Lengths of water courses classified into purity classes 4 and 5 (km)	River-basin company	

Annex 2: Types of model regions

<i>Type of region</i>	<i>European Commission</i>	<i>Law No. 248 (2000)</i>	<i>Harrop (1996)</i>	<i>Year-book competitiveness (2009)</i>	<i>Kutscherauer and oth. (2009)</i>
Backward region	yes	Economically weak region	Insufficiently developed peripheral region	Economically innovation backward region	Economically backward region
Region affected by industrial decline or by recession	yes	Structurally affected region	Declining and old industrial region	Economically and innovation backward old industrial region	Region affected by industrial decline or by recession
Peripheral region	yes	Other regions	Insufficiently developed peripheral region	Peripheral region (second dimension)	no
Border region	yes	Other regions	Insufficiently developed peripheral region	Peripheral region (second dimension)	no
Rural region	yes	Rural region	no	no	Rural region
Region with urban problems	yes	no	Central region	Metropolitan region (second dimension)	no
Economically advanced (flourishing) region	no	no	Quickly developing region	Economically efficient highly innovating region	Economically powerful region
The best region	no	no	no	no	Region with universal conditions for life
Region for life	no	no	no	no	No
Social region	no	no	no	no	Region with highly developed social services
Innovating region	no	no	no	Economically efficient highly innovating region	Highly innovating region

Annex 3: Characteristics of model regions

CHARACTERISTICS OF MODEL REGIONS TYPES								SHEET: 1
								SHEETS: 2
SPHERE	CHARACTERISTICS	ECONOMICALLY BACKWARD REGION	REGION AFFECTED BY INDUSTRIAL DECLINE OR RECESSION	RURAL REGION	ECONOMICALLY WELL GOING REGION	REGION WITH UNIVERSAL CONDITIONS FOR LIFE	REGION WITH HIGHLY DEVELOPED SOCIAL SERVICES	HIGHLY INNOVATING REGION
ECONOMIC	• Economic performance	low	decreasing	low	high			
	• Labour productivity				high			
	• Value added				high			
	• Value added in technologically intensive industry and services							high
	• Structure of economy	unfavourable	unfavourable	single				
	• Employment structure		unfavourable	unfavourable				
	• Households income	low		low		high		
	• Unemployment	high	high	high	low			
	• Employment level in science and research							high
	• Scholarship level				high	high		high
	• Manpower quality	low	unfavourable	low	high			
	• Manpower availability					high		
	• Business activities level	low			high			
	• Portion of innovating firms	low			high			high
	• Significant firms	no		no	yes			
	• Significant firms decline			yes				
	• Level of science and research							high
	• Foreign investments level				high			high
	• Level of fixed capital formation							high
	• Level of business activities in knowledge-based sectors	low		low				high
• Offer of development areas				high				
• Unused facilities and areas			a lot of					

CHARACTERISTICS OF MODEL REGIONS TYPES								SHEET: 2
								SHEETS: 2
<i>SPHERE</i>	<i>CHARACTERISTICS</i>	<i>ECONOMICALLY BACKWARD REGION</i>	<i>REGION AFFECTED BY INDUSTRIAL DECLINE OR RECESSION</i>	<i>RURAL REGION</i>	<i>ECONOMICALLY WELL GOING REGION</i>	<i>REGION WITH UNIVERSAL CONDITIONS FOR LIFE</i>	<i>REGION WITH HIGHLY DEVELOPED SOCIAL SERVICES</i>	<i>HIGHLY INNOVATING REGION</i>
SOCIAL	• Social services level					high	high	
	• Health service level						high	
	• Educational system level						high	high
	• Culture level						high	
	• Leisure time activities					high	high	
	• Criminality level		high			low		
	• Housing level					good	good	
	• Social exclusion level	high	high				low	
TERRITORIAL	• Distance from markets			large				
	• Territory environmental quality		unfavourable	good		high		
	• Natural environment level		devastation					
	• Territory attraction			unfavourable		high		
	• Traffic infrastructure quality	low				good		
	• Traffic services level	low		low	high	high		