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Impact of economic crisis on life span and its spatial inequalities in Hungary

by
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CONTENTS

List of Figures

List of Tables

1 Introduction

The credit crisis in Autumn 2008, the deepening world economic crisis in 2009, and the crisis of the Euro emerging in 2010 raise the following question: if the crisis affects the financial and economic processes, would it be instrumental in the functioning of social and health sectors? If the answer is yes, other questions arise, such as: how and in what measure. There is no definite answer even three years after the outburst of crisis, because the potential impacts of economic processes on health attract attention to complicated, complex mechanisms and causality. Snakes and ladders, unemployment, indebtedness and the decline of living standard influences the populations' life conditions, directly and/or indirectly the mental health, thus the large-scale appearance of some particular diseases.

It is unquestionable that the crisis has been taking effect on the people's state of health, although the impacts are complex. If our starting point is that the crisis is perceptible in all sectors of economic life and employment has decreased while unemployment had increased, we can deduce that the unfavourable processes have directly affected households. We can assume that the behaviour of households has certainly changed in this economic context, their consumer habits have transformed; they diminish some of their expenses while other expenses have necessarily increased. However it is not so univocal that the changes or reform of the structure of households' or individuals' consumption have always been made at the expense of health behaviour patterns connected with health preservation or prevention. Moreover, it is a fact that state revenue fell back in the crisis period of the last years, owing to the decline of households' income. Under such circumstances, the social resources for healthcare and the development of this sector have been exhausted, non-wage based health expenditure has been drastically cut back.

It is a general experience that even the developed countries could not respond with the expected rapidity and efficiency to the health (sanitary) and medical challenges of the crisis. The concrete problem is that we do not have enough knowledge about the background mechanisms originating in the supplier system during the crisis, and we cannot answer the questions: who adapts himself to the new situation and how he does it, or how he should do it. Consequently it seems to be a strategic issue that the mitigation of negative effects requires inter-sectoral interventions, and in the long run health systems have to be prepared to treat the social consequences of similar economic situations more quickly and efficiently.

Most of the European countries should be prepared for the treatment of the direct and indirect social, health and healthcare consequences of the crisis. Particularly Central and Eastern European countries face serious challenges, where already existing healthcare conflicts would re-appear and health inequalities

would become more acute due to the recent crisis. The bad health conditions of the region's population and its shorter life expectancy compared to the Western European average, crisis factors of healthcare inherited from socialism, and inadequate financing altogether mean a problem for healthcare policy, which could not find an efficient solution even 20 years after the transition. Therefore, the role of the present economic crisis is to be predicted in the future change of health conditions.

The health status of the Hungarian population has been extremely unfavourable for many decades. Regarding certain diseases and causes of death, Hungary is in a negatively outstanding position in international statistics. Hungary has one of the lowest life expectancy rates at birth among the member states of the European Union. The low life expectancy mainly originates from a high mortality rate related to cardiovascular diseases. In morbidity patterns, the diseases of the circulatory system have very high share. Hypertension is almost an endemic disease in Hungary, and ischemic heart disease is the dominant factor of mortality in Hungary. The poor ranking of Hungary on the list of life expectancy at birth in the European Union (EU27) has not changed during the last 35 years, but the size of deviation – expressed in years – from other countries has changed substantially.

2 The methodological background

Does the present crisis have effects on health and life expectancy at all? If it does, what factors can influence the changes of health inequalities? In the context of the crisis what is the role of economic mechanisms in the development of the state of health? Which social groups, strata are principally exposed to health deterioration occurring as a result of the crisis? Is the increase of health disparities in all cases the direct consequence of the financial and economic crisis? Could we speak about the favourable effects of economic crisis on health?

My hypothesis is that the crisis would probably result in health deterioration for the social groups who are most affected by unemployment and poverty. On the other hand, decreasing income and low-key consumption would result in limited possibilities for health conscious lifestyle. Thirdly, health might be considered as an asset to maintain one's position on the labour market, but in prevention and health protection large social differences will appear.

The current objective of science is to answer these above questions, which are questions under debate in the interdisciplinary exploration of this complex issue. My aim is in the one hand to interpret the hypothetical connection between crisis and health through the analysis of the specialised literature, and on the other hand

to present the domestic situation with the help of statistical induction. I wish to emphasise that the study examines primarily the relationship between the crisis and the state of health, and the effects of social-economic changes on the state of health, while it presents only tangentially the effects concerning the functioning, financing and use of healthcare system. It is also important that I do not analyse the hypothetical relationship between crisis and health on a global level (from the point of view of the so-called global health), I examine and evaluate exclusively the Hungarian situation based on the information and data available.

The following logical framework was applied in the main structure of this survey.

The theoretical analysis is based on the approach to define the social determinants of health and health inequalities. The factors of the socio-economic environment are firstly responsible for the development of life circumstances and social situation. The socio-economic circumstances of health are shaped by the distribution of money, power and resources at the global, national and local levels. Therefore, the social determinants of health are mostly responsible for health inequalities – the unfair and avoidable differences in health status seen within and among countries. Besides all this the theoretical framework also intends to interpret the supposed relation between crisis and health through the effects of unemployment on health. The main reason to select unemployment as the most important risk factor on health during the crisis was that this is the factor which most endangers directly and indirectly the state of health.

In the presentation of the impact of unemployment on health, I took the index of average life expectancy at birth, which determines life chances in a complex way, since it is determined by death rates. Life expectancy means the average number of years to be lived, calculated from birth or from a particular age, so this is an average number of years that a newborn is expected to live if current mortality rates continue to apply (*Marmot–Wilkinson*, 2003). The index reflects the overall mortality level of a population. It summarises the mortality pattern that prevails across all age groups - children and adolescents, adults and the elderly (*Wilkinson–Pickett*, 2010). Life expectancy is influenced by death rates, so they are even compound indexes for life chances. Economic circumstances also affect life expectancy. For example, life expectancy in the wealthiest areas is several years longer than in the poorest areas. This may reflect factors such as lifestyle as well as access to medical care.

Mortality rates depend on age distribution: if the population ages, mortality rate increases. Comparing the mortality of the population's different age distributions is possible by calculating the life expectancy at birth, thus the

mortality level of a population can be defined with one indicator. The better the mortality circumstances, the higher the average life expectancy rates at birth.

What tendencies have characterised life expectancies in Hungary during the last decades? How significant regional differences can be experienced regarding life expectancies in Hungary? Do regional differences unequivocally prove a western-eastern split in health inequalities? How did the economic regime and the appearance of unemployment influence life chances after 1990? How strong is the connection between unemployment and life chances? Does the present crisis have an influence on life chances at all? Does favourable social-economic environment and low unemployment always mean better life chances?

To answer these questions, I used regional analytical methods. In order to explain cause-and-effect correspondences, I justified the link between unemployment and life chances with correlation and regression calculations. I took the data from online database of the Hungarian Central Statistical Office (http://portal.ksh.hu) and VÁTI Térport – TEIR (https://teir.vati.hu/). In order to describe tendencies, I analysed historical data, while to prove regional and spatial differences, I tried to obtain the most recent data from 2009/2010. The levels of examination of the statistical analysis are the counties (NUTS3) and micro-regions (LAU1).

The significance of the results of the enquiry lies in the regional characteristics of public health processes, and socio-economic factors determining health state. The aim was a multidisciplinary approach, using applied methodology and analysing configuration of life chances. In effect, to be aware of the population's health and illness correlation, and its role in social-economic context is indispensable in regional development, social-economic planning and political decision making. Similar regional analyses can be the starting point for a nationwide Health Impact Assessment (*Reiner*, 2003).

3 Theoretical framework of the connection between crisis and health

Health, social welfare and economy are notions that are tightly interconnected and complement each other; therefore, the health conditions of humans have an essential role in economic and social processes. For the evaluation of risk factors and their prevention, it is of essential importance to analyse the social situation's role regarding health state and its effect on the health system.

Social inequalities related to health are present in every country and mostly depend on macro economic conditions. The interpretation of the social factors defining health inequalities presumes that during a crisis, not only does the labour

market position and the level of income count from a health point of view, but also the level and growth of already existing social and health inequalities.

The most important question is whether the social network protecting the poor and those liable to poverty is appropriate enough, and whether the gap between the availability of health services is getting larger. Health inequalities are always linked to economic inequalities, the unfairness of the distribution system, bad labour market positions, difficulties in the availability of healthcare and education, disadvantaged living and life conditions, and no chance of a healthy life (*Benach–Muntaner–Santana*, 2008).

3.1 Social determinants of health

The examination of social determinants of health looks back on a long history. The term 'social determinants of health' grew out of the search by researchers to identify the specific exposures by which members of different socio-economic groups come to experience varying degrees of health and illness. The common score of these approaches is the birth of modern social medicine during the middle of the 19th century, which has not only established the explicit link between living conditions and health, but has also explored the political and economic structures that create inequalities in the living conditions which can lead to health inequalities.

Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality of life outcomes and risks. Health conditions in these various environments and settings have been referred to as 'place'. In addition to the more material attributes of place, the patterns of social engagement and sense of security and well-being are also affected by where people live (e.g. *Hyunen–Martens–Hilderink*, 2005). Resources that enhance quality of life can have a significant influence on population health outcomes.

Understanding the relationship between how population groups experience place and the impact of place on health is fundamental to the social determinants of health, including both social and physical determinants (*Hamilton–Bhatti*, 1996). Some examples of social determinants are: access to educational, economic and job opportunities; access to healthcare services; quality of education and job training; transportation options; socio-economic conditions; social support; social norms and attitudes, residential segregation; culture etc. (*Grzywacz–Fuqua*, 2000). Examples of physical determinants include: natural environment (e.g. green space, climate change); built environment; work-sites, schools, and recreational settings; exposure to toxic substances and other physical hazards,

physical barriers, especially for people with disabilities etc. (*Evans–Stoddart*, 1990).

Social determinants of health are the economic and social conditions under which people live and which determine their health. They are 'societal risk conditions' rather than individual risk factors that either increase or decrease the risk for a disease. These economic and social conditions shape the health of individuals and communities. *'Social determinants of health also determine the extent to which a person possesses the physical, social, and personal resources to identify and achieve personal aspirations, satisfy needs, and cope with the environment (a broader definition of health). Social determinants of health are about the quantity and quality of a variety of resources that a society makes available to its members*' (*Raphael*, 2008, p. 9.).

On the one hand, WHO has integrated the main health determinants into three groups to indicate their role in predicting the incidence of a disease but do not specify the mechanism of disease causation (*WHO*, 2008):

- *Physical environment*: e.g. shelter, stable ecosystem, peace, sustainable resources etc.
- *Social Environment*: e.g. income, education, social security, equity, social justice and respect for human rights, access to healthcare services etc.
- *Biological and Behavioural determinants: e.g.* genetic factors, ethnicity, lifestyle (such as smoking, drinking, drug-addiction), immigration etc.

On the other hand, most public health agencies have proposed lists of social determinants based on health models (e.g. *Dahlgren–Whitehead*, 2007; *Marmot–Wilkinson*, 2006), but many of these determinants are grouped under the general heading of socio-economic status (SES). From the perspective of this study, I find the current list of social determinants on health by the Public Health Agency of Canada particularly relevant (http://www.phac-aspc.gc.ca/index-eng.php):

1) Income and social status
2) Social support networks
3) Education and literacy
4) Employment/working conditions
5) Social environment
6) Physical environment
7) Personal health practices and coping skills
8) Healthy child development
9) Biology and genetic endowment
10) Health services
11) Gender
12) Culture

Social determinants and influencing factors of health can be summarize in the so called 'health models' to define complexity its effects, and to analyse health inequalities with adequate statistical methods. According to the so called Health Field Concept of the Lalonde model, environmental factors that determine the state of health are qualification, employment, and unemployment. This model was one of the first health models which has proven that the population's state of health is mostly determined neither by the quality of healthcare, nor by the development of the healthcare system, but by the effect of the environment and lifestyle (*Lalonde*, 1974).

Recently, international interest in the social determinants of health has led to the World Health Organisation's creating a Commission on the Social Determinants of Health in the 21st century. Social determinants of health including employment/unemployment have been recognised by researchers and World Health Organisation. Responding to increasing concern about the persisting and widening health inequities, WHO established the Commission on Social Determinants of Health (WHO CSDH) in 2005 to provide advice on how to reduce them. The definitive work on the social determinants is the 2008 report from WHO, 'Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health' (*WHO*, 2008).

3.2 Definition of health inequity and inequality

The publication in 2008 of the report of the WHO Global Commission (WHO CSDH) on the social determinants of health raised the profile of the social determinants of health and highlighted the importance of addressing the conditions of everyday life that lead to health inequities, defined as the 'unfair and avoidable differences in health status' (*WHO*, 2008).

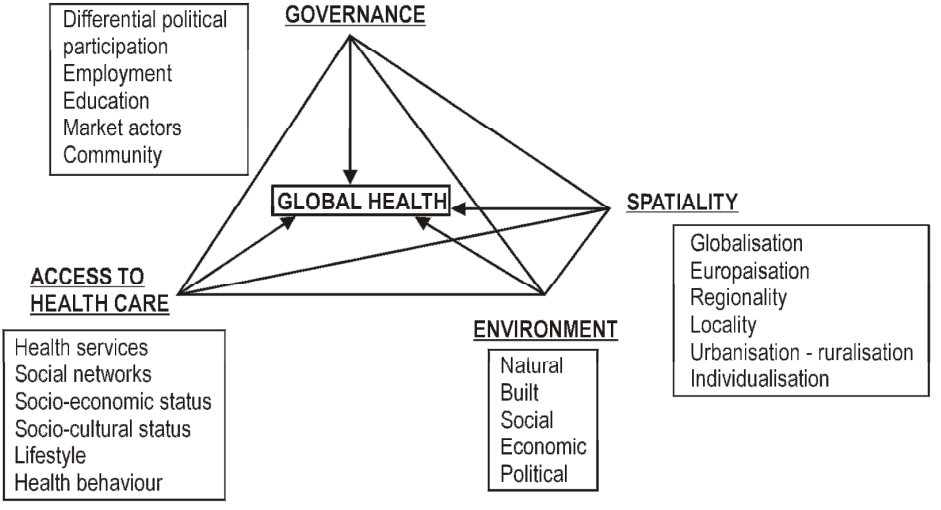
The concept of socio-economic health differences refers to the systematic differences in health between people with different positions in social stratification (*Figure 1*). It is important that these differences in health are not confined to differences between the highest and the lowest social class (*Willems*, 2005). Health follows a social gradient: the higher the position in the social hierarchy, the lower the risk of different diseases and premature death (*Marmot – Wilkinson*, 2003). Moreover, health inequalities not only imply social or spatial inequalities, but also socio-spatial inequalities as a whole (*Jones–Moon*, 1987). It is also important to recognise that social inequalities have spatial aspects that reflect the social context of spatial inequalities.

The social and spatial distribution of health, diseases and causes of death characteristics is the best described with the term of inequality. It is not only Hungary but also other developed countries where inequalities are easy to detect

in these respects. The issue of „health inequalities" has been becoming more and more serious a social problem and therefore a topical research focus since the 1980s. The leading experts of the topic in Great Britain brought up the issues in question in the so called Black Report (*Black* et al. 1985). The life chances are socially determined as inequalities are present in both the quality of life and in the life prospects as the impact of the social conditions: the differences are caused by morbidity in the first and by mortality in the second case.

Figure 1

Social, economic and environmental determinants of health by WHO



Source: Author's construction based on WHO CSDH 2008 and Orosz, 2008.

Various views have evolved regarding the interpretation of the morbidity factors causing the inequalities in the quality of life. According to the model of the medical experts, the diseases, disabilities, degree of incapacity and the need for care mean the basis of inequalities. The social view of the issue suggests that the cause of inequalities originate from the self-qualification of health state and from the deviances from the social norms. The healthcare system sees inequalities as the result of using the health services differently while people in general approach the question from the angle of the consumption habits of individuals and families. In the life chances of the people, the most deterministic factors are the mortality conditions of the given population.

3.3 The supposed relation between unemployment and health

The recent economic crisis with increased unemployment led to adverse economic and social implications in some countries of Central Europe, including Hungary. After the economic downturn in these countries, there was a lot of speculation about causes and effects, actions and reactions in the connection of economic recession and health. Most researchers agree that involuntary job loss increases the risk of psychiatric disorder and its somatic complications (*Catalano*, 2009). But in reality, is there a link between financial crisis and health? The social determinants of health are the circumstances of daily life – the conditions in which people are born, grow, live, work, and age – and the structural drivers of those conditions (unfair distribution of power, money, and resources). Both the conditions of daily life and the structural drivers will be influenced by the financial and economic crisis (*Marmot–Bell*, 2009).

For the evaluation of risk factors and their prevention, of essential importance to analyse the social situation's role regarding health state and its effect on the health system.

Social inequalities related to health are present in every country and mostly depend on macro economic conditions. The interpretation of the social factors defining health inequalities (*Figure 2*) presumes that during a crisis, not only the labour market position and the level of income counts from a health point of view, but also the level and growth of already existing social and health inequalities.

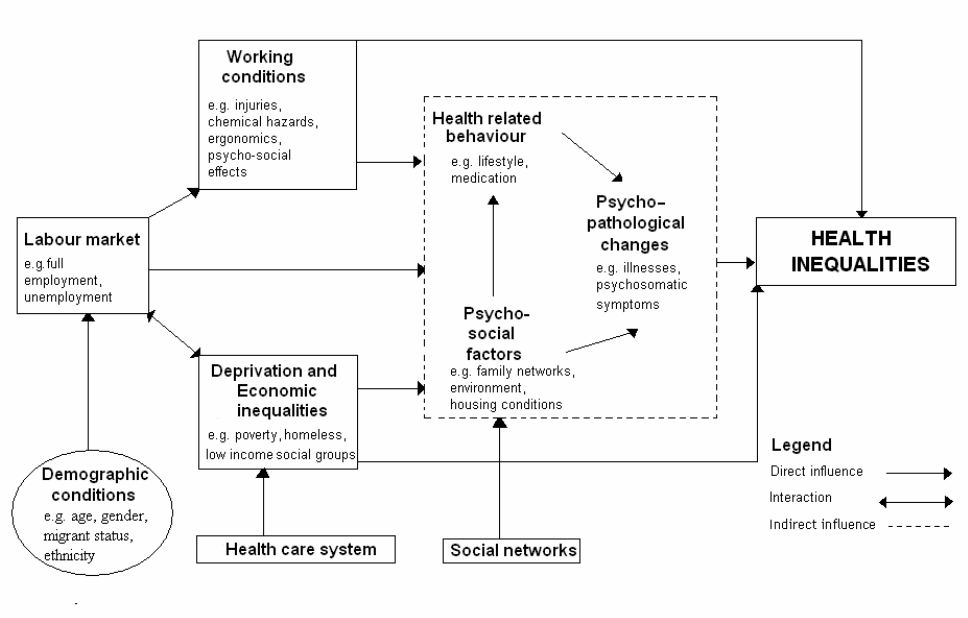
When income decreases due to the economic crisis, the health status of the poor or low-income people will be affected more seriously than that of the rich or the well-off. When the rich have less income, they will normally cut down on luxury goods, but their essential purchases, particularly food and medication, remain unaffected. Among the poor or low-income people, whose income is just enough for daily survival, when their income drops, all their food, medication and necessities will be lessened, immediately affecting their health. The economic downturn means that, increasingly, work will not be the route out of extreme poverty. Unemployment, job insecurity, and the lack of a living wage all have an important effect on health. The economic crisis will therefore show up not only in a rise in unemployment but also in the numbers of working poor and vulnerable workers (self-employed or unpaid contributing family workers). Due to the recent crisis, the shortfalls in investments and industrial production caused the rise of unemployment, mostly affecting vulnerable social groups. Vulnerability is a particular challenge in the cities and urban areas (*Horváth–Zágon*, 2011).

Unemployment is the factor that has the strongest influence on health (*Böckermann–Ilmakunnas*, 2009). The situation is the worst in the case of middle-aged males who become unemployed for the first time during a crisis period. Indeed, unemployment makes you sick as it has a negative effect on the indi-

vidual's identity, emotional world, and self-esteem. It increases the feeling of hopelessness, depressive symptoms and the risk of suicide (*Hegerl* et al. 2008). When a crisis hits, everyone is about to keep one's workplace. Therefore, permanent uncertainty, increased stress result in physical and psychical diseases. Stress caused by unemployment results in the spread of risky behaviour (e.g. medicine consumption, alcoholism, excessive smoking).

Figure 2

Theoretical framework about the connection between unemployment and health inequalities



Source: Benach–Muntaner–Santana, 2008. p. 32 and Author's supplements.

It was apparent during the 2009 economic crisis that beside growing unemployment, in some economic sectors the incomes decreased even for the employed due to necessity leave, a reduced working-time etc. The disadvantages of falling income were increased by the fact that families, households got indebted, their subsistence was in danger. As a consequence, the consumption, mainly the consumption of healthy products and the demand for health related services decreased. One possible explanation is that in uncertain periods people tend to neglect their health; thus, healthcare and prevention does not reach the required

level. Decreasing revenue makes it more difficult for the sick to reach medical services (*Gilson–Schneider*, 2008).

The effect of the economic crisis on the health system can be seen on the availability of health services (*Pope–Mays*, 1995). Inequal availability in geographical sense raises the question of regional inequalities, while in sociological sense it does so for the equality of chances. Unequal availability of health services are determined by the individual's socio-cultural conditions (*Raphael*, 2007). To give access to medical services is one of the most effective ways to reduce poverty and social differences. The health system plays an important role in protecting the labour force; therefore, the resources for benefits should not be reduced in case of crisis. Consequently, investments in health and the healthcare system have an advantageous effect on social stability, thus on economy at the same time (*Mackenbach–Bakker*, 2002). In time of an economic crisis, the growth of unemployment acts together with a decrease in revenues from health insurance; therefore, during these periods the costs of maintaining a healthcare system increase. At the same time, the WHO's warning is an important message for the national health systems, institutions, political decision makers:

'*The healthcare system plays an important role in labour force protection. In case of economical crisis, people renounce private medical services, and rather turn to state financed medical services, although in most countries state financed healthcare is overburdened and underfinanced. The first goal to reach is that governments should maintain their state financed healthcare in time of economic crisis as well, and they have to take measures to protect vulnerable and poor social levels*.' (*WHR*, 2010, p. 47.)

Those Central European countries suffer the most who received immediate financial help from International Monetary Fund. IMF credits control governments to spend less on healthcare, the population's health state is worse than in Western European countries, while on the other hand, mass unemployment appeared in Spring-Summer 2009. Economic stimulus programmes to ameliorate the consequences of the crisis can go together with the development of healthcare and stimulus in healthcare background industries. The condition of all of these can be that economic development programmes should be able to integrate health development as well.

The effect of the economic world crisis on health and the healthcare system can be positive and negative at the same time. As for the future and the interprettation of possible positive effects, a "best case scenario" should be considered as a research objective. The mechanisms are complex and complicated, but the following assumptions must be kept in mind.

The economic crisis may contribute to the valorisation of health in several ways. In the cycle of economic prosperity people work more, the order of priority changes, there is a tendency to take less care about one's health. During a crisis, if

the unemployed take the difficulties in a balanced way physically and psychically, health and healthcare become important because of the lack of a fast lifestyle and rapidly changing situations, and in order to start work again. Crisis can result in reinforcing people's survival instinct. The effects of former world economical crises on health were examined, and it could not be clearly proven that the number of cardiac diseases and mortality caused by cirrhosis of the liver increased due to the world crisis, or that more people were taken to psychiatric institute than usual. From the statistics it can be seen, that 1% growth in the rate of unemployment during crisis decreased mortality rate by 0.5%, which practically means, that from a hundred thousand people 5 more people survived compared to usual periods (*Suhrcke* et al. 2005).

4 Health inequalities and its spatial dimension after 1990

The marked deterioration in the health status of the Hungarian population has been going on since the middle of the 1960s. The general health status of the Hungarian people is worse than justified by the level of economic development. The adult mortality rate in Hungary is one of the worst among the European countries. Due to the very disadvantageous mortality rate of the middle-aged Hungarian male population (*Józan*, 1998), Hungary has a very bad situation in the European continent. '*The mortality situation in Hungary, which had been worsening for decades, developed into an epidemiological crisis by the early 1990s, and it presently hits the whole adult population*' (*Józan*, 1991, p. 20.). On the other hand, the negative natural population growth rate, the very low birth rate and the ageing population has also turned into a demographic crisis in Hungary at the beginning of the 1990s (*Hablicsek*, 2000).

Hungary's economy has been experiencing significant transitional difficulties after 1990. Its social effects, such as the acute problems of unemployment and poverty among low-income population groups have gone together with a 'health recession'. Jointly the role of the epidemiological, the demographic and the new economic crisis have shown some unique trends in the Hungarian health indicators over recent years. The spatial dimension of the socio-spatial inequalities in health are justified by means of regional inequality indicators. Significant relationship can be detected by the examination of the impact of economic conditions on health state characteristics. The post 1990 transformation of the economic spatial structure of the country greatly affects the arrangement of the counties and regions with favourable and unfavourable general health.

4.1 Mortality trends and spatial structure

Mortality data are the most complete and comparable, and they therefore constitute the main component of international comparisons. However, even in this case, there is often some doubt about the completeness of the recording of deaths. (Especially at very young and old ages, regarding the accuracy of determining the causes of death.)

There are determining inequalities in the health status in Europe, mainly between the western and the eastern halves, and the patterns of these differentials vary considerably among these countries. Central European countries, as a 'transitory region', are considered to show some similarities to both Western and Eastern European countries. The populations of all CEE countries as new member states are falling (except for Malta and Cyprus), owing to a combination of high death rates exceeding births (negative natural growth). This particularly affects Hungary and the Baltic Republics. The demographic situation of decreasing population and increasing ageing index in Central Europe is typically parallel with Western Europe; on the other hand, its mortality position is less favourable. In Hungary, some diseases remain more prevalent than in Western Europe – such as cardiovascular diseases and general cancers (lung cancer in particular). Unfortunately, Hungary has the highest cancer mortality in Europe, mainly due to lung cancer (*WHO*, 2002). The dominant cause is clearly the consumption of cigarettes. Some causes of mortality are currently less common in Hungary than in Western Europe, mostly respiratory and many infectious diseases.

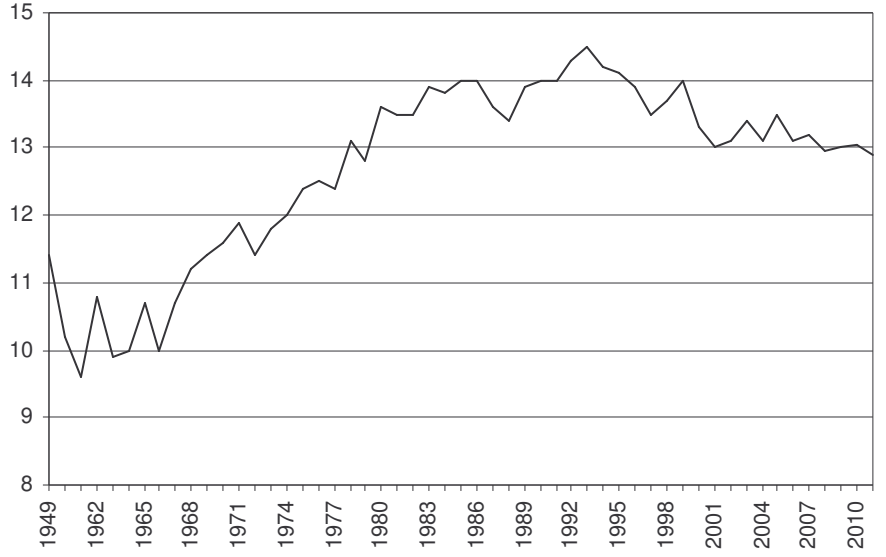
The mortality of the Hungarian population is very unfavourable in relation to other European countries. The adult mortality rate in Hungary is one of the worst; better values can even be found in the newest members of EU, Bulgaria and Romania. Hungary is only ranked 33rd among the 40 European countries by both of male and female death rate (*Uzzoli*, 2006). Hungarian men's health is particularly poor in comparison with other countries of the European Union. The death rate of the middle-aged male population stands out by global standards. Due to this indicator Hungary belongs to the middle-ground countries in the world among WHO members. However, by European standards, it is among the countries with the worst characteristics regarding the general state of health. All mortality indicators are worse than the average European values and it is especially true about the mortality rate of middle-aged male and female population.

Mortality statistics and their changes are tied to the improvement or the worsening periods in Hungary after the Second World War (*Figure 3*). That is the main reason that mortality tendencies can be divided into four distinct periods in the second half of the 20th century. The first is an improvement period until the middle of the 1960s, the second brought deterioration between 1968 and 1993, the third stage between 1994 and 1999 stagnated, while after 2000, mild decrease has

taken place. Nevertheless, the role of transition caused mortality to bottom in 1993. The moderation of mortality rate resulted that the life chances could increase again over 70 years from the second half of the 1990s.

Figure 3

Mortality rate in Hungary (‰), 1949–2011



Data source: http://portal.ksh.hu.

There are significant mortality differentials among the Hungarian counties and according to life expectancies the probability of survival have greatly deteriorated over the last decade. This fact is also clear in adult and infant mortality. Trend surface of the Hungarian mortality by standardised death rate (SDR) can also prove that there is north-eastern–south-western gradient or axis in the spatial structure (*Figure 4*). Budapest has the best position (SDR=86), and Transdanubia except for Somogy and Komárom-Esztergom county is below the Hungarian average. Counties from Southern part of Eastern Hungary as Csongrád or Békés are due to the average value of SDR. Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg counties have 10 per cent higher SDR value than the average of the country. The Southern part of Transdanubia has a disadvantageous position.

In *Figure 5*, we calculated the centre of gravity (*Uzzoli–Szilágyi*, 2009). This method could help us to define the spatial structure of mortality rate and its regional changes between 1970 and 2007. In the coordinate system the centre is Budapest, the units of weight are the values of adult mortality rate. The spatial

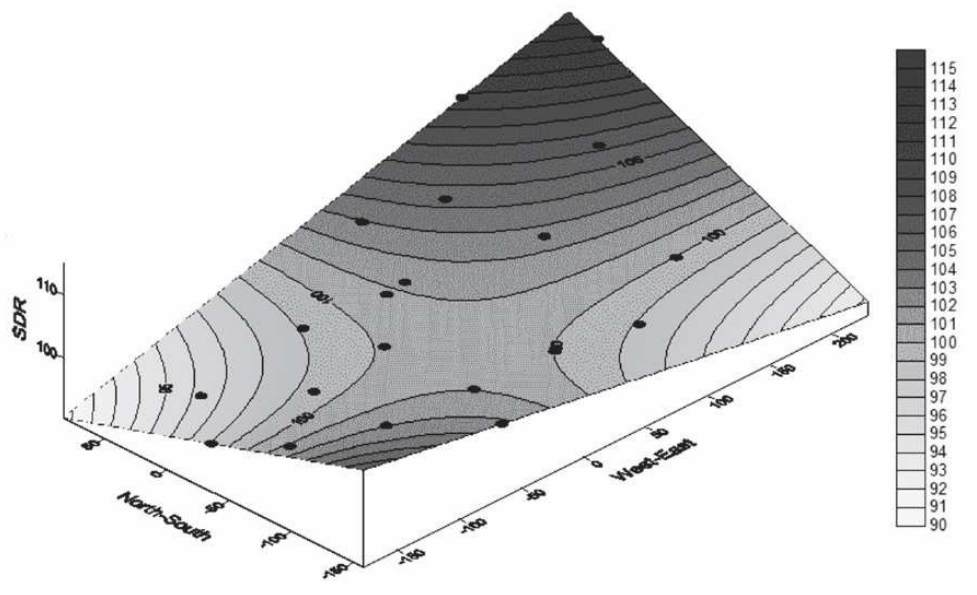
units are counties. It can be seen that all centres of gravity can be found in the eastern part of Hungary, which can explain the high mortality rate of this area. From 1970, there was a continuous shifting of these centres of gravity towards the north-eastern part of Hungary. That is to say, the deterioration of health status was the most meaningful in eastern Hungary, especially after 1990.

Adult mortality data serve a standard information resource to guide public health action. This is also an important indicator of probabilities that over a 15 year old will die before reaching his/her 60th birthday (premature death).

The health indicators of the Hungarian population have been reflecting a particularly unfavourable tendency for a number of decades. The mortality statistics sadly qualify the country for the international vanguard. The unfavourable health status of the Hungarian population is characterised partly by mortality and morbidity data which are outstandingly high in international comparison, and partly by the high occurrence of risk factors (e.g. smoking, alcohol consumption, drog use, nutrition, obesity, lack of physical exercise, unhealthy environment).

Figure 4

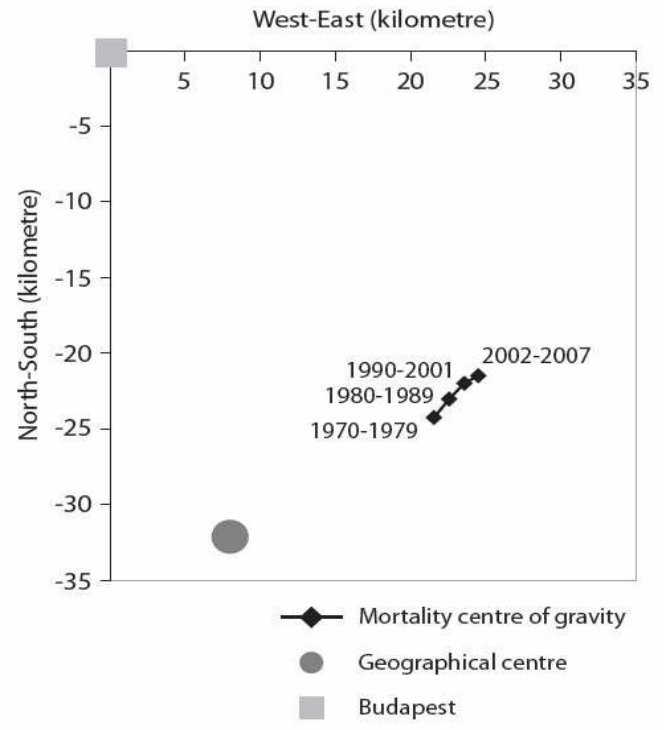
Trend surface of the Hungarian mortality by SDR, 2007
(SDR=Z(x,y)=100.814+0.028x+0.000xy+0.004y) (bi-linear)



Source: Uzzoli–Szilágyi, 2009, p. 134. [Standardised death rate (SDR) is a death rate (usually per 100,000 population) adjusted to the age structure of a standard population, and because of it, it is more suitable to measure the spatial pattern of health inequalities.]

Figure 5

Centres of gravity of the Hungarian mortality rate, 1970–2007



Source: Uzzoli–Szilágyi, 2009. p. 135.

4.2 The changes of life expectancy after 1990

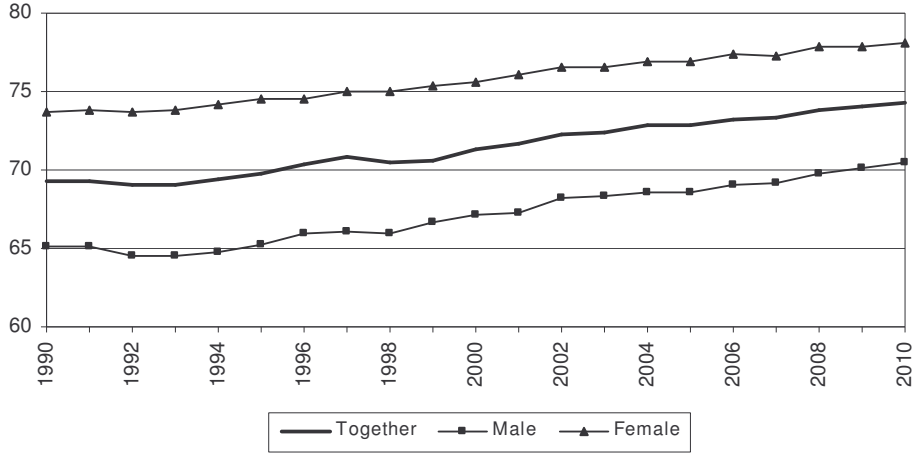
Life expectancy in Hungary is among the lowest in Europe. From 1996 onwards there was a trend towards better life chances, but they are still a very long way from corresponding figures for wealthier Western European countries. Furthermore, large variations of life expectancy can be experienced in different parts of the country. The trend in life expectancy in Hungary has a similar pattern to most other Central and Eastern European countries and shows some characteristic features. The average life expectancy at birth was only 62 years in 1945, but as in all of the European states after the Second World War a downward trend in mortality rate was seen, which led to an increase period in life expectancy at birth (*Kowaleski–Starzynska*, 1996). This favourable tendency was caused by the decreased number of maternal, neonatal and infant mortality due to the develop-

ment of preventive strategies and implements for infectious diseases from the beginning of the 20th century in Europe.

The average life expectancy at birth and its changes continuously depended on the improvement or the worsening of the mortality situation in Hungary in the second half of the 20th century. Remarkable improvement was mainly experienced until the beginning of the 1970s. Naturally, the result of this positive trend was the advantageous life chances among Hungarian middle-aged population. However, the substantial improvement was followed by a marked deterioration of life expectancy at the end of the 1970s, because from 1966 the main health indicators changed for the worse. The deterioration of Hungarian life expectancy reached its bottom in 1985, but this could not be followed by a period of upswing due to the change of regime and the socio-economic transformation. Nevertheless, the role of the transition caused another bottom in 1993. Life expectancy fell to unprecedented levels in this year: for men 64.5 and for women 73.8 years (69.2 years both sexes combined). The fall in life expectancy in 1989–1993 has been largely due to a sharp rise in premature mortality of the middle-aged male's population. The moderation of mortality rate after 1993 resulted that the life chances could increase again over 70 years from the second half of the 1990s. Thus, it could increase over 71 years from 2000, over 72 years from 2002, over 73 years from 2006, and over 74 years from 2009 *(Figure 6).* Incidentally, the year of 2009 is particular, because Hungarian male's average life expectancy at birth could increase over 70 years from this year.

Figure 6

Average life expectancy at birth (years) in Hungary, 1990–2010

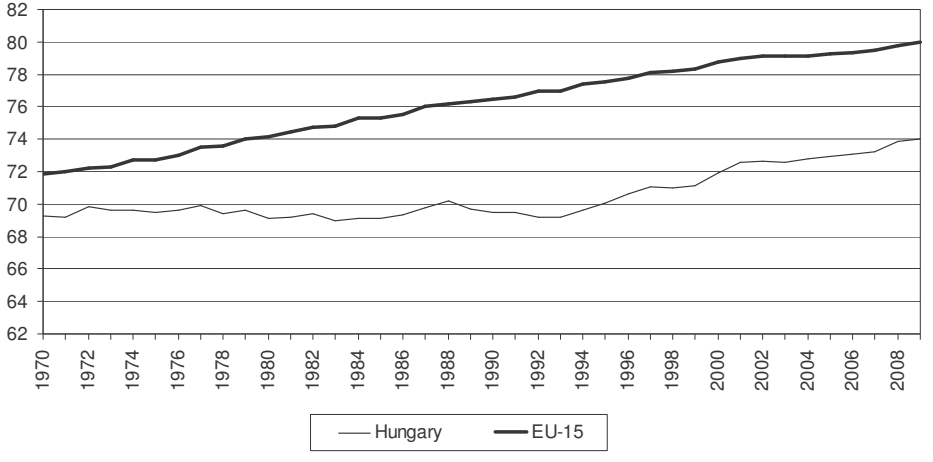


Data source: http://portal.ksh.hu.

Now the average number of it is 74.3 years, for males is 70.5 years and for females is 78.1 years in Hungary (2010). According to the latest available data, the average life expectancy at birth in Hungary remains among the lowest in the European Union *(Figure 7).* The poor ranking of Hungary on the list of life expectancy at birth in the European Union (EU27) has not changed during the last 35 years, but the size of deviation – expressed in years – from other countries has changed substantially (*Balogh–Papp–Józan–Császár*, 2010). The group of post-socialist countries in Central Europe can be divided into two sections on the basis of life chances: the most advantaged are Slovenia, the Czech Republic, Poland and Slovakia; and the most disadvantaged are Hungary and the Baltic Republics. We can say that the entirety of the Central and Eastern European country group has one of the worst health status values in the world. Even in those groups where all countries show similarities by health, other important differences remain, leaving each with its unique profile.

Figure 7

Average life expectancy at birth (years) in Hungary and in EU15, 1970–2009



Data source: http://www.euro.who.int/en.

The bad health conditions of Hungary's population and its shorter life expectancy compared to the Western European average, risk factors of healthcare inherited from socialism, and inadequate financing together mean a problem for health politics, which could not find an efficient solution even for more than 20 years after the transition. The health status of the Hungarian population has been extremely unfavourable for many decades. Regarding certain diseases and causes of death, Hungary is in a negatively outstanding position in international statistics.

Hungary has one of the lowest life expectancy rates at birth among the member states of the European Union. Low life expectancy is mainly due to the high mortality rate from cardiovascular diseases. In the morbidity pattern, the diseases of the circulatory system have a very high share. Hypertension is almost an endemic disease in Hungary, and ischemic heart disease is the dominant factor of mortality in Hungary.

4.3 The current spatial inequalities of life expectancy

The life chances and its spatial differences within Hungary are influenced by the socio-economic situation of the counties. The relative position of territorial units has not or hardly changed in the past 15 years. The most advantaged and the worst disadvantaged counties were the same at the beginning of the 1990s as they are today. The examination of the average number and divergence of life expectancy at birth in the last decade shows us a very typical spatial structure *(Figure 8–9*).

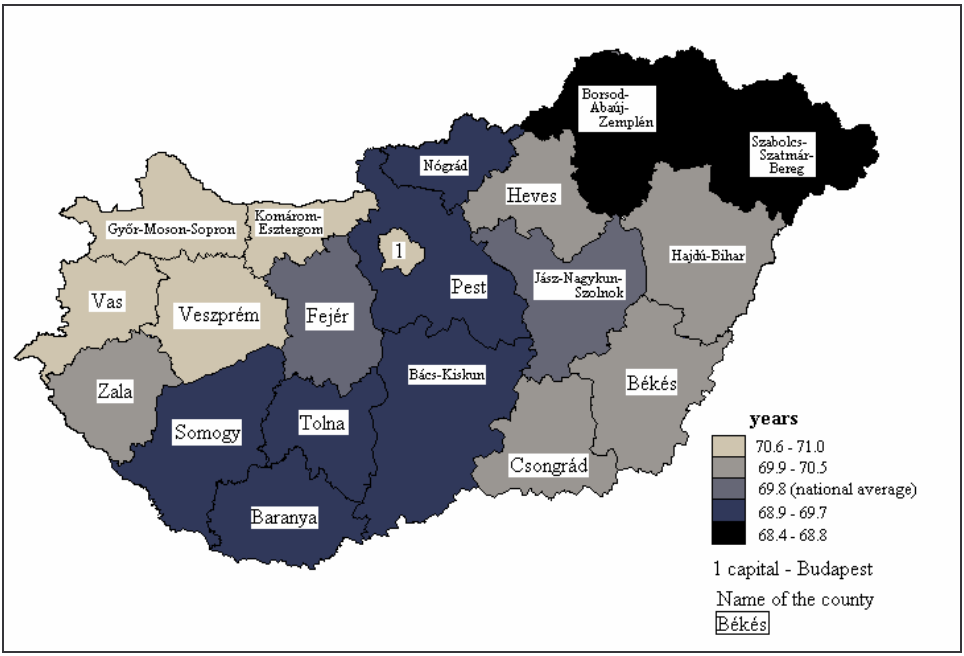
The most favourable life chances include North-Western Transdanubia (Győr-Moson-Sopron, Vas and Veszprém counties) and Budapest, while the most disadvantageous area can be found in North-Eastern Hungary (Szabolcs-Szatmár-Bereg and Borsod-Abaúj-Zemplén counties). Mortality trends have remained disadvantageous for these, and for Southern Transdanubian counties (especially Somogy county). The county with the best indicators in the fairly bad context of the east of the country is Csongrád. Budapest in general has favourable values regarding the examined indicators; nevertheless, it has a bad reputation for the high rate of deaths caused by malignant tumours. The spatial inequalities of health even more articulated within the boundaries of the capital than those of the country itself (*Uzzoli*, 2008).

In the comparison of *Figure 8* and *Figure 9*, what can be seen is a very close connection in the spatial structure of life expectancy in the 1990s and the 2000s. During a ten-year period, there was more than 3 years increase in the national average of life chances on the level of counties. Studying the spatial inequalities in life expectancy, the following relation is found: broadly, the best and worst values of life expectancy could be experienced in the same counties – also in the capital – during the examined periods.

Life expectancy in Hungary shows characteristic regional variation (*Figure 10–11*), a feature which is also typical of other indicators of health status. Life expectancy in Hungary has been increasing recently, but in a geographically uneven distribution (*Uzzoli–Szilágyi*, 2009). Broadly speaking, the life chances in the Eastern part of the country are a great deal worse than that of the population in the Western part of Hungary.

Figure 8

Average life expectancy at birth and its divergence from the national average in Hungary, 1990–1999

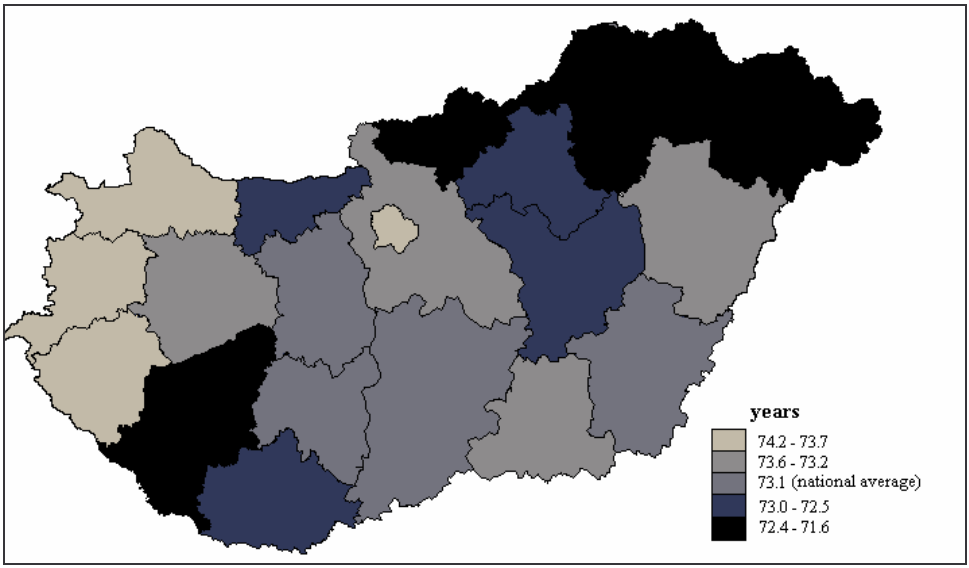


Note:
Name of the Hungarian statistical regions including the counties:
Central Hungary includes the capital (Budapest) and the county Pest.
Central Transdanubia includes the counties Komárom-Esztergom, Veszprém and Fejér.
Western Transdanubia includes the counties Győr-Moson-Sopron, Vas and Zala.
Southern Transdanubia includes the counties Somogy, Baranya, Tolna.
Northern Hungary includes the counties Nógrád, Heves and Borsod-Abaúj-Zemplén.
Northern Great Plain includes the counties Szabolcs-Szatmár-Bereg, Hajdú-Bihar and Jász-Nagykun-Szolnok.
Southern Great Plain includes the counties Békés, Csongrád and Bács-Kiskun.

Data source: Hungarian Demographic Yearbook 1999.

Figure 9

Average life expectancy at birth and its divergence from the national average in Hungary, 2000–2009



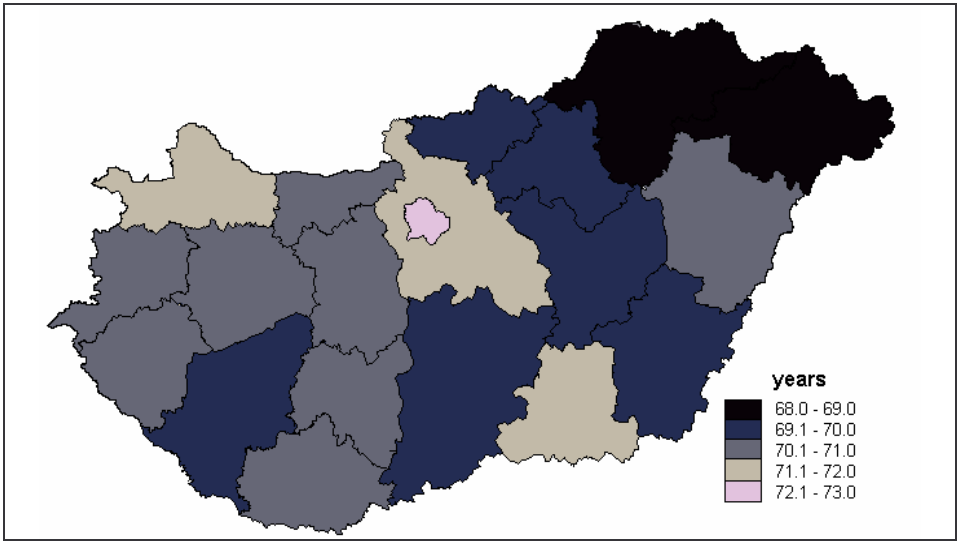
Data source: Hungarian Demographic Yearbook 2009.

For 2010, the difference between the average life expectancy of the counties of the best and the worst values is more than 3 years (for males 4.3; for females 1.6 years), while in the capital it is a 7.5 years difference (for males 8.5; for females 6.6 years) between the most and the least 'healthy' districts (*Uzzoli,* 2012). On the county level, the highest values of life expectancy are found in Budapest and Győr-Moson-Sopron county (74.5 years), for males, it is in Budapest (72.4 years), and for females, it is in Veszprém county (78.9 years). On the level of counties, the lowest value of life expectancy at birth can be experienced in Borsod-Abaúj-Zemplén county (71.4 years), which is also the case for males in general (68.1 years), while the minimum for females is in Jász-Nagykun-Szolnok county (77.3 years). Among Budapest districts, the best value of life chances is found in the 2nd district (79.8 years), also applying for males and females (77.5 and 82.1 years), while the worst value is in the 23rd district (72.3 years) also by both sexes (69.0 and 75.5 years).

One of the most interesting things about the widening health gap between the eastern and western halves of Hungary is that it had already begun to evolve during the 1970s and 1980s, so it is not exclusively the result or a new health process of the transition. Considering the significant mortality and life chances

Figure 10

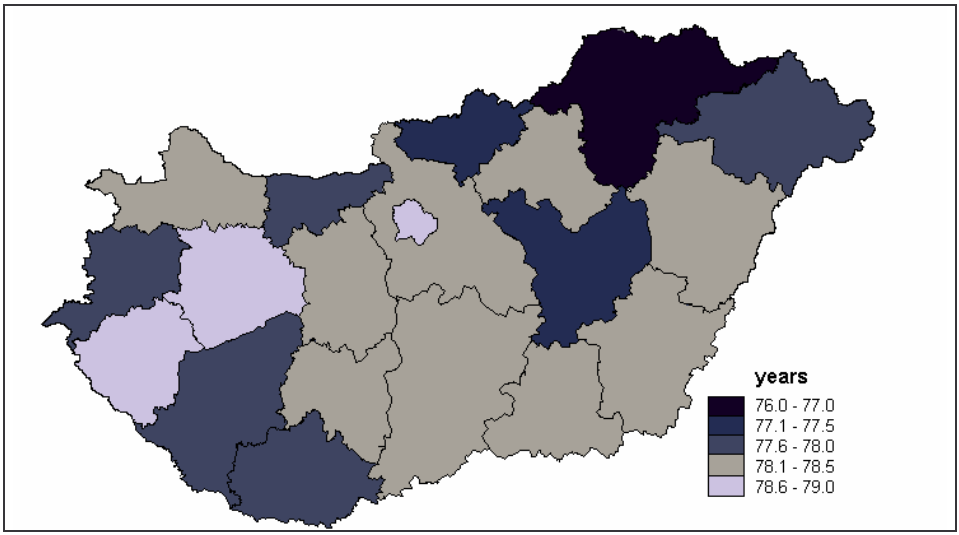
Average life expectancy at birth (years) for males in the Hungarian counties, 2010



Data source: http://portal.ksh.hu.

Figure 11

Average life expectancy at birth (years) for females in the Hungarian counties, 2010



Data source: http://portal.ksh.hu.

data, it is impossible to disregard the fact that in the eastern part of Hungary the number of people in a multiply-disadvantaged position is very high, and they are struggling with several concurrent economic (e.g. unemployment) and social problems (e.g. ethnical minority groups). In the eastern half of Hungary, the number of people belonging to the upper strata of the social hierarchy is the lowest in the country.

Unemployment in Hungary mainly affects these regions. Of those who are unemployed now in Hungary, 45 percent live in these undeveloped rural regions in the eastern and south-western part of the country (*Enyedi*, 2009).

5 Connections – Case study

The aim of this chapter is to give a short review of the emergence of the crisis in Hungary and to interpret the connection between unemployment and life expectancy in its regional aspects. For this chapter, I used statistical analysis as a case study on the spatial level of counties and micro-regions. The direct and indirect consequences of the crisis go hand in hand with the deterioration in the affected group's life circumstances. Based on the analogy of the transition period after 1990 the main issue was what kind of structural changes the economic crisis caused in the variations in the Hungarian unemployment and regional changes in health inequalities.

5.1 The spatial features of recent economic crisis in Hungary

Hungary is the 51st most developed state economy in the world, and produces 0.2% of the total world GDP. 70% of the country's GDP comes from Foreign Direct Investment, while 80% of the export and import is realised by foreign companies (*Bernek*, 2009). For this reason, the Hungarian economy is particularly exposed to international financial trends.

The recent crisis has mainly been experienced in the decline in industrial production and the rise in unemployment in Hungary. While the former has affected mainly the processing industry, the latter has concerned the skilled male workers and the highly qualified employees working in the market sector. As a consequence, the spatial concentration of industrial production capacity and the structural change of the current unemployment can be observed presently. At the beginning of the crisis forecasts regarding regional development predicted the moderation of regional inequalities. At present it is clear that regions which were the winners of regime change after 1990 could pull through the crisis more easily while the lag of loser regions is growing (*Lőcsei*, 2010a).

The present economic crisis has primarily affected regions in a favourable situation (e.g. Central Transdanubia). Owing to the redundancy of export-oriented companies in the processing industry and large companies, increasing unemployment has been observed mainly in the Northern Hungary region from October 2008 (*Lőcsei*, 2011). Most dismissals affected the Central and Western Transdanubia regions in the first year of crisis. The capital and its agglomeration was among the less affected areas. The number of dismissals was lower in the Northern Hungary region because of the lack of larger local companies. Studying the distribution of unemployment on region level in 2009, we can observe that the highest proportion of job seekers was located in the Northern Hungary region where the rate of lay-off workers was above 13–14%.

Although redundancy and unemployment have more strongly affected Western Hungary, originally in a better social and economic situation, the main spatial structure of unemployment did not change fundamentally (*Miklósné–Uzzoli*, 2011). The economic crisis of the former years has rather differentiated the areas in a better situation, deepening the contrast between the capital and rural areas (*Lőcsei*, 2010b). The long-term spatial effects of the crisis may result in the slight increase of spatial inequalities and the continuous lag of backward areas.

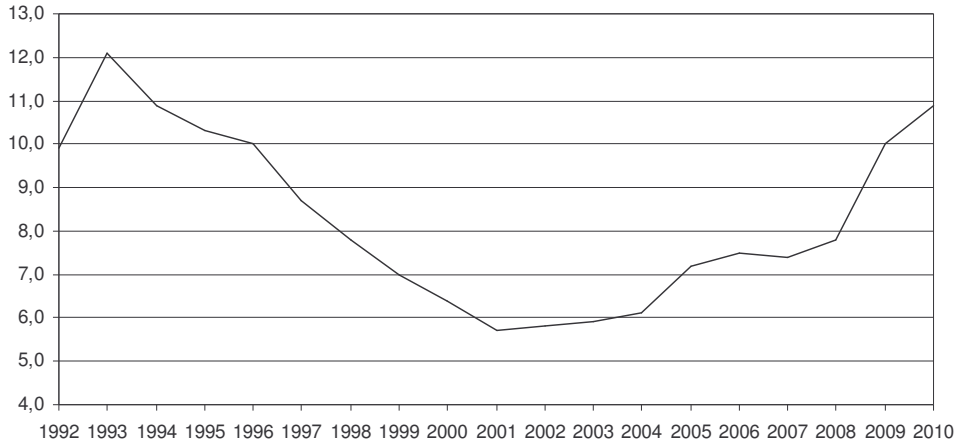
Counties lagging as a consequence of regime change are located in the eastern and north-eastern part of the country (*Nemes Nagy*, 2004), but the situation of Somogy and Baranya counties in the western part of the country is also unfavourable compared with the national average. The transition into the market economy resulted in the western–eastern polarisation of the country's spatial structure of unemployment, together with the increase of regional inequalities and Hungary's polarised spatial development.

5.2 Changes of unemployment and life expectancy due to the crisis

The early 1990s labour market in Hungary was characterised by the rapid decline of employment and the fast rise of unemployment. *Figure 12* shows that Hungarian unemployment increased very fast within a short period of time after the years of regime change, it peaked in 1993 (12.1%) together with the highest mortality rate (14.6‰) and the shortest life expectancy (69.2 year). Between 1993 and 2001, unemployment decreased constantly and considerably, and 2001 was the best year with an index of 5.7%. After 2001, the unemployment rate increased with little fluctuations, but a serious rise has been experienced since 2007, the year before the crisis. As a consequence of the financial and credit crisis in Autumn 2008, the unemployment rate was the highest (more than 10%) in 2010, but after the second half of 2011, a slow moderation can be noticed.

Figure 12

Unemployment rate in Hungary (%), 1992–2010



Data source: http://portal.ksh.hu. [The Hungarian Central Statistical Office has been reporting Hungarian unemployment data since 1992.]

During the 15 years following the Second World War life expectancy at birth grew spectacularly in Hungary; followed by 30 years of stagnation in a time when there was a constant rise in Western Europe. Nowadays, Hungarians can expect to live four and a half years longer than in the period of the socialist regime. The increase of the average life span was the smallest in Northern Hungary after 1996.

The majority of job hunters have always been men since the appearance of unemployment in Hungary. The unemployment proportion between the two genders converged substantially from 2004 to 2008, but the representative dominance of men can be observed again after 2009. Currently, Hungarian mens' unemployment is 25% higher than the rate for women.

The causes of unemployment also changed significantly in the period of the crisis in comparison with the first half of the 1990s. Owing to the regime change, employment in agriculture and industry decreased, but the proportion of unemployed entrant professionals with a degree has risen since the end of 1990s.

People with low education were the obvious losers of the regime change regarding the labour market and the deterioration of life circumstances (*Hablicsek–Kovács*, 2007; *Kovács*, 2011). In contrast with this phenomenon, the present crisis has strongly affected the highly qualified employees working in the tertiary and quaternary sectors. Thus highly educated social groups with better quality of life indexes have appeared among the unemployed in the last decade.

Due to the recent crisis, these highly educated social groups with better quality of life changed their consumption behaviour and for example, spent less on healthy food (*Egedy*, 2012).

Compared to the early 90s, the root cause of unemployment changed in the present crisis. As a consequence of the changement of regime, employment in agriculture and industry declined, but from the end of the 90s, the proportion of unemployed higher education graduates has increased. '*The low-qualified were the losers of the transition not only in terms of labour market and life circumstances, but in life chances as well*' (*Kovács*, 2006, p. 73.). The present crisis has significantly affected highly qualified labour force, the employees of the tertiary and quaternary sectors. Thus, in the last decade, social groups with a favourable health index and better life expectancies appeared among the unemployed. According to a more optimistic forecast, this is the reason why the growth of life expectancy at birth will stagnate in Hungary as a result of the crisis, but it will not decrease. However, it could also cause some problems in the future as life expectancy in Hungary is still some 6–7 years behind the Western European average.

5.3 Connection between unemployment and life expectancy during the crisis on the level of counties

Studying the distribution of unemployment on the county level in 2010 (*Figure 13*) we can observe that the highest proportion of job seekers was located in the northern and north-eastern part of the country (Nógrád, Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg counties) where the index was above 16%. The better situation of Central Hungary (Budapest and Pest county), North-Western Transdanubia (Komárom-Esztergom and Győr-Moson-Sopron counties), in Central Transdanubia (Fejér and Tolna county), and Csongrád county in Eastern Hungary can also be observed.

The economic crisis of the last years has rather differentiated the areas in a better situation, deepening the contrast between the capital and provincial areas (*Lőcsei*, 2010b). The long-term spatial effects of crisis may result in the slight increase of territorial inequalities and the continuous lag of backward areas. Namely, the forecasts formulated at the outbreak of the crisis have not proved themselves to be appropriate when they were predicting that the spatial consequences of crisis would be accompanied by the decrease of territorial differences.

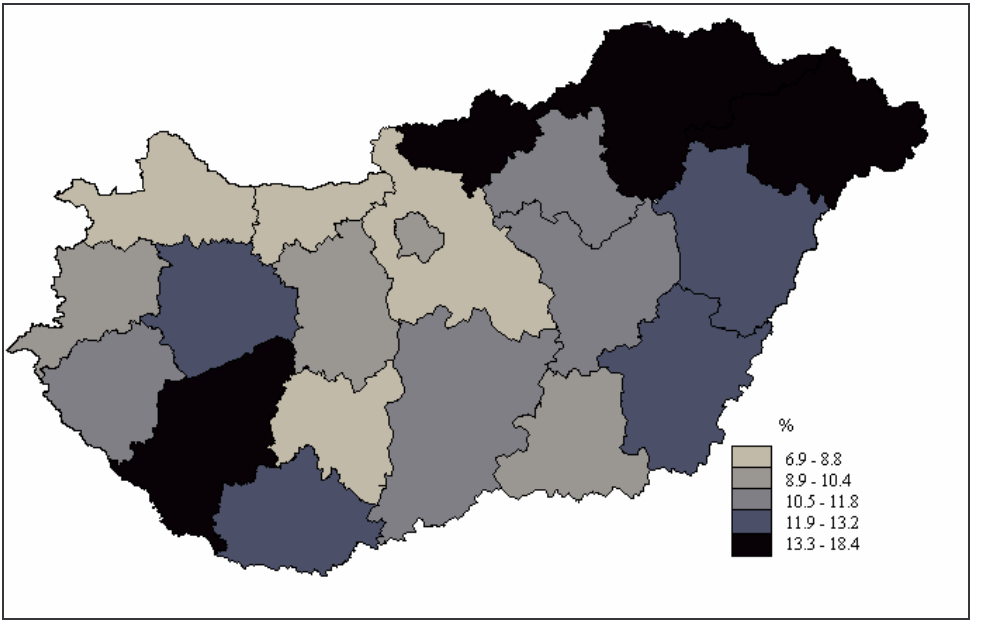
Hungarian average life expectancy at birth has continuously increased during the years of the recent crisis, basically owing to the results of advantageous mortality and life span tendencies. There was not a deteriorating period in the changes of mortality trend in the last years (*Figure 6*) and the crisis could not

change, or turn it into a negative or stagnating process. In the last years, the positive mortality trend could result in males' life expectancy reaching 70 years, just in the first year of the crisis. Naturally, the question is whether the economic crisis will take a long time, and whether the increases of life expectancy will pause or stop, and will turn into a stagnation period. In my opinion, the recent crisis is not very deep, and certainly will not be deeper than after the economic regime in Hungary. Consequently, Hungarian life expectancy will not decrease or deteriorate in the future.

During the period of the crisis, we can see both 'losing' and 'winning' positions on the level of counties due to both unemployment and life expectancy (*Figure 14*). From 2009 to 2010, there had been a massive 'loss position' via increasing unemployment in Zala and Veszprém counties, while there is a nearly 'loss position' by stagnating life expectancy in Baranya county, and by marginally decreasing life expectancy in Vas county – all in the western part of the country. 'Winning positions' can only be detected in life span, because it was increasing during one year in all counties (except for Baranya and Vas).

Figure 13

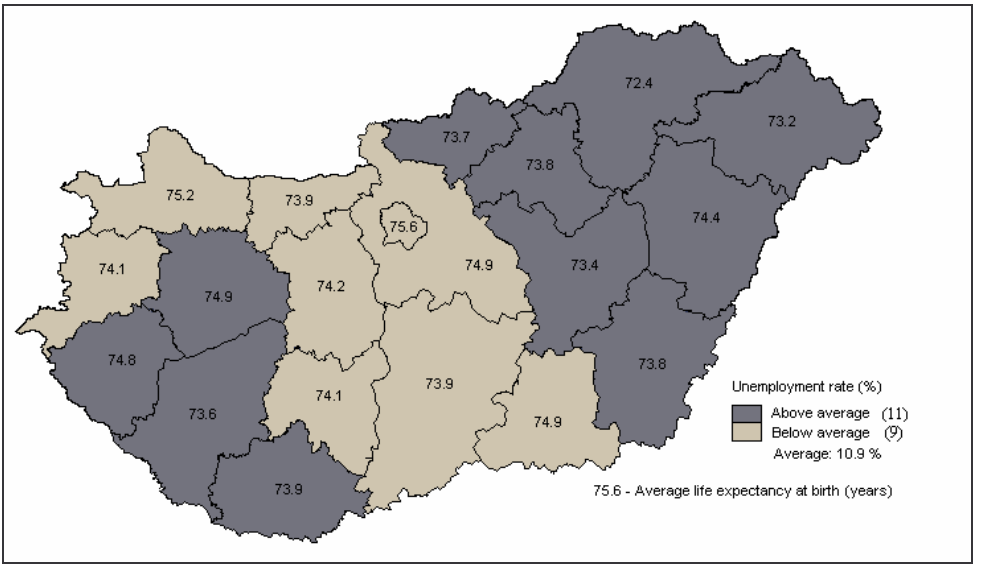
Unemployment rate (%) in the Hungarian counties, 2010



Data source: http://portal.ksh.hu.

Figure 14

Unemployment rate (%) and average life expectancy at birth (years) in the Hungarian counties, 2010



Data source: http://portal.ksh.hu.

Based on a correlational matrix (*Table 1*), we can have an overview of the connection between health and economic indicators of the middle-aged population. GDP per capita for middle-aged males shows the closest connection with health and life expectancy. Employment rate shows the closest connection with health, but it is more significant for men. Thus employment determines men's 'healthy' life expectations more. It is justified by the fact that men's healthy life expectancy is in close connection with the unemployment rate. From the examined economic factors, unemployment rate determines life chances the most significantly, mainly for middle-aged males, as 60% of unemployed in Hungary are men.

Disadvantageous life expectancy in Hungary presently affects the whole adult population, but its spatial inequalities are influenced by the connection between life expectancy and economic development.

The scale of health differences within Hungary is surprising. The following regional analysis finds a medium-strength relationship between unemployment and life expectancy. These health differences structure is not confined to differences between the poor and the rest of society, but instead run right across society with every level in the social hierarchy having worse health than the one

above it. This is the main point where health differences have a typical pattern due to the socio-economic spatial position of the Hungarian counties. I also found what I expected, which is that huge gaps in health exist between eastern and western counties according to the regional inequality of Hungary. With the development of capitalism after 1990, the economic and social differences among the regions of Hungary increased. Economic deterioration had become especially intensive in eastern and rural Hungary (*Szalai*, 1991).

Table 1

Connection between health and economic indicators by Pearson's Correlation Coefficient (R^2), 2009

Health indicators	Economic indicators		
	GDP per capita (thousand forint)	Full employment rate (%)	Unemployment rate (%)
Healthy life expectancy at age of 45, males (year)	0.65	0.81	–0.84
Healthy life expectancy at age of 45, females (years)	0.50	0.63	–0.67

Data source: portal.ksh.hu.

In the connection between average life expectancy at birth and economic development, GDP per capita, average income and unemployment rate are equally determinative (*Józan*, 1998). The correlation coefficient measuring the strength of the link between unemployment rate in counties and life chances was –0.77 in 1993, –0.63 in 2003, –0.69 in 2009 and 0.66 in 2010.

It is not true for the whole country that higher unemployment goes together with lower life expectancy *(Figure 15).* The situation is the worst in Borsod-Abaúj-Zemplén county, where unemployment was already high before the crisis, increasing even more in 2009 and 2010, while improvement was the lowest in the country after 1996. In Győr-Sopron-Moson and Vas counties, life chances are less favourable than they would be expected according to the unemployment rate. Most probably unemployment is less significant when considering the average life expectancy due to the fact that Budapest is extremely well developed.

If we adjust the axes of the dot diagram to the two indicators' average values (unemployment 12.6%; life expectancy 73.7 year in 2009), we can identify the counties with the best and worst life chances (*Figure 16, Table 2*). The western and central part of the country stands out unequivocally, where favourable social-economic environment results in better life chances. Komárom-Esztergom and Fejér counties are exceptions to this. In Eastern and North-Eastern Hungary

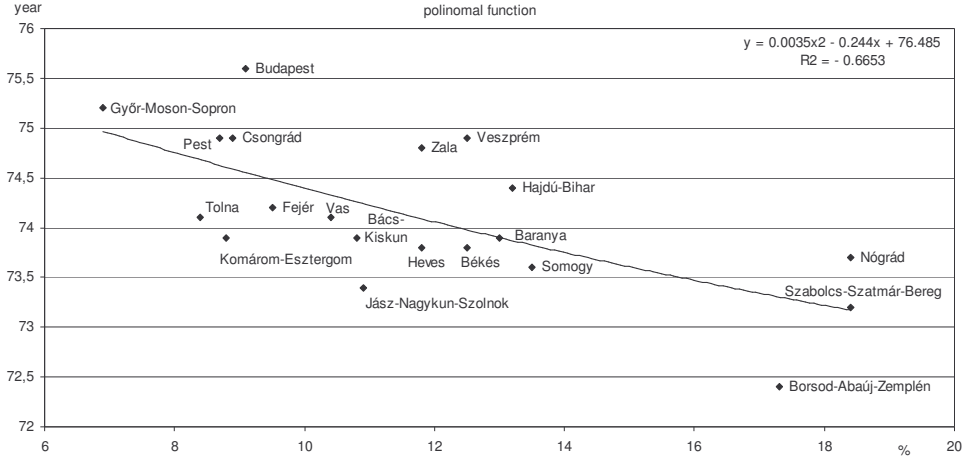
unemployment exceeding the Hungarian average is linked to the worst life expectancy.

Based on 1990s county-level data regarding the main causes of death, unemployment showed significant correlation with standardised deaths of adult population aged between 15 and 59 caused by cardiovascular diseases (R^2=0.68; 1994–1998 average). In that period, the development of cardiovascular diseases not only developed because of the low incomes caused by unemployment and its consequences (eg. limited possibilities to healthy life), but the psychic experience of being redundant and the depression caused by it were also risk factors (*Szvitecz*, 2002). The group of cardiovascular diseases, cerebral diseases and death caused by brain haemorrhage showed a similarly strong correlation with unemployment. The situation was the least favourable in Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg and Nógrád counties, where beside the high rate of unemployment, the mortality rate was also the highest in the country.

The average income of an active population living on a given area is in correlation with health state. Those with higher income can spend more on health conscious life, have more possibility to a healthy lifestyle, and they have a more favourable access to better (e.g. private) healthcare. There was a typical correlation in the 1990s between monthly average income and the life expectancy of men at the age of 45 (R^2=0.478; 1994–1998 average).

Figure 15

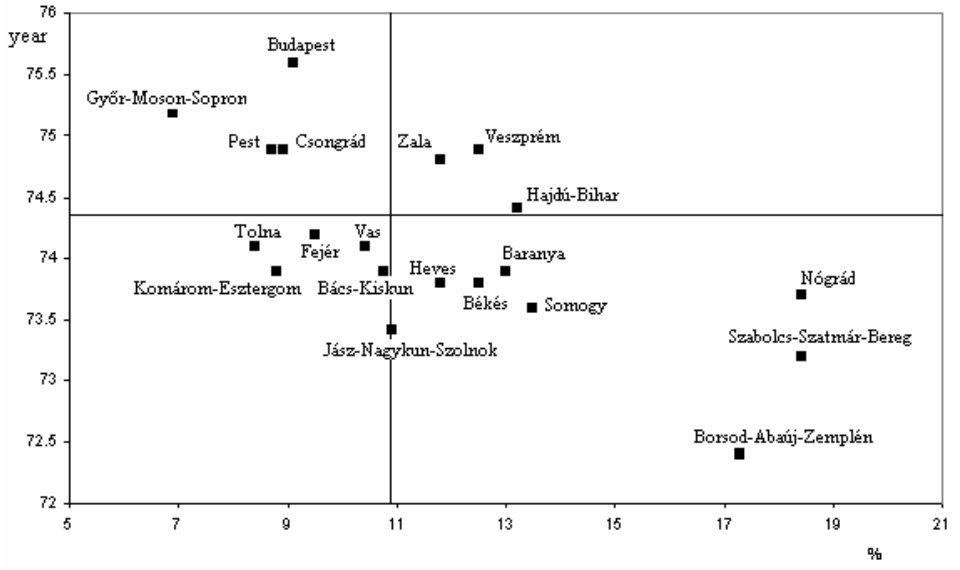
Correlation between unemployment rate (%) and average life expectancy at birth (years) by county level, 2010



Data source: Hungarian Regional Statistical Yearbook, 2010.

Figure 16

The relative position of Hungarian counties by the connection between unemployment rate (%) and average life expectancy at birth (year), 2010



Data source: Hungarian Regional Statistical Yearbook. 2010.

Table 2

Unemployment rate (%) and average life expectancy at birth (years) above and below the national average in the Hungarian counties, 2010

Average life expectancy at birth (year)	Unemployment rate (%)	
	Below average	Above average
Above average	Budapest, Csongrád, Győr-Moson-Sopron, Pest	Hajdú-Bihar, Veszprém, Zala
Below average	Bács-Kiskun, Fejér, Komárom-Esztergom, Tolna, Vas	Baranya, Békés, Borsod-Abaúj-Zemplén, Heves, Jász-Nagykun-Szolnok, Nógrád, Szabolcs-Szatmár-Bereg, Somogy

Source: Hungarian Regional Statistical Yearbook. 2010.

5.4 Connection between unemployment and life expectancy during the crisis on the level of micro-regions

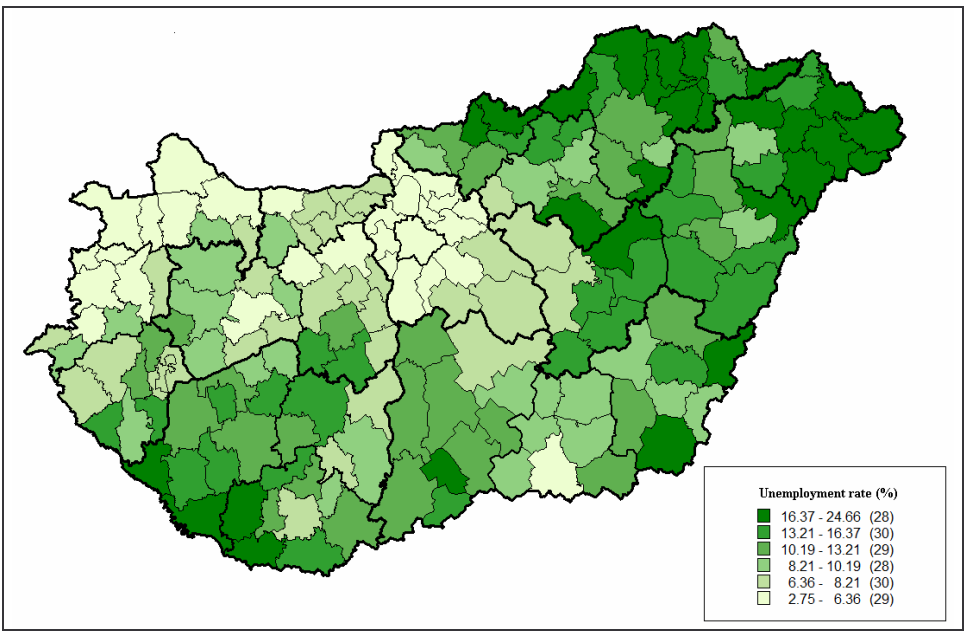
After analysing health inequalities through the life expectancy and mortality position on the level of counties it is necessary to define and analyse life expectancy differentiation on the level of Hungarian micro-regions.

The spatial structure of unemployment and life expectancy (*Figure 17–18*) on the micro-regional level can provide a more sophisticated view on health inequalities. The local differences of unemployment and life expectancy prove the unambiguously unfavourable position of the north-eastern and south-western parts of the county, as well as North-Western and Central Hungary's favourable situation.

The situation is more differentiated in Eastern Hungary. In the north-eastern micro-regions live the most affected poor and vulnerable social groups with their worse labour market positions. At the same time, in South-Eastern Hungary, Csongrád county positively differs from the average level of Great Plain. There is another 'breaking off' area in the south-western part of Hungary in Somogy county, which is very similar to the north-eastern area.

Figure 17

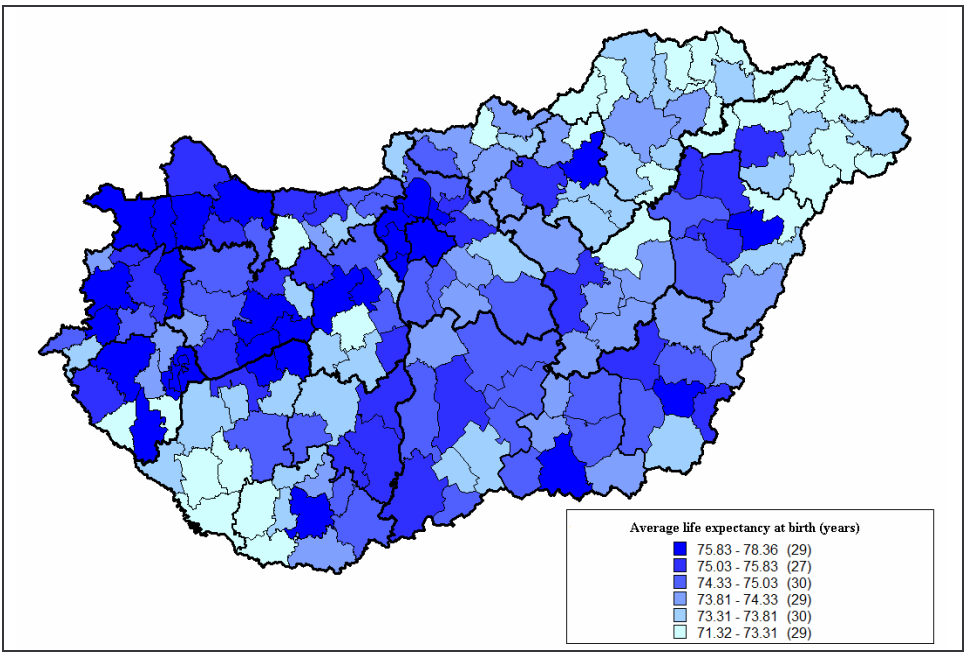
Unemployment rate (%) in the Hungarian micro-regions, 2010



Data source: teir.vati.hu.

Figure 18

Average life expectancy at birth (years) in the Hungarian micro-regions, 2010



Data source: teir.vati.hu.

Particularly, the most disadvantageous situation can be experienced in geographically rural micro-regions along the borderline of the country. The urban environment ensures special life conditions that fairly strongly influence the local population's life chances. Between Budapest and Vienna, we find an axis based on many favourable health, environmental and other socio-economic factors or indicators.

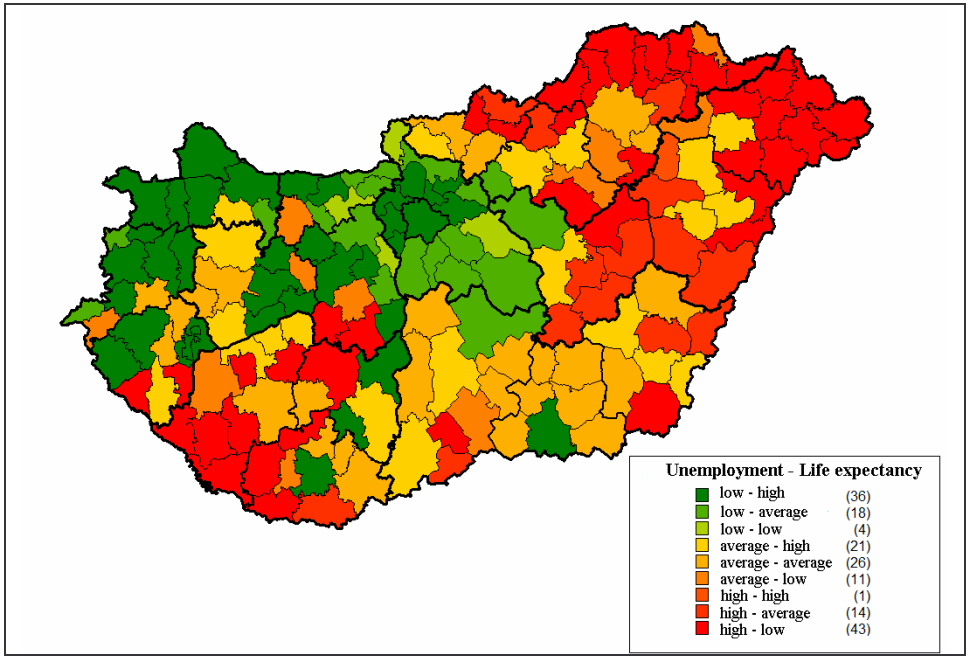
The micro-regional difference between the most and least favourable average life expectancy at birth is 7.1 years, which is larger than in the counties (3.1 years). The connection between unemployment and life expectancy is medium-strength on the level of micro-regions, and from 2009 to 2010 it has become stronger, especially in the case of males' life span. If the micro-regional differences of life span and unemployment rate are compared to the national average (*Figure 19*), we can get information about the spatial structure of these indicators which is so similar to *Figure 17* and *Figure 18*.

The outcome of this chapter can be used in practical planning tasks as background material and gives a hand to prepare health programmes for the Hungarian

micro-regions. Fundamentally, socio-economic environment and quality of life influence health conditions; therefore, the current task is to interpret the inequalities of health-related quality of life within Hungary, from the national level through the county level to the level of micro-regions and settlements. The unearthed information and the statistics carry significant future implication for national health policy. In Hungary the relevant epidemiological challenge is to increase life expectancy and to improve the qualitative parameters of life expectancy.

Figure 19

Unemployment rate (%) and average life expectancy at birth (years) above and below the national average in the Hungarian micro-regions, 2010



Source: Szilágyi–Uzzoli, 2012.

Summary

We face a severe financial and economic crisis and its global consequences in Europe. The current crisis threatens to become a social crisis in many European countries. There are several strong reasons supporting investment in health and the social sector (*WHR*, 2010). First, to protect the poor: stronger social safety nets are urgently needed to protect the most vulnerable in both rich and poor countries. Second, to promote economic recovery and social stability: healthy, productive, and stable populations are always an asset, but most especially in a time of crisis. Fourth, to generate efficiency: pre-payment with the pooling of resources is the most efficient way of financing health expenditure. Fifth, to build security: robust health systems are essential to maintain surveillance and response capacity in the face of pandemic threats.

The global economy has been unprepared for the financial crisis, which has also been unexpected by the population. During the deepening of the crisis, the social and healthcare supplier systems have focused on the quick solution of problems; however, the promptness of reactions varied from country to country. But the continuation of crisis, the forecast of new crisis situations, the deepening of negative effects, the radical change of life situation of some social groups attract the attention of health policy to medium-term development, strategic planning and the importance of long-term thinking. During a crisis a lot of changes may occur in the resources of healthcare systems (material and human resources, medication expenses, infrastructure, etc.), the population's living conditions, social norms, consumption habits and health behaviour.

Owing to the present crisis, the transformation of global and European market relations signifies a challenge for the healthcare suppliers, hastening the renewal of healthcare systems. As a background, the exploration of the connection between economic crisis and health status, the measuring of health inequalities, the discourse of policies could contribute to the birth of health policy answers and solutions. Besides the new challenges of the global crisis, the Hungarian healthcare supplier system has to face conflicts unsolved for years or decades. In this multiplied crisis situation policy-makers have to recognize that these are not only financial and structural issues, but also the problems of chances for access or the lack thereof.

Macroeconomic processes have direct impact on the population's state of health. At the beginning of the 90's the transition into the market economy created a similar crisis situation in Central and Eastern Europe. In these countries, the economic and social consequences of change of system resulted in epidemiologic crisis shown by mortality and morbidity statistics decaying for decades. The current prolonged crisis does not attract so much attention to the direct relationships as compared with the crisis twenty years ago. It rather

indicates how the mental conception and psychic perception of crisis affect people and their health. The psychic stress accompanying the crisis is much more intense in those countries where the healthcare and social supplier network has to confront several other challenges. Consequently the workplace maintenance, the retention and improvement of employment opportunities could have a health-protecting effect in critical periods. Moreover, these factors are much more favourable from cost-effectiveness point of view compared with the healing of diseases caused by psychic stress.

The European healthcare sector seems to be relatively stable even during the crisis, but the health sector and the substantial role of health status in the economy have to be managed in a very special way. In order to avoid potentially risk situations caused by the crisis the European healthcare systems need actions which constitute basic and great challenges. Knowing the responses given to the effects of the European crisis and the challenges of healthcare can state that even in a short-term period it is important to take into account the role of economic crisis in defining and setting of healthcare priorities. After the economic crisis we have to emphasize the importance of strategic development of health policy in regard to the prospective changes and challenges. It is a hackneyed formula that health is a national value, but as the crisis revealed people can tide over problems and troubles more easily in a better physical and mental health.

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