

**Changes in the Demographic  
and Health Situation  
Among Post-Communist Members  
of the European Union**



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## Preface

The aim of this book is to provide the reader with an insight and depiction of the demographic and health situation in those postcommunist countries which joined the UE in 2004. The focus is on the initial stage and changes in the demographic and health situation. Peoples and governments of the countries in question face numerous challenges which they have to overcome if they want to dream about reaching the level of development and welfare close to average standards in the 'old' countries of the UE.

Surprisingly, the demographic situation is getting worse and worse and vague health standards follow suit. This tendency may become a serious hindrance stopping further development of the new EU members in the foreseeable future.

This book is a comprehensive section of the research (see T. Michalski, 1999, 2000a, 2000b, 2001a, 2001b, 2001c, 2001d, 2001e, 2002, 2003a, 2003b, 2003c, 2003d, 2003e, 2003f, 2003g, 2004a, 2004b, 2004c; M. Ilieva, T. Michalski, 2002; T. Michalski, O. Pierkhach, 2001; T. Michalski, J. Wendt, 2002; M. Pacuk, T. Michalski, M. Tarkowski, 2003; O. Perkhach, T. Michalski, 2000; M. Stašac, T. Michalski, T. Palmowski, 2002), carried out in order to build a model reflecting and explaining changes in the demographic and health situation in all former European postcommunist countries (excluding Russia and German Democratic Republic). The book is the most comprehensive presentation of partial research results that have been published so far.

The territorial range of the research presented in this book includes (Fig. 1) Estonia, Latvia, Lithuania, Poland, Slovakia, The Czech Republic, Hungary and Slovenia. The term EU-p8 is used in the book to refer to the above mentioned countries. EU-10 is another term to denote all new members of the EU, whereas the term EU-15 stands for all the countries forming the EU before 2004.

The period covered by the book begins in the year when the communist system collapsed (in most of the countries it was 1989) and continues until the year 2002. In a few cases the period of research was limited due to statistical data being unavailable or not credible.

The analysis of changes subject to research was based on regression equations calculated with the use of the least square method. An average level of a given variable in the analyzed period was the arithmetic mean, whereas similarities in a given variable for different countries were identified by means of the tau Kendall's



Fig. 1. The situation of the analysed countries at the background of Central and Eastern–Central Europe

Source: author's own analysis.

correlation coefficient. Trends were considered to be similar when the degree of correlation was at least 0.600.

Most of the statistical data used in this book comes from WHO Copenhagen and World Bank databases. In some cases data published in statistical yearbooks of particular countries was also used. Data derived from WHO Copenhagen data-



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bases was given priority whenever there was a discrepancy between different data sources.

Finally, I would like to express my gratitude to Professor Jerzy J. Parysek from Adam Mickiewicz University of Poznań as well as Dr hab. Tadeusz Palmowski and Dr Jan Wendt from University of Gdańsk for their invaluable support without which this book would not be completed. The responsibility for any possible inaccuracies lies entirely with me.

Author



# 1. Systemic changes

## 1.1. International scale

After 1989 essential political, economic and social changes took place in the countries of Central–Eastern Europe. On an international scale, this was primarily the “autumn of the peoples”. This term usually refers to a peaceful (with a few exceptions) break-up of the political system of socialist countries that had existed in this region of Europe. This process started at the end of 1989 and within two years it led not only to the dismantling of the system of communist countries, but also to the cancellation of the WW2 arrangements made at the conferences in Potsdam and Yalta, during which Great Britain and the United States “sold” the nations of this part of Europe to the Soviet Union.

Other important events and processes of an international character include:

- a peaceful unification of Germany in 1990, which was another symbol of overcoming the injustice done after WW2;
- dismantling in 1991 of military and economic organisations of communist countries (the Council for Mutual Economic Assistance and the Warsaw Pact);
- the break-up of all federal countries of the communist block (Czechoslovakia, Yugoslavia and the USSR) as a result of the increase in ethnic tensions which had been suppressed by communist parties for many previous years.

After the break-up of the system of socialist countries and the USSR itself, there was a void in this part of Europe as to international relationships. However, new initiatives began to appear in this respect, which were aimed at creating new economic, political and social links. These can be divided into the pro-western and pro-Russian ones. From among pro-Russian organisations, the Commonwealth of Independent States, created in 1991, comes to the forefront. Naturally, none of the present EU–p8 countries joined the organisation. Created in 1996, the Union State of Russia and Belarus was more of a propaganda than practical significance. Similarly, created in the same year, the Community of Integrated States was of marginal importance.

From among pro-western activities, meetings of the presidents of Czechoslovakia, Poland and Hungary were an entirely new political initiative. 1991 can

be considered as the starting point of the co-operation, as in this year a common declaration was signed in Visegrad, in which, among other things, a support for the dismantling of the Council for Mutual Economic Assistance and the Warsaw Pact and a willingness to consult a common policy (both the international and partially the domestic one) was stipulated. After the name of the place in which the declaration was signed, these three countries, and after the break-up of Czechoslovakia four, were called the “Visegrad group.” The most important achievement of this initiative was signing in 1992 of the Central European Free Trade Agreement – CEFTA, which started functioning a year later. The success of CEFTA made other countries join it in subsequent years. CEFTA lost the reason for its existence after the enlargement of the European Union in 2004.

The Central European Initiative (called so since 1991) was an old political structure that gained a new significance after the collapse of the system of socialist countries. Its beginnings go back to the late 1970s and are connected with the cooperation between Italy and Austria, enlarged later to Yugoslavia and Hungary. After 1989 it was joined by Czechoslovakia (later the Czech Republic and Slovakia), Poland, Albania, Bulgaria, Romania, Belarus, Moldova and Ukraine. After the break-up of Yugoslavia, countries which appeared after this break-up became members of the Central European Initiative. The goals of the organisation amount to consulting actions and exchanging information. The main institutionalised form of the co-operation is the Centre for Information and Documentation situated in Trieste (cf. E. Cziomer, 2000).

Besides, there are two regional groups encompassing only some of post-communist European countries. In the north this is the Council of the Baltic Sea States created in 1992. It includes Denmark, Finland, Germany, Poland, Lithuania, Latvia, Estonia and Russia, and was later joined by Iceland. The functioning of this organisation centres around the issues connected with environmental protection, the development of power industry, transportation and the rights of ethnic minorities. The other organisation is the Baltic Council created in 1990 and including the former soviet republics: Lithuania, Latvia and Estonia. Within its framework a wide co-operation is conducted, which involves the political, socio-economic and cultural grounds (cf. T. Palmowski, 2000).

In the south, the Black Sea Economic Council, created in 1992 plays an important role. However, none of the post-communist countries that became part of the EU in 2004 is its member. Only Poland, Slovenia and Slovakia participate in its works as observers.

The most important events among post-communist countries after 1989 was the enlargement of NATO and the European Union. In 1999 NATO welcomed the

Czech Republic, Hungary and Poland, while five years later Slovakia, Slovenia, Estonia, Latvia, Lithuania, Romania and Bulgaria. This created a geopolitical situation of a new quality. Russian military influences on most of the so-called far foreign countries and three of the so-called near foreign countries (Lithuania, Latvia, Estonia) were almost entirely eliminated. Still, economic influences are quite strong, mainly due to making the economies of the majority of these countries dependent on Russian supplies of oil and natural gas. On the other hand, NATO influences expand, which can be illustrated by its interventions in Albania and the countries of former Yugoslavia.

Post-communist countries were admitted to the European Union twice. In 1990 after the unification of Germany, the former German Democratic Republic automatically became its member, while in 2004 Slovenia, Hungary, the Czech Republic, Slovakia, Poland, Lithuania, Latvia, Estonia and Malta and Cyprus (actually only its Greek part) became its members. Turkey and, from the post-communist countries, Romania, Bulgaria and Croatia urgently strive to join the EU.

Among the transformations of an international nature, the “opening” of borders and granting the right to keep a passport at home had the greatest influence on the changes in the demographic and health situation. This resulted in a rapid increase in mobility among the societies of all post-communist countries. On the one hand, there is a development of civil rights, which is an undeniable advantage. On the other hand, the increase in the hazard of infectious diseases is the major disadvantage. This regards mainly the hazard of transmitting tuberculosis, STD and HIV/AIDS from the Commonwealth of Independent States. An appropriate visa policy and border controls are the most essential precautions in this respect (cf. T. Michalski, 1999, 2000b, 2003b, 2003c).

## **1.2. Domestic scale**

One can distinguish between two ways of achieving full independence by EU-p8 countries. Poland, Hungary, the Czech Republic and Slovakia have taken a simple and shorter route. In 1989 all these four countries either had their own political states (Poland, Hungary) or they were equal partners of larger countries (the Czech Republic and Slovakia). The second route referred to Slovenia, which was part of Yugoslavia dominated by Serbia, as well as Lithuania, Latvia and Estonia, constituting part of the USSR, where the communist state machinery deriving mainly from among Russians took all decisions. The road to independence of the

latter four countries was much more difficult, since the loss of communists' capacity to govern was additionally overlapped by the factor of long-suppressed nationalist tendencies (cf. M. J. Zacharias, 2003).

After 1989 all post-communist countries faced numerous political, economic and social challenges connected with the need for radical reforms, the reforms which practically encompassed all walks of life. The most important transformations are listed below, with a particular attention paid to their impact on the health and demographic situation of societies.

The political changes primarily affected the domains of the military, the system of political parties, mass media and NGOs (Non Governmental Organizations).

Subordination of the armed forces to communist parties was a peculiarity of Eastern and Central Europe. Besides, all armies from the eight analysed countries, except for the Yugoslavian one, were part of the Warsaw Pact. The most difficult situation was in the areas of present Slovenia as well as in Lithuania, Latvia and Estonia. These four countries were components of larger state organisms in which the armed forces were controlled by a foreign nation. In the case of Slovenia this was the Yugoslavian army dominated by Serbs, and in the case of the three remaining countries – the Soviet army dominated by Russians. An additional example of a negative impact of the army on the situation in these three countries was a habit of settling the retiring officers in areas considered attractive in the former USSR, and these included the three mentioned countries (especially Estonia). The influence of these displacements on the demographic and health situation of the three Baltic States is clearly noticeable till this day. It is not surprising, then, that new authorities in the majority of post-communist countries (including all the ones studied here) very soon began to try to limit the influences of communists in the armed forces. The soonest (as early as in 1989) this was achieved in Poland, Czechoslovakia and in Hungary by doing away with the main political boards of the armies, the political apparatus and party organisations functioning in the army until that time (Z. Trejnis, 2003).

In all eight of the analysed countries within the first two years after the dissolution of the socialist system, the laws concerning the principles of functioning of political parties and the elections were amended. The characteristic feature of the countries of the region was a rapid appearance of many parties, which, naturally, was not favourable to the stability of the political system. The presence of post-communists, who did not give up attempts to regain power, was an additional threat. Another characteristic feature was the revival of parties of Christian origin in some post-communist countries. For example, in Lithuania in 1994 Christian Democratic Party ranked the third in the country as far as the number of members

is concerned (A. Jankauskas, 1996). Parties composed of people who until recently were active participants of anti-communist opposition took power in the first democratic elections. On the other hand, in the case of the majority of post-communist countries which were not admitted to the European Union in 2004, it were post-communists that took power. J. Wojnicki (2003) points out the connection between the stability of the political system and the advancement of market reforms. The countries that are in the most advanced stage of the process to free-market economy simultaneously have the most stable political systems. After a few years of political confusion, in the second half of the 1990s the then ruling political parties drew attention to the necessity of a reform of the health care system inherited after the communist times. Unfortunately, the lack of financial resources, and well developed consultations procedures, as well as the pressure from lobbyists, caused the reforms to be quite painstaking to carry out.

The reform of the law occupies an important place in the transformation process of post-communist countries. Because in the communist period the independence of people working in jurisdiction was illusory and they often served the governing communist party, the independence of judges was given particular attention in the reform of the law. Besides, the issues connected with the necessity to observe human rights and the regulations connected with the functioning of market economy, including privatisation processes, were given particular attention (cf. I. Malinowska, 1996). This was also reflected in the realm of health care, when patients harmed as a result of doctors' mistakes or faulty equipment more and more often lay their claims before court. A wrongly taken idea of corporate solidarity among doctors is a factor that makes seeking justice difficult.

In the mass media market, the changes took place in two areas. The first one was the appearance of free media. Even a synergetic effect appeared, when mass media, freed from censorship, have become one of the most important guards of liberty. G. Edelstam (2002) point to the fact that it is not only tracing scandals that is at stake, but also extensive information of the society about the prepared changes in law. An example of the latter kind of activity of the press is the bribe scandal revealed by the *Gazeta Wyborcza*, which was one of the reasons for the collapse of L. Miller's post-communist government in 2004 in Poland. The second change in the mass-media market is related to property transformations. These are connected with the appearance of new owners (especially the appearance of western European media concerns on the mass media market) and the attempt of all governments to retain control over theoretically public television. From among the democratic post-communist countries the second process was particularly conspicuous in Croatia during F. Tudman's government (cf. G. Vilović, 2002). The above changes

are not without influence on the evaluation of the functioning of the (reformed) health care systems. The publications on the subject can be divided into two groups: (1) broadsheet newspapers and magazines focus their attention on the systemic depictions of the functioning of the health care system, while (2) tabloids on drastic cases of individual doctor's mistakes or faulty functioning of medical equipment.

A characteristic feature of changes in the social sphere is the increase in citizens' activity manifested in the appearance of NGOs. During the communist period, all activities of this kind were perceived by the authorities as a threat to the monopoly of the communist party and related to it organisational annexes. The enlargement of the European Union gave a new impulse to the development of these organisations in the EU-p8. Most of them deal with health care, social work and education. In 2001 in Poland this type of NGOs constituted a little over half of all organisations (S. Rzyński, 2004).

Just as spectacular changes have taken place in economy but also with respect to the starting point and the rate of economic reforms post-communist European countries show large discrepancies between each other. On the one hand, there are countries in which the reforms are not implemented or they are implemented very slowly. The reasons for this are multiple, and they are usually connected with staying in power by populists or post-communists (e.g. Belarus, Moldova) or with a complex domestic situation (e.g. Bosnia and Herzegovina, Macedonia). On the other hand, there are countries which implement bold and fast reforms (especially Estonia, Hungary, the Czech Republic, Slovenia, Poland). There are also countries with an in-between situation, such as, for example, Bulgaria. In the first half of the 1990s an acute economic crisis was observed there, which was an effect of post-communists' inefficient government. Only the change in the authorities and the implementation of sweeping economic reforms improved the situation (cf. M. Ilieva, T. Michalski, 2002). All countries included in the EU-p8 started their economic reforms very soon, which gave favourable results with the crowning achievement in form of joining the European Union. However, the past still has a very strong impact on the level of the citizens' affluence. With regard to per capita volume index at the level of total GDP 2003 nowcast results (EU25=100) (Fig. 2) EU-p8 countries are divided into two groups. The first one, with shares of 61–77%, comprises Slovenia, the Czech Republic and Hungary. These are countries that were well developed prior to the communist period. The remaining countries, with the shares of 42–51%, belonged to the less developed ones before WW2. Thus, as far as economy was concerned, with respect to wealth the period of communist economy hardly changed the relations among the citizens of the present post-



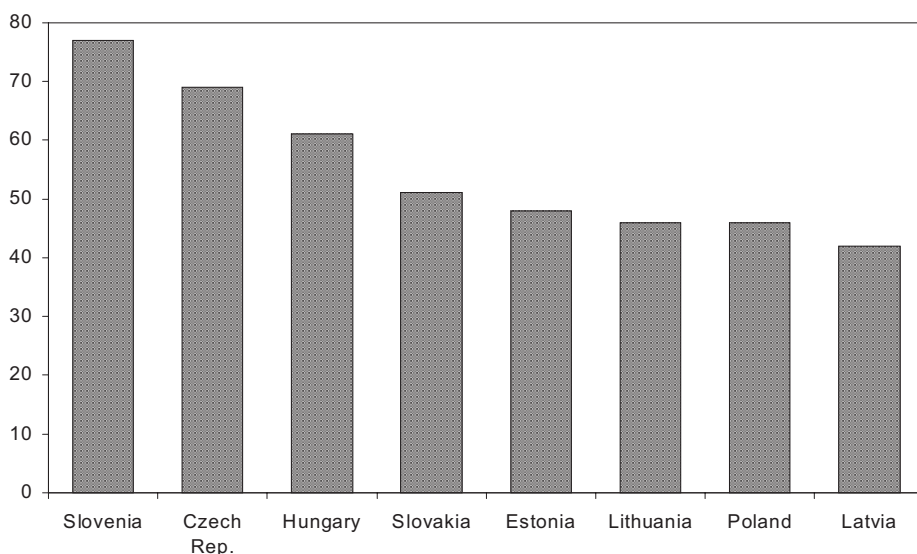


Fig. 2. Per capita volume index at the level of total GDP 2003 nowcast results (EU25=100) in w EU-p8

Source: P. Leetmaa (2004), graphically worked out chart 1.

communist countries. However, in the European arena, it led to their economic backwardness, which, of course, translated to a lower level of the population's wealth. For instance, the Czech society in the period between WW1 and WW2 was more affluent than the Greek or the Spanish one.

The level of affluence of the citizens and the country is closely reflected by the outlays on health care (Fig. 3). The country's policy on health and social care as well as the society's habits are the modifying factors in that respect. The two modifying factors significantly influence the relation between public and private outlays on health care. As expected, from among EU-p8 countries the highest expenditures are in the wealthiest countries Slovenia, the Czech Rep., Hungary (PPP\$ 910–1550 per capita), whereas in the remaining ones they are much lower (\$480–680). On the other hand, the impact of affluence on the relation between public and private outlays on health care is not distinct. In the majority of the studied countries the share of public outlays remains at the level of about 74%, which is not much different from the EU-15 values. The Czech Republic and Slovakia, where the share of public outlays amounts to about 90%, and Latvia (with the share of 53%) are exceptions.

Naturally, not all economic changes give favourable results. The biggest downside is the appearance of unemployment and the exclusion of vast social groups from the benefits of economic reforms.

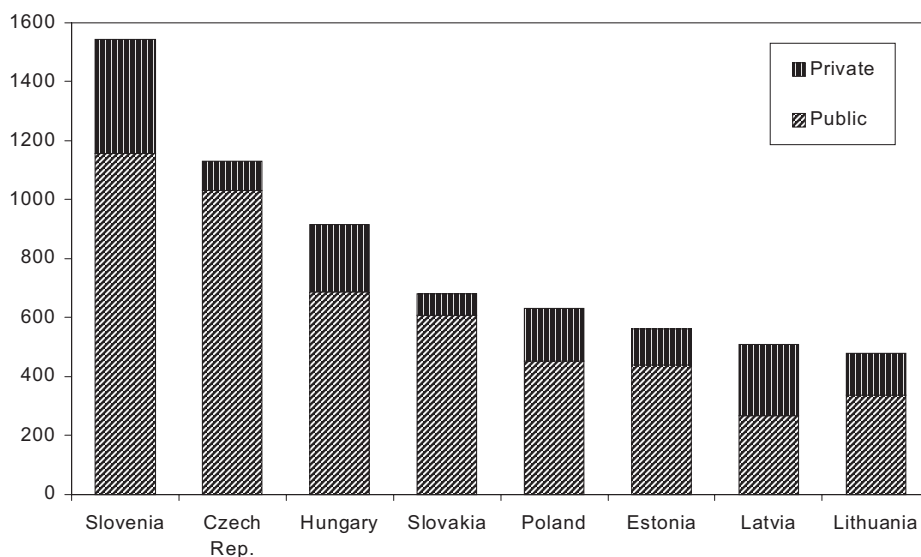
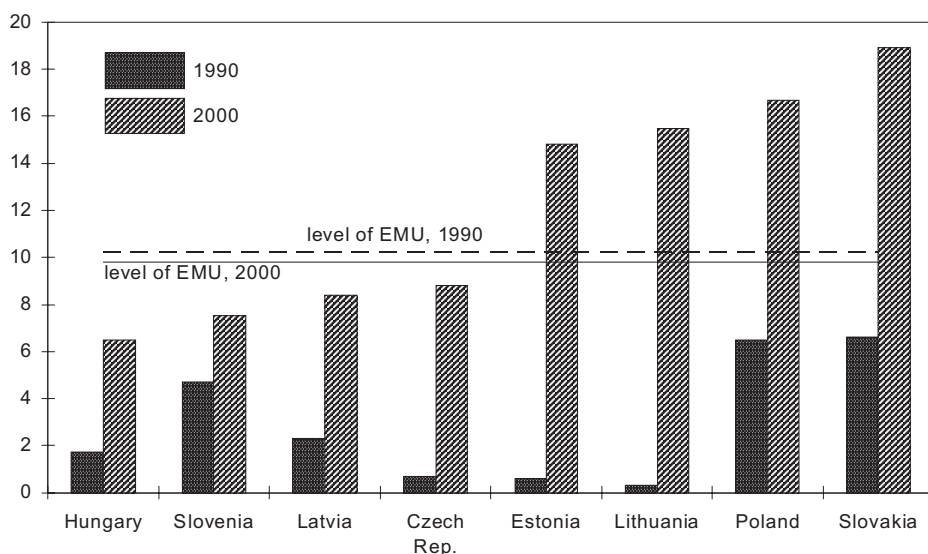


Fig. 3. Total health expenditure PPP\$ per capita in 2001 in EU-p8 (WHO estimates)

Source: author's own study based on WHO Copenhagen database.

The appearance of unemployment was a natural consequence of the carried out economic reforms. One of the inevitable elements of these reforms was the rationalisation of employment and the closing down of uncompetitive companies. In post-communist countries there were two economic ways of influencing the unemployment rate. There were countries implementing only cosmetic reforms in their economic systems, which has caused only little unemployment. However, these countries are characterised by less competitive economies and a pauperisation of the society (e.g. Belarus with the unemployment rate at 2.0% in 1999). On the other hand, most post-communist European countries (including all EU-p8 countries) have carried out drastic economic reforms, which resulted in the growth of unemployment (Fig. 4). But then again, the economies of some of these countries turned out to be so attractive to investors (especially the foreign ones) and had so liberal legislation that new places of work were created in place of the closed down ones. Countries with such a situation include Hungary, Slovenia, Latvia and the Czech Republic (unemployment rate in 2000 6.5 to 8.8%). The situation is much worse in Estonia, Lithuania, Poland and Slovakia (in the same year the unemployment rate of 14.8 to 18.9%).

The most “defeated” groups include elderly people and former farm workers of state-owned farms. People of the pre-retirement age are in a worse position since there is a fashion among employers for youth associated with greater creativity,



Instead of 1990 in Latvia 1992 was given, while in Lithuania, Slovakia 1991

Fig. 4. Unemployment, total (% of total labour force) in 1990 and 2000 in EU-p8 and European Monetary Union (EMU)

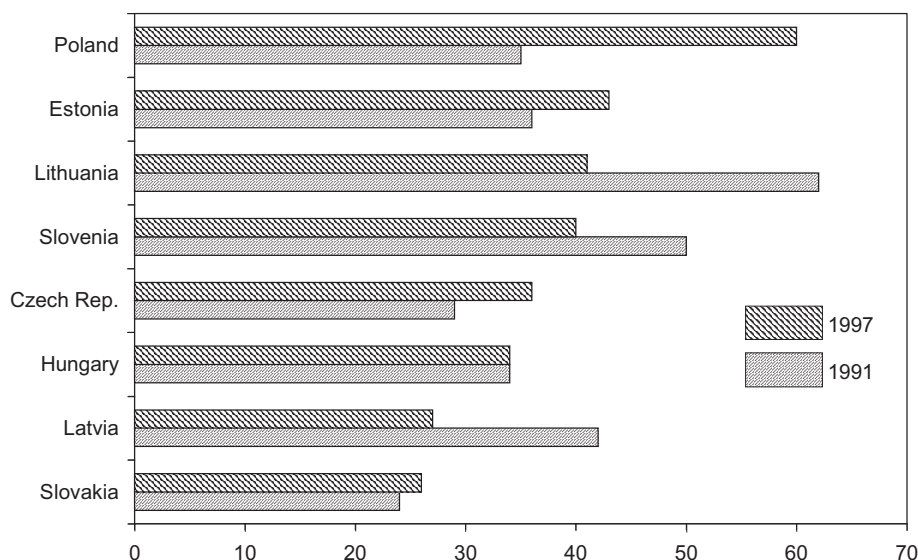
Source: author's own study based on WDI (2003).

availability, visual attractiveness for customers, etc. It follows from the observation of the job market in Poland, Slovakia and Hungary that only within the last few years this unfavourable tendency has been reversed, at least in the realm of commerce and non-material services. During the communist period, workers from state-owned farms were under particularly strict control of the communist party. Living in small rural communities with a difficult access to the outside world was conducive to such a situation. After the collapse of the system of communist countries, the process of closing down of these farms started. Of course, it takes a different speed in various countries, but the result in all countries is similar. Former farm workers and their families are too inert to actively seek a job. Besides, in their place of living very few new vacancies appear or even their number is further reduced. This happens because urban areas and their suburban zones are more attractive for investors. As a result, in the areas in which state-owned farms dominated, now there is very high unemployment. This is conducive to numerous social pathologies.

The economic problems sketched above and the disillusionment with political elites contribute, contrary to initial expectations, to the existence of a large number of people dissatisfied with the introduction of free-market economy. This is

manifested in a longing for the past “welfare” communist state, in voting for populist or extremist parties, and in a very low level of satisfaction with democracy. Fig. 5 presents the percentage of people satisfied with the changes in EU-p8 in the initial period (1991) and after a few years of reforms (1997). It is clear that at the beginning the societies of countries that had been part of larger state organisms in which another nation dominated (Lithuania, Slovenia, Latvia, Estonia) were the most content with the introduced reforms. Initially, the main factor deciding about the level of satisfaction with the introduced democracy was the fact of gaining independence. Then, a few years later the situation is quite the opposite – the greatest level of satisfaction with democracy is declared by the societies in which the improvement in the standard of living was the fastest. These are primarily Poland and Estonia, in which the connection of a bad state of economy at the beginning of the analysed period with fast favourable effects of sweeping economic reforms caused a significant increase in the satisfaction with democracy among the society.

The situation of the majority of post-communist European societies countries, including all EU-p8 countries, improved a lot after 1989. Undoubtedly, however, certain serious threats still prevail. The ones of supranational dimension include:



Instead of 1991 in Slovakia, Slovenia 1992 was given

Fig. 5. Percentage of population very or fairly satisfied with democracy in 1991 and 1997 in EU-p8

Source: D. G. Blanchflower, 2001, table X, p. 384.

1. In the economic domain: the necessity to ensure a possibility of making a full use of the help funds received from the European Union by EU-p8. The need to maintain efficient administration and further opening of own economies is inseparable from this necessity. In the context of recent events in the oil and power sectors, and the circumstantial evidence leading to Russia, the question of the power safety of most EU-p8 countries arises.
2. In the foreign policy domain: a revival of Russian ambitions to be a superpower. Central and East-Central European countries have almost always remained in the sphere in which western European (mainly German) and Russian influences have overlapped (cf. R. Szul, 2001; J. Wendt, 1999). Since taking over the authority in Russia by W. Putin, a gradual return to imperial politics has been conspicuous. The interference in the elections in Ukraine in 2004, which brought about the “orange revolution” triggered by numerous corruptions of election returns, is a case in point.
3. In the internal policy domain: the appearance of populist or extreme parties or politicians is a serious threat. The societies of the majority of EU-p8 countries are tired of having to face yet another sacrifice connected with another reform. On the other hand, large social groups do not experience any beneficial effects of the carried out reforms. This causes frustrations, anger and an idealisation of the past communist times.
4. In the ethnic domain: the rebirth of nationalist movements, stifled for years by the ruling communist systems, has brought new dangers. The government’s feeling of threat of national and ethnic minorities creates a phenomenon which, after G. Kosmala (2001), can be called “internal colonialism”, and which can lead to the alienation of whole groups from social life. In the EU-p8 countries, the most threatened by this process are national minorities (mostly Russians) in Estonia, Latvia and Lithuania and Hungarians in Slovakia.

## 2. Demographic situation

### 2.1. Natural increase

With regard to the birth rate, the differences between EU-15 and the new member countries are minimal. In the analysed period, the average live birth rate in EU-10 was slightly higher (live births per 1000 population 11.3) than in the EU-15 countries. However, the basic differences are in the tendency of births. While the decrease in births among EU-15 countries was low, which is represented by the equation  $y = -0.12x + 11.93$  ( $R^2 = 0.84$ ), among the new EU members it was high  $y = -0.42x + 14.41$  ( $R^2 = 0.85$ ). The only positive aspect is the fact that since 2000 there has been a tendency to slow down the decrease in births in the EU-10 countries.

The above presented falling tendency is clearly visible in Fig. 6. By analysing the average live births rate per 1000 population among EU-p8 countries, we can differentiate between two groups of countries (Tab. 1): the ones characterised by

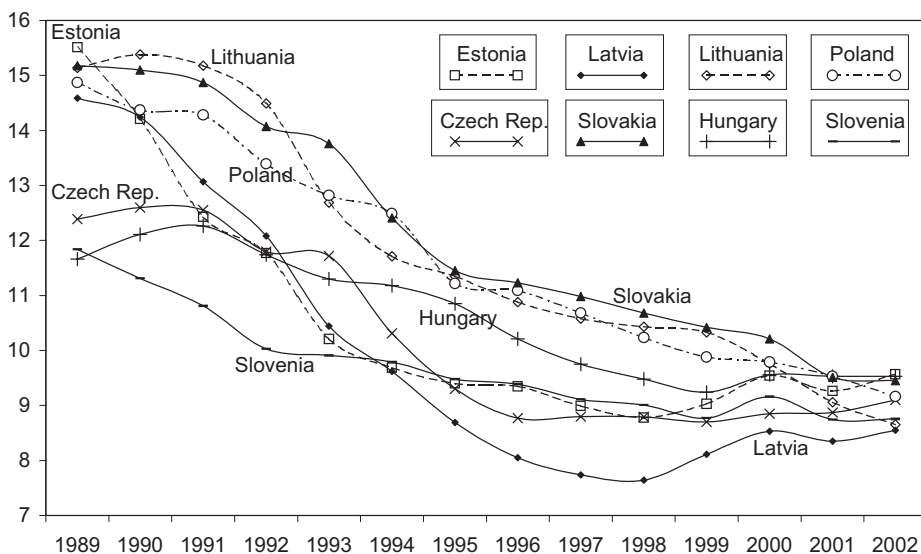


Fig. 6. Changes in live births rate [per 1000 population]

Source: author's own study based on WHO Copenhagen databases.

Tab. 1. Distinguished situations with regard to births

	Subtypes of changes in births		
Average intensity of births		A1	A2
	low and average	<b>Hungary</b> <b>Slovenia</b>	<b>Latvia</b> <b>Czech Rep.</b> <b>Estonia</b>
	high	<b>Slovakia</b> <b>Lithuania</b> <b>Poland</b>	

Source: author's own study.

a low and average birth rate (9.7 to 10.6‰): Slovenia, Latvia, the Czech Republic, Estonia and Hungary, and the ones characterised by a high birth rate (11.7 to 12.10‰): Poland, Lithuania, and Slovakia. Likewise, in these three countries the birth rate is higher than the EU-25 average.

There is a very high probability of changes in live births in all analysed countries. This resulted in determining only one type (A) characterised by a continuous decrease (Tab. 1). As a result of the conducted research, two its sub-types have been distinguished: A1 comprises Slovakia, Poland, Lithuania, Hungary and Slovenia, which are characterised by a stable tendency of decrease in births. Sub-type A2 comprises Estonia, Latvia and the Czech Republic. The falling tendency in live births in their case is the same as in other countries, but in the first half of the 1990s the decrease was more rapid, whereas at the beginning of the 20<sup>th</sup> c. there was a noticeable suppression of the fall, and even a slight increase.

As a result of a simultaneous analysis of the average intensity of births and the types of its changes, a relatively clear picture emerges (Tab. 1). Regardless of the initial birth rate, in all EU-p8 countries there have been its significant decreases. It seems that in this case the main reason was the changes in the economic situation of the families, which influenced procreative attitudes. On the other hand, the rate of the decrease is heavily influenced by the religion which is dominant in a given country, since in the initial period the most serious decrease took place in the countries with a high percentage of protestants or atheists (sub-type A2), while it was slighter in the countries with a strong position of Catholicism (sub-type A1).

With respect to the intensity of deaths, a distinct division of the European Union countries into two groups is noticeable. Among the EU-15 countries the mortality rate in the analysed period amounted on average to nearly 10 deaths per 1000 inhabitants, while among the new members it was higher by 0.9‰. With regard to the intensity of deaths among both groups of countries of the Union, there are

similar tendencies. In EU-15 there is a weak, but steady, tendency towards a decrease in mortality, which is represented by the equation  $y = -0.04x + 10.24$  ( $R^2 = 0.80$ ). Among the EU-10 countries the falling tendency is more distinct but not as steady  $y = -0.07x + 11.44$ ;  $R^2 = 0.78$ ) because at the beginning of the analysed period (1989–1991), a slight increase in mortality was noted.

EU-p8 countries are characterised by a vast differentiation in regard to both the average intensity of deaths and its changes (Fig. 7). Due to the former, three groups of countries are distinguished (Tab. 2.):

- with a high mortality rate: Estonia, Latvia and Hungary (crude death rate about 13.8‰);
- with an average mortality rate: the Czech Republic and Lithuania (crude death rate about 11.4‰);
- with a relatively low mortality rate: Slovenia, Slovakia and Poland (crude death rate about 9.8‰).

Mortality intensity lower than in EU-25 was noted only in three countries from the ones analysed. This proves that excessive mortality is a substantial problem for the majority of the new post-communist EU members.

Still a greater differentiation takes place with regard to the changes in mortality intensity in the period of 1989–2002. Here as many as four types can be distinguished (Tab. 2).

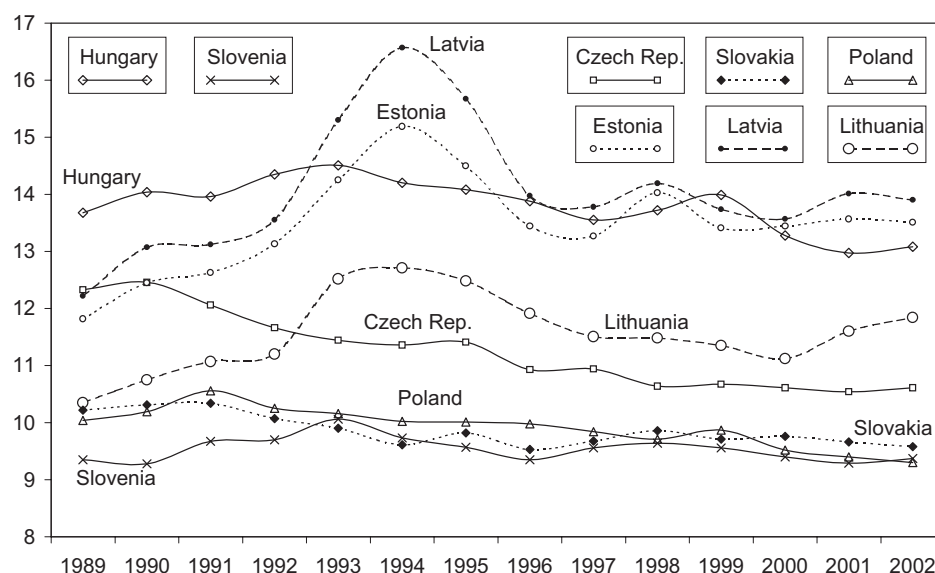


Fig. 7. Changes in crude death rate [per 1000 population]

Source: author's own study based on WHO Copenhagen databases.



Tab. 2. Distinguished types of situations with regard to deaths

Average mortality intensity	Types of changes in mortality				
		A	B	C	D
	low		<b>Poland</b>	<b>Slovakia</b>	<b>Slovenia</b>
	average	<b>Lithuania</b>	<b>Czech Rep.</b>		
	high	<b>Latvia</b> <b>Estonia</b>	<b>Hungary</b>		

Source: author's own study.

The first type (A) comprises: Estonia, Lithuania and Latvia. They are characterised by a rapid surge in the intensity of deaths until 1994, and then its slow decrease, although this is interrupted by slight yearly increases. This proves the development of a mortality crisis until 1994, after which it was overcome and an improvement took place, though a sudden increase in the number of deaths can occur again at any time.

The second type (B) comprises Poland, the Czech Republic and Hungary. Changes in mortality intensity in these countries are partly similar to the ones enumerated in the previous type. Initially, there was a stagnation, or even a slight increase, in the mortality intensity, only to be replaced by a dominant falling tendency which was interrupted for a short time (in Poland and Hungary in 1999, in the Czech Republic four years earlier). It can be assumed that negative consequences of socio-economic-political transformation influenced the mortality rate in the societies of these countries shorter and weaker than in the societies of the countries included in type A. However, in the second half of the 1990s growing economic problems resulted in a slight and temporary increase in mortality. But then again, the subsequent systematic fall noted at the beginning of the 21<sup>st</sup> century indicates a gradual disappearance of the negative impact of the economic problems.

Slovakia and Slovenia were classified in separate types. Unlike in the previous two types, in Slovakia (type C) there was a decrease in mortality until the mid-90s. Since then slight decreases in mortality intensity alternate with its equally slight increases, naturally with the dominance of the former ones.

On the other hand, in Slovenia (type D) initially the situation is similar to the one noted in the type B countries. Thus, first there is a slight increase in mortality (though much higher than in type B, and also lasting until 1993), and subsequently a decrease interrupted by a small increase in deaths at the end of the 1990s (1998) and again a decrease. Here, the similarities to the changes in mortality distinguished in type B end. Over there, a falling tendency occurs at the beginning of the 21<sup>st</sup> c.,

whereas in the Slovenian society, after a short-lasting decrease, a decrease in mortality intensity can be observed again.

Simultaneously, analysing the average mortality intensity together with the types of its changes, we receive a picture of a very diversified situation (Tab. 2). The conclusion that follows from it is that it is impossible to specify one model of changes with respect to mortality among EU-p8. Many factors are involved here, primarily of a cultural and economic nature (especially the radicalism and the effects of the carried out economic reforms) as well as the political past (especially the fact of being part of the former USSR).

The above presented intensity and changes in births and deaths are reflected in the changes in the intensity of natural increase. Contrary to opinions prevailing until recently, it is much lower in new member countries (the average value of the natural increase rate in the analysed period amounts to 0.4‰) than in EU-15 (1.1‰ respectively). Although in both groups a falling tendency is noted, in EU-10 countries it is almost four times higher  $y = -0.35x + 2.97$  ( $R^2 = 0.90$ ) than in the countries of the old European Union  $y = -0.08x + 1.69$  ( $R^2 = 0.64$ ).

The diversity of deaths and births corresponds to the diversity of natural increase (Fig. 8). Due to an average natural increase rate among EU-p8, three groups of countries are distinguished (Tab. 3):

- with distinctly negative natural increase: Latvia, Hungary, Estonia (natural increase rate  $-4.1‰$  to  $-2.9‰$ );
- with natural increase around zero: the Czech Republic, Slovenia, Lithuania (natural increase rate  $-1.1‰$  to  $+0.3‰$ );
- with distinctly positive natural increase: Poland, Slovakia (natural increase rate about  $2.0‰$ ). Societies of only these two countries show the average natural increase above the EU-25 average.

With regard to changes in natural increase in the analysed period, two types can be distinguished (Tab. 3). The first one (A) comprises Estonia and Latvia. In these countries natural increase was falling rapidly until 1994 to be stabilised at a very low level. Since 1998 even a slight growing tendency can be observed. Type B included all the remaining countries. Still, it is internally diversified. The common feature is a steady, though with some fluctuations, fall of natural increase. In the societies of almost all countries belonging to this type a suppression of the fall of natural increase is noticeable. The exception here is the Lithuanian society, in which since 2000 a sudden decrease has been noted.

With respect to both average natural increase rates and the types of their changes, four groups of countries can be distinguished (Tab. 3). The first one (type A) includes Estonia and Latvia, which are characterised by negative natural increase

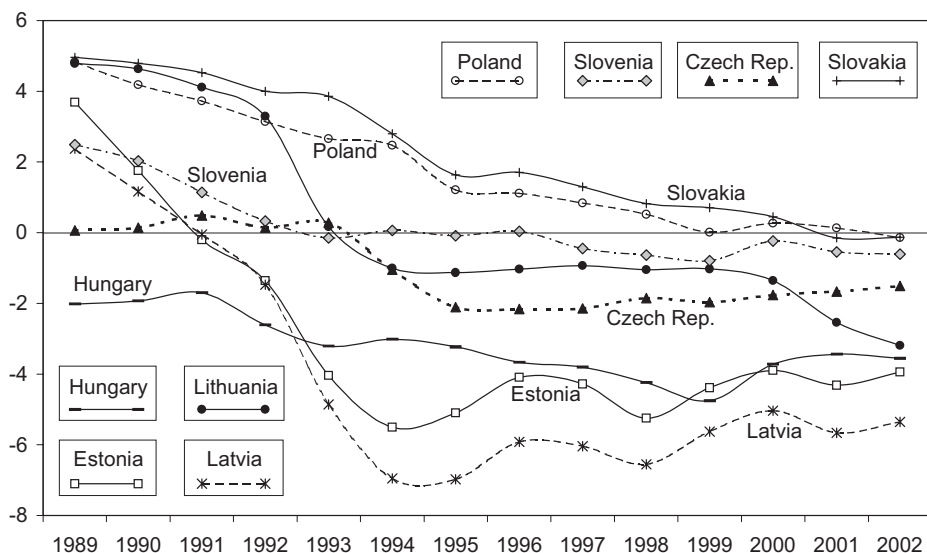


Fig. 8. Changes in natural increase rate [per 1000 population]

Source: author's own study based on WHO Copenhagen databases.

with its sudden slump in the initial period. The second group (type B) includes all the remaining countries, with a steady decline of natural increase but varying insofar as its average rate in the analysed period. Here one can differentiate between countries with negative natural increase (Hungary), those where it is around zero (the Czech Republic, Slovenia and Lithuania) and those with a distinctly positive one (Poland and Slovakia).

Tab. 3. Distinguished types of situations with regard to natural increase

Natural increase rate	Types of changes in natural increase		
		A	B
	distinctly negative	<b>Estonia</b> <b>Latvia</b>	<b>Hungary</b>
	oscillating around zero		<b>Czech Rep.</b> <b>Slovenia</b> <b>Lithuania</b>
	distinctly positive		<b>Poland</b> <b>Slovakia</b>

Source: author's own study.

The analysis of natural increase on the basis of data only from the beginning (1989) and the end (2002) of the studied period constitutes a supplement for the research. As a result of the classification, three groups of countries are distinguished (Fig. 9). The first one includes Estonia, Latvia and Lithuania, in which a heavy decline of natural increase took place. This resulted mainly from a substantial decrease in the number of live births, with an increase in mortality following it. Such a bad situation in these three countries was also influenced by a numerous national minority (mainly Russian). For example, in 2000 the demographic dynamics factor for the citizens of Estonia of Estonian origin was 0.71, while for the citizens of Estonia of a different nationality only 0.59. The second group includes the Czech Republic and Hungary, in which a small decline of natural increase took place (nonetheless, very low in 1989), which was caused by the slump in the number of births. In these two societies there was also a decline in the intensity of deaths, which significantly counteracted a further decline of natural increase. Intermediate processes took place in Slovenia, Poland and Slovakia. In the societies of these three countries there was also a decline of natural increase, in Slovenia from an average level while in Poland and Slovakia from a high one. It was caused by a large slump in the number of births with an almost unchanged mortality rate.

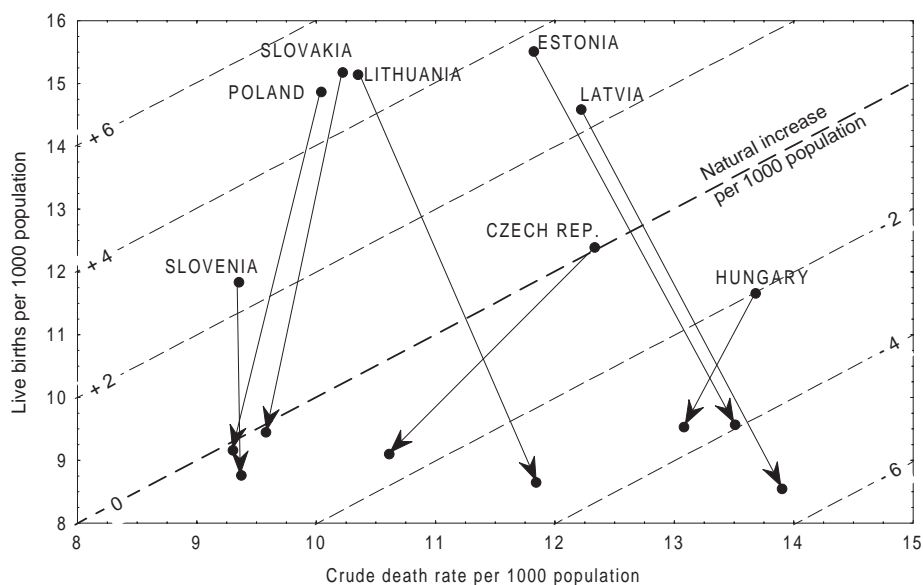


Fig. 9. A synthetic presentation of changes in natural increase rate in 1989 and 2002 [per 1000 population]

Source: author's own study based on WHO Copenhagen databases.

## 2.2. Foreign migrations

The analysis of foreign migrations poses serious difficulties due to a different definition of definitive migration in various countries. Hence, the data and conclusions presented in this chapter can be treated only as general ones. Likewise, when collecting data describing foreign migrations, statistical yearbooks of particular EU-p8 countries were used. It is also impossible to compare EU-15 with EU-10, since in order to do so, both groups would have to be treated as super-countries without taking into consideration the migrations between countries constituting both groups, and such actions are especially difficult. The analyses presented below refer to the period of 1990–2001. Besides, Estonia was partially omitted in them because the data on migration published by its statistical office are fragmentary.

Emigration in EU-p8 countries is very diversified (Fig. 10). By analysing the emigration intensity calculated by means of the number of emigrants per 1,000 inhabitants, two groups of countries may be distinguished (Tab. 4): citizens of Lithuania and Latvia are characterised by a very high intensity of departures of a permanent nature (6.6‰ and 7.2‰ respectively). Incomplete data indicate that a similar situation also occurred in Estonia. In Hungary, Slovakia, Poland and in the Czech Republic the intensity of departures was much lower, oscillating between 0.3‰ and 0.7‰. An intermediate situation was in Slovenia (2.1‰).

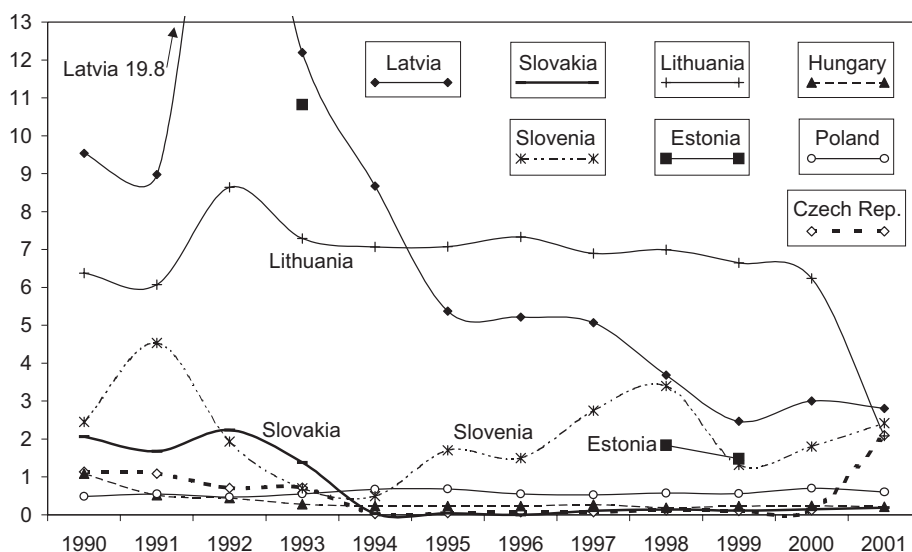


Fig. 10. Changes in emigration (per 1000 inhabitants)

Source: author's own study based on statistical yearbooks of particular countries.

Tab. 4. Distinguished types of situations with regard to emigration

		Types of changes					
Average intensity		A	B	C	D	E	F
	low	<b>Slovakia</b> <b>Czech Rep.</b>	<b>Hungary</b>	<b>Poland</b>			
	average				<b>Slovenia</b>		
	high					<b>Latvia</b>	<b>Lithuania</b>
not analysed		<b>Estonia</b>					

Source: author's own study.

A very diversified situation evolved with reference to the changes in the intensity of emigration (Tab. 4). Only the Czech Republic and Slovakia could be classified in the same type (A). They were characterised by a very high emigration in the period preceding the definite break-up of Czechoslovakia (1990–1993). Despite the fact that in that period it was one state, migrations between its both republics are treated in this study as foreign migrations. The biggest emigration was noted in Slovakia in 1992 (2.2‰). Since 1994 emigration in both countries was minimal – below 0.2‰. It has rapidly increased since 2001 only in the Czech Republic (2.1‰ in 2001 and 3.2‰ in 2002), which is probably caused by the emigration of Gypsies to the countries of the then European Union. In Hungary (type B) the level of emigration is low, and throughout the whole analysed period it systematically decreases. On the other hand, in Poland (type C) migration remains at a slightly higher level than in Hungary, not changing significantly in time. The situation in Slovenia (type D) is different. In this country there were two periods of increased emigration. The first one took place since the beginning of the analysed period until 1992 and was connected with migration movements caused in effect of the break-up of the former Socialist Federal Republic of Yugoslavia. The second one occurred between 1995–1998 and most probably resulted from warfare taking place in the area of former Yugoslavia. On the other hand, it seems that the increase in emigration in 2001 is of economic nature. In the countries which used to belong to the former USSR, emigration remained at a high or very high level throughout the whole analysed period. Because its causes in all three countries are similar, let us trace them on the example of Latvia (type E). The high level of emigration was connected here with the existence of numerous ethnic minorities. It was the highest in the first years after the break-up of the USSR, and gradually it declined. The existence of a large group of minorities there was caused by the fact that the three

Baltic republics and the Black Sea coast constituted attractive settlement areas, which was why many high-class specialists tried to move there. Besides, the retired ones “of particular merit” (e.g. ex-soldiers) were settled there, and they later tried to bring their children and other relatives. After the break-up of the USSR this multitudinous Russian-speaking minority (mainly Russians, Byelorussians and Ukrainians) lost their privileged position or even became discriminated against. This resulted in the known from the past process of leaving the former colony by the colonisers (as it was e.g. in the 1960s in Africa after gaining independence by local French, British or Belgian colonies). The peak of departures of the Russian-speaking population took place in 1992 (the emigration rate amounted then to almost 20%). In that year 51 778 people emigrated from Latvia, of which 53.1% to Russia, 20.5% to Belarus and 17.0% to Ukraine, which altogether constitutes a little in excess of 90% of total emigration. Similar reasons for departures were in Lithuania (type F) and in Estonia.

Taking into consideration both the emigration intensity and its changes in time, we get a rather complex picture (Tab. 4). Apart from Poland and Hungary, after 1989 all the remaining countries experienced the break-up of larger states of which they were part. This was reflected in the changes and intensity of emigration, which at the beginning of the 1990s was at an average level in the states of the former Czechoslovakia, only to decline after its break-up. On the other hand, high fluctuations in Slovenia result from wars consuming former Yugoslavian republics. Then again, very high emigration at the beginning of the 1990s in the countries of the Baltic Council is a derivative of a “colonisation” of these regions in the period of the USSR.

In the course of conducted research it appeared that immigration in EU-p8 countries was also subject to high fluctuations (Fig. 11), though smaller ones than in the case of emigration. Taking into consideration the average immigration intensity (Tab. 5), we can single out Slovenia with a very high influx of population (2.8‰), then there are Latvia and Hungary with also high immigration (1.8‰), Lithuania, the Czech Republic and Slovakia constitute the third group with average influx of population (0.9 to 1.3‰). The lowest average values of immigration were noted in Poland (0.2‰). Estonia would probably have to be included in the group with the highest immigration.

Such large immigration to Slovenia results from two reasons (1) the economic one, since this is the richest country which appeared on the rubble of former Yugoslavia, hence it is attractive to many migrants, particularly from this region; (2) the political one, since the wars in the former republics of Yugoslavia, especially in Croatia and Bosnia and Herzegovina caused a mass exodus of the population

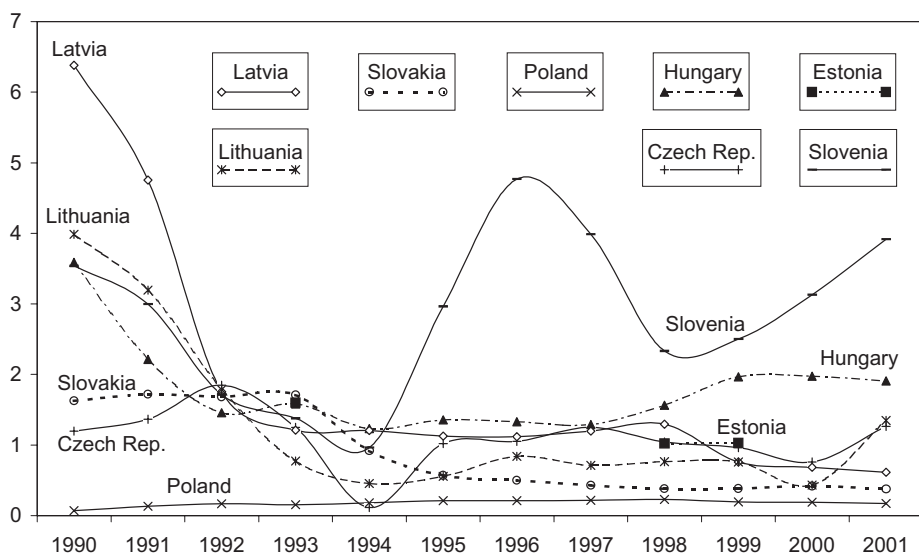


Fig. 11. Changes in immigration (per 1000 inhabitants)

Source: author's own study based on statistical yearbooks of particular countries.

from the areas overcome by fights. High immigration to Hungary is connected with the existence of multitudinous Hungarian diaspora in neighbouring countries, especially in Romania, Slovakia, Ukraine, Serbia and Montenegro. In all these countries the rights of the Hungarian minority are, as a matter of fact, limited. Besides, in these countries the standard of living is much lower than in Hungary (except for Slovakia, where it is indeed lower but not as much as in the other three countries). Large or average immigration to the countries of the Baltic Council results from the aforementioned presence of Russian-speaking minority. Although immigration is of a much lower intensity than emigration, it still takes substantial

Tab. 5. Distinguished types of situations with regard to immigration

		Types of changes						
Average intensity		A	B	C	D	E	F	G
	low							<b>Poland</b>
	average				<b>Lithuania</b>	<b>Czech Rep.</b>	<b>Slovakia</b>	
	high		<b>Latvia</b>	<b>Hungary</b>				
	very high	<b>Slovenia</b>						
not analysed		<b>Estonia</b>						

Source: author's own study.



values. To illustrate that, the example of Latvia in 1992 is used again. In that year 51,778 people emigrated from that country, including 53.1% to Russia, whereas immigration amounted to 4,590 people including 61.6% from Russia. The mechanism of this phenomenon is of historic and economic nature. The standard of living in the countries of the Baltic Council is higher than in Russia. Additionally, the immigration is facilitated by the fact that a large Russian-speaking diaspora lives there, which may help immigrants in the initially difficult time for them. Not less important is the fact that young men leaving Russia may avoid inhumane conditions in which one is to serve in the Russian army, and they may avoid the service in corps actively participating in both Chechen wars. On the other hand, increased immigration in the states of former Czechoslovakia is based on common past and resulting from this cultural similarities, a large number of mixed marriages, etc.

Like in the previous process, also the changes in immigration do not prove similarities which enable grouping the countries in common types (Tab. 5). Although the changes in Lithuania and in the Czech Republic show a correlation coefficient above the adopted limit (0.606), it is just above it. Besides, the lack of similarities in the causes of immigration to these two countries makes this a false correlation. The changes in time in immigration intensity in Slovenia (type A) are similar to the changes in emigration. Likewise, there are two maximal values here which are separated by a period of a decreased intensity of departures. The main difference between emigration and immigration is that the second maximum of arrivals falls on 1996, whereas in the case of departures it was two years later and was of a lower intensity. This indicates a close correlation with the changes in the political situation in former Yugoslavia and with the attracting role of relatively good living conditions in Slovenia (possibly some of earlier immigrants) decided to remain in this country at all costs). In the case of Latvia the highest intensity of immigration to this country was noted in the initial period of the analysis (1990), and through the subsequent two years it gradually declined. Taking into consideration a numerous Russian-speaking minority, better living conditions and apprehension of Latvian authorities about further influx of immigrants from Russia, the most probable cause of such a rapid decrease in immigration to this country (from 6.4‰ in 1990 to 1.8‰ in 1992) is the implementation of drastic administrative limitations. The existence of a large diaspora in countries with a lower standard of living is the cause of increased immigration to Hungary (type C) and, additionally, various limitations of this minority's activities. The very beginning of the analysed period (i.e. just after gaining full independence) and the last years of the analysis (after 1998) are periods of increased immigration, which is connected with the

consequences of the policy of the Hungarian government to support its nation in neighbouring countries. A similar course of the decline in immigration as in Latvia was also observed in Lithuania (type D), but this one is characterised with a lower intensity of immigration both in the initial period (1990), and the later one. Possibly, similarly to Latvia and Lithuania, the changes in the intensity of immigration took place in Estonia. In the Czech Republic (type E) initially the increased rate of immigration is noted, which results from the easiness of crossing the border within former Czechoslovakia (as mentioned earlier, since the beginning migrations between the Czech Rep. and Slovakia were treated as the foreign ones, even if formally they constituted one state). Short-lasting decrease in immigration in 1994 was a consequence of the break-up of Czechoslovakia, after which there was an increase in the immigration intensity. This was so, because due to the standard of living and the cultural specificity of inhabitants, this is one of the most attractive countries for migrants from among EU–p8 states. In Slovakia (type F) in the initial period an increased rate of immigration was also noted (for the same reasons as in the Czech Republic). After 1993 its decrease took place, but in the subsequent years there was no increase in the number of arriving people, as it was in the Czech Republic. This was so because Slovakia was characterised by lower attractiveness for potential immigrants than the neighbouring Czech Republic due to a lower standard of living and domestic political conflicts of the country. In Poland (type G) throughout the whole 1990–2001 period there was a steady low rate of immigration. This results from the fact that, at the background of other EU–p8 countries, Poland is rather unattractive for potential immigrants for economic reasons. Besides, there is a relatively small diaspora, when compared to the number of inhabitants of Poland. Additionally, this country was not in the recent past a part of a larger political organism.

As a result of a simultaneous study of average intensity and temporal changes of immigration, an equivocal picture emerged (Tab. 5). Using a simplification, the analysed countries can be divided into as many as five groups. The first one includes Poland with low immigration. The second one includes Hungary with substantial immigration resulting from a multitudinous diaspora. The main factor influencing the initially intensive and then weaker immigration in the Czech Republic and Slovakia is the fact that until 1993 both countries constituted one political organism. Large fluctuations of the number of immigrants in Slovenia result from the break-up of Yugoslavia and wars in the area. Very high initial immigration and equally rapid decline in the subsequent years in Latvia, Lithuania and most probably also in Estonia result from the existence of numerous Russian-speaking diaspora.

Studying simultaneously foreign departures and arrivals of a permanent nature, we obtain the net foreign migration. Its changes in the period of 1990–2001 in EU-p8 countries are presented in Fig. 12. With regard to the direction and intensity of migration, four groups of countries can be distinguished (Tab. 6). Latvia and Lithuania are characterised by distinctly negative net migration ( $-5.3\%$ ). The same group probably comprises also Estonia (the average value for 1990 and 1992–1999 amounts to  $-5.8\%$ ). Average net migration slightly below zero ( $-0.2\%$ ) was noted also in Poland. Positive net migration ( $0.2\%$  to  $0.8\%$ ) characterises Slovakia, the Czech Republic and Slovenia. The highest average positive net migration was noted in Hungary ( $1.4\%$ ).

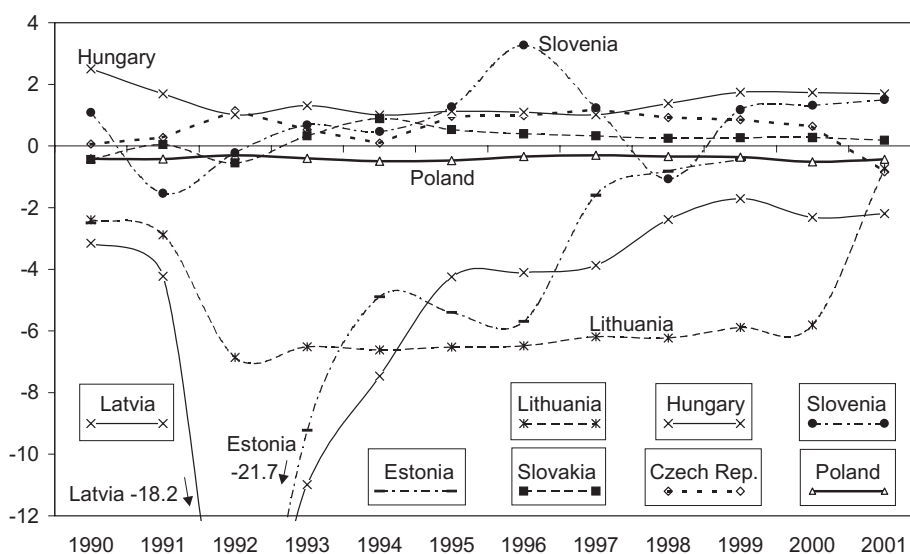


Fig. 12. Changes in net migration (per 1000 inhabitants)

Source: author's own study based on statistical yearbooks of particular countries.

Taking into consideration the course of net migration in the analysed period, a similarity between Latvia, Lithuania and most probably Estonia (type A) is striking. In all three countries throughout the whole period there is negative net migration with a very distinct surge in 1992, and then a very slow approach to zero. The situation in Poland (type B), where there are very small changes, is quite reverse. Interesting are the changes in time in net migration in Slovakia (type C) and the Czech Republic (type D). Their contrast draws one's attention – the increase in net migration in the Czech Republic is accompanied by a decrease in Slovakia and vice versa, the year 2001 being the only exception from the rule. This shows

Tab. 6. Distinguished types of situations with regard to net migration

		Types of changes					
Average net migration		A	B	C	D	E	F
	distinctly negative	<b>Latvia</b> <b>Lithuania</b>					
	negative		<b>Poland</b>				
	positive			<b>Slovakia</b>	<b>Czech Rep.</b>	<b>Slovenia</b>	
	distinctly positive						<b>Hungary</b>
not analysed		<b>Estonia</b>					

Source: author's own study.

how strongly connected are the societies of the two countries. Very high fluctuations in net migration Slovenia (type E) result from the mentioned influence of wars in former Yugoslavia. The best illustration of this thesis is very high positive net migration in 1996 and its sudden plunge until 1998. Net migration in Hungary (type C), with its slightly decreased positive values in the middle of the analysed period when compared to its beginning and end, is a little less steady than in Poland, but on a regional scale still characterised by rather low fluctuations.

The situation obtained as a result of superimposing the average level and yearly changes in net migration in EU-p8 countries gives a rather diversified picture. Taking into consideration the reasons for the direction (influx or outflow), the intensity and changes in time in net migration, five groups of countries can be distinguished.

Poland and Hungary belong to countries with low fluctuations of migrations. What they are different in is the direction of net migration (in the former it is negative, in the latter positive). This results from relatively low attractiveness of Poland for potential emigrants from the neighbouring countries and the widespread myth among its inhabitants about possibilities of growing rich in wealthy European countries as well as in the USA and Canada. In the case of Hungary, its distinctly positive net migration is owed to a numerous diaspora (which was mentioned when talking about the analysis of immigration). Then, the fact that these countries did not constitute in the past a component of larger states is a factor contributing to low fluctuations in net migration. Slovenia keeps a record of very high yearly fluctuations of migrations, with a dominance of immigration. This results from the economic attractiveness, relative political stability and wars taking place in former Yugoslavia. On the other hand, the example of the Czech Republic and Slovakia

proves that even a division into two separate states cannot destroy the connection between two nations living together in one country for many years. The changes in migration, with a clear dominance of departures in Estonia, Latvia and Lithuania illustrate a thesis about former colonisers leaving their former colonies, after these gain independence. This process, however, is untypical because here we have to do with colonisers' departures from colonies in which the standard of living is higher than in the former metropolis.

### **2.3. Changes in the population figure**

Similarly to the analysis of the net migration and its components, also with reference to the yearly changes in population there are vast discrepancies, which results from the adoption of various methods of calculation or referring to diverse kinds of population. In this chapter in order to assess the changes in the population figure, the difference between its amount in the base year and the subsequent year was used, with the value of 100% being the population figure in the base year. Due to the existence of various data, the author based his study fully on the information made available by WHO Copenhagen. In this way, yearly percentage changes in the population figure were obtained, which refer to the middle of subsequent years. Thus calculated changes in the period of 1989–2002 are presented in Fig. 13.

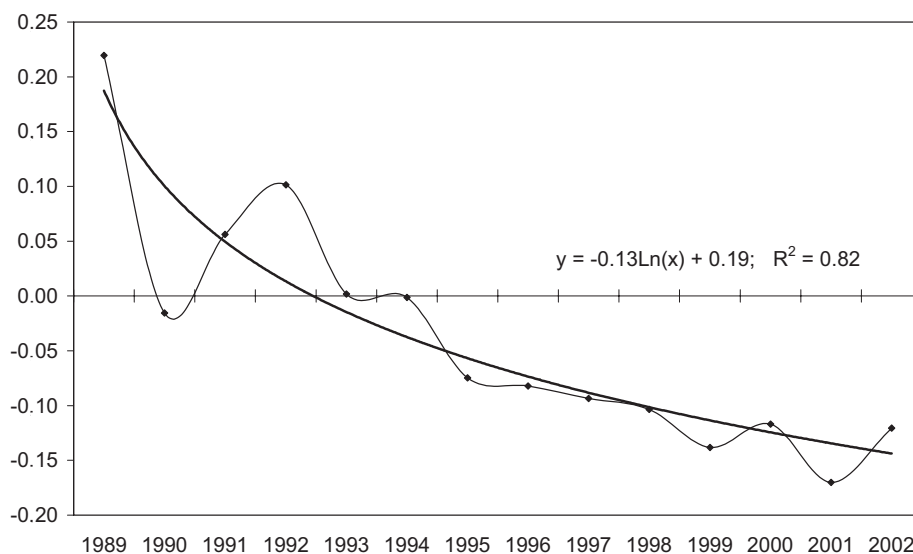


Fig. 13. A total change in the population figure in percentage of the previous year in EU-p8 countries  
Source: author's own study based on WHO Copenhagen databases.

It emerges that the falling tendency predominates, but it gradually slows down. However, since 1995 in EU-p8 countries the loss of population dominates. The third interesting issue is the yearly fluctuations in the changes of the population figure in EU-p8 countries for the period of 1989–1993, with lower ones for later years. On this basis, one can conclude that the changes in the social, economic and political situation of EU-p8 countries are partly reflected in the changes of the population figure. Because the beginning of the 1990s was a period of stormy economic, political and ethnic transformations in this part of Europe, this was reflected in high yearly fluctuation of the population figure. In the second period such stormy changes do not take place in these countries. The price that these countries and their societies have to pay for accelerated transformations and a relatively fast economic development (compared to other post-communist countries) is the decline in the population figure, which is mainly caused by negative natural increase. For example, in 2001 only Poland noted a positive natural increase (+0.13‰), and in 2002 in all eight countries there was negative natural increase. Besides, dominating negative net migration is of significant importance as well. One must remember, however, that a part of these foreign migrations takes place between EU-p8 countries.

As a result of the conducted research, a substantial differentiation of the situation between EU-p8 countries was noted (Fig. 14). Taking into consideration the mean of these changes for the period of 1989–2002, four groups of countries can be

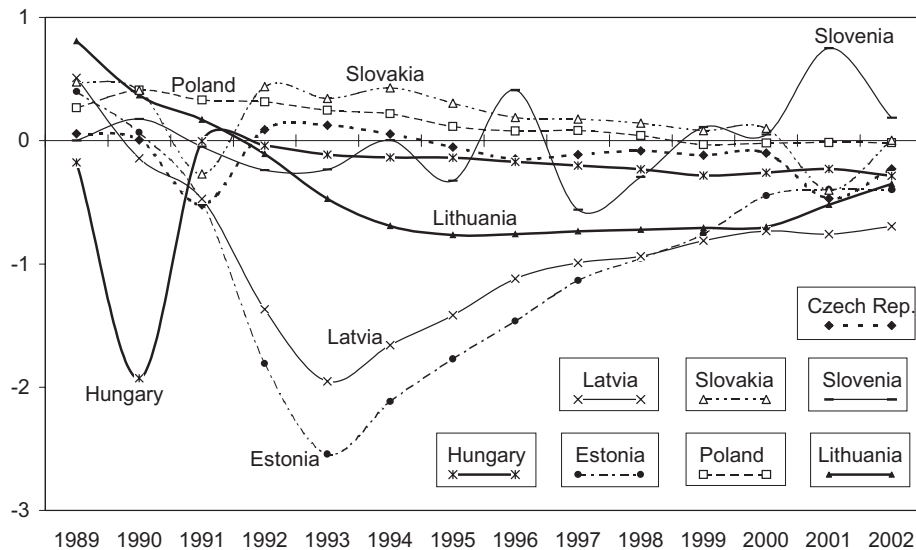


Fig. 14. Changes in the population figure in % of the previous year

Source: author's own study based on WHO Copenhagen databases.

distinguished (Tab. 7). Estonia and Latvia were characterised by a very high loss in the population (about  $-0.94\%$  per year); Lithuania and Hungary by a slightly smaller one (about  $-0.34\%$  per year). An average yearly pace of the decrease in the population figure slightly below zero (about  $-0.05\%$ ) characterised the Czech Republic and Slovenia; whereas Poland and Slovakia could boast an increase in the population figure (about  $+0.16\%$  per year).

Tab. 7. Distinguished types of situations with regard to the changes in the population figure

		Types of changes					
Average intensity		A	B	C	D	E	F
	very negative	<b>Estonia</b> <b>Latvia</b>					
	negative		<b>Lithuania</b>	<b>Hungary</b>			
	slightly negative				<b>Czech Rep.</b>	<b>Slovenia</b>	
	positive				<b>Slovakia</b>		<b>Poland</b>

Source: author's own study.

Taking into consideration the changes in the yearly pace of the population figure, as many as six groups of countries can be distinguished. The first one (type A) comprises Estonia and Latvia, characterised by a very high slump of the population figure in the period of 1989–1993, and then a reduction of the pace of that slump. The changes in Lithuania (type B) were a little similar, but the decline in the period of 1989–1993 was much less rapid, and directly afterwards there was no reduction of the decrease in the population figure. In Hungary (type C) changes in the population figure are insignificant. Still, such a drastic fall of the population figure in 1990 compared to 1989 ( $-1.93\%$ ) must be surprising. The more so that, according to the World Bank data, in the same year the fall amounted to only  $-0.18\%$ . Although in both cases different methods of calculation were used, in no way does it justify such wide discrepancies. Hence, one can be inclined to believe that such a drastic decrease results from a sudden change in Hungarian statistics, or even a mistake which was not corrected in later years. Type E is represented by the Czech Republic and Slovakia. In these countries the changes in the population figure are not significant, except for years 1991 and 2001. On the other hand, Slovenia (type E) can boast the highest yearly fluctuations of the changes in the population figure. The lowest yearly changes in the population figure were noted in Poland (type F).

Considering both the direction, the intensity and the yearly changes in the population figure, a rather diversified picture of the situation emerges (Tab. 7).

Fig. 15 may be helpful in its analysis. However, it must be remembered that due to various data regarding the changes in the population figure and the data describing net migration – the picture revealed in Tab. 7. and in Fig. 15 should be treated merely as an approximation.

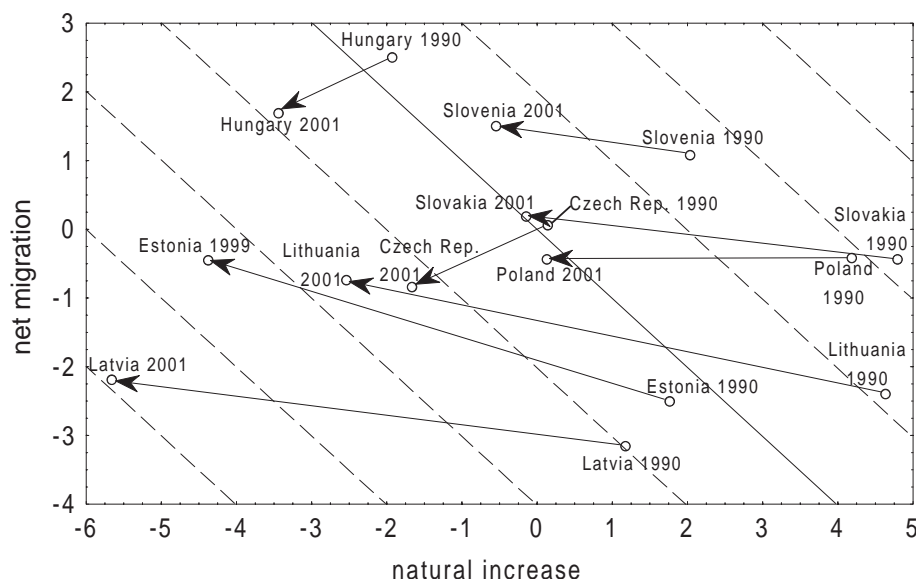


Fig. 15. Components of real increase (in ‰)

Source: author's own study based on various materials.

In an overwhelming majority of countries, the population figure started to dwindle after the fall of communism. The main reason was a substantial decline of natural increase, mainly caused by a decrease in live births. On the other hand, the influence of net migration is not so unequivocal. Slovenia is an exception to the rule of declining population figure, as it not only managed to maintain positive natural increase, but was also characterised by the dominance of immigration over emigration. In Slovakia and Poland throughout most of the analysed period the increase in the population figure also prevailed, which was mainly caused by positive natural increase. However, already at the beginning of 21<sup>st</sup> c. it began to approach zero, and thus the number of natural increase also approached zero. In the remaining countries, the dominance of the loss of population dominated. Still, in Hungary and in the Czech Republic it was rather insignificant. In the former, the main reason was negative natural increase, whereas in the latter both net migration and natural increase. Then, in the countries of the Baltic Council the loss of population was substantial, which was caused both by negative natural increase and very unfavourable net migration.



Just before the expansion of the European Union to new countries, in EU-15 countries there were opinions about flooding their job markets with migrants from the new, post-communist member countries. Voices drawing attention to the dangers connected with mass influx of population from EU-p8 countries were also frequent. On the basis of the conducted research, it can be concluded that these fears were groundless. Apart from the economic factor, EU-p8 countries are characterised by too little a population potential to influence significantly the population situation in EU-15 countries.

## 3. Changes in the health situation

### 3.1. Morbidity

Diseases may considerably deteriorate quality of life. The onward march of medical progress allows to sustain a human life without full recovery. Long lasting diseases are very characteristic of the health situation in developed countries. However, some diseases depend on specific conditions in which a given community lives.

The research which was carried out looked into the incidence of five chosen contagious diseases: tuberculosis (TB), viral hepatitis B (HBV), viral hepatitis A (HAV), and two main sexually transmitted diseases, i.e. gonococcal infection and syphilis. Additionally the spread of HIV/AIDS was analysed. Unfortunately, data concerning HIV are not reliable whereas information on AIDS reflects the whole problem partially so in this case descriptive material was used instead of analytical tools.

Tuberculosis should be viewed as a contagious disease related to the level of well-being of a country's inhabitants. It also reflects the attention that the government pays to the inhabitants' health. The incidence of tuberculosis in developed and well off countries continued to fall until well into the 1980s. The falling trend stopped then and in some regions started to rise. It is thought that negative tendencies lie in the ageing of population, the influx of immigrants coming from poor countries and the epidemic spread of HIV/AIDS. Other social problems such as homelessness, poverty, budget cuts in programmes fighting tuberculosis also contributes to the spread of tuberculosis (J. M. Słomiński, 1998).

The research clearly shows differences between "old" and "new" members of the EU. While the average incidence of tuberculosis among old members was 13.7 per 100000 inhabitants, it was over 2.5 times higher in the EU-10 countries. Clear differences are also observed in the number of inhabitants suffering from diseases over the period of time. In the EU-15 countries there is a falling trend as shown in the equation  $y = -0.40x + 16.78$  ( $R^2 = 0.88$ ). Among the new members of the EU a slight increase was predominant. It later turned into a steep decrease  $y = -0.17x^2 + 1.91x + 33.25$  ( $R^2 = 0.96$ ).

In the course of the analysis the tendency to make the intensity of tuberculosis considerably different in the EU-p8 countries was confirmed (Fig. 16). If we focus our attention on the average level (Tab. 8) we can say that all analysed countries have the number of people suffering from tuberculosis (per 100000 inhabitants) which exceeds the average level calculated for the EU-15 countries.

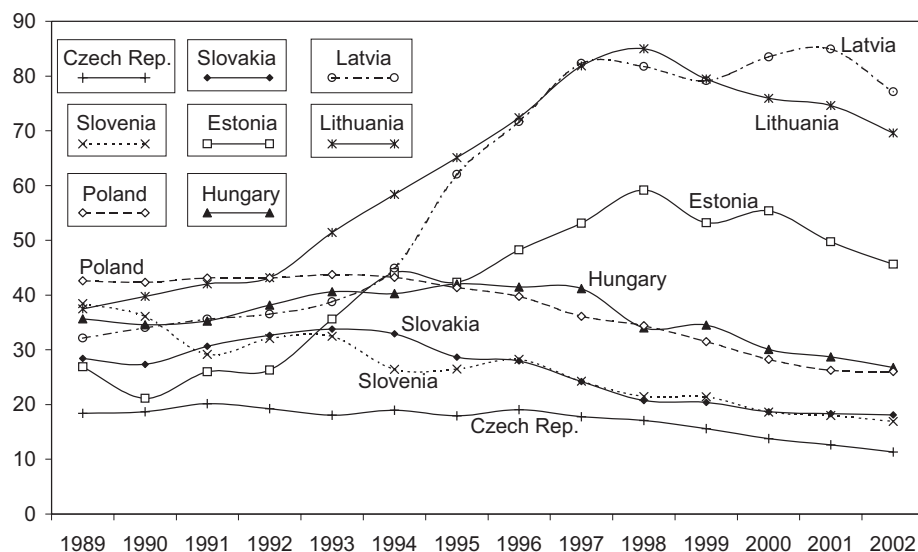


Fig. 16. The number of tuberculosis sufferers (per 100000 inhabitants)

Source: author's own study based on WHO Copenhagen databases.

The Czech Republic is in the best situation (17.1 per 100000). The second group includes Slovakia and Slovenia (approximately 26.2). Hungary is in a relatively worse situation as well as Poland and Estonia (36.9–41.9). The highest incidence of tuberculosis is observed in Latvia and Lithuania (approximately 61.5).

In the course of the analysis of the changes in the number of people suffering from tuberculosis per 100000 inhabitants two groups of countries were formed (Tab. 8). The first group (A) was made up of Estonia, Lithuania and Latvia. The number of those who suffered from tuberculosis was at the average level until 1993/4. Then it began to grow. Starting from 1989 (Estonia and Lithuania) and 2001 (Latvia) the number of the sick began to fall. The second type (B) includes the other countries. No increase was observed in the number of those who suffered from tuberculosis. What is more, a slow decrease started its course in mid-nineties.

Considering the number and changes in the group of those who came down with tuberculosis, the EU-p8 countries can be divided into two groups (Tab. 8).

Tab. 8. Analysed kinds of situations related to the incidence of tuberculosis

Average intensity of incidence	Types of changes in the incidence of tuberculosis		
		A	B
	Low		<b>Czech Rep.</b>
	Medium		<b>Slovakia</b> <b>Slovenia</b>
	High	<b>Estonia</b>	<b>Hungary,</b> <b>Poland</b>
	Very high	<b>Latvia,</b> <b>Lithuania</b>	

Source: author's own study.

The first group is characterised by a high incidence of tuberculosis which rose in the beginning and then fell (Estonia, Latvia, Lithuania). The other countries show not only a lower incidence of the disease but also a falling trend throughout the whole period. It is supposed that the post-soviet new member countries of the EU had much more painful socioeconomic and political processes than the countries which did not belong to the USSR. Russian minorities in Estonia, Latvia and Lithuania are also to blame, as a very high incidence in Russia (it rose from 34.2/100000 in 1990 to 95.2/100000 in 2000) combined with Russians' mobility made it easier to spread the disease in these three countries. Alarming news coming from the Polish region of warmińsko-pomorskie voivodship which has a border with Kaliningradskaja Oblast confirms the thesis that a great number of people suffering from tuberculosis worsen the situation in the neighbouring countries. According to this news there is a sharp increase in the incidence of TB there caused – to a great extent – by Russians coming from the oblast.

There are two main models of transmitting the vital hepatitis B (HBV): (1) perinatal and contracted in the neonatal period (typical of the Far East) and (2) contracted in the adult life. The second model of transmitting the disease is noted in countries of Middle Europe and Mid-East Europe. These countries show an average intensity of HBV carrying. The disease in this model is caused by low hygiene standards in hospitals and surgeries as well as by negligence in carrying out preventive health procedures. The disease can also be transmitted by sexual contact (especially without preventive measures) and during childbirth (J. Juszczuk, 1996).

This study considers the incidence of HBV to be an indicator of the quality of health services. Obviously, it is a rough indicator as it is influenced by infections through sexual contact and the quality of medical statistics. An important role in

lowering the number of infections, especially in hospitals, is played by vaccinations. They are compulsory before operations in most of the analysed countries. The analysis of the incidence of HBV excluded Hungary as this country started publishing relevant statistical data in 1998.

It comes as no surprise that the average level of the incidence of HBV in the new EU member countries (without Hungary) in the analysed period reached 16.9 per 100000 inhabitants and was over four times as high as the average level registered in the EU-15 countries. The changes in the number of HBV sufferers were also different. It seems that rich countries of the EU did their best and were not able to further lower the number of sufferers. The indicator 4.1/100000 is more or less stable throughout the whole period. The EU-10 countries saw a clear decreasing trend slowly losing momentum which is reflected in the equation  $y=40.68e^{-0.14}$  ( $R^2=0.97$ ). In 2002 the incidence of HBV in EU-10 was still much higher than in EU-15 reaching about 170% of the incidence registered in the old member countries of the EU. Any further decrease in the number of the sufferers in the EU-10 countries is going to be minimal with a possibility of a slight temporary increase. The development will depend on many factors including well-being of the countries and reforms of national health systems.

Both factors stimulate financial outlays on health services. The development of the situation in Russia will also play an important role (particularly in the countries of the Baltic Council). The incidence of HBV in Russia was 21.9/100000 in 1990 and reached 44.2/100000 in 1999. Then, by a miracle, the indicator fell rapidly to reach merely 20.0/100000 in 2002. There might have been two reasons for such a miraculous drop: (1) a sudden deterioration in the quality of medical statistics or (2) a deliberate attempt to manipulate data to suit the authorities. Informal talks with Russian scientists confirm that both reasons are equally probable but impossible to verify. Fig. 17 illustrates changes in the number of HBV sufferers in the EU-p8 countries (excluding Hungary). While doing the research four groups of countries were formed to show different levels of the incidence of the disease (Tab. 9):

- Slovenia has a relatively low level (2.8/100000 inhabitants);
- Slovakia and the Czech Republic have worse records (about 7.0);
- Lithuania has a bad level (15.3);
- Poland, Estonia and Latvia show the worst record (18.9–21.7).

It is difficult to describe the situation in Hungary. However, if we compare the statistical data for the years 1998 – 2002 in all EU-p8 countries, then it turns out that in this period Hungary enjoyed a very good situation.

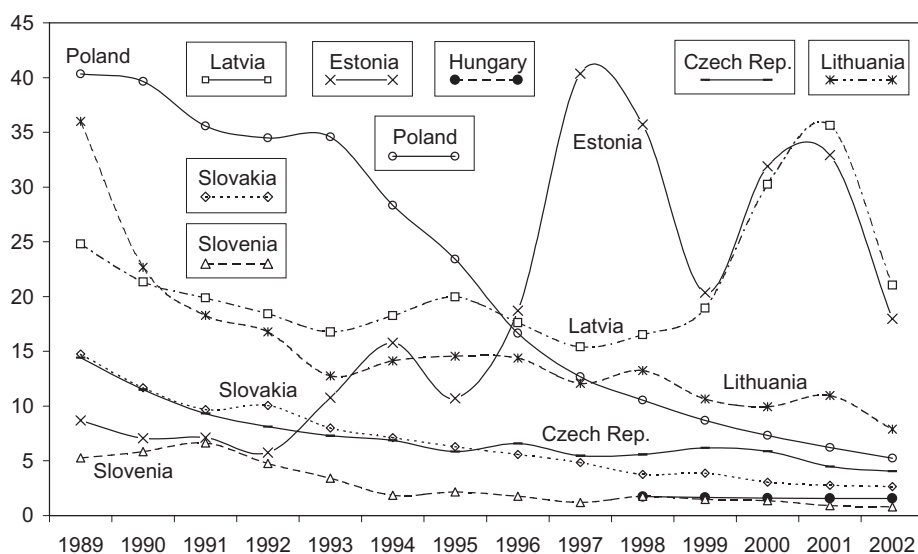


Fig. 17. The number of vital hepatitis B sufferers (per 100000 inhabitants)

Source: author's own study based on WHO Copenhagen databases.

Changes in the incidence of HBV make it possible to form three groups of countries (excluding Hungary) (Tab. 9). Type A includes Poland, Slovakia, the Czech Republic, Lithuania and Slovenia. These countries are characterised by falling incidence of the disease whose intensity varies from very big in Poland to relatively low in Slovenia. Such varied intensity is mainly caused by different levels of the incidence of the disease at the beginning of the period. The situation looked entirely different in Estonia (type B) and Latvia (type C). Estonia saw a slow increase of the incidence in the first stage which continues throughout the rest of the period with two sharp fluctuations. These fluctuations are too sharp to

Tab. 9. Analysed kinds of situations related to the incidence of vital hepatitis B

Average intensity of incidence	Types of changes in the incidence of vital hepatitis B			
		A	B	C
	Low	<b>Slovenia</b>		
	Medium	<b>Slovakia, Czech Rep.</b>		
	High	<b>Lithuania</b>		
	Very high	<b>Poland</b>	<b>Estonia</b>	<b>Latvia</b>
Not analysed		<b>Hungary</b>		

Source: author's own study.

be easily understood. It is supposed that the main reason was the spread of the disease among the very mobile Russian minority. Putting the blame on statistics seems to be less likely. Latvia reveals similar changes, although a slow decrease was registered in the early stage followed by a rapid growth which later turned into an equally sudden fall. In this case causes of such big changes seem to be similar to those observed in Estonia.

A simultaneous analysis of the average level and changes in the incidence of HBV leads to a rather complicated situation (Tab. 9). Countries of type A, regardless of their average incidence, show a clear tendency to improve the situation. It seems that in most of the countries (perhaps excluding Lithuania) further improvements based on the known factors of lowering the incidence of HBV have been exhausted. Any further positive changes depend on bigger outlays (financed by the state and private sources) on medical treatment and vaccinations. This group may also include Hungary. A different and very complicated situation is observed in Latvia and Estonia. It is supposed that in these two countries the number of HBV sufferers mainly depends on sexual transmission of the disease and injecting drug use (IDU) (cf. T. Michalski, 2003b).

Vital hepatitis A (HAV) – in contrast to HBV – is spread mainly through the digestive system. The sources of the disease are water and food. As the virus is excreted with faeces hygienic conditions in public toilets are very important. Generally speaking, the better hygienic standards are in the population the lower the number of HAV sufferers is (J. Juszczuk, 1996). The analysis of the incidence of HAV was carried out excluding Hungary and Poland where available data is incomplete. It wasn't until the 90s when complete data started to be regularly published. Besides, the analysis was shortened by one year, thus the time span referred to the years 1990–2002.

HAV clearly shows how changes in social customs and morality as well as hygienic standards may affect health conditions. The incidence of vital hepatitis A among the new EU member countries (excluding Poland and Hungary) in the years 1990–2002 was over four times higher than in the EU-15 countries. At the same time the EU-10 countries (excluding Poland and Hungary) show a very sharp decreasing trend which is depicted by the equation  $y = -3.44x + 49.51$  ( $R^2 = 0.89$ ). This trend shows only slight fluctuations. As a result the level of the incidence of the disease among new member countries (excluding Poland and Hungary) in 2002 was even a bit lower (4.3) than among old EU members (4.4).

The research carried out into the incidence of HAV in the EU-p8 countries (excluding Poland and Hungary) brings out a complicated situation (Fig. 18). If we take into account the average level of the incidence three groups of countries

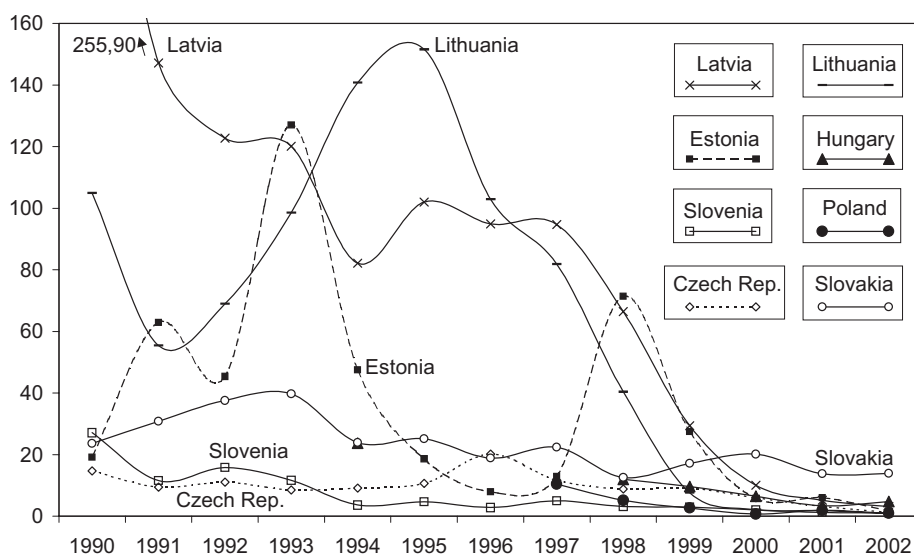


Fig. 18. The number of viral hepatitis A sufferers (per 100000 inhabitants)

Source: author's own study based on WHO Copenhagen databases.

emerge (Tab. 10). A relatively low incidence of the disease was observed in the former Czechoslovakia (approximately 10.6/100000 inhabitants). The incidence was much worse (73.5) in Slovenia and Estonia (23.7–34.9). Lithuania and Latvia (87.2) saw the worst incidence of HAV. If we consider only the time span of 1998–2002 including Poland and Hungary we can say that the incidence of HAV in Poland in the analysed period was the lowest among the analysed countries, while in Hungary it reached average level.

Changes in the incidence of HAV in particular countries are so different that it is impossible to indicate any groups of countries (with the use of tau Kendall's correlation matrix and Mc Quitty's method). It can only be stated that the threshold date which starts a period of a low level of the incidence of HAV – comparable with that of the EU-15 countries – is the year 2000. It is worth restating that the spread of HAV depends on hygienic standards, particularly in public places. Apparently, the EU-p8 countries represent a similar hygienic standards to those in EU-25.

The spread of sexually transmitted diseases is considered to be an important indicator of the mental condition of particular communities, especially those of young people. These diseases, especially gonococcal infection, are subject to considerable fluctuations caused by catastrophic circumstances. A high number of people suffering from STD in Europe and the USA after WW2 may serve as an



Tab. 10. Analysed kinds of situations related to the incidence of viral hepatitis A

		Types of changes in the incidence of viral hepatitis A					
Average		A	B	C	D	E	F
intensity of incidence	Low	<b>Slovenia</b>	<b>Czech Rep.</b>				
	Medium			<b>Slovakia</b>	<b>Estonia</b>		
	High					<b>Lithuania</b>	
	Very high						<b>Latvia</b>
Not analysed		<b>Hungary, Poland</b>					

Source: author's own study.

example (cf. B. Chodyncka, 1998). A high number of STD sufferers is considered to be evidence of social awareness of a catastrophic situation in a given country.

Both EU-15 and EU-10 see a decrease in the number of STD sufferers. Throughout the whole analysed period (1990–2000) the average incidence of STD in the new EU member countries (31.5/100000) was over 2.5 times higher than in old ones. No wonder the decreasing trend observed in the new member countries is much stronger, which is shown in the equation  $y = -2.99x + 49.45$  ( $R^2 = 0.96$ ) than in the EU-15 countries, which is reflected in the equation  $y = -1.09x + 18.35$  ( $R^2 = 0.78$ ). It can be assumed that the situation in the new EU member countries is slowly becoming stable which may mean that sex escapism as an antidote to everyday problems has lost its importance.

The incidence of STDs in the EU-p8 countries is notably different (Fig. 19). The differences in the levels of incidence of STDs lead to forming two totally different groups of countries. The average level (between 10.7 and 35.5/100000) is characteristic of Slovenia, Poland, Slovakia, Hungary and the Czech Republic. The incidence of STDs remains very high (from 132.4 to 196.4) in the countries which belonged to the former USSR (Lithuania, Latvia, Estonia).

A similar situation takes place when we analyse changes in the incidence of main STDs (Tab. 11). Countries which formerly did not belong to the USSR make up type A. All of them had a decreasing trend. However, there are two subtypes within this trend. The countries which belonged to the former Czechoslovakia (subtype A1) saw the decreasing trend with a delay – it started in 1992. In such countries as Poland, Hungary and Slovenia (subtype A2) a clear decreasing trend was observed throughout the whole analysed period. Type B is made up of Estonia, Latvia and Lithuania. A big increase of the incidence of STDs continued in these countries until the mid-90s. It was caused both by gonococcal infection and syphilis.

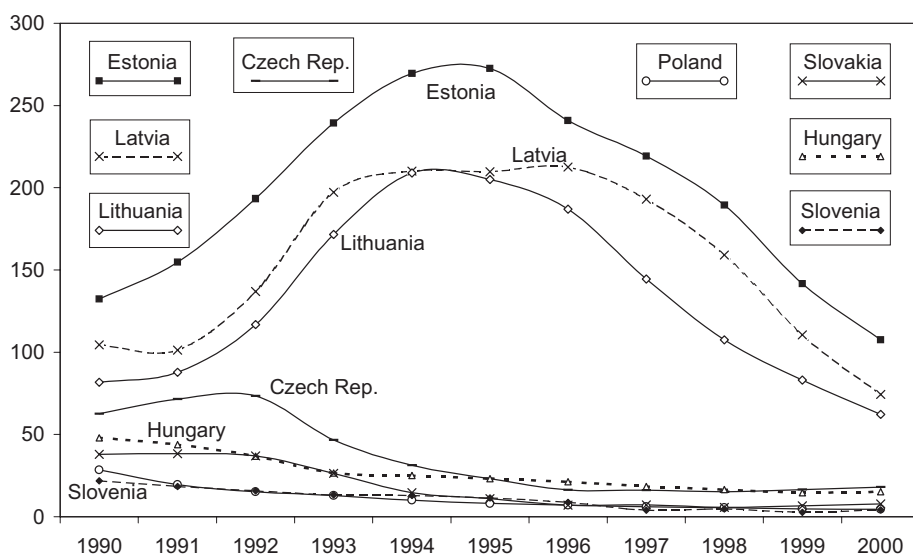


Fig. 19. The number of main STD sufferers [Gonococcal infection plus Syphilis] (per 100000 inhabitants)

Source: author's own study based on WHO Copenhagen databases.

Then a rapid decrease followed. As a result the incidence at the beginning and at the end of the analysed period was almost the same. If we assume that the growing feeling of lost prospects for the future, loss of moral values, fighting for money and survival makes people (especially young ones) look for risky sex, then two diagnoses can be put forward. One is hidden (i.e. hardly perceived by the population) as it was the case in the countries of the former Czechoslovakia where the decrease in the incidence of STDs was “delayed” in the Czech Republic and Slovakia compared with the other countries. The main reason for the deterioration of mental

Tab. 11. Analysed kinds of situations related to the incidence of STDs

Types of changes in the incidence of STDs				
Level of incidence		A1	A2	B
Medium		<b>Slovakia, Czech Rep.</b>	<b>Slovenia, Poland, Hungary</b>	
High				<b>Lithuania, Latvia, Estonia</b>

Source: author's own study.

health were processes of transformation carried out after 1989 (D. Dżurówá, E. Dragomecká, 1997). The other one was connected with the uncertainty felt after the collapse of the USSR which was reinforced by the numerous Russian minority. These reasons caused a sharp increase in the incidence of STDs in the countries of the Baltic Council (Latvia, Estonia and Lithuania). It lasted until migration processes got stabilized (mainly Russian migration) and first signs of the possibility of joining the EU and NATO became tangible. As a result the nervous tension eased and the incidence of STDs started to fall.

The new postcommunist countries of the EU are also threatened by HIV/AIDS. These countries were divided into three groups to properly analyse causes of the spread of the disease. As the above mentioned countries have relatively efficient systems of counter-acting the spread of the disease, the main external threat seems to come from infected people travelling from the territories of the former USSR. The nations living there are among those countries which are directly threatened by HIV/AIDS. The most important causes of the spread of the disease are (L. Atlani and others, 2000; M. G. Field, 1995; C. M. Lowdens and others, 2003; T. Michalski, 2003b):

- the growing feeling of emptiness, lack of prospects in life as well as drug abuse and “easy” sex;
- bad hygienic conditions and social relations in prisons;
- inefficiency of health systems including first of all medical prevention and banks of blood;
- low outlays on HIV carriers treatment and prevention programmes aimed at social groups of high risk;
- weak Non Governmental Organizations (NGOs) which are unable to take over the initiative from too strong EU organizations which deal with prevention and help;
- governments pretending not to see the problem and considering it an imperialist imaginary threat (at least in the first stage of the epidemic spread of the disease).

The first group consists of the following EU-p8 countries: the Czech Republic and Slovenia. These countries do not have any borders with Russia, Belarus or Ukraine and therefore are relatively safe. Poland, Slovakia and Hungary are exposed to a greater risk. The threat of the disease spreading is even greater in the countries formerly belonging to the USSR: Estonia, Latvia and Lithuania. The worst situation is observed in Estonia and Latvia where the Russian minority constitutes the main threat. In Estonia as many as 1067.3 new cases of HIV per 1 million inhabitants were registered whereas Latvia revealed 346.9 cases. Fortunately, Poland registered

a lower indicator of 14.4/1000000 (F. F. Hammers, A. M. Dows, 2003). Sadly enough, an increase of the incidence of the disease is expected in the foreseeable future in all EU-p8 countries.

### **3.2. Mortality from chosen diseases**

This chapter deals with standardised death rate (SDR) referring to people aged 0–64. Using SDR while doing research makes it possible “to get rid of” the influence of differences in the age structure of certain population groups on mortality. This approach facilitates concentration on other reasons for differences in mortality than age. The choice of people aged 0–64 is also deliberate as it leaves out of the research all sorts of inconsistencies in doctors “habits” connected with certifying death causes in different countries. Elderly people usually suffer from more than one chronic diseases so it is often difficult to state the actual cause of death. The research consists of four parts. In the first one all causes of SDR are analysed. The second part includes major causes of deaths: diseases of the circulatory system, malignant neoplasm’s, external causes (injury and poisoning), diseases of the respiratory system and diseases of the digestive system. Third part analyses overmortality of men, whereas the forth compares changes in the death structure in 1989 and 2002 with the use of the coefficient of convergence in structure (cf. P. Wiatrak, 1982).

Throughout the whole analysed period (1989–2002) the average SDR related to all causes per 100000 inhabitants aged 0-64 in the new EU member countries (421.6/100000) was 180% of SDR in the old member countries. It shows how bad the situation in those countries is. It is hard to explain why it is so bad, but undoubtedly the poor condition of the health system in each of the new countries has to do with it, especially when it comes to advanced and expensive medical treatment procedures, not to mention a rather poor health awareness of the population. What sounds more optimistic is the fact that after a short length of time of increased mortality, the year 1991 started a decreasing trend in the EU–10 countries:  $y = -10.89x + 486.63$  ( $R^2 = 0.98$ ). This trend was twice as much intensive as in the EU–15 countries:  $y = -5.16x + 262.82$  ( $R^2 = 0.98$ ). It proves that social, economic and political measures undertaken by new (especially postcommunist) member countries of the EU influence in a very positive way the decrease in mortality among their citizens. The conducted research indicates notable differences in the intensity of SDR related to all causes per 100000 inhabitants aged 0-64

(Fig. 20). Taking into account the average level of this kind of mortality we can divide the EU-p8 countries into three groups (Tab. 12):

- Slovenia and the Czech Republic with the average death rate of (321.8 and 340.2);
- Slovakia and Poland with the high death rate of about 402.9;
- Hungary, Lithuania, Estonia and Latvia with the highest death rate ranging from 506.0 to 585.7.

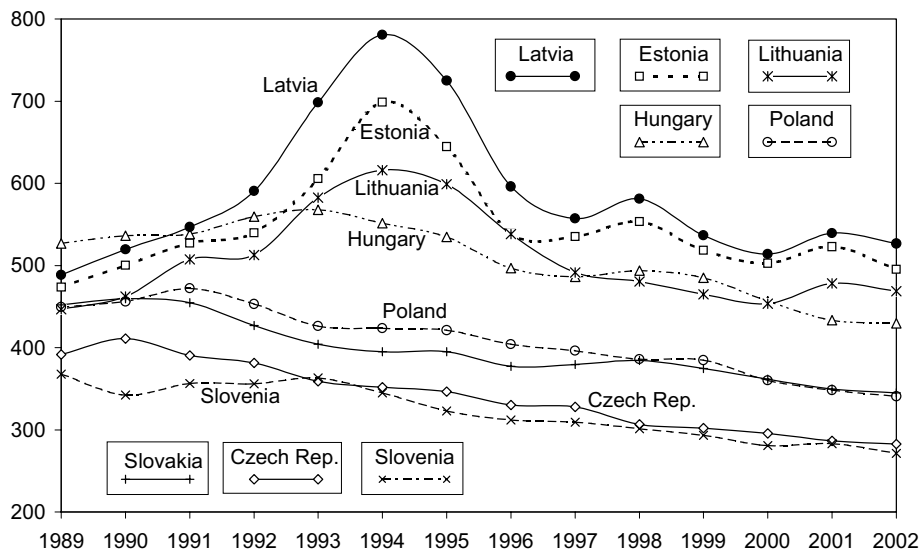


Fig. 20. Changes in SDR related to all causes per 100000 inhabitants aged 0–64 per 100000 inhabitants

Source: author's own study based on WHO Copenhagen databases.

The analysis of changes in the intensity of SDR (all causes, per 100000 inhabitants aged 0–64) in the years 1989–2002 gives reasons for discerning two types of countries (Tab. 12). The first type (A) includes Lithuania, Latvia and Estonia. There was a sharp increase in SDR (all causes, 0–64) in the years 1989–1994 in these countries, which was followed by a decrease in SDR. The decrease was less significant than the previous increase. As a result the level of SDR in all these countries was higher than in 1989 (the highest in Latvia – by 39/100000). The reason for such deterioration must lie in the social situation since the three countries enjoyed far reaching improvements in their economic situation. The most important factors seem to be:

- an increase in the number of people falling ill with some contagious diseases, particularly with HIV/AIDS and then STD and TB;

Tab. 12. Discerned kinds of situations for SDR related to all causes per 100000 inhabitants aged 0–64

Intensity of deaths	Types of changes		
		A	B
	Average		<b>Slovenia</b> <b>Czech Rep.</b>
	High		<b>Poland</b> <b>Slovakia</b>
	Very high	<b>Lithuania</b> <b>Estonia</b> <b>Latvia</b>	<b>Hungary</b>

Source: author's own study.

- a rapid social and partly economic deterioration of the situation among the Russian minority. Obviously, contagious diseases tend to spread in such minorities.

A much better situation takes place in the remaining EU–p8 countries (type B) in which SDR has a decreasing tendency. Although some of these countries (especially Hungary and Poland) went through a slight increase of SDR at the beginning of the analysed period, it is worth remembering that the increase was insignificant and short-lived. This increase in SDR might be explained by a short period of worse economic conditions which might have been caused by the introduction of economic reforms. It becomes clear that economic well-being, if not harassed by ethnic unrest – positively influences the decrease of the intensity of SDR.

If the average intensity of SDR (all cause, per 100000 inhabitants aged 0–64) is overlaid with the types of its changes, then a quite clear picture of the situation emerges (Tab. 12). Improvements in the economic situation of each country cause the death rate to decrease (aging of the population not analysed).

This positive trend is strongly distorted in the countries of the former USRR presumably because of the existence of a numerous Russian diaspora. What the diaspora needs to make the death rate quickly go down is stabilisation of their position within each of the above mentioned countries.

In the analysed period SDR (per 100000 inhabitants aged 0–64) related to diseases of the circulatory system in the new EU countries (132.9) was 2.5 times higher than in the old EU countries. Changes in this type of SDR were similar to those of SDR for all causes (0–64).

It is obvious if we consider the fact that diseases of the circulatory system cause approximately 1/4 of all deaths in Europe. At the beginning of the analysed period a slight increase of the number of deaths was noted in the EU–10 countries.

In 1991 a very intense decreasing trend started:  $y = -5.28x + 163.59$  ( $R^2 = 1.00$ ). It was almost three times stronger than in the case of the EU-15 countries:  $y = -1.82x + 63.84$  ( $R^2 = 0.99$ ). It seems that such a strong decreasing trend has three factors affecting the social situation and the quality of life in the EU-p8 countries: (1) the “inherited” from communism high death rate at the beginning of the period, (2) a quick change of lifestyle towards healthy attitudes, (3) a better access to drugs and medicines as well as health services.

The population of the analysed EU-p8 countries show great differences in changes of SDR related to diseases of the circulatory system (per 100000 inhabitants aged 0–64). Taking into account the average intensity of the death rate four groups of countries can be formed (Fig. 21, Tab. 13):

- Slovenia with a low death rate (71.4);
- the Czech Republic with a slightly better indicator (110.8);
- a group of countries in an average or a bad situation: Poland, Slovakia, Lithuania, Hungary, Estonia (130.3–172.1);
- Latvia with a very high death rate (199.1).

Changes in SDR related to diseases of the circulatory system (per 100000 inhabitants aged 0–64) lead to another division of the analysed countries. They may be divided into two groups (Tab. 13). The first group (type A) includes the countries which belong to the Nordic Council. All the three countries first saw an increase in the death rate and later a decrease. However, the scale and duration of the increase were different. The growing trend in Latvia and Estonia was steep in the years 1989–1994, whereas in Lithuania it was steadier and one year shorter. The causes of the increase and subsequent decrease are similar to those related to SDR for all causes.

The remaining countries make up the other group (type B). The beginning of the analysed period did not bring any considerable changes in mortality in most of the countries of type B. It changed later when a significant decrease followed. The causes of the decrease are the same as those which refer to SDR related to diseases of the circulatory system in the EU-10 countries. The decrease in the very six countries was the main reason for so sharp decrease in the whole group of the new EU member countries.

Both average intensity and changes in SDR related to diseases of the circulatory system per 100000 inhabitants aged 0–64 (Tab. 13) are similar to those which refer to SDR related to all causes.

On the one hand there are countries which belonged to the USRR in the past. Negative consequences of this fact caused death rates to increase in the initial stage. As a result the average mortality in the whole period was high. On the other

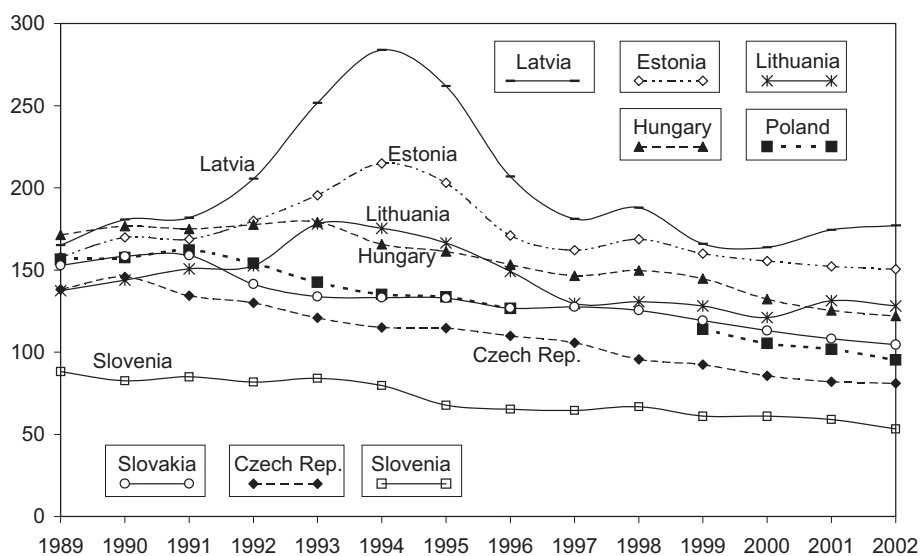


Fig. 21. Changes in SDR related to diseases of the circulatory system per 100000 inhabitants aged 0–64

Source: author's own study based on WHO Copenhagen databases.

hand the decreasing trend in the remaining countries was strong enough to bring about a lower level of the overall mortality.

The average level of SDR related to malignant neoplasms (per 100000 inhabitants aged 0–64) in the EU–10 countries was 140% of the level noted in the EU–15 countries. It goes without saying that the situation in the group of the new member countries of the EU was worse than among the old member countries. Consequently, at the early stage a slight increase in mortality was observed in the

Tab. 13. Discerned kinds of situations for SDR related to diseases of the circulatory system per 100000 inhabitants aged 0–64

Intensity of deaths	Types of changes		
		A	B
	Low		<b>Slovenia</b>
	Average		<b>Czech Rep.</b>
	High	<b>Lithuania</b> <b>Estonia</b>	<b>Poland</b> <b>Slovakia</b> <b>Hungary</b>
	Very high	<b>Latvia</b>	

Source: author's own study.



EU-10 countries. A decreasing trend started in 1991  $y = -1.24x + 122.38$  ( $R^2 = 0.99$ ) being slightly weaker than in the EU-15 countries  $y = -1.25x + 89.17$  ( $R^2 = 0.98$ ). It means that not only was the situation in EU-10 worse but also its improvement was not as satisfactory as in the EU-15 countries. That is why looking for reasons which shaped the situation seems to be of great importance. It is beyond question that new EU member countries made a certain progress in terms of medicine and social well-being. This is especially true about postcommunist countries and explains why the situation should be analysed within social factors. On the one hand citizens of the EU-10 countries tend to adopt a healthy lifestyle, but on the other hand some unhealthy habits are becoming quite common. Willingness to catch up with richer countries in terms of standards of living understood as increasing consumerism leads to workaholic attitudes and frustration. One of the most serious results of this process is smoking cigarettes additionally boosted by aggressive advertising campaigns financed by big tobacco companies. Smoking cigarettes is considered to be the most serious factor conducive to cancer related diseases. It is difficult to directly analyse the consumption of tobacco products by citizens of new member countries due to a large scale of smuggling, especially in the EU-p8 countries. There is, however, an indirect way to depict the problem if we analyse selected smoking related causes per 100000 inhabitants. This analysis explains that not only was the average level of mortality in the years 1989–2002 much higher in the EU-10 countries (395.8/100000) than in the EU-15 countries (258.9/100000), but also the decrease in mortality in the years 1991–2002 was among the new EU member countries over two times smaller  $y = -2.96x + 412.17$  ( $R^2 = 0.61$ ) than among old members  $y = -6.49x + 295.62$  ( $R^2 = 0.98$ ). It becomes clear that consumption of tobacco seems to be the main culprit responsible for the smaller decrease of mortality in EU-10 compared with EU-15. Differences in the quality of health services as well as improvements in techniques of treating cancer are certainly important but seen to play a secondary role.

All eight analysed countries show decisively different SDR related to malignant neoplasms (per 100000 inhabitants aged 0–64) (Fig. 22).

Average levels of deaths caused by malignant neoplasms in the analysed countries are quite similar (Tab. 14). Most of the countries (Latvia, Lithuania, Estonia, Poland, Slovakia, the Czech Republic) belong to a group of high mortality (100.8–114.7). Slovenia and Hungary belong to two groups of countries of a relatively low (98.9) and very high mortality (140.5).

Much more complicated changes in SDR related to malignant neoplasms (per 100000 inhabitants aged 0–64) take place in the whole analysed period of time. A characteristic feature of such changes are considerable fluctuations in mortality

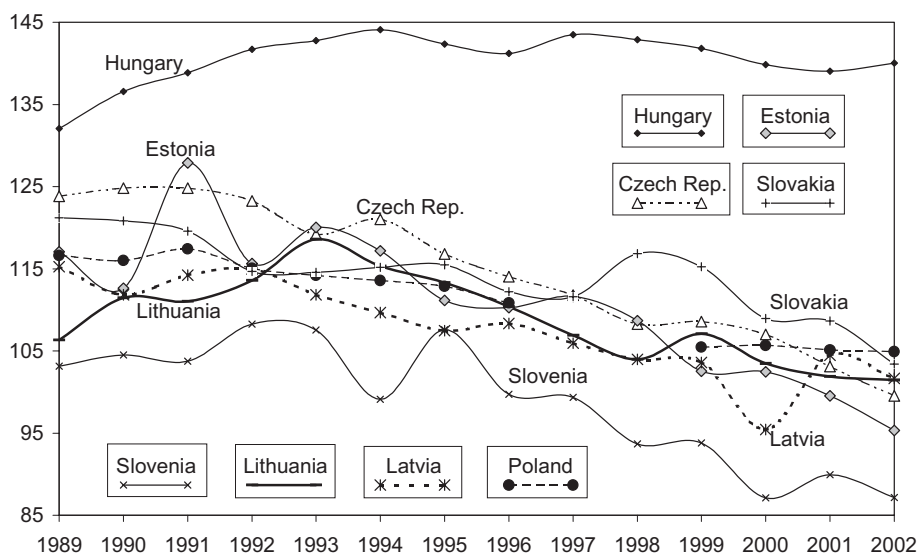


Fig. 22. Changes in SDR related to malignant neoplasms per 100000 population aged 0–64

Source: author's own study based on WHO Copenhagen databases.

occurring in all eight countries. In the course of research four types of changes were put forward. The most numerous is type A which includes Estonia, Latvia, the Czech Republic and Poland. Its characteristic feature is a clear decreasing trend of an average intensity. Type B is made up of Lithuania and Slovenia. This group saw an increase in mortality at the early stage which turned into a clear decreasing trend in mid 90s. The remaining two types refer to single countries. Slovakia was identified as type C. Although its level of mortality at the end of the analysed period was lower than at the beginning, it is hard to call it a decreasing trend as it consisted of a series of short spells of time of rising or falling death rates which finally turned out to be positive for the population. The least advantageous trend occurred in Hungary (type D), where a weak growing trend started in 1994. Eventually it faded out.

While analysing simultaneously the average level and changes that take place in the whole period in SDR related to malignant neoplasms a very vague outline of the situation emerges (Tab. 14). This is due to a lot of different factors affecting the level of mortality at the same time. It is impossible to choose one or two factors of social, culture or economic nature to clearly describe spatial differentiations in SDR related to malignant neoplasms afflicting inhabitants aged 0–64. Only one inference seems to be reliable. A very bad situation in Hungary stems from an unhealthy lifestyle which is based on traditional habits. The collapse of the

Tab. 14. Discerned kinds of situations for SDR related to malignant neoplasms per 100000 inhabitants aged 0–64

Intensity of deaths	Types of changes				
		A	B	C	D
	Low		<b>Slovenia</b>		
	Average	<b>Latvia Estonia Poland Czech Rep.</b>	<b>Lithuania</b>	<b>Slovakia</b>	
	High				<b>Hungary</b>

Source: author's own study.

communist system in Hungary has not exerted any notable impact on unhealthy habits (mainly eating and smoking habits).

The level of SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64 in the EU–10 countries is over twice as high (33.4) as in the EU–15 countries. This kind of mortality rose until 1994 in the new EU member countries and then started to fall  $y = -2.28x + 79.14$  ( $R^2_{adj.} = 0.89$ ). This equation is valid for the years 1994–2002, whereas the death rate in the old member countries has continuously been decreasing all the time. In the same period (1994–2002) the rate of the decreasing trend in the EU–15 countries  $y = -0.64x + 34.35$  ( $R^2_{adj.} = 0.96$ ) was almost four times slower than in EU–10. It seems that the main factors responsible for this state of affairs are bad working conditions and a worse system of medical emergency services in the new EU member countries.

Stopping this kind of mortality and even starting a notable decreasing trend may prove that direct negative consequences of the collapse of the communist system eventually ceased to bother the EU–p8 countries.

A clear division of the EU–p8 countries can be made with regard to the average SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64 and its changes (Fig. 23). A relatively low level of SDR (49.9–71.0) was characteristic of the Czech Republic, Slovakia, Poland, Slovenia and Hungary. Lithuania, Estonia and Latvia saw much worse situation (Tab. 15). This has a direct reference to the impact the former USSR exerted on the above mentioned countries.

Three types of countries may be discerned with regard to changes in SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64. The Czech Republic, Slovakia, Poland and Hungary make up type A. These countries have a common feature of a weak decreasing trend with short-term slight

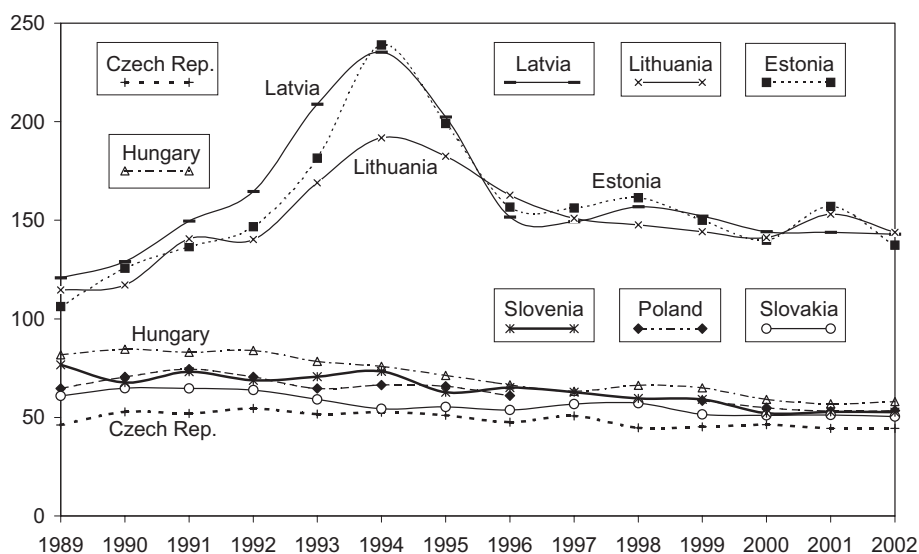


Fig. 23. Changes in SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64

Source: author's own study based on WHO Copenhagen databases.

increases in mortality. A similar trend is also seen in Slovakia (type B), although it has two distinct periods of growing mortality and two periods of decreasing mortality. A profoundly different picture should be drawn as far as mortality in Lithuania, Latvia and Estonia are concerned (type C). Between 1989 and 1994 a dramatic increase in mortality was observed in these countries. Then followed a rapid decreasing trend which did not help much as the level of mortality at the

Tab. 15. Discerned kinds of situations for SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64

Intensity of deaths	Types of changes			
		A	B	C
	Average	<b>Czech Rep.</b> <b>Slovakia</b> <b>Poland</b> <b>Hungary</b>	<b>Slovenia</b>	
	High			<b>Lithuania</b> <b>Estonia</b> <b>Latvia</b>

Source: author's own study.

end of analysed period was higher than at the beginning. For example, Lithuania started with the rate of 114.7/100000 in 1989 to close the period in 2002 with the rate higher by 30/100000.

A simultaneous analysis of both the level and changes in SDR related to external cause injury and poisoning per 100000 inhabitants aged 0–64 gives a clear picture of spatial differentiations in the situation of communities belonging to the EU–p8 countries (Tab. 15). The level of safety measures in companies as well as medical emergency services were poorer in the countries formerly belonging to the USSR than in the satellite countries. Besides, consumption of alcohol (one of the most serious causes of accidents) was much higher in those countries than in satellite ones. An additional factor which worsened the situation was a large Russian minority in Estonia, Latvia and Lithuania. Most probably a cumulative affect of difficulties occurring at the initial stage of transformation, a feeling of alienation among large Russian minority groups and overconsumption of alcohol played the most important role. We should also not forget about the poor system of medical emergency services. This thesis requires further research of a detailed nature into the communities of the three countries with regard to separate ethnic minorities. The remaining countries (Poland, the Czech Republic, Slovakia, Hungary and Slovenia) show a more or less clear decreasing trend related to changes in working safety measures and transformation processes in the industry and agriculture. A negative impact on SDR is exerted by the level of motorization. A big number of imported second-hand cars as well as poor quality of roads only add to a high level of SDR related to external cause injury and poisoning.

The average level of SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64 in the years 1989–2002 in the EU–10 countries (13.5) was one and a half times higher than in the EU–15 countries. A good thing is a faster decreasing trend of the analysed kind of mortality in the new EU member countries  $y = -0.44x + 16.83$  ( $R^2 = 0.97$ ) compared with the old ones  $y = -0.18x + 10.34$  ( $R^2 = 0.86$ ).

There is no reason to doubt that the main causes of so quick improvement in the EU–10 countries are both lesser air pollution (changes in the industry) and better health services.

In the course of the analysis a considerable differentiation of the situation was revealed with regard to SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64 (Fig. 24).

Taking into account the average level of mortality we can discern three groups of countries (Tab. 16):

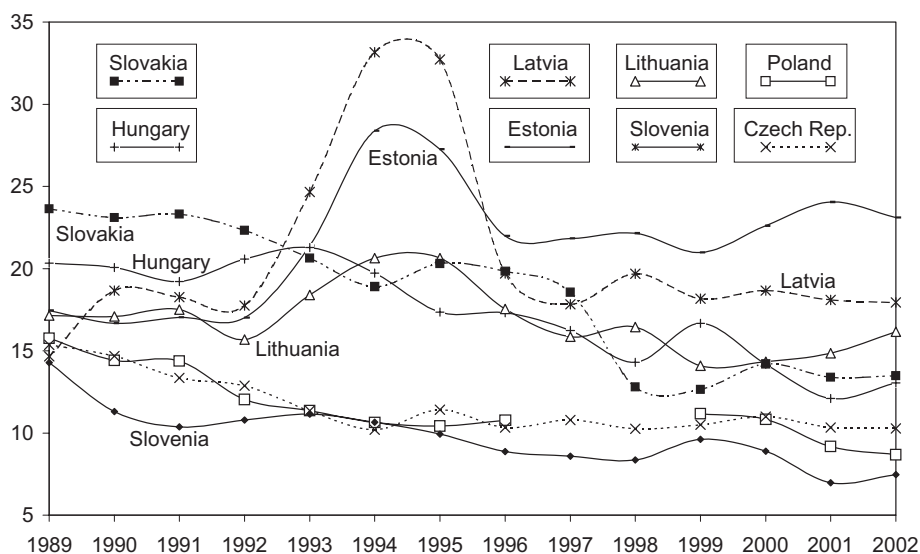


Fig. 24. Changes in SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64

Source: author's own study based on WHO Copenhagen databases.

- Slovenia, Poland and the Czech Republic with relatively low death rates (9.8–11.6);
- Lithuania, Hungary and Slovakia characterized by an average level of mortality (16.9–18.4);
- Latvia and Estonia with a high level of mortality (20.7–21.6).

It is also interesting to consider changes in the intensity of SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64. There are four types of them (Tab. 16). Type A includes Poland, the Czech Republic, Hungary and

Tab. 16. Discerned kinds of situations for SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64

		Types of changes			
Intensity of deaths		A	B	C	D
	Low	<b>Slovenia</b> <b>Poland</b> <b>Czech Rep.</b>			
	Average	<b>Hungary</b> <b>Slovakia</b>	<b>Lithuania</b>		
	High			<b>Latvia</b>	<b>Estonia</b>

Source: author's own study.

Slovenia. These countries are dominated by a decreasing trend which is interwoven with short-term increases of mortality (e.g. Slovakia 1995–1997). Each of the three countries which belonged to the former USSR formed separate types. Although there are differences among changes in the analysed mortality (level of tau Kendall's correlation below 0.6) all the three countries have one thing in common – it is a rapid growth in mortality in the years 1993–1995. Estonia saw the strongest increase while Lithuania the weakest. Moreover, the level of mortality in these countries was higher in 2002 than in 1989.

A simultaneous analysis of the average level and changes in the intensity of SDR related to diseases of the respiratory system per 100000 inhabitants aged 0–64 shows a rather clear picture (Tab. 16). What we can see is a bad and unstable situation in the countries which formerly belonged to the USSR. This inference is strongly supported both by the average or high level of mortality and considerable changes in the intensity of mortality.

Satellite countries of the former USSR enjoyed a better situation. Their population registered a low or average level of mortality and a clear decreasing trend. This is one more example of how a stable economic and socio-political situation positively influences mortality of a given kind. However, it is hard to explain why the growth in mortality in the early 90s of the previous century was so high in Latvia (e.g. 33.2/100000 in 1994 compared with 14.7/100000 in 1989) and in Estonia (28.4 and 17.5 respectively).

Unlike previously discussed diseases SDR related to diseases of the digestive system per 100000 inhabitants aged 0–64 was analysed with the exclusion of 1996 and 1997. The whole period lasting from 1989 to 2002 remained unchanged. Similarly to the previous research the level of mortality in the EU–10 countries was higher (27.4) than in the EU–15 countries. In fact, it was almost twice as high as in the latter group of countries.

The trend depicting changes in mortality in the new member countries of EU is also different from the previous analyses. The growing trend lasted up to 1995 and then turned into a decreasing trend. This change is reflected in the equation  $y = -0.08x^2 + 1.29x + 23.66$  ( $R^2 = 0.61$ ). The EU–15 countries registered throughout the whole period a clear decreasing trend  $y = -0.27x + 16.93$  ( $R^2 = 0.98$ ). The main reason for the death rate in the EU–10 countries to grow was the big increase in mortality in Hungary in the years 1992–1995.

Moreover, this is an exceptional situation among all groups of diseases which have been analysed so far as the level of mortality in the EU–10 countries was higher at the end of the analysed period (26.4/100000) than at the beginning (25.0).

The whole situation concerning SDR related to diseases of the digestive system per 100000 inhabitants aged 0–64 in the years 1989–2002 (excluding 1997 and 1998) is shown in Fig. 25. Taking into account the average level of mortality in the analysed period three groups of countries can be discerned (Tab. 17):

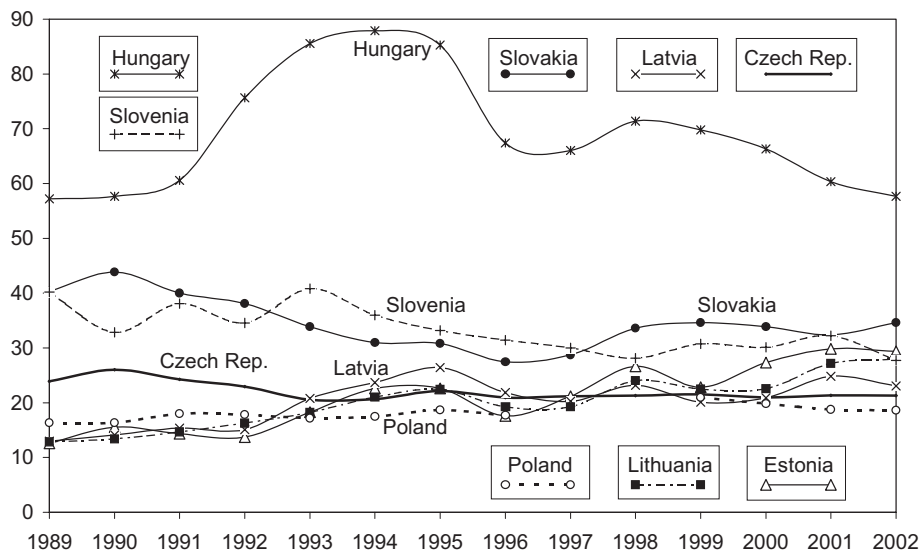


Fig. 25. Changes in SDR related diseases of the digestive system per 100000 inhabitants aged 0–64

Source: author's own study based on WHO Copenhagen databases.

- Poland, Lithuania, Latvia, Estonia and the Czech Republic with a relatively low mortality at the level of 18.1–22.2;
- Slovakia and Slovenia with an average level of mortality (about 34.5);
- Hungary with a high level of mortality (69.3).

Tab. 17. Discerned kinds of situations for SDR related to diseases of the digestive system per 100000 inhabitants aged 0–64 (1989–2002 excluding 1997 and 1998)

		Types of changes					
Intensity of deaths		A	B	C	D	E	F
	Low	Lithuania Latvia Estonia	Poland	Czech Rep.			
	Average				Slovenia	Slovakia	
	High						Hungary

Source: author's own study.



While analysing changes in SDR related to diseases of the digestive system per 100000 inhabitants aged 0–64 it was necessary to look into six types of countries. Type A is the only one which consists of more than one country (Lithuania, Latvia, Estonia). All other types describe single countries. The countries of type A were characterized by a growing trend throughout the whole period with many fluctuations. As a result the level of mortality in 2002 was higher than in 1989 (for example in Estonia 29.4 and 12.6 respectively).

Changes in the level of SDR related to diseases of the digestive system in Poland (type B) are insignificant against the background of a slight growing trend. The Czech Republic (type C) showed a weak decreasing trend.

The level of mortality in Slovenia (type B) was even more stable. At the initial stage (1989–1993) noticeable yearly changes took place but without any growing or decreasing tendency. Then followed a weak decreasing trend in the years 1993–1998. Finally it turned into a slight growing trend. In Slovakia (type E) there was a fall in mortality at the beginning of the period which later turned into a slight increase in the years 1997–1999. Finally a weak decreasing trend followed.

The greatest differences in the level of SDR related to diseases of the digestive system took place in Hungary (type F). There are two extremes here (the highest one for the years 1992–1995 and the lowest one for 1998–1999) interwoven with a few short-term decreases in mortality (1989–1991, 1996–1997 and 2000–2002).

The average level and changes in SDR related to diseases of the digestive system per 100000 inhabitants aged 0–64 (Tab. 17) – if analysed simultaneously – give a very complicated pattern. Hungary is evidently different from the other countries in terms of the level of mortality and its dynamics. Both the level of mortality and its fluctuations are much lower in the other countries. A higher level of mortality at the end of the period compared with the initial stage was caused by complicated internal changes which took place in the EU-p8 countries. These changes included:

- the increasing significance of ready-made food – unfortunately, not of a high quality at first, with a lot of various chemicals;
- a quicker pace of life with irregular meals;
- the increasing level of stress resulting in a growing number of stomach afflictions caused by the nervous system;
- a growing diversity of food products, especially national cuisine of different countries which may drastically alter eating habits.

The worst situation is registered in Hungary where people are thought to have very unhealthy eating habits.

The condition population is in, especially its male part, can be assessed by analysing the size of overmortality of men. In this study overmortality is understood as a percentage result of subtracting SDR for women aged 45–59 (all causes) from SDR for men aged 45–59 (all causes), while the level of mortality for women is 100%. The analysis was carried out for the period 1992–2002. In the EU–10 countries men aged 45–59 died 2.6 times more often than women, whereas in EU–15 twice as often. It comes as no surprise since in countries belonging to the European culture men do not live as long as women. A very high overmortality of men in the postcommunist countries is the result of a low level of health awareness among male population as well as bad working conditions combined with smoking and drinking habits. These countries dominate in the EU–10 group and therefore affect the overall result. On the other hand a better quality of life, closures of some big industrial plants and an increase in health awareness of individuals notably contribute to a quick decrease in the overmortality among men in the EU–10 countries (almost twice as fast as in the EU–15). The equation  $y = -2.00x + 279.53$  ( $R^2 = 0.84$ ), describes the situation in the EU–10 countries while the equation  $y = -1.04x + 207.95$  ( $R^2 = 0.95$ ) refers to EU–15.

Changes in the standardized overmortality of men aged 45–59 in the EU–p8 countries are shown in Fig. 26. Different levels of overmortality of men give grounds for discerning three groups of countries (Tab. 18):

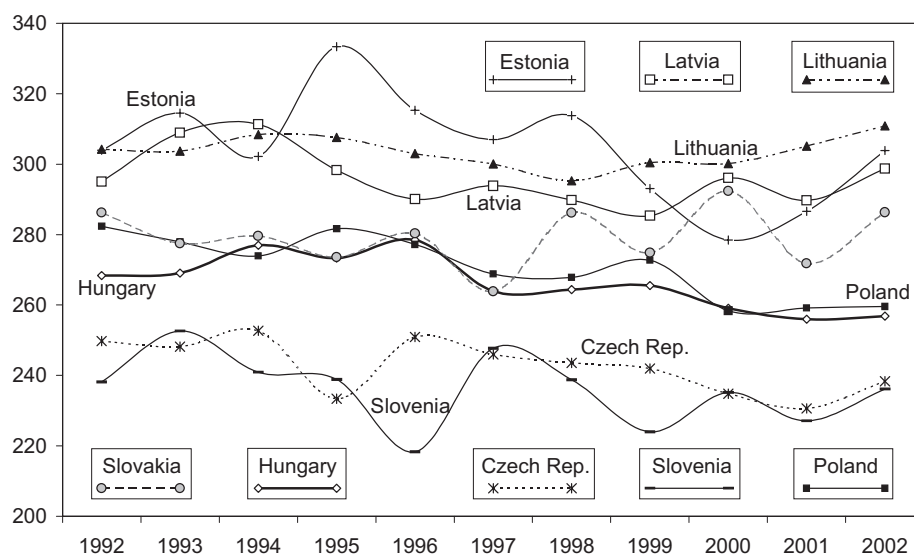


Fig. 26. Age related standardised male overmortality (calculated as % of female mortality) (per 100000 inhabitants aged 45–59)

Source: author's own study based on WHO Copenhagen databases.

Tab. 18. Age related standardised male overmortality per 100000 inhabitants aged 45–59

Overmortality	Types of changes							
		A	B	C	D	E	F	G
	Low		<b>Slovenia</b>	<b>Czech Rep.</b>				
	Average	<b>Hungary</b> <b>Poland</b>			<b>Slovakia</b>			
	High					<b>Latvia</b>	<b>Lithuania</b>	<b>Estonia</b>

Source: author's own study.

- Slovenia and the Czech Republic with a relatively low level of overmortality (about 240%);
  - Hungary, Poland and Slovakia with an average level (267–279%);
  - Latvia, Lithuania and Estonia with a high level of overmortality (296–305%).
- This classification corresponds to differences in the well-being of particular countries. There is also an indirect link between a country's well-being influencing healthy lifestyle and health awareness combined with the quality of health services. Another factor which deteriorates the situation in the countries of the former USSR is the existence of a large Russian minority. The culture of this minority makes a point of frequent consumption of alcohol and smoking strong cigarettes. Moreover, members of the Russian minority may feel alienated from “new” nations as they have lost their privileged position. Alienation may also give rise to escapism turning into alcoholism or addiction to cigarettes. Although numerous closures of the most harmful industrial plants counteract bad habits, other negative factors seem to remain unchanged.

There are hardly any similarities among the analysed countries with respect to changes in overmortality of men (Tab. 18). Only Poland and Hungary have similar trends which lack a decreasing tendency at the beginning of the period and show a slight decreasing trend starting from 1996. All other countries have different characteristics. Lack of long-term changes in the level of overmortality and big fluctuations for particular years characterize Slovenia (type B). The Czech Republic (type C) reveals a very weak decreasing trend followed by a sharp decrease in 1995 and an increase in the following year. Both Slovakia (type D) and Slovenia do not show any signs of long-term changes in overmortality. Besides, big yearly fluctuations are observed in the two countries after 1996.

Latvia (type E) also lacks clear trends as the initial increase in overmortality is followed by a decrease and another increase. Among all analysed countries

Lithuania (type F) features the smallest changes in male overmortality. There are no short-term fluctuations although two very weak trends can be observed: a decrease at the beginning of the period and then, starting from 1998, an increase in overmortality. Estonia (type G) showed the greatest fluctuations in the level of overmortality throughout the whole period.

Having considered both the level of overmortality and its changeability a relatively clear outline of the situation emerges as shown in (Tab. 18).

The level of overmortality is directly influenced by the level of well-being of a given country. Consequently, the level of overmortality is the lowest in the richest countries: Slovenia and the Czech Republic. However, the changeability of overmortality does not show any regularities which might explain it. Moreover, the changeability of overmortality in particular countries does not indicate any similarities, either.

An additional analysis was also carried out to reveal similarities related to SDR in particular countries in the years 1989 and 2002. Its aim was to show to what extent social, political and economic changes influenced the structure of deaths. The analysis was based on the coefficient of convergence in structure (P. Wiatrak, 1982). The analysis also covered the groups of SDR discussed previously for inhabitants aged 0–64:

- diseases of the circulatory system;
- malignant neoplasms;
- external cause injury and poisoning;
- diseases of the respiratory system;
- diseases of the digestive system;
- other diseases forming one category.

It comes as no surprise that changes in the structure of deaths in the EU–15 countries are less significant (coefficient 0.995) than in the EU–10 countries (coefficient 0.989). If this reasoning was to be followed, then one might expect that the biggest structural changes in deaths (thus the smallest values of the coefficient) would refer to the countries which are characterized by the biggest changes. Surprisingly, this is not the case, as this regularity did not take place (Tab. 19). The biggest changes in the structure of standardized deaths took place in Hungary (0.979). This is the very country which started its reforms at the end of the communist era (in the 80s of the 20<sup>th</sup> century. This is why it is hard to regard economic changes as a cause of changes in the structure of deaths. Most probably there is a single factor related to very untypical changes in mortality (compared to other EU–p8 countries). As far as the remaining countries are concerned there were not only economic factors that mattered a lot, but also political ones connected with the disintegration

Tab. 19. Coefficient of convergence in structure of deaths in 1989 and 2002

Structural similarities for deaths	Countries
Low	<b>Hungary</b>
Average	<b>Estonia</b> <b>Poland</b> <b>Czech Rep.</b> <b>Slovenia</b> <b>Lithuania</b>
High	<b>Slovakia</b> <b>Latvia</b>

Source: author's own study.

of political organisations these countries belonged to (excluding Poland). Previous analyses made it possible to draw a conclusion that the Russian minority in the Baltic Council countries would destabilise the structure of deaths. This conclusion has not been confirmed. Although Hungary is directly followed by Estonia (0.983), the next country is Latvia which has the most stable structure of deaths among all EU-p8 countries.

### **3.3. Infant mortality**

An important indicator of the state of health a country's population is in seems to be infant mortality (i.e. infant deaths per 1000 live births). The research was expanded to cover an analysis of early neonatal deaths per 1000 live births (i.e. the number of deaths of neonates 0–7 days old per 1000 live births) as well as the number of neonates who weighed at birth more than the norm, i.e. 2500 grams. Due to insufficient data the analysis covered the years 1994–2001.

As it had been predicted the average level of infant deaths per 1000 live births in the years 1989–2002 was almost twice as high in the EU-10 countries (10.9) as in the EU-15 countries (5.9). A favourable fact was that the average rate of decrease in infant deaths per 1000 live births in the new EU member countries was 2.5 times faster  $y = -0.66x + 15.86$  ( $R^2 = 0.96$ ) than in the “old” EU countries  $y = -0.27x + 7.94$  ( $R^2 = 0.94$ ). The downward trend of the analysed mortality in the EU-10 countries was quite slow up to 1994 when it started to gather momentum. One clear interpretation of such analysis is thus that economic and political reforms accompanied by social changes in the EU-p8 countries exerted a positive impact on pregnant mother's health and infants.

Changes in infant deaths per 1000 live births in the analysed time span in the EU-p8 countries indicate an improvement in the situation (Fig. 27). Taking into account the average level of infant mortality three groups of countries can be distinguished (Tab. 20):

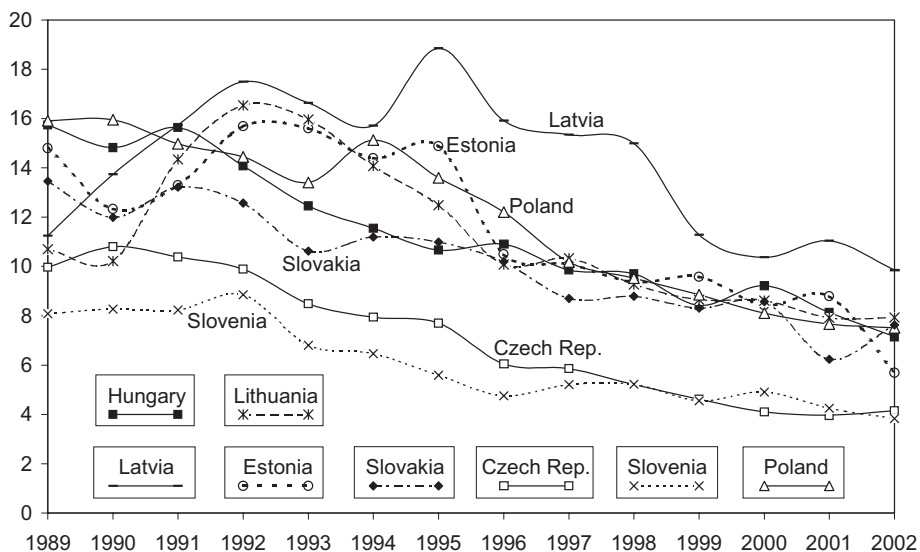


Fig. 27. Changes in infant deaths per 1000 live births

Source: author's own study based on WHO Copenhagen databases.

- Slovenia and the Czech Republic characterised by a low level of mortality (6.1–7.1);
- Slovakia, Lithuania, Hungary, Estonia and Poland with the average level of mortality (10.2–12.0);
- Latvia with a very high mortality (14.2).

Tab. 20. Situations of different kinds related to infant deaths per 1000 live births

Intensity of deaths	Types of changes		
		A	B
Intensity of deaths	Average	<b>Slovenia</b> <b>Czech Rep.</b>	
	High	<b>Slovakia</b> <b>Hungary</b> <b>Poland</b>	<b>Lithuania</b> <b>Estonia</b>
	Very high		<b>Latvia</b>

Source: author's own study.

The above division shows a notable influence of well-being on the level of infant deaths per 1000 live birth. Slovenia and the Czech Republic are the richest countries in the EU-p8 group (the mean value of the gross national product per capita in the years 1991–2001 was US\$ 8490 and US\$ 4161 respectively). The two poorest countries are Latvia and Lithuania (US\$ 2200 and US\$ 2583 respectively). Undoubtedly, there are other factors which make this dependence more complex but they seem to be of lesser importance. In the case of the average level of infant deaths per 1000 live births there is a direct connection with the well-being of a given country, but when it comes to changes in the above mentioned level the political past of a country plays a key role.

As a result of the classification carried out for the sake of this research two groups of countries can be formed (Tab. 20). One of them (type A) consists of Slovenia, the Czech Republic, Slovakia, Hungary and Poland. All these countries saw fluctuations in the level of mortality at the beginning of the analysed period which later turned into a clear decreasing trend. The turning point was different for particular countries. The decreasing trend started first in the Czech Republic in 1990. The last country to start this trend in 1994 was Poland. The duality of the analysed period was caused by two factors: (1) lack of quick positive economic results of market reforms and (2) changes in the definition of births resulting in slight statistical alterations. Type B includes countries of the former USSR (Estonia, Latvia and Lithuania). A different kind of duality in the changes of the level of mortality was observed in this group of countries. It was much more dynamic and shifted in time. In the first period a considerable increase in the level of mortality was noted. It turned into a decreasing trend starting from 1993 (Lithuania) and 1996 (Latvia and Estonia). Additionally, at the very beginning of the period (i.e. in 1990 compared with 1989) there was a slight decrease in the level of mortality in Estonia and Lithuania. There is no doubt that the reaction of infant deaths per 1000 live birth to economic and political changes in the countries of type B was similar to those of type A, but at the same time it showed a more complex mechanism. The first period was much longer and less favourable for the type B countries.

A simultaneous analysis of both the level and changes in infant deaths per 1000 live births reveals a quite clear situation (Tab. 20). In the former satellite countries of the USSR and Slovenia the average level of infant mortality was low or medium with a distinct decreasing trend. In the countries which had belonged to the former USSR the average level was medium or high. The first stage was dominated by a growing trend which later turned into a decrease trend. It can be said that the situation was shaped by two factors: economic (well-being of the

population) and the political past (in this case the existence of a large ethnic minority whose members consider themselves marginalised).

The average level of early neonatal deaths per 1000 live births (5.8) was almost 2.5 times higher in the EU-10 countries than in the EU-15 ones. It confirms the common belief that the quality of health care taken of pregnant women as well as women during the childbirth and during the first days after the delivery is much worse in the new EU countries than in EU-15. The early neonatal deaths per 1000 live births also reveal a different course of changes over the time span from the total infant mortality.

In the countries of the old EU a weak decreasing trend was observed which is shown in the equation:  $y = -0.11x + 3.64$  ( $R^2 = 0.96$ ). In the case of the EU-10 countries such a decreasing trend is almost four times more intense:  $y = -0.42x + 8.98$  ( $R^2 = 0.96$ ). As early neonatal deaths are a very sensitive indicator of how improved living standards and the quality of health care influence the health situation, there is no doubt that the collapse of the communist system and the successful introduction of the western market economy have affected directly and positively the health situation of the inhabitants of the EU-p8 countries.

The results of the research show a betterment in the situation of the EU-p8 countries as far as early neonatal deaths per 1000 live births are concerned (Fig. 28). While analysing the average level of this mortality three groups of countries were distinguished (Tab. 21):

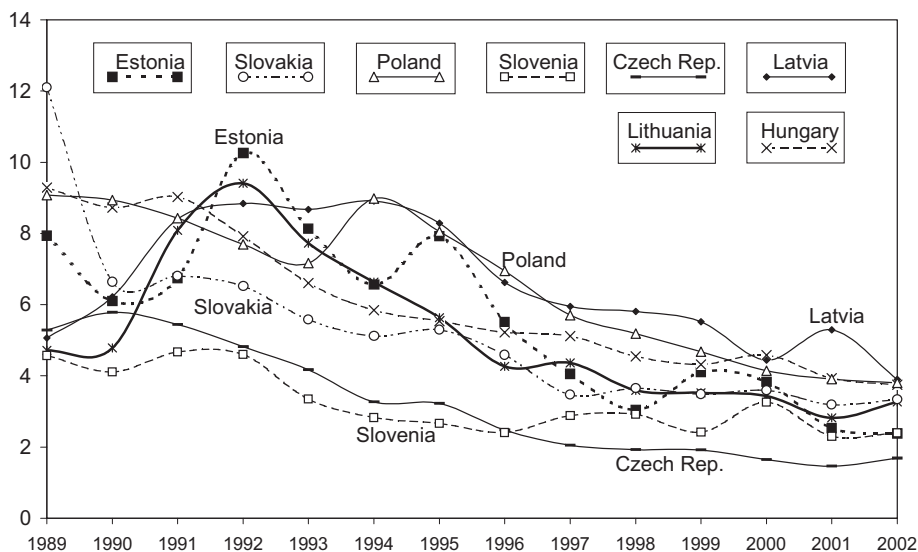


Fig. 28. Changes in early neonatal deaths per 1000 live births

Source: author's own study based on WHO Copenhagen databases.



Tab. 21. Situations of different kinds related to early neonatal deaths per 1000 live births

Intensity of deaths	Types of changes		
		A	B
	Low	<b>Czech Rep.</b> <b>Slovenia</b>	
	Average	<b>Slovakia</b> <b>Hungary</b>	<b>Lithuania</b> <b>Estonia</b>
	High	<b>Poland</b>	<b>Latvia</b>

Source: author's own study.

- the Czech Republic and Slovenia with a low level of mortality (approximately 3.2);
- Lithuania, Slovakia, Estonia and Hungary with a medium level (5.2 do 6.0);
- Latvia and Poland with the worst indicator (6.6).

The thesis which says that the level of well-being influences mortality (and indirectly the quality of health services for pregnant mothers and neonates as well as the private health care sector) has been confirmed in the case of the Czech Republic and Slovenia, i.e. the richest countries of the EU–p8 group. Besides, there is a big gap between these countries and those which come next, both in terms of their well-being and the level of mortality. Latvia (as one of the poorest countries of the EU–p8 group) is another example which partly confirms the thesis.

Poland fits the situation only to some extent (although it belongs to the poorest countries of the EU–p8 group, its economic conditions are not so bad as to have an excuse to approve of a very high level of early neonatal deaths per 1000 live births). It is partly due to the change in the definition of “live births” introduced in 1994. The change “shifted” a number of births from the category of “infant deaths” to the category of “early neonatal deaths”. As a result there was, for example, a statistical increase of deaths from 7.2/1000 in 1993 to 9.0/1000 one year later (see Fig. 28).

Changes in early neonatal deaths per 1000 live births divide the countries into two groups according to the pattern used earlier in the research: countries which did not belong to the former USSR (type A) and those which belonged to it (type B). The course of changes in the early neonatal deaths is similar in both types to the one registered in infant deaths per 1000 live births. However, there are a few minor differences of which one is particularly interesting. In the case of infant deaths per 1000 live births the level of higher mortality lasted two years longer on average in Lithuania, Latvia and Estonia compared to early neonatal deaths per

1000 live births. It is supposed that positive results of reforms first affected those health services which were responsible for childbirths as well as mothers with their infants in the first days after delivery. On the other hand, habits related to taking care of newborns (which have a great influence on postneonatal mortality) or (which is hard to prove) the quality of the health care in general – showed improvements more or less two years later.

If both the average level of early neonatal deaths per 1000 live births and its changes are analysed simultaneously, then the overall situation bears resemblance to the infant deaths per 1000 live births (Tab. 21). The only exception is a worse situation in Poland. It is hard to say explicitly what caused it. Certainly, the change in the definition of “live births” distorted the statistics. The reforms of the health care system in Poland which failed, were also to blame. However, one cannot judge decisively unless further detailed research is conducted.

Additionally, the percentage of live births weighing 2500 grams or more in the years 1994–2001 was analysed. As the period is too short to indicate trends the attention was focused on the analysis of the average level of neonatal births with the registered weight considered to be the norm. The percentage of such live births in the EU–10 countries was similar to those in the EU–15 countries and reached 93.7%. Most probably this similarity stems from the existence of two contradicting trends. On the one hand the level of taking care of pregnant women is much higher in the EU–15 countries than in the new member countries but on the other hand the very high level of medical care makes it possible to prolong difficult pregnancy and deliver a newborn weighing less than the norm. A different approach leads to the reasoning that a lower level of health care in the EU–10 countries lessens the chances a newborn weighing far less than the norm to survive while the same conditions cause a smaller number of mothers to continue with difficult pregnancies until the child is delivered. It is obvious that the hypothesis that has been put forward above requires a lot of detailed research either to prove it or reject.

In order to make the subject matter more demonstrative Fig. 29 shows the average percentage (%) of live births weighing 2499 grams or less. Taking into account the percentage of such births four groups of countries were distinguished:

- Hungary with a very bad situation (8.4% of births under the weight norm);
- Slovakia and Poland marked by a bad situation (approximately 6.4%);
- the Czech Republic, Slovenia and Latvia with a relatively better situation (approximately 5.4%);
- Estonia and Lithuania with the lowest percentage of births under the weight norm (4.4%).

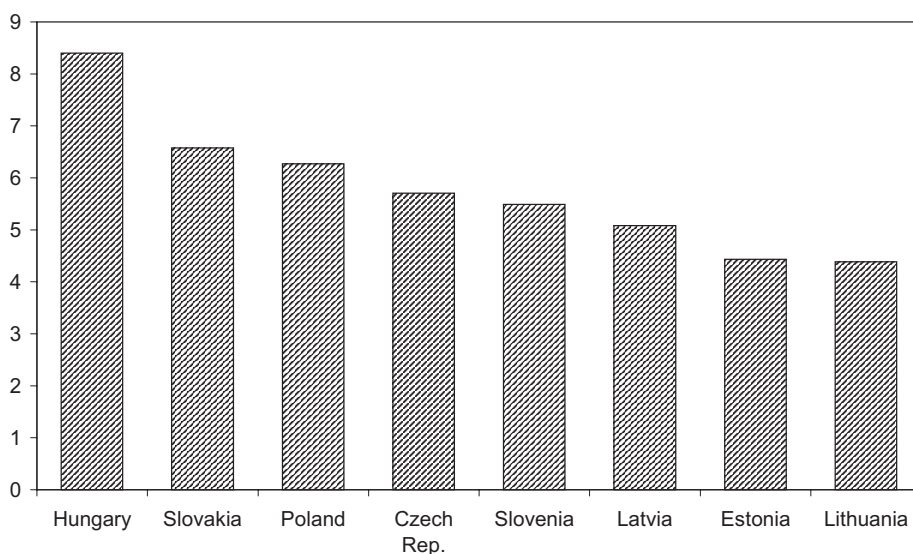


Fig. 29. Percent of live births weighing 2499 or less (the mean for 1994–2001)

Source: author's own study based on WHO Copenhagen databases.

Against the backdrop of previously presented analyses which outlined the unfavourable situation in Hungary, the percentage of the live births under the weight norm is one more confirmation of the thesis that the bad situation in this country was caused by endogenous factors.

In the current period of a prolonged demographic decline in the EU-p8 countries which was caused by changes in procreative attitudes it seems particularly important to decrease the number of infant deaths. There are now very real grounds for optimism as a fast decreasing trend has been registered in all EU new member countries since the mid 50s of the 20<sup>th</sup> century.

## 4. Life expectancy

All factors affecting a population's health situation exert their impact on life expectancy. As there is a considerable difference in the European culture between life expectancies of men and women, the analysis discerns male life expectancy at birth (in years) and female life expectancy at birth (in years). Besides, the analysis of differences between these two variables was also carried out.

The collected data show that men born in the years 1989–2002 in the new EU member countries are expected to live until they are 67.9 years old which is over 6 years less than in the EU–15 countries. This difference does not change much within the above mentioned period. The comparison between the two trends confirms the inference. Both in the EU–10 member countries and in the old EU member countries male life expectancy at birth rose at a similar pace which is shown by the equations  $y=0.29x+65.68$  ( $R^2=0.92$ ) and  $y=0.25x+72.52$  ( $R^2=0.99$ ). It seems to be true that although the impact of favourable health factors on life expectancy was much stronger in the EU–15 countries it was at the same time more and more difficult to make life expectancy figures higher. On the other hand, it may be assumed that factors supporting healthy habits in the EU–10 countries were weaker but they brought about similar effects as they affected lower life expectancy figures which were easier to be raised.

In the analysed period there were big differences in male life expectancy at birth in years in the EU–p8 countries (Fig. 30). Considering an average level of life expectancy in the analysed period three groups of countries can be discerned:

- The Czech Republic and Slovenia with a relatively favourable situation (about 70.5 years);
- Poland and Slovakia with an average situation (about 68.3 years);
- Latvia, Estonia, Lithuania and Hungary with an unfavourable situation (63.1–66.2 years).

The most influential is the economic factor, then come negative patterns of men's behaviour and habits. The relatively rich Hungarian population is an exception with its bad health habits (social factor) which prevail over the economic well-being. Working conditions also exert a certain influence but they lose importance because of closures and big factories adopting European safety regulations.

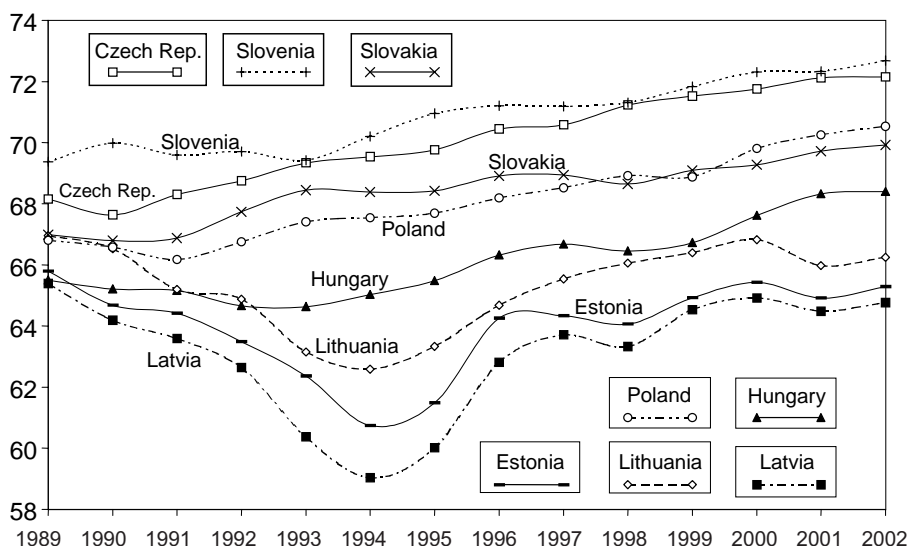


Fig. 30. Changes in male life expectancy at birth in years

Source: author's own study based on WHO Copenhagen databases.

While analysing changes in male life expectancy at birth (Tab. 22) we once again see the previously mentioned division into countries formerly belonging to the Soviet bloc and the others. Two groups were discerned. Type A included Hungary, Poland, Slovakia, the Czech Republic and Slovenia. As there were internal differences these countries were divided into two subtypes. Most of the countries (excluding Hungary) show a slow increase in male life expectancy. Hungary is an exception as a noticeable fall in life expectancy occurred in this country in the years 1989–1992 (that is why Hungary was classified as a separate subtype

Tab. 22. Discerned kinds of situations regarding male life expectancy at birth in years

Average level	Types of changes			
		A1	A2	B
	High	<b>Slovenia</b> <b>Czech Rep.</b>		
	Average	<b>Slovakia</b> <b>Poland</b>		
	Low		<b>Hungary</b>	<b>Lithuania</b> <b>Estonia</b> <b>Latvia</b>

Source: author's own study

A2). Type B included the Baltic Council countries. These three countries saw a tangible fall in life expectancy at the beginning of the analysed period with its bottom level in 1994. The shortest lifespan was observed in Latvia where it decreased by 6.4 years. Then life expectancy figures started to rise. Unfortunately, the increase was weaker than the previously noted decrease. As a result, male life expectancy at birth in years was slightly lower in these three countries in 2002 compared with 1989. The negative result was caused by the necessity of undertaking painful market, social and political reforms as well as the emergence of large minority groups (mainly Russian minority) which were pushed to the bottom of social life. Such changes gave rise to social frustration which led to unhealthy social habits.

Juxtaposing both factors, i.e. the average level and changes in male life expectancy at birth makes the whole situation quite clear (Tab. 22). A negative trend with low and average values of life expectancy was seen in the Czech Republic, Slovenia, Slovakia and Poland. Lithuania, Latvia and Estonia were in a bad situation (both in terms of the average level and changes occurring within the analysed period of time). Hungary was somewhere in the middle as far as figures and trends are concerned.

Female life expectancy at birth in years shows a similar characteristics. Women born in the years 1989–2002 in the countries of the “old” Union could expect their lives to be longer by 4 years on average compared with women living in the new member countries of the Union (76.6 years). It is worth noting that this gap is slowly getting smaller as the tendency to lengthen women’s lifespan in the EU–10 countries is slightly more dynamic  $y=0.25x+74.72$  ( $R^2=0.95$ ), than in the EU–15 countries  $y=0.19x+79.46$  ( $R^2=0.92$ ).

This comparison gives evidence that either positive health factors are stronger in the communities belonging to EU–10 or female life expectancy at birth for women living in the EU–15 countries reached so high levels that it was hardly possible to make them higher.

Another similarity to the previously analysed process is that female life expectancy at birth in the EU–p8 countries revealed considerable changes (Fig. 31). Taking into account the average level of female life expectancy three groups of countries can be put forward (Tab. 23):

- Slovenia with the most favourable situation (78.8 years);
- The Czech Republic, Slovakia, Poland and Lithuania with average life expectancy figures (76.4–77.2 years);
- Estonia, Hungary and Latvia with the worst situation (64.6–75.3 years).

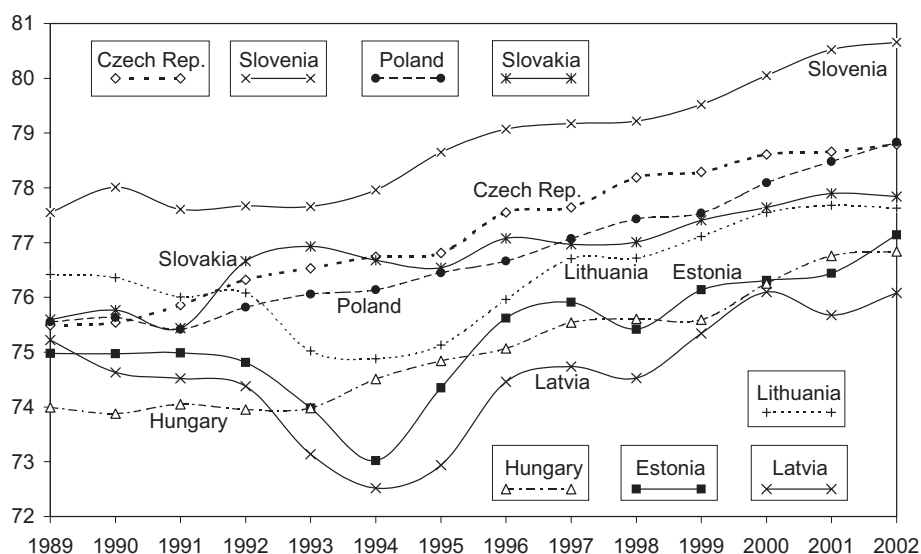


Fig. 31. Changes in female life expectancy at birth in years

Source: author's own study based on WHO Copenhagen databases.

Factors affecting shorter female life expectancy in the new member countries of the EU are similar to those factors which influence male life expectancy. First of all they are connected with the level of social well-being, both in relation to individuals and health care public outlays. However, the factor connected with working conditions in big industrial plants did not matter at all. The only exception from this “economic” rule is Hungary.

To characterise changes in the female life expectancy variable at birth in the years 1989–2002, two types of countries were analysed (Tab. 23).

Tab. 23. Discerned kinds of situations regarding female life expectancy at birth in years

Average level	Types of changes		
		A	B
	High	Slovenia	
	Average	Czech Rep. Slovakia Poland	Lithuania
	Low	Hungary	Estonia Latvia

Source: author's own study.

Countries of type A included: Slovenia, the Czech Republic, Slovakia, Poland and Hungary. These countries show a continuous tendency towards lengthening female life expectancy at birth. There were wide fluctuations in the years 1989–1995 only in Slovakia but they did not influence the increasing tendency. A different situation was seen in Estonia, Lithuania and Latvia. In the years 1993–1995 female life expectancy figures fell and then evidently rose resulting in a longer lifespan for women born in 2002 compared with those born in 1989.

A clear conclusion can be put forward if the average level and fluctuation in female life expectancy are analysed simultaneously (Tab. 23). The average level of female life expectancy for women born in the countries which belonged to the former USSR (Estonia, Latvia, Lithuania) was lower than in the remaining former socialist countries which joined the EU in 2004.

Moreover, there was a transient shortening of women's lifespan in the three above mentioned countries as a reaction to economic and social problems (particularly among ethnic minorities). All the other countries enjoyed an increasing tendency throughout the whole period. In this context it is quite surprising to see a low level of female life expectancy at birth in Hungary. Since the Hungarian population is relatively well off with its efficient health care services, factors which contribute to short female life expectancy may come out from Hungarian women's unhealthy lifestyle. Similar conclusions regarding a bad health situation of Hungarian women may also be derived from the analysis of the underweight infant death rate carried out in the previous chapter (Fig. 29). It may be interesting to compare differences between female and male life expectancies at birth in years.

The less the differences are, the better the health care system in a given country is. Consequently, the narrower the gap between male and female life expectancies becomes, the higher the overall level of health awareness is. The actual difference between female and male expectancies in the EU–10 countries in the analysed period was 8.7 years in favour of women. It was two years more than in the EU–15 countries.

Fluctuations in the differences throughout the analysed period are not optimistic either. In the new member countries of the EU they rose in the years 1989–1993 and then started to fall. In the EU–15 countries the decreasing tendency is stable within the whole period. Moreover, in the years 1993–2002 the decline rate  $y = -0.07x + 9.98$  ( $R^2 = 0.88$ ) in the EU–10 countries was almost identical to that of the EU–15 countries  $y = -0.07x + 6.80$  ( $R^2 = 0.96$ ). These figures show that although health conditions in the new EU member countries are getting better, women benefited from such changes more than men, particularly at the beginning of the



analysed period. This only added to the fact that men's lifespan is by far shorter than that of women's.

The research which was carried out clearly shows differences between female and male life expectancies in favour of women (Fig. 32). The average level of the above discussed differences makes it possible to distinguish three groups of countries (Tab. 24):

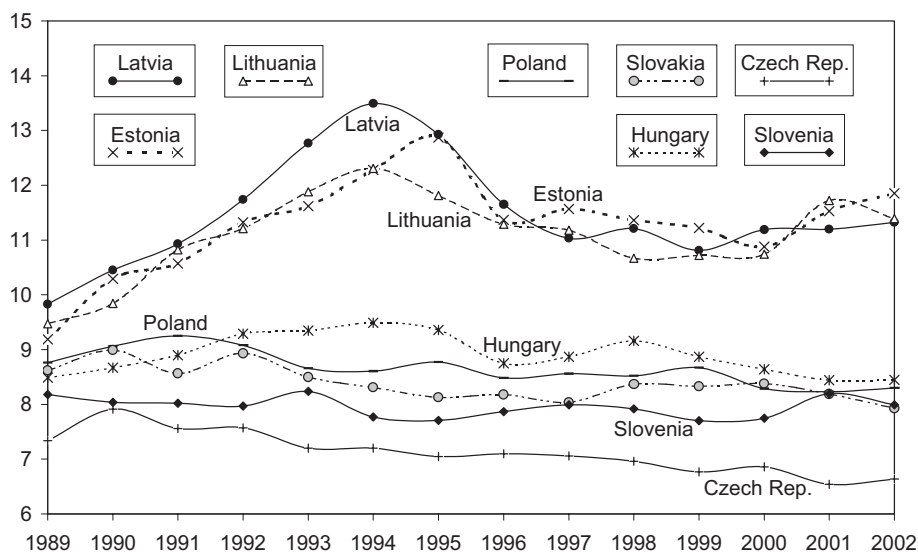


Fig. 32. Differences between female and male life expectancies at birth in years (in favour of women)

Source: author's own study based on WHO Copenhagen databases.

- the smallest difference was seen in the Czech Republic (7.1 years);
- average differences (8.0–8.9 years) were observed in Slovenia, Slovakia, Poland and Hungary;

Tab. 24. Discerned kinds of situations regarding differences between female and male life expectancies at birth in years

Average level of differences	Types of changes					
		A	B	C	D	E
	Low		<b>Czech Rep.</b>			
	Average		<b>Poland</b>	<b>Slovenia</b>	<b>Slovakia</b>	<b>Hungary</b>
	High	<b>Lithuania</b> <b>Estonia</b> <b>Latvia</b>				

Source: author's own study.

- female life expectancy is longer by about 11.3 years than male life expectancy in Lithuania, Estonia and Latvia.

Two factors influence the above mentioned differences. First and foremost, men continued to lead an unhealthy lifestyle. Secondly, the standards of working conditions were also of considerable significance. Both factors caused the biggest differences to take place in the countries which were part of the former USSR.

Fluctuations of the changes between female and male life expectancies are far from being clear to interpret. The classification procedure led to dividing the analysed countries into five groups, out of which three countries constitute single cases (Tab. 24). Type A included the Baltic Council countries in which the gap between male and female life expectancies widened at a slow pace. At first the gap grew quickly and then, in the mid-fifties, it started to narrow. Finally, around 1999, it started to widen once again, this time very slowly. The first considerable increase of differences was caused by much more stronger fall in male life expectancy at birth than in female life expectancy at birth. This statement may lead to the conclusion that in the first years after the collapse of the communist system men found themselves in a much worse situation than women. The subsequent slow increase in the described differences between female and male life expectancies at birth after the year 1999 was caused by a slightly quicker lengthening of female life expectancy at birth in comparison with male life expectancy at birth. Presumably men found it more difficult to adapt themselves to new economic conditions they faced after 1989. The risk of losing their jobs in the new economic circumstances could only contribute to make life even more stressful. Certainly, it could not have happened in the former centrally controlled economy. One should also remember that traditional family patterns consider the man to be the breadwinner who is the most important family member. This conviction was upheld despite a high employment rate among women and therefore could have caused men to escape from the new economic environment into frustration and resignation. To make matters worse drinking strong alcoholic drinks added to the cumulative effect of factors shortening men's lifespan, particularly among numerous minorities. On the other hand, women's health situation improved as a result of some positive effects of socioeconomic reforms. It means that women were able to adapt themselves to new economic reality.

A slightly decreasing tendency in male and female life expectancies dominated in the Czech Republic and Poland (countries of type B). There was only a short period of a growing tendency at the beginning of the analysed length of time in this country. Despite considerable fluctuations Slovenia (country of type C) did not show neither a clear decrease nor increase in the differences in male and fema-

le life expectancies. Slovakia's population (country of type D) had three periods of varied differences: 1989–1992 with big fluctuations in differences; 1993–1997 with a lower level of differences and 1998–2002 with a higher level of differences which gradually decreased. The most inconsistent situation was observed in Hungary (Type E) where initially (up to 1994) differences between female and male life expectancies increased. Later a decreasing tendency followed to be broken up by a sudden rise in the years 1996–1997. Taking into account both level and changes in differences between female and male life expectancies at birth (Tab. 24) two groups of countries can be formed. This division is similar to the ones discussed earlier. The first group with considerable differences is made up of the countries which formerly belonged to the USSR. The explanation of the differences lies mainly in their increase in the years 1989–1994 (Latvia and Estonia) or 1989–1995 (Lithuania). The second group consisted of the remaining countries. It was typical of them to have a relatively low or average level of differences with a tendency to stability or a slight decrease. Contrary to the tendencies known from analyses of changes in the standardised death rates related to groups of diseases, life expectancy in the EU-p8 countries does not show a tendency to make their situation similar to that of the EU-15 countries.



## Conclusions

The research which has been carried out so far makes it possible to draw certain general conclusions. It seems there is a great likelihood that the future demographic and health situation can be roughly predicted. To do research resulting in general conclusions a table of signs was to be used. The table (Tab. 25) was constructed with the use of the following indicators:

1. Demographical parameters:
  - 1.1. Natural increase of the population.
  - 1.2. Net migration.
2. Morbidity:
  - 2.1. Tuberculosis.
  - 2.2. Viral hepatitis B.
  - 2.3. Main sexually transmitted diseases (STD).
3. Mortality:
  - 3.1. Total SDR.
  - 3.2. Total infant mortality.
4. Life expectancy (both sexes).

In the course of the analysis conclusions referring to the impact of political, economic and social transformation processes on notable changes in demographic and health situation were confirmed (cf. G. Moon, 1994; D. R. Philips, Y. Verhasselt (eds.) 1994). The classification of the EU-p8 countries divided them into two groups (Tab. 25).

Countries of type A belong to the Baltic Council, whereas all the other countries make up the other group. A very bad demographic situation can be seen in Estonia, Latvia and Lithuania. Both a negative natural increase of the population and a net migration contribute to this situation. Health situation follows suit although it shows slight signs of improvement. The demographic and health situation in the remaining countries is relatively stable or satisfactory. Slovenia (type E) enjoys the best situation. Although the natural increase of the population is negative, immigration prevails over emigration. Countries of the former Czechoslovakia (type D) have slightly worse health situation which depends on demographic conditions (the increase of the population is predominant in Slovakia while the Czech Republic shows a contrary feature). The worst health situation is noted in Hungary (type B)

Tab. 25. General assessment of demographic and health situation in EU–p8 countries in the years 1989–2002

Country	Demography		Morbidity			Mortality		Life expectancy	Typ
	1.1.	1.2.	2.1.	2.2.	2.3.	3.1.	3.2.		
Estonia	—?	—?	—	—	—	—	—	—	A
Latvia	—	—	—	—	—	—	—	—	A
Lithuania	—	—	—	0	—	—	—	—	A
Poland	0	—	0	0	++	+	—	0	C
The Czech Rep.	—	+	++	+	+	++	++	+	D
Slovakia	0	+	+	+	++	+	0	0	D
Hungary	—	++	0	++?	++	—	—	—	B
Slovenia <sup>1</sup>	—	+	+	++	++	++	++	++	E

1.1. A – explanation of symbols used in text.

Relative situation plus its changes:

— very unfavourable, – unfavourable, 0 average, + favourable, ++ very favourable,

? assessment doubtful due to incomplete data

Source: author's own study.

and Poland (type C). In the case of Hungary mortality trends are particularly unfavourable.

They influence a relatively short life expectancy indicator. Weaknesses of the health situation in Poland are related to a very high infant mortality rate and partly high morbidity. Both countries register average demographic conditions although they stem from different factors. A favourable natural increase of population in Poland is achieved despite slightly prevailing emigration figures, while Hungary shows entirely different trends.

However, it should be stressed that the demographic and health situation observed in the remaining postcommunist countries is even worse. For example, Bulgaria lost over 12% of the population in the years 1989–2002. Bulgarian authorities are worried enough to introduce rapid changes in their internal policy (cf. N. Micher, 2000). Similarly, EU–p8 countries either have already introduced, or are going to introduce active pro-natal policies as well as other incentives encouraging potential emigrants who are mainly young and energetic people, to stay in their motherland.

Although the main aim of the book is to describe demographic and health conditions in the EU–p8 countries, it is still worth explaining how the situation has changed in terms of space and time.

In the communist era health conditions depended on health habits of cultural nature. Demographic changes, in the first place, were influenced by the main religion and the extent to which it had been destroyed by the communist regime.

Nowadays, the health situation depends mainly on two factors: the geopolitical past (former Soviet countries: Lithuania, Latvia and Estonia are placed in a worse situation) and the level of well-being. All health habits, whether good or bad, should be considered less important. They play a decisive role only in Hungary. Taking into account geopolitics and state welfare, the population of this country should be in a good health situation. In fact, Hungary's health situation is not much better than that of the countries belonging to the Baltic Council. The spatial factor which differentiates natural increase of the population (mainly pro-natal attitudes based on religious beliefs) remains the same despite its drastic fall. The most profound changes affected migration. Migration was not significant in the communist era for two reasons. Firstly, communist governments exercised full control over their countries; for example, passports were issued by internal security services and were given to those people who declared leaving the country for a certain period of time. Secondly, any national or separatist movements were suppressed as potentially dangerous for political authorities.

The postcommunist period has significantly intensified migration processes of a permanent nature. They do not occur on a massive scale only in Poland. However, the expansion of the EU may cause emigration from the EU-p8 countries to some richer EU-15 countries to grow.





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