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## DEMOGRAPHIC CHANGES IN COUNTRIES JOINING THE EUROPEAN UNION

**ABSTRACT.** The aim of the present study is to analyse the basic demographic changes taking place in the countries which will become members of the European Union in 2004. A relatively good situation is in Cyprus and Malta, an average one in Poland and Slovakia, while in the other countries it is bad or very bad. The main factors determining the demographic situation are: the political past, the influence of religion and (this pertains only to post-communist countries) belonging to the former USSR.

**KEY WORDS:** demography, candidates to EU.

### INTRODUCTION

The aim of the present study is to analyse the basic demographic changes taking place in the countries which will become members of the European Union in 2004. Five variables collected in three groups were analysed in the study. In the first one life is emphasised (two variables: live births and total fertility rate); in the second one death plays a primary role (again two variables: crude death and life expectancy); finally the fifth variable is analysed: a resultant of life and death (natural increase). The temporal scope of the study encompasses the years 1990–2000. In order to define the similarity in the course of demographic processes between countries, a correlation matrix method was used (Kendall's tau) as well as Mc Quitty's elementary linkage method. On the other hand, to interpret the average intensity of the analysed phenomena a median was used.

## ANALYSIS

The trends in total fertility rate in the analysed period in countries entering the European Union were very similar. From among the ones used in order to construct a spanning tree Slovenia demonstrated the lowest correlation (together with Poland), and still it was as much as 0.852. Here, two groups were differentiated: the first one encompasses Lithuania and the Czech Republic, the second one — all the other countries. Both the countries within the groups and the two groups only slightly differ from one another in the intensity of the course of changes in the total fertility rate. The only distinct difference is the higher values of the total fertility rate in the countries which were not socialist. The median for Cyprus amounts to 2.1 and for Malta 1.8, while for the former socialist countries treated as a whole it was 1.4.

The above proves that the total fertility rate in the countries which are candidates to the European Union shows similar values and trends; therefore, it does not constitute an important demographic variable characteristic of the group of these countries.

Another variable, live births (per 1,000 inhabitants), remains in a direct connection with the total fertility rate. The level of similarity in the course of the trends in the period of 1990–2000 is still larger than in the previous case. From among the countries used in order to construct a spanning tree, Malta (together with Poland) demonstrates the lowest correlation, and still it was as much as 0.934). Taking into consideration the level of the correlation of trends, three groups of countries were differentiated: the first one encompasses Estonia and Latvia, the second one Slovenia, Hungary and the Czech Republic, while the third one comprises all the remaining countries. Groups one and two are very alike — they are characterised by low average values of live births (median 8.6 to 9.5, only Hungary 11.0) and a similar trend (the drop in value usually until 1997–1998, and then a slight increase). The main difference between groups one and two is the fact that in the first one the values of live births are lower and the drop and subsequent increase are much clearer. On the other hand, the countries included in group three are characterised by higher average values of live births (median 11.1 to 15.4) and a dominance of a downward trend throughout the whole analysed period. Still, in 2000 they demonstrated higher live births than the countries included in groups one and two.

There is a distinct regularity in the spatial distribution of values and trends of live births. Countries of the third group are states with a very strong position of religion, which, understandably, is conducive to procreation. The Greek part of Cyprus is dominated by the Orthodox Church, the remaining countries by the Catholic one. The other two groups are countries with less religious societies.

A worse situation in Estonia and Latvia stems from the fact that these states used to belong to the former Soviet Union, where, as a result of the downfall of the totalitarian system there has been a dramatic decrease in the number of births in all states that used to be its parts.

In the analysis of crude deaths rate (per 1,000 inhabitants) in candidate countries to the EU there is a significant differentiation of the situation. Also the dissimilarity in trends of crude deaths in the period of 1990–2000 is much greater than in the case of the two variables mentioned above (Malta together with Cyprus demonstrated the lowest correlation – only 0.451). Thus, four groups were differentiated. The first one comprises the Czech Rep. and Poland – these are characterised by average values of crude death (median 10.0–11.4) and a slight, though clear, downward trend noted throughout the whole period. The second group comprises Estonia, Latvia and Lithuania – on average in the period of 1990–2000 much higher rates of crude death were noted here (Estonia and Latvia over 13.0, only Lithuania 11.1). Also the trend is rather characteristic: in the period 1990–1992 there are no significant changes, then in the years 1992–1996 an increase and afterwards a fall in mortality is noted. Thereafter, there is a very strong downward trend in Lithuania while in other countries it is very weak. The third group comprises Hungary and Slovenia – they differ very much in mortality (median for the former is 14.1, for the latter 9.6). However, trends are very similar: minimal changes in the whole analysed period with a slight maximum in 1993 and a minimum in 2000. The last group (Malta, Cyprus, Slovakia) is characterised by the lowest average mortality rate (median: 7.6–9.8). Although a downward trend dominates here, there are two slight maximal values (depending on the country: 1991 or 1992 and the other one in 1998). The situation in the first two countries is almost identical. On the other hand, Slovakia is characterised by a higher mortality rate despite a similar course of the trends. The course and the rate of crude death in the analysed group of countries is clearly influenced by their political past and the present speed of reforms and the wealth of the society. Also the division of the countries into groups does not raise serious reservations. Surprising is only the fact of including Slovakia in the same group as Malta and Cyprus. This probably resulted from the adopted analytical method (putting to the fore the dispersion of the analysed variable rather than its values).

In the analysis of life expectancy at birth (in years) far lesser differentiation is noted than in the case of the previous variable (Slovakia has the smallest correlation from among the countries: 0.801). Here three groups of countries were distinguished. The first one comprises Slovenia and Hungary. Although they differ in the average life expectancy (median for Slovenia was 73.4, while for Hungary it is 3.6 years shorter), both countries have very similar trends: a relatively stable situation until mid-1990s, then a slight increase which accelerates after 1999. The second group comprises Estonia, Latvia and Lithuania.

They are characterised by similarly average life expectancy (about 69.8) and the trend: until 1994–1995 there was a very distinct shortening of life expectancy, only to note its marked tendency to increase (already around 1996–1997 life expectancy from the beginning of the analysed period was exceeded). The third, the most numerous, group includes the remaining countries. As far as average values of life expectancy are concerned, they differ from one another (medians for Cyprus and Malta are about 77.1, while for the post-communist countries about 72.6). However, they are distinguished by a comparable slight upward tendency. It is obvious, then, that in the countries with the capitalist past life expectancy is significantly higher than even in the richest post-communist countries. The affluence of a society is a secondary factor determining life expectancy (which is already typical).

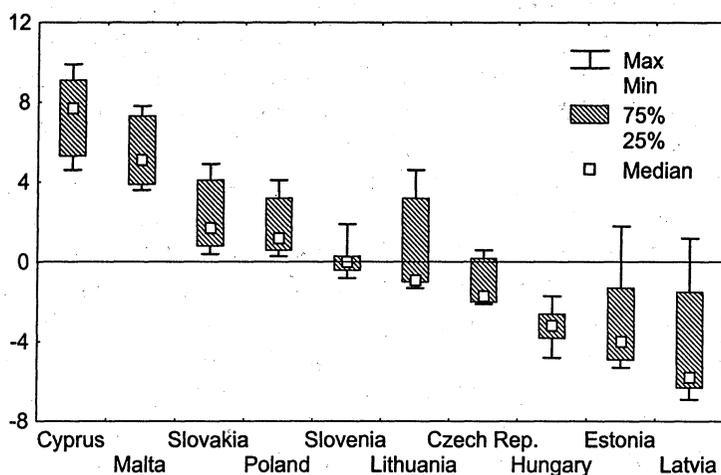


Fig. 1. Natural increase [in %] in countries candidates to the European Union (1990–2000).  
Source: European health for all database, 2003

Finally, the course of the processes of natural increase in the analysed group of countries is similar (it was least correlated in the Czech Republic and Slovakia: 0.685). With respect to natural increase three groups of countries were distinguished (Fig. 1.). The first one, with positive average natural increase (median from the period 1990–2000 above zero), comprises two countries with the capitalist past (Cyprus and Malta) and two Catholic countries with the communist past (Poland and Slovakia). Countries with negative natural increase (median below zero) include Latvia, Estonia, Hungary, the Czech Rep., and Lithuania. The middle position (median equals zero) is taken by Slovenia. In such a distribution of average values of natural increase the influence of the political and economic past is the most visible. A secondary role is played by religion. With respect to the course of trends two groups of countries were distinguished.

The first one includes the three countries which used to belong to the former Soviet Union (Lithuania, Latvia, Estonia). In these three countries until 1994 there was a very sudden drop of natural increase, which slowed down in subsequent years. This is reflected in Fig. 1., where medians for these three countries are very close to the lower quantile. Such a phenomenon is typical of almost all European countries of the former Soviet Union. The second group includes the remaining countries. A characteristic feature here is a slow fall in natural increase throughout the whole analysed period (with insignificant one-year increases in certain countries). Noteworthy are almost identical values and courses of the trend in two most Catholic post-communist countries: Poland and Slovakia.

### CONCLUSIONS

Candidate countries to the EU differ markedly between each other as far as demographic situation is concerned. While Cyprus and Malta have a good situation and Poland and Slovakia an average one, in all other countries it is bad or very bad. Additionally, it is worsened by substantial emigration from these countries, which may even grow in strength after their accession.

The most important factor influencing the differentiation of a demographic situation is the past of these countries. – a good situation is in countries with the capitalist past (Malta and Cyprus (the Greek part)). The second factor is the influence of religion – countries with a strong dominance of the Catholic or Orthodox Church demonstrate a better demographic situation (again Malta and Greek Cyprus as well as Poland, Slovakia and partially Lithuania). The third factor (referring only to post-communist countries) is the membership within the former Soviet Union (Estonia, Latvia and partially Lithuania, where the influence of Catholicism partially levels the detrimental impact of the Soviet past). On the other hand, much less notable is the influence of the wealth of a society on the demographic situation, which is significantly more obvious in the case of analysing their health situation (Michalski, 2003).

A bad demographic situation in Lithuania, Latvia and Estonia (Michalski, 2001) will deteriorate even more in the near future. The reason is not only a high level of STD incidence, but also a rapid development of HIV/AIDS epidemic (Goodwin et al., 2003; Hammers and Downs, 2003; Estonia ..., 2002; Latvia ..., 2002; Lithuania ..., 2002). Estonia is especially at danger in that respect. Paradoxically, the country with the fastest economic growth from among the former communist countries is characterised by both tragic and still deteriorating demographic situation.

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