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Abstract

The study investigates how Hungarian demographic development from the end of World War I to 1990 related to the changes that took place in Western Europe, and in which areas and in what periods can divergence or convergence be observed. The issues examined included fertility, mortality and nuptiality movements. Based on the analyses three main periods in 20th century Hungarian demographic development can be distinguished: from the beginning to the middle of the century, Hungary converged to the societies of Western Europe; approximately from the middle of the century to the mid-60s, the diminution of differences between Hungary and Western Europe halted on the whole, but the gap still did not begin to widen; in the third period, which lasted from the mid-60s to 1990, Hungary took a course diverging from Western Europe.

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1. Introduction

This paper describes the Hungarian demographic development in the 20th century in a European context with a main focus on analysing the convergent and divergent features. There are several reasons that account for this research interest. On the one hand, it is increasingly acknowledged that reaching a full understanding of social developments in any particular country is only possible if its experience is set in the context of wider changes. This fact is reflected in the continuously growing body of comparative historical literature. In spite of this, no systematic comparative study of 20th century Hungarian demographic development has been carried out yet, although this development has often been regarded as a peculiar one, following a path significantly different from Western Europe (Hajnal 1965, Demeny 1972). Due to the shortcomings of comparative research on Hungarian population history, there are several questions still have to be answered in this respect: One of the most important of these is, whether the whole 20th century can be viewed as a period, in which Hungary clearly differed from Western Europe, and parallel change occurred between them; or there has been a specific dynamics in the relationship of Hungary and Western Europe, with periods of growing similarities and/or dissimilarities.

Beside the general interest in the long-term comparative study of Hungarian population history, a more specific interest in the problem of European social integration will constitute the basis of the present investigation. Current discussions of European integration focus in particular on economy and politics, but much less on the social side of the integration process. Another important feature of the ongoing debates is, that issues revolving around European integration have been dealt with little reference to historical processes.

The interest in social integration leads us to the problem of convergence in population development. In the light of the relative neglect of the historical approach it seems relevant to analyse these processes in the long run. Consequently, in the paper we primarily seek to explore the relationship between Hungarian and Western European demographic development by answering the following questions: Have 20th century demographic changes in Hungary converged to or diverged from Western European trends? In which periods and in which areas of development can convergence and divergence be observed?

The article is structured as follows: We first deal with some important features of research carried out on social convergence in Europe and on comparative population history of Hungary. Then we lay out the measures of convergence and approach other methodological problems. In the main part of the paper, first changes in 20th century Hungarian fertility will be presented in comparative perspective. Next a closer look will

be offered at mortality as well as nuptiality in a similar context. In the last section, a summary of the findings is presented.

2. Convergence in research

The existence and extent of convergence between industrial societies has been a subject of debate and controversy in social sciences for generations. Convergence theory suggests that industrial nations are becoming more and more similar despite different cultural and historical legacies and various political and economic systems. One can encounter the idea of decreasing differences among societies over time in several works of nineteenth-century century social thinkers. In the 1950s and especially in the 1960s, social scientists have continued the convergence debate very intensively. At that time convergence theory was closely connected to modernisation theories on the one hand, and to the assumption of growing similarities between the capitalist and communist countries in industrial organisation, social structure etc. on the other hand.

More recently, controversies over convergence have been especially fierce among economists, dealing with the problem both theoretically and with regard to the regional development.(1) The significance of cohesion objectives in the European Union, and indeed the effect of the Cohesion Fund itself to the harmonious development of the European Union, has resulted in numerous studies seeking to find out whether economic disparities between member states, regions and social groups have diminished over time. Economic convergence also appears to be a hot topic for both the European Union and the member candidates, since it obviously reduces the dispersion of countries on the scale of economic development. The narrower the distribution, the lower the cost of future European Union enlargement, because it lessens the burdens of transfers from the European Union to the new members, such as structural, cohesion, and agricultural supports (Andreff 1999).

Although the issue of economic convergence clearly received the most attention in research, considerable empirical research on the convergence thesis has been carried out by sociologists, historians, demographers, and other social scientists as well. Sociologists have been particularly active in such areas as stratification systems, industrial sociology, and welfare systems, producing conflicting evidences with respect to convergence in all these areas (Williamson, Flemming 1977, Erikson, Goldthorpe, Portocarero 1983, Kosonen 1995, Crouch 1999). In the historical research of the past few decades, it was the German social historian, Hartmut Kaelble, who carried out the most systematic research on convergence. Kaelble can be regarded as one of the main proponents of the view that the developments of Western European societies (including Scandinavia and, in several respects, even South Europe) have converged in significant

areas of social life during the 20th century. As a result, it is almost justifiable to talk about an integrated — or, at least, an integrating — specific Western European society, as compared to the societies of the USA, Japan or Australia (Kaelble 1987, 1990, 1997). Kaelble analyses Western European social integration through examining different areas of social history, among others, the demographic and family development. However, he excluded Hungary and other Central and Eastern European countries from the scope of his research. (2)

The assumption of convergence also appears in demography. The model of demographic transition, widely used as a point of reference, even with such versions as the "second demographic transition" (Van de Kaa 1987), assumes that fertility and mortality rates move together interrelatedly over time in a predictable and uniform way, although the real predictability of demographic development has not been unquestionable in the research literature at all. Beside the demographic transition model, some other examples of research on convergence in the realm of demography and family can also been found. Susan C. Watkins explored the Western European population history on a regional level in the 19th and 20th century and found a strong tendency towards demographic integration within the nation states (Watkins 1991). Alex Inkeles presented supporting evidence of convergence in several areas of family life, such as family size; yet, other aspects with no clear long-term trends distort this picture somewhat (Inkeles 1981: 14-18). Perhaps the most explicit research on post-Second World War European demographic convergence has been carried out by David Coleman, concluding that an industrial economy does not necessarily result in demographic convergence "beyond certain limits" (Coleman 1992: 141-179, Coleman, Chandola 1999: 39).

In contrast to Western Europe, demographers and historians dealing with Hungarian population history have only performed comparative analysis regarding certain periods (primarily the post-1960 period) and some countries (e.g. Finland, some East-Central European countries) (Andorka 1987, 1990, Klinger 1991, Hablicsek 1992, 1995). In recent years, some highly informed comparative studies in social history and demography have been published, which, unlike former works, included in their scope of comparison Central and Eastern European countries, as well as Hungary with other regions of Europe. Most of these works also focused on the post-1945 decades only and their interest allowed merely for a brief and general treatment of Hungary (Ambrosius, Hubbard 1989, Coleman 1992, Monnier, Rychtarikova 1992, Rallu, Blum 1993, Therborn 1995). That is, with some notable exceptions (Hajnal 1965, Demeny 1972, 1997), even comparisons of the widest scale have only concentrated on the demographic changes in recent decades. In the absence of systematic comparative research, it is not surprising that empirical research on convergence is also lacking. The exploration of this field, however, poses a challenge in methodological respects as well.

3. Methodology and data

The development of Hungarian demography will be examined in comparison to Western Europe through simple statistical procedures as well.(3) The appropriate Hungarian data can obviously be compared to the Western European means to reveal the degree of convergence or divergence. This method is widely used in comparative research, and, indeed, it is suitable to pointing out some important trends. Notwithstanding, this method in itself seems not to be fully satisfactory: the interpretation of the Western European means is not without its problems, as it fails to take into consideration the variations in the indicators of the different countries.(4)

Common alternatives for measuring convergence are the standard deviation or variance and the coefficient of variation. We also calculate the convergence of Western European countries by using the coefficient of variation because it is adjusted for shifts in the mean (i.e. a 10 point spread is likely to have a different interpretation around a mean of 50, than, say, around a mean of 20). The greater the decrease in the coefficient of variation over a specified period of time, the greater the convergence, and the greater the increase in the coefficient of variation, the greater the divergence.

However, in contrast to the studies cited above, which measure convergence among countries, in the present analysis convergence is assessed between one specific country, Hungary, and a group of countries, Western Europe. For this purpose the coefficient of variation seems to be not suitable. In order to overcome this difficulty, we measure convergence of Hungary and Western European societies using the standardised Hungarian data. That indicator takes into account both the changes in standard deviations and means, and therefore provides more comprehensive information. Standardisation is the transformation of values of a distribution, so that it has mean 0 and standard deviation 1. Standardisation is carried out using the transformation,

$$z = (x-\mu)/ \sigma$$

where μ is the mean, σ the standard deviation, x the original value, and z the new value. To put it less formally we can reach the standardised Hungarian data through subtracting the respective Western European means from the Hungarian data and then dividing it by the Western European standard deviations. The difference of this number from zero shows the degree of diversion from the Western European data. The greater the decrease in the standardised data over a specified period of time, the greater the convergence and vice versa. These indices are not only suitable for properly indicating convergent or divergent tendencies, but they also make it possible to measure the

convergence of Hungarian development even when Western European societies diverge in an area of demographic development.

It is also possible to offer a measure of the mean convergence/divergence per year. The mean convergence per year can be expressed formally as follows,

$$MC/Year = [\ [(z_{t1} - z_{t2}) \div z_{t1}] \times 100] \div (t_2 - t_1)$$

where MC/Year is the mean convergence per year, z_{t1} the standardised data at the earlier date, z_{t2} the standardised data at the later date, t_1 the earlier date, and t_2 the later date. True, this statistics implicitly assumes that any one-year period is equivalent to another, although, in reality, there is at least some variation in the rate of convergence from one year to another. The mean convergence per year also neglects the so-called crossover pattern of trends. The interpretation of average annual change is relatively easy, when simple convergence or convergence from different directions occur with a movement towards a common point from the same or the opposite direction respectively. However, converging trends may meet, and then not fuse but cross each other and then start to diverge (Inkeles 1981: 14-27). This crossover pattern can be observed in some cases in our investigation, when the standardised Hungarian data approaches the zero level, then crosses it and starts to diverge. In this case average annual changes of the standardised data can not be interpreted as a measure of the dynamics of convergence or divergence and we left out from the computations. (Appendix)

Another important methodological problem is – present in many comparative studies –, that of what is compared to what, i.e. what is regarded to be the unit of comparison. Hungary as the unit of comparison is given in this case. The comparison with other Central and Eastern European countries would obviously be a legitimate exercise, because these countries have shared several distinct demographic features with Hungary throughout the 20th century. However, the similarity of development paths does not allow a "contrasting type" or "individualising" comparison, which is also a useful research strategy.(5) This version of comparison is only possible if there are clear-cut differences between the units of comparison, which makes a case for the comparison of Hungary to units with highly distinct structures, such as Western Europe.

In addition, a comparison of Hungary with other Eastern European societies would obviously need another focus, different from convergence. As we noted earlier, convergence between the European Union and prospective EU members, such as Hungary, appears to be a hot topic. In contrast convergence between the Central and Eastern European countries has not attracted significant interest so far.

It is not evident either which countries are regarded as Western European ones. When selecting the Western European countries into the sample, an effort was made to

include ones that produced similar socio-economic and political development in the 20th century. Thus among the countries analysed, beside Norway and Switzerland, the present EU member states are included with the exception of Spain, Greece, Portugal, and Luxembourg. The inclusion of the latter one was hindered by very practical reasons, namely the unavailability of reliable sources. Nevertheless, no attempt has been made to claim that other countries could not have been considered for inclusion in the sample.

There are several international data sets containing demographic data.(6) However, none of them covers the whole period under investigation, which historians sometimes call the "short 20th century" (1918-1990), and all of the 14 countries we intend to incorporate into the study. Using different types of sources, we compiled own our data set which contains several indicators on demographic and family change and has been published elsewhere with technical notes (Tomka 2000). This set of demographic indicators also has its limitations. For some periods (interwar years), and some areas (average age at first marriage) we were unable to obtain appropriate data and the quality of some of the existing data might be unequal. However, we believe these limitations do not seriously restrict the intended comparison in the case of fertility, mortality, and nuptiality.

4. Some results

4.1 Fertility

In the course of the 20th century, a great decrease in fertility can be observed in all Western European countries, though interrupted by shorter periods of rise.(7) This process can be characterised by the most obvious index, the crude birth rate but there are more complex and sensitive ratios eliminating the differences in sex and age distributions and better suited for international comparisons. Considering the total fertility rate for example, the composition of the groups of countries with the highest and the lowest fertility changed relatively often, except for the position of Ireland.(8) At the turn of the century, Austria, Germany, Ireland and Italy had the highest fertility rates, whereas it was the lowest in France. By 1950, Finland and the Netherlands joined Ireland in the highest fertility group, while the rates dropped in West Germany, Austria and the United Kingdom to the lowest in the continent. Then, by the end of the 1980s, the highest total fertility rates were reported in Ireland, Sweden, Norway, the United Kingdom and France, while the lowest in Italy, West Germany and Austria (Rallu, Blum 1993: 3-28).

The rapid decrease of fertility in the first half of the century was influenced by the waves induced by World War I, i.e. the substantial reduction during the war and the transitory growth periods afterwards. The decrease of fertility resulted in fertility rates under replacement levels between the wars everywhere except Italy and the Netherlands (Sardon 1991: 22). Immediately after World War II there was a short period of rising fertility due to family reunifications. Then in the late 40s and early 50s a period of lower fertility followed. The ensuing baby boom affected all Western European countries in almost the same way, with significantly increased fertility rates until the early 60s. This was a longer period of fertility growth and on a much larger scale than could have been attributed to the usual increase in post-war birth figures. Besides, the collapse of the baby boom ("baby bust") happened in a similarly dramatic manner and at a similar time around 1964. After this, Western European fertility figures dropped rapidly, the process further accelerating in the early 70s. By 1975, fertility was below the level necessary for population replacement in each country (e.g. by 1968 in Sweden, by 1969 in Denmark and by 1970 in West-Germany), not to rise above it ever since (Coleman 1996: 11). In the period called the second demographic transition, after the mid 1970s, fertility fluctuated around this low level. Since fertility significantly decreased in the Southern European countries, too, Ireland remained the only remarkable exception with relatively high fertility, even though this rate was on the decline here as well, continuously all through the 70s and 80s (eventually halving). In most North Western European and Scandinavian countries, fertility temporarily began to rise again from the mid 1980s. Of these, Sweden produced the highest development, mostly due to measures taken in family policy (Coleman 1992: 156).

In the inter-war period the coefficient of variation of fertility increased in Western Europe, and the pronounced convergence of the two decades following World War II could but counterbalance this process. In the 1960s and 70s, differences between the fertility rates of the individual countries rose significantly again. In the 80s this was followed by a rapid and considerable tendency of uniformisation in both the crude birth rate and the total fertility rate. In summary, despite the general decrease of fertility, the differences between the countries with the highest and the lowest fertility figures did decrease in absolute values but the ratios hardly changed between the beginning and the end of the century (Kaelble 1990: 162-163). (See Appendix)

Fertility decreased significantly in Hungary, too, in the course of the 20th century. Following the rapid decrease which started from 44-46‰ in the 1880s, at the beginning of the century the crude birth rate was around 39‰ and the total fertility rate around 5.3, both exceeding all Western European countries in this respect. At the middle of the century, after territorial changes, Hungarian fertility appeared average compared to the same countries. In 1990 the crude birth rate was 12.1‰, the total fertility rate 1.84. The

former was below the Western European mean, while the latter can be considered average in a Western European context (Demeny 1972: 153-172, Dányi 1977).

The decrease was interrupted by small changes in Hungary, too. On the one hand, the world wars resulted in fluctuations in birth numbers. These, however, induced movements different from those characterising Western Europe. In the period of World War I, only France suffered a greater decrease in the number of births than Hungary. Even the increase in fertility occurring after the World War was not sufficient to replicate pre-war levels (Acsády, Klinger 1965: 25). From the 1920s a continuous decrease took place and it accelerated in the years of the Great Depression. In 1930 the total fertility rate was about half (2.8) of that at the turn of the century, thus, disregarding the world war, the decrease in fertility between 1910 and 1930 was the greatest in the century (Kamarás 1997: 320). In contrast with World War I, the slight fall of the birth rate during World War II is also characteristic. As there were hardly any missed births, fertility did not rise afterwards with the spectacular pace seen in other European countries: after a short period of increase the earlier tendency in birth rates continued. That is, the number of children dropped, and the pace of the decrease became more rapid. The baby boom of Western European countries and North America did not occur in Hungary. Furthermore, because of pronatalist measures in population policy, the crude birth rate and, even more so, the number of births suffered stronger fluctuations than those in the previous decades.

The birth rate greatly increased from 1953, as a consequence of the ban on abortion, forbidding any termination of pregnancies, and it stabilised on a high level (21-23‰) for a few years. This, with the backlash of the following years, i.e. the plummeting number of births from 1957 had a significant effect on later demographic patterns, too. These together created characteristic demographic waves, repeating ever since in Hungary every 20-24 years as the corresponding female generations reach child bearing age.

Births were at the lowest in 1962-65 (12.9-13.1‰), a negative record in contemporary Europe and in the world, too. The total fertility rate fell back to 1.8. Pronatalist measures (raising family allowances, 1965; introduction of paid maternity leave, 1967) reversed the decreasing tendency in the mid 1960s. The birth rate increased somewhat and then settled around 15‰ between 1967-73, much below the Western European average. A new series of pronatalist measures (e.g. slightly stricter abortion regulations and another raise of family allowances) brought about an increase in the birth rate between 1974-76 (raising it to 18‰), which was considered high in Europe by that time. 1977 was the year of yet another turn with the decrease of the birth rate. (This was primarily due to the continuing decrease of the fertility level and, partly, the decrease in the number of women in child bearing age.) The crude birth rate settled

around 12‰ in the 1980s (Klinger 1985: 73). The total fertility rate was 1.84 in 1990, approximately 7% higher than the Western European average. (See Appendix)

Considering all factors, the Hungarian fertility rate was among the lowest in Eastern Europe after World War II (similarly to East Germany), thus it was rather at the Western than the Eastern European level. Regarding the trends in fertility, Hungary actually outstripped Western Europe in certain respects, because here the fertility dropped below the level necessary for simple reproduction sooner after World War II (Kamarás 1997: 323).

Sensitive to changes in Hungarian development relative to both the Western European average and the standard deviations of Western European indices, the standardised Hungarian data show that, in all, Hungarian fertility approached Western European rates in the course of the century. Hungary was closest to Western European levels in the 50s. It is true, though, that this post-World War convergence was of short duration because it resulted from the strong rise of fertility in Western Europe and the significant fall in Hungary. These two opposite tendencies resulted in the rapid emergence of great differences again, because by then the fertility level of Hungary was below the Western European average – for the first time in the century.(9) (See Appendix)

4.2 Mortality

The patterns of mortality changed significantly in Western Europe in the 20th century.(10) As the main trend, mortality indices decreased continually, though with different pace in different countries and periods. The dynamics in the changes of mortality is only partially shown by the crude death rate, which is significantly influenced by the age structure of the population. At the turn of the century, the crude death rate was between 15.8 and 25.2‰ in the countries examined. By the middle of the century these figures dropped to 7.5-12.7‰, and by 1990 they were between 8.7 and 11.9‰ (Mitchell 1981: 100-110, Gabriel, Brettschneider 1994: 498-499). The age-specific indices eliminating the effects of the age structure of the population (such as mean life expectancy and infant mortality) give a more refined picture in this case as well and are thus more appropriate for purposes of comparison.

While at the beginning of the century average male life expectancy at birth hardly reached 50 years in the countries with the highest indices (Scandinavia except Finland), by the late 80s it exceeded 70 years in all Western European countries, and in Norway and Sweden it almost reached 75. For women, the increase was even higher. By 1990 Western European women could expect to live 6.5 years longer than men. Nevertheless, the improvement of mortality was not evenly paced in either aspect. The increase of the

life expectancy was very rapid in the first half of the century and still kept strong in the 50s and early 60s. Then in the second half of the 60s and the early 70s it slowed down, to increase at a somewhat faster pace from the late 1970s on.

Improving significantly in the 20th century, infant mortality deserves special attention, because it was the most important area where mortality improved. In 1900 this index was above 200‰ even in Germany and hardly below 100‰ in Sweden and Norway. In contrast, by the late 1980s the figures dropped to a fraction of the above. In all Western European countries less than 9‰ of infants died before their first birthday. The decrease was especially rapid between 1950 and 1990, when infant mortality dropped 5% each year in the countries of the European Union, decreasing this level to its fourth in the course of these four decades (Noin 1993: 46-47). The differences between the leading countries (Finland and Sweden) and those with the poorest indices (Portugal and Greece) in the EU were twofold and the differences remained unchanged till the 1990s. Still, between the countries presently examined, the differences decreased at a great pace from the 70s. While in the first three quarters of the century the coefficient of variation was around 30% in 1990 it was only 11%. (See Appendix)

It clearly appears from the above that mortality differences between the countries were on the decline almost continually. Though this decrease progressed in the first half of the century, the mortality differences between Western European countries still remained relatively considerable after World War II. In 1950, there was a 12 year difference of life expectancy between the Netherlands, Norway, Sweden, and Denmark, where indices were the best, and Finland, where they were the poorest. An indication of the obvious convergence of the decades that followed was that, between 1950 and 1990, male life expectancy at birth increased by 3 years in the Netherlands and by 12.3 years in Finland. As a result of rapid development in Finland, in 1990 Sweden's advantage at the head over Finland at the end of the list was only 3.3 years. The dynamics of the changes in the coefficients of variation clearly show that the difference did not decrease only between the two extremes. While in 1900 the coefficient of variation was 8% for both male and female life expectancy in Western Europe, it dropped to 5 and 3% respectively by 1950 and 2 and 1% by 1990. Of all the important demographic phenomena, the greatest convergence between Western European countries occurred in mortality figures (Coleman 1992: 175). (See Appendix)

In the first two thirds of the 20th century, with its considerable improvement, Hungarian mortality followed the Western European trend. Afterwards, however, mortality indices stagnated and even deteriorated, thus the dynamics of development differed significantly from that of Western Europe.

From the 1870s, the crude death rate rapidly declined from 35-39‰ to 25‰ by the turn of the century. Then the pace of decrease slowed down, to reach 23‰ by the eve of World War I. Disregarding direct war casualties, during the war the death rate first

increased somewhat but then the declining trend continued, similarly to other European countries.(11) The death rate rose rapidly in the last year of the war (1918: 26.4‰) because of the Spanish flu epidemic affecting all Europe.

The crude death rate decreased again after the war, though it remained relatively high compared to the pre-war level with 20-21‰ between 1919 and 1924. From the mid-20s it plummeted again to 15‰ by 1930. This decrease appears to be one of the greatest in Europe in the period. In the early 30s, mortality figures rose (to 18‰ by 1932), largely due to an infant colitis epidemic. The increase proved to be only temporary and mortality figures actually improved through most of the 30s. Disregarding military losses, the decrease of mortality continued during World War II until 1943, with the number of civilian deaths increasing from 1944.

In the first half of the century, and especially in the inter-war period, the life expectancy at birth improved significantly for both sexes. At the turn of the century this figure was 36.6 for men and 38.2 for women, growing to 41 and 43.1 respectively by 1920-21, then 54.9 for men and 58.2 for women by 1941. That is, it was 18 years higher for men and 20 years higher for women in 1941 than at the beginning of the century. This was primarily due to the significant improvement in infant mortality.

Immediately after World War II, due to the consequences of war, i.e. poor health conditions and poor nutrition, the mortality rate increased (1946: 15‰), but from 1947 figures began to improve. The following one and a half decades can be considered the most rapid transformation period of mortality in Hungary (Hablicsek 1995: 15). With the rapid decrease of mortality, female life expectancy at birth grew from 64 years at the late 1940s to 72 years by the mid-60s. There was a notable improvement for males as well between 1949 and 1965, raising this index from 60 to 67 years.

The mid-1960s, however, brought a turn in mortality tendencies. The trend of decline, unbroken since 1880 reversed, with the crude mortality rate beginning to rise from around 10‰ from the mid-60s, reaching 13.6‰ by 1980 and 14.1‰ by 1990. But it was not only the crude mortality rate that deteriorated. Though not to the same degree, age specific ratios also worsened. The change for women was relatively favourable because for them it was only the pace of improvement that slowed down, thus their life expectancy was 72.7 years in 1980 and 73.7 in 1990. In contrast, the same index for men first stagnated then began to decline, dropping to 65.5 years in 1980 and 65.1 in 1990. This also meant that the mortality difference between the sexes became considerably larger than in Western European countries, reaching more than 8 years in life expectancy in 1990. Moreover, the deterioration of mortality did not influence all age groups similarly. As in other communist countries, it mostly affected middle age men in Hungary as well (Okolski 1993: 165-189).

The developmental differences between Hungary and Western Europe are demonstrated by the improving mortality figures in England and France between 1970

and 1990 in all age groups except for men in their 20s, where it stagnated. The improvement was not even, being the highest in England for infants, children and the middle aged (40-60-year-olds), and in France for infants, children and those between 40-70 years of age. In contrast, in the same period in Hungary the mortality of all male groups deteriorated, sometimes dramatically plummeted, except for those under 20. For example, the mortality risk of a 40-year-old man was about 60% higher in 1990 than 20 years before (Mesle 1996: 132-133). In other words, in 1965 a 40 year old man could expect to live a further 32.7 years as opposed to only 29.5 years two decades later – especially considering that, in this age group, the effects of the continuing decrease in mortality of those under 20 and especially infants and children, raising mean life expectancy, are not tangible any more. For women, the 35.6 years of further life expectancy practically did not change.

Infant mortality in Hungary fluctuated between 190 and 250‰ from the turn of the century to World War I, i.e. it was much higher than the Western European average. During World War I, it essentially stagnated except for one year, and hardly declined for some time even after the war, infant mortality being approximately 190‰ between 1920-1924. Only from the mid-20s can an improvement be observed, though it was still interrupted by declines. As a result, by the mid-30s the figure was between 150-160‰ and it dropped to 120-130‰ before World War II. In the war years it continued to decrease and it was only in 1945 that it increased to 169‰.

Immediately after World War II infant mortality was high for two years, but then a plunge followed. The reasons behind this were similar to those in Western Europe: primarily the spreading use of antibiotics and certain vaccines (against diphtheria, etc.). In addition, access to medical care also expanded in this period in Hungary. By the end of the 50s infant mortality was below 50‰ and by the mid-60s below 40‰, becoming constant around 35‰ for a decade. In the second half of the 1970s the decline accelerated again, resulting in levels around 20‰ by the early 80s and reaching 14.8‰ by 1990.

Despite its large scale decrease, Hungarian infant mortality appeared to be rather unfavourable in a European perspective throughout the century. In the first third of the century, the differences grew significantly compared to Western European figures, and the moderate convergence of the two decades after World War II was followed by diverging trends again.

In summary, 20th century Hungarian mortality figures converged to Western Europe in certain periods, but between the beginning and the end of the century a general tendency of divergence can be observed. The convergence was especially strong in the 30s and then in the first half of the 60s, when the most developed societies had already reached a point from where further improvement became difficult, while Hungary was still able to develop. From the mid-60s, however, as Western European

mortality tendencies continued to improve, in Hungary adult male mortality figures deteriorated, a phenomenon sometimes referred to as an epidemiological crisis (Józan 1994). With this, a pronounced divergence began between Western European and Hungarian mortality tendencies, further accentuated by the rapid Western European unification in the 80s, especially with respect to infant mortality (Okolski 1993, Mesle 1996: 140-41, Józan 1997: 376, Hablicsek 1995: 39, Losonczi 1989: 320-321). (See Appendix)

4.3 Nuptiality

Concerning marriage patterns, Western European societies underwent significant and special changes in the 20th century. The crude marriage rate reveals but little of these transformations, because up until the 1970s the Western European annual average was 7-8 marriages per 1000 inhabitants (with fluctuations caused by the wars at most), then it dropped below 7‰ and then below 6‰. Differences between countries did not change much during the century, either, the coefficient of variation remaining between 12-15%. (See Appendix)

The special features are better shown by two other indices, the average age at first marriage and proportion never married. Compared to other continents or the societies of Eastern Europe (Hajnal 1965: 101-143), people all over Western Europe married late at the turn of the century, men at around 28, women at around 26 years of age. This was still characteristic in the inter-war period. After World War II, however, there emerged a new sign of a renaissance of marriage and family (the jump in birth rates and their stabilisation at high levels has been demonstrated above). In most countries the average age at first marriage dropped significantly, by several years (2-3 years for men, 3-4 years for women) between 1950 and 1970. From the mid-70s, however, this index rapidly increased again and reached the levels of the beginning of the century by 1980 on a Western European average.

The extreme poles were only partly represented by the same countries. At the beginning of the century Irish, French and German men and Irish, Austrian and German women were the oldest when tying the knot. At the end of the century Danish, Swedish and Swiss men and women were the oldest to do so. The youngest to marry in Western Europe at the turn of the century were Italian women and Finnish men, whereas at the end of the century Belgian, British and Austrian women and British, Belgian and Finnish men.

Lifelong celibacy, i.e. the proportion of those never married in the 45-54 age group, followed a similar trend.(12) (It must be noted though that this index follows the changes in nuptiality with a lag of several years.) At the turn of the century celibacy

(proportion never married) was between 8-28% for men and 10-24% for women (the lowest being in Germany, the highest in Ireland for both sexes). Except for Ireland and the Scandinavian countries, the proportion of those never marrying decreased among men and stagnated or slightly increased among women in the first half of the century. From the 50s, however, the proportion of female celibacy (proportion never married) significantly decreased in every country. With the exception of Denmark and Italy, men display a decrease, too, although it was not so rapid as for the other sex. For women, the intensity of the process is shown by the decline in the proportion of those not married in the 45-54 age group, from 20.7% to 9% in Norway between 1950 and 1970, from 19.1% to 8% in Sweden, and from 15.1 to 8% in England and Wales. The decrease was not on such a large scale elsewhere, but neither were the starting levels so high: the decline was from 12-14% to 7-10% in France, West Germany, the Netherlands and Denmark. From the 1970s proportion of never married women further decreased, because it was then that those in their twenties during the intensive period of marriages in the 1950s entered the age group of 45-54 year olds. This tendency did not effect men, as their group was rather characterised by stagnation by this time. As a result, from the 1970s female celibacy (proportion never married) dropped below the male level for the first time in the century, the Western European male average being 10.7% and the female 7.1% in 1990.

The index of proportion never married is appropriate to characterise long term changes in marriages but, as indicated above, it is not sensitive to short term fluctuations. Indices sensitive to such movements, e.g. the total first marriage rate, reveal that, similarly to the marriage age, considerable changes began in the marriage ratios of the youth from about 1970 in most Western European countries. The total first marriage rate shows that nuptiality significantly decreased in every country in the 70s, with the greatest fall in the Netherlands. This process continued in the 80s in most countries, though the pace of the decrease was more moderate and in the two Scandinavian countries of low marriage intensity (Denmark and Sweden) a growing number of couples were married (Haskey 1993: 214-215).

All in all, the differences between Western European societies with respect to the age at first marriage reached the lowest point in the 30s and 40s, but then they grew again, reaching turn of the century levels by the 1980s. As regards the proportion of those never married, the differences grew until the 60s (men) and 70s (women), and then a levelling trend of relatively considerable pace occurred. Despite the latter tendency, differences were still greater in 1990 than in 1900. (See Appendix)

Although age at first marriage slightly increased in Hungary at the end of the 19th century, Hungarian marriage patterns at that time still belonged to the Eastern European type of the Hajnal typology, even though they represented a moderate sub-category (Hajnal 1965: 103, Demeny 1972: 164-168, Ni Bhrolchain 1993: 461-479). Not only

was the crude marriage rate higher than that of any Western European country's but, even more revealing for the marriage structure, women married at age 22.5 and men at 26.4 on the average in 1900. Only 4-5% of both sexes did never marry in their lives.

In the first decades of the 20th century, and especially in the 30s, the age of those marrying for the first time increased. Thus before World War II bridegrooms were 27 year old on the average and brides 23. These ages reached the highest point during the war, in 1944, with 29.7 years for men and 25.3 years for women. The proportion of those never married also increased in these decades. Before World War II, 5-6% of men and 7-8% of women remained celibate in their lives. Consequently, the average age at marriage did not considerably differ from the Western European level (Csernák 1997: 342-343). The convergence was also promoted by stagnating average ages at first marriage in Western Europe. Regarding celibacy ratios (proportion never married), the differences remained greater, even though the Hungarian figures began to approach the Western European ones, especially for women. (See Appendix)

After World War II, corresponding to European and North American tendencies, a clear upswing in marriage figures can be observed in Hungary, too. The number of marriages rose (especially among those widowed or divorced) and the average age at marriage dropped. Furthermore, while in Western Europe a turn occurred in nuptiality from the end of the 60s, in Hungary there was no significant decline in marriage figures until the second half of the 70s. This also surfaced in the level of proportion never married, although this index was also influenced by the nuptiality trends of the previous decades. Considering especially the total first marriage rates which eliminate the effects of different age structures, it can be stated that marriage rates remained relatively high until the 70s. Only those widowed or divorced were less willing to marry again from the 1960s. In this decade, grooms' average age at their first wedding fell to 24 and brides' to 21, reaching the lowest level of the century in the mid-70s (20.7 years for women, 23.4 for men). This also meant that the age difference between grooms and brides dropped from the pre-war 4.7 years to 2.7.

From the mid-70s, inclination to marry began to weaken somewhat in Hungary, too. The average age at marriage began to rise slowly, reaching 21.5 years for women and 24.2 years for men by 1990. At the same time, however, this index increased more considerably in Western Europe, thus Hungary diverged from the region rather than converging to it. The change in the ratio of marriages was faster, which appears more clearly in the annual marriage numbers than in the celibacy ratio (proportion never married). Had the age specific marriage ratios of 1987-88 become constant, approximately 82% of men and 92% women born in Hungary in the second half of the 1960s would have married before the age of 50, which signals a significant decrease when compared to earlier figures (Csernák 1993: 801).

Summing up, the Eastern European marriage pattern as defined by the Hajnal typology strongly faded in Hungary between the two world wars. In 1930 both men and women were only one year younger on the average at their first marriage than the Western European average. The frequency of marriages was the closest to the Western European average at this time, too, although because of the statistical methods applied, this appeared in the level of proportion never married only a few decades later. After World War II, however, and especially between the mid-60s and the late 70s, the presence of the Eastern European marriage pattern became strong again in Hungary. Although the willingness to marry tangibly diminished from the late 70s, this tendency was even stronger in Western Europe, therefore this can be interpreted as divergence rather than convergence (Kiernan 1996: 62-64). (Appendix) Despite the changes in the 80s, the comparatively high number of marriages and the young age at marriage both clearly suggest that all through the period examined, marriage had a monopoly, as it were, on relationships in Hungary.

5. Conclusions

The present study investigated the trends of major demographic changes in Western Europe and Hungary in the "short 20th century", that is, from the end of World War I to 1990. The examination concentrated on how Hungarian development related to the changes that took place in the Western part of the continent, and in which areas and in what periods can divergence or convergence be observed. The issues examined included fertility, mortality and nuptiality movements.

For about ten previously cited quantitative indices, relatively complete data coverage is available in the period investigated, thus it was possible to calculate the standardised Hungarian data. This yielded figures taking into consideration the relative changes of Hungarian conditions regarding both Western European means and Western European standard deviations. On the basis of the above, three main periods in 20th century Hungarian demographic development can be distinguished.

1. In the first period, which ranges from the beginning to the middle of the century, Hungary converged to the societies of Western Europe. This convergence is evident both in the areas of fertility and mortality (though not in infant mortality). The convergence was greatly facilitated by a departure from the Eastern European marriage pattern of the Hajnal typology in inter-war Hungary, both in terms of the average age at first marriage and the frequency of marriages (though, as a result of the method of calculation, this latter figured in the level of proportion never married only some decades later). As a result of these processes, by the middle of the century Hungarian

demographic patterns were much closer to the Western European patterns in most of the important areas than at the beginning of the examined period.

2. In the second period, approximately from the middle of the century to the mid-60s, the diminution of differences between Hungary and Western Europe halted on the whole, but the gap still did not begin to widen. The development of this specific, balanced situation was the result of several factors.

On the one hand, several such Hungarian tendencies in nuptiality patterns of the first half of the century reversed that had played a major role in convergence in the previous period. It is important to note that the coefficient of variation of several indicators substantially decreased among the Western European societies, which would also have resulted in the divergence of Hungarian family development, had everything else remained unchanged.

On the other hand, there were such tendencies that pointed rather towards convergence thus compensating for the effect of the former ones. In the 50s and in the first half of the 60s mortality in Hungary improved more rapidly than in Western Europe. Furthermore, this second period is special in that the former trends of Western European societies came to a halt in several areas (fertility and nuptiality) due to the baby boom and the temporary strengthening of traditional family patterns. Thus with a little exaggeration it may even be proposed that during these years it was Western Europe that converged to Hungary.

3. In the third period, which lasted from the mid-60s to 1990, Hungary took a course diverging from Western Europe. In all examined areas the differences became increasingly pronounced. This was partly a result of the end of the "golden age of the family" in Western Europe, which brought about marriage patterns similar to Eastern European ones there, too. In Hungary, however, attitudes toward marriage and family changed less or expressly in the opposite direction and between the mid-60s and the late 70s the Eastern European marriage pattern became predominant again. Though after the end of the 70s a decline in nuptiality occurred, this was even stronger in Western Europe. Therefore what happened can be considered as divergence rather than convergence.

In addition, while in Western Europe mortality rates began to fall more rapidly, in Hungary a dramatic change came about in mortality in the 60s. The improvement of women's rates slowed down considerably, whereas in adult male age cohorts the indices began to show an expressed deterioration, which process continued steadily on for three decades. With this, a great divergence began to emerge in the development of mortality in Hungary and Western Europe, becoming even stronger in the 80s due to the growing uniformity within Western Europe (especially in infant mortality).

6. Acknowledgements

Notes

1. We only refer to one widely cited theoretical work on economic convergence here, Barro, Sala-i-Martin 1995: 26-39, 382-413.

2. Kaelble also deals with employment structures, social mobility, social inequality, the quality of urban life, the welfare state, labour relations, and in his recent studies he also includes the patterns of mass consumption (Kaelble 1997: 40-42).

3. On comparative methods a.o., see Griffin 1992, Oyen 1990, Kaelble 1999.

4. On forms of convergence, see Inkeles 1981: 13.

5. On classification of historical comparisons, see Kaelble 1999: 25-36, Van den Braembussche 1989, Skocpol, Somers 1980, Tilly 1984: 82ff.

6. As examples, see Flora 1987, United Nations.

7. From the rich research literature on this subject, see Gillis, Tilly, Levine 1992, Coale, Watkins 1986.

8. If not indicated differently, Western European fertility, mortality, and nuptiality figures come from our own data compilation, based on numerous sources, and published with technical notes in Tomka 2000, Tables 1-17, on pages 111-128.

9. On the causes of this development and on different determinants of fertility, see a.o. Tilly 1978: 18-20, Sporton 1993: 58, Easterlin 1978: 57-133, Anderson 1996: 390, Murphy 1992: 235-257, Inglehart 1971: 991-1017, Ariès 1980: 645-650, Lesthaeghe, Surkyn, 1988: 1-45, Molnár 1999: 31-54, Demeny 1972: 170, Andorka 1987: 87-248, Andorka 1969: 114-124, Andorka 1969: 26-39.

10. For a brief review from the vast literature on this subject, see Kunitz 1986: 279-302, Schofield, Reher 1991: 1-17.

11. The reason for this somewhat surprising fact was (beside the practice that the deaths of soldiers away from the country were not included into the mortality figures, although they were included into the total population) that the number of births stagnated and in this way the infant mortality (which accounted for the 30% of mortality before the war) also stagnated in relative terms. For the European developments, see Winter 1988: 9-42.

12. J. Hajnal in his seminal study takes the non-married population in the age group 45-49 to determine the proportion never married. See Hajnal 1965: 101-104. In the following, for practical reasons, we based our computation on the non-married population in the age group 45-54, which only slightly affects the results.

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Appendix

Indicators of demographic development in Western Europe and Hungary, 1900-1990

Year	Hungarian data (1)	Western European mean (2)	West. European standard dev. (3)	West. Europ. coeff. of variation	Standardised Hungarian data = (1)–(2)/(3)	Average annual change of the standardised H. data in the previous decade (percent)
Crude birth rate (per mill)						
1900	39.70	29.57	4.24	.14	2.39	
1910	35.10	26.97	4.05	.15	2.01	−1.59
1920	31.40	24.95	3.17	.13	2.03	.10
1930	25.40	19.01	3.17	.17	2.02	−.05
1940	20.00	17.52	3.22	.18	.77	−6.19
1950	20.90	18.86	2.82	.15	.72	−.65
1960	14.70	17.79	1.90	.11	−1.63	
1970	14.70	15.98	2.26	.14	−.56	−6.56
1980	13.90	13.02	2.90	.22	.31	
1990	12.10	12.92	1.40	.11	−.59	
Total fertility rate						
1900	5.28	4.22	.65	.15	1.64	
1910	4.67	3.59	.64	.18	1.69	.30
1920	3.74	3.19	.51	.16	1.07	−3.67
1930	2.84	2.37	.51	.21	.92	−1.40
1940	2.48	2.17	.49	.22	.63	−3.15
1950	2.62	2.57	.41	.16	.12	−8.10
1960	2.02	2.69	.40	.15	−1.68	
1970	1.97	2.35	.52	.22	−.74	−5.60
1980	1.92	1.79	.45	.25	.29	
1990	1.84	1.71	.25	.15	.50	7.24

Year	Hungarian data (1)	Western European mean (2)	West. European standard dev. (3)	West. Europ. coeff. of variation	Standardised Hungarian data = (1)–(2)/(3)	Average annual change of the standardised H. data in the previous decade (percent)
Average life expectancy at birth, males (year)						
1900	36.60	45.59	3.79	.08	−2.37	
1910	39.10	49.76	4.62	.09	−2.31	−.25
1920	41.00	53.61	4.03	.08	−3.13	3.55
1930	48.70	57.72	3.52	.06	−2.56	−1.82
1940	55.00	61.94	3.97	.06	−1.75	−3.16
1950	59.90	65.21	3.45	.05	−1.54	−1.20
1960	65.90	68.40	2.14	.03	−1.17	−2.40
1970	66.30	69.09	1.81	.03	−1.54	3.16
1980	65.50	70.78	1.33	.02	−3.96	15.70
1990	65.10	73.06	1.13	.02	−7.05	7.80
Average life expectancy at birth, females (year)						
1900	38.20	48.23	4.02	.08	−2.49	
1910	40.50	52.29	5.04	.10	−2.34	−.60
1920	43.10	56.51	3.41	.06	−3.93	6.79
1930	51.80	60.77	2.97	.05	−3.02	−2.32
1940	58.20	64.06	4.06	.06	−1.44	−5.23
1950	64.20	69.32	2.40	.03	−2.13	4.79
1960	70.10	73.58	1.32	.02	−2.63	2.35
1970	72.10	75.30	1.34	.02	−2.38	−.95
1980	72.70	77.52	1.30	.02	−3.70	5.55
1990	73.70	79.52	1.11	.01	−5.25	4.19

Year	Hungarian data (1)	Western European mean (2)	West. European standard dev. (3)	West. Europ. coeff. of variation	Standardised Hungarian data = (1)–(2)/(3)	Average annual change of the standardised H. data in the previous decade (percent)
Infant mortality (per mill)						
1900	223.00	154.23	42.84	.28	1.61	
1910	195.00	116.23	33.50	.29	2.35	4.60
1920	192.70	98.85	28.73	.29	3.27	3.91
1930	152.50	74.38	21.05	.28	3.71	1.35
1940	130.10	65.69	22.53	.34	2.86	−2.29
1950	85.70	42.00	15.23	.36	2.87	.03
1960	47.60	26.45	8.45	.32	2.50	−1.29
1970	35.90	18.11	5.70	.31	3.12	2.48
1980	23.20	10.42	2.56	.25	5.00	6.03
1990	14.80	7.25	.80	.11	9.42	8.84
Crude marriage rate (marriages/1000 population)						
1900	9.10	7.37	1.04	.14	1.66	
1910	8.60	7.08	.84	.12	1.81	.90
1920	13.10	10.89	3.63	.33	.61	−6.63
1930	9.00	7.58	1.10	.15	1.29	11.15
1940	7.70	7.98	2.35	.29	−.12	
1950	11.40	8.23	1.17	.14	2.71	
1960	8.90	7.45	.94	.13	1.54	−4.32
1970	9.30	7.62	.98	.13	1.72	1.17
1980	7.50	6.02	.73	.12	2.04	1.86
1990	6.40	5.81	.73	.13	.81	−6.03

Year	Hungarian data (1)	Western European mean (2)	West. European standard dev. (3)	West. Europ. coeff. of variation	Standardised Hungarian data = (1)–(2)/(3)	Average annual change of the standardised H. data in the previous decade (percent)
Average age at first marriage, males (year)						
1900	26.40	28.50	1.41	.05	−1.48	
1910	26.20	27.40	.55	.02	−2.19	4.80
1920	26.70	29.29	2.56	.09	−1.01	−5.39
1930	26.80	27.86	.69	.02	−1.53	5.15
1940	27.50	28.17	.75	.03	−.89	−4.18
1950	26.40	28.50	2.07	.07	−1.01	1.34
1960	25.30	26.76	1.55	.06	−.94	−.69
1970	24.00	25.57	1.07	.04	−1.47	.56
1980	24.00	26.29	1.17	.04	−1.96	3.33
1990	24.20	28.17	1.11	.04	−3.57	8.21
Average age at first marriage, females (year)						
1900	22.50	25.63	.92	.04	−3.41	
1910	22.30	25.25	.96	.04	−3.08	−.97
1920	23.60	26.00	1.41	.05	−1.70	−4.48
1930	23.80	24.71	.95	.04	−.96	−4.35
1940	23.00	25.50	.55	.02	−4.56	37.50
1950	22.80	25.25	1.39	.05	−1.76	−6.14
1960	21.90	24.07	1.25	.05	−1.73	.17
1970	21.10	23.23	.87	.04	−2.45	4.16
1980	21.30	23.83	1.06	.04	−2.39	−.24
1990	21.50	25.87	1.02	.04	−4.28	7.91

Year	Hungarian data (1)	Western European mean (2)	West. European standard dev. (3)	West. Europ. coeff. of variation	Standardised Hungarian data = (1)–(2)/(3)	Average annual change of the standardised H. data in the previous decade (percent)
Proportion never married, males (percent)						
1900	4.90	11.88	2.44	.21	−2.86	
1910	5.80	13.89	5.12	.37	−1.58	−4.48
1920	5.20	12.92	2.89	.22	−2.67	6.90
1930	5.00	13.66	7.12	.52	−1.22	−5.43
1940	5.80	15.39	9.80	.64	−.98	−1.97
1950	6.00	11.95	6.36	.53	−.94	−.41
1960	5.40	11.32	6.05	.53	−.98	.43
1970	4.10	10.81	5.75	.53	−1.17	1.94
1980	5.00	11.10	4.39	.40	−1.39	1.89
1990	6.10	10.71	2.78	.26	−1.66	1.94
Proportion never married, females (percent)						
1900	4.80	14.40	2.80	.19	−3.43	
1910	5.70	15.82	4.06	.26	−2.49	−2.74
1920	5.50	16.05	3.76	.23	−2.81	1.29
1930	6.10	17.13	4.73	.28	−2.33	−1.71
1940	8.00	18.54	6.14	.33	−1.72	−2.62
1950	8.20	16.21	4.24	.26	−1.89	.99
1960	7.30	12.89	3.78	.29	−1.48	−2.17
1970	5.60	10.45	3.30	.32	−1.47	−.07
1980	3.80	7.21	2.75	.38	−1.24	−1.56
1990	3.80	7.14	2.03	.28	−1.64	3.23

Source: Tomka 2000: 111-128.