The differences and similarities between some population processes and structures in Slovakia and Japan

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Abstract

The aim of the contribution is to compare the development of the natality and fertility indicators in Slovakia and in Japan, to find common and different development features, as well as to identify main factors of this development. The importance of the population ageing process reflects themself also in relatively extensive method and techniques set of their research. By the study of the population ageing in Japan and Slovakia two different accesses aply – intertemporal and interregional analysis. Population ageing processes cause needs to solve a whole line of social problems, which have recently met especially developped countries.

Key words: natality, fertility, extramarital birt,population ageing, ageing from top and down, simple and derived ageing measures, age structure typology of districts and prefectures

Introduction

This paper is aimsed at the presentation of some resultes of the population study by the international research project "Demographic processes and structures – comparative analysis of the Japanese and Slovak population". From the wide spectrum of the population study topics is the paper oriented on the natality and fertility trend and on the population ageing processes.

1. Development of the natality and fertility

Natality, as the basic component of the reproduction process, recorded in the long-term development distinct changes in Slovakia and in Japan. In the historical development is it possible to identify several common features of indicators of this process in both countries, e.g. the decrease of the crude birth rate, the total fertility rate, shift of the maximum fertility towards the higher age, increase of the average age of the woman in childbirth.

We observe the mentioned features of the long-term development, although it handles about considerably different populations from the viewpoint of the economic, social, cultural, political and other characteristics. Right with the general differencies

is connected also a number of differencies in the natality development. These are projected especially into the intensity and velocity of the changes of the natality indicators in the time.

1. 1. Development of the natality and fertility indicators of the decreasing trend

1. 1. 1. Development of the crude birth rate

During the last 100 years in Slovakia (SR) the crude birth rate (also the absolute number of living born in one year) dropped from the values 40–43‰ (100–110 thousand) to 10–12‰ (55–65 thousand), however in Japan in this period decreased only from the values 30–33‰ (1300–1500 thousand) to the present 9–10‰ (1200 thousand). The falling trend of the natality development was however not uniform in both countries but it was affected by several short periods of increase of their level.

In the year 1872 was the crude birth rate of Japan 17.04‰, while in the SR up to 44.1‰. In the following period up to the World War I had it in Japan a growing tendency, while in the SR falling (Fig. 1). In the beginning of the World War I Japan surpassed by the value 34.8‰ the birth rate level in the SR (34.1‰). During the World War I the development was different. Slovakia as a part of Austrian-Hungarian Monarchy was involved in the war events, in consequence of which the birth rate dramatically decreased to 14.6‰ in the year 1918. In Japan decreased only by 2‰ to 32.7‰ in the year 1918. The after-war compensation stage of birth rate was more distinctive in the SR, where it achieved the top in the year 1921 (38.2‰), in Japan in the year 1920 (36.2‰).

Fig. *1* Development of the crude birth rate in Slovakia and in Japan (1870–2000)

In the period between the World Wars was for both countries typical the decrease of the birth rate, deepened by the World Economic Recession, which was in the SR more distinct. The minimum had been achieved in Japan in the year 1939 (26.6‰), in the SR one year earlier (21.7‰). In the period of the World War II came to a growth of the birth rate level, caused especially by the strengthened age groups born during the high birth rate after the World War I, which reached the reproduction age. The compensation stage was manifested more distinctly in the Japan, also the start was more rapid. The top had been achieved in the year 1947 (34.3‰) and in SR in the year 1951 (28.7‰), after the coup d'etat in the year 1948.

After the fade away of the compensation stage in both coutries followed the decrease of the natality connected with distinct changes in the society development. While in the SR this change had been marked by the start of communism, in Japan it handled primarily about the reform of the classic empire and the transition to capitalism. Different was also the population policy in both states. While in the socialist countries the urge had been to keep the birth rate level, in Japan the social policy steered more towards decreasing the birth rate in the spirit of the family planning.

In Slovakia the decrease of the birth rate had been gradual, affected by its short-time increase during the 70-ties, by conditioned shift of the strong after-war age groups to the reproduction age as well as by the pro-natality policy. After the political-economic system changes in the year 1989 in the SR we observe the acceleration of the natality decrease. Since the year 1990 to 2000 the number of living born decreased from almost 80 thousand to 55 thousand and the crude birth rate from 15.1‰ to 10.2‰.

In Japan after the compensation stage of the Word War II had been a very steep decrease of the birth rate up to the 16.9‰ in the year 1961. To a further decrease comes since the half of the 70-ties to the half of the 80-ties and since this period it keeps the level around 10‰ (9.5‰ in the year 2000). Interesting is the year 1966 (similarly also the year 1906), when it came to a distinct decrease of the birth rate by 5‰ to the value 13.6‰. This distinct population wave is related to the strong belief in Chinese astrology, according to which it handles about the year of the "fire horse", whereby the women born in this year are marked as deadly dangerous for men.

1. 1. 2. Development of the total fertility rate

In Japan the total fertility rate achieved its maximum value (5.11) in the year 1925 (Fig. 2). In the following period it decreased, but in the after-war period it comes to its increase of compensations chararacter up to 4.54 in the year 1947. After the distinct compensation stage followed a steep decrease of the ferility rate, the reasons of which are in the social changes – the reform of the Empire, the transition to the market economy, the new education programme. These changes manifested themselves in the area of the population policy and of reproduction behaviour by propagating of the methods of planned family and began to assert a new style of life. The decrease of the total fertility rate in the course of the 50-ies was very rapid. In the course of one decade it decreased from approximately 4.5 to the level lower then 2. Into the fertile age began gradually to come the strong after-war age groups and the total fertility rate began slightly to increase. In the period 1963–74 it kept nearly at the retain level (2.1). In the middle of the 70-ies the total fertility rate definitively decreased under 2.1. At

the beginning of the 80-ies achieved the value about 1.7, in the beginning of the 90-ies about 1.5 and in the year 2000 1.36. Also in the development of the total fertility rate we identify distinctly the "fire horse" year 1966, when it decreased to 1.58 from the 2.14 in the previous year and increased to 2.23 in the following year.

In Slovakia was the start of the compensation stage of the World War II slower, what could be connected also with the uncertain inner political situation in the after-war years, whereby the total fertility rate reached the top in the year 1950 (3.47). Since this year followed a slow decrease of the total fertility rate. Under the value 3 it got the first time in the year 1961 and under 2.5 in the year 1967. In the development of the total fertility rate is presented also the following increase in the middle of the 70-ies, when ranged about 2.5. The reason had been especially the shift of the strong after-war age groups into the fertile age and the pro-natality policy of the state. In the course of the 80-ies continued the slow decrease of the fertility rate and to the year 1989 decreased it to 2.08, that it is got the first time under the retain level. Historically lowest value of the total fertility rate 1.29 reached SR in the year 2000, what is lower level as in Japan. To the decrease of the total fertility rate in the 90-ies comes also despite the decrease of the level of the induced abortion and favourable age structure of women connected with the shift of the strong generations of women born in the 70-ies into the reproduction age. The explanation can be in the postponing of the deliveries to the higher age.
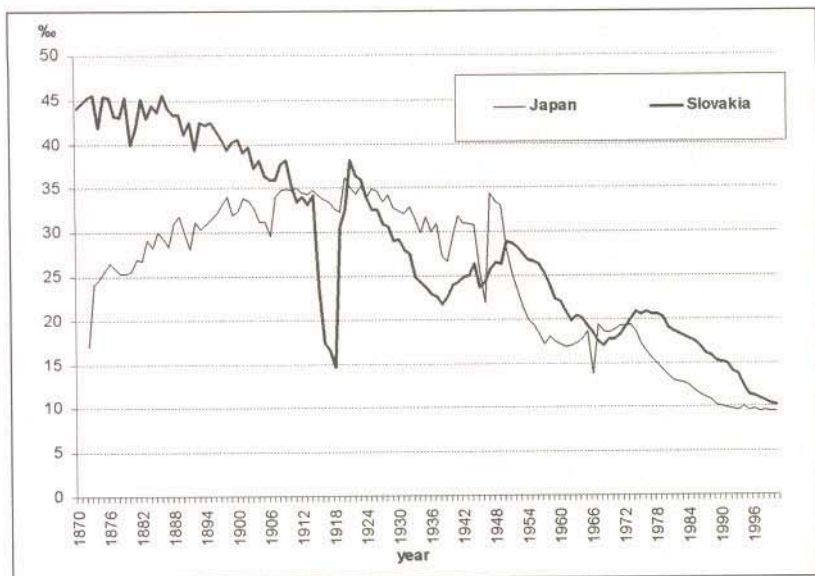

Fig. 2 Development of the total fertility rate in Slovakia and in Japan (1925–2000)

1. 1. 3. Development of the age specific fertility rate

In the both observed states is with the decrease of the total fertility rate connected also the decrease of the specific fertility rate of women, which we observe in all age categories, though the intensity of this decrease was in individual categories different. The differencies between the SR and Japan are especially in the intensity of the

decrease of the fertility rate in the corresponding age categories, as well as in the reached level of fertility rate in these categories in the individual time periods. With the differencies in the level and intensity of the decrease of the specific fertility rate is connected also the difference in age, in which is achieved the maximum fertility rate, what is a characteristic with an increasing development trend.

On the bases of the specific fertility rate by 5-years age categories comes in Japan in the 50-ies to a distinct decrease of the fertility rate in all age categories, to the most distinct however in the categories 30–34 and 35–39 years. (Fig. 3). The smallest changes recorded the marginal age categories (15–19 and 45–49), in which however the fertility rate reached negligible low values already in this period (under 10‰). The further period of steep changes of the specific fertility rate in Japan begins since the year 1980, when however most distinctly decreases the fertility rate in the lower age categories (25–29 and 20–24). On the contrary the fertility rate of women 30–34 and 35–39 years old recorded a slight growth, what testifies about the shift of deliveries to the higher age already since the beginning of the 80-ies.

In Slovakia after the World War II up to the end of the 80-ies the greatest decrease of the fertility rate recorded the women categories 30–34 and 35–39 years old, equally as in Japan by more than 2/3 of the values, but in the SR this drop occur during three decades. The smallest changes in fertility rate were recorded in the category of 15–19 years old (Fig. 4). In the 90-ies the greatest decrease of the fertility rate recorded the women categories up to the 29 years (especially the category of 20–24), which attests the postponing of the first child birth into the higher age. Women in the higher fertile age (from 30 years up) with low level of fertility rate, show the smallest decrease, because they recorded the steep decrease already in the previous period.
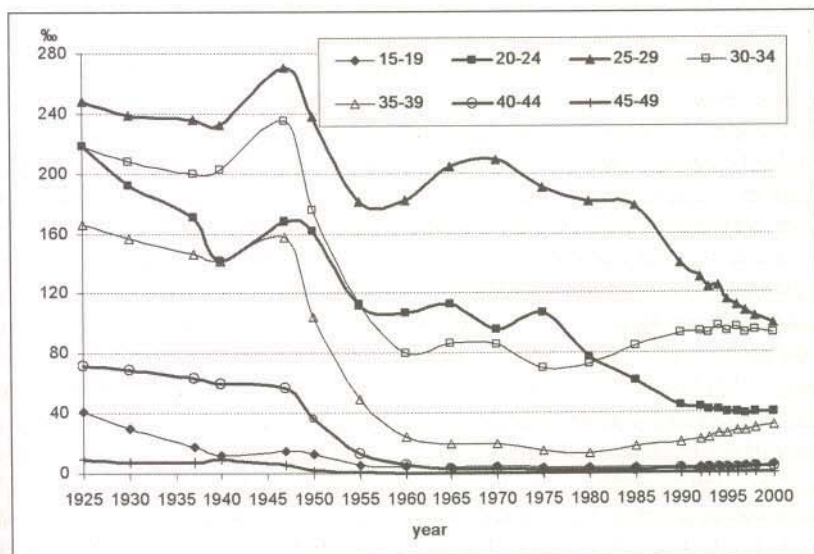

Fig. 3 Development of the age specific fertility rate by 5-years categories in Japan (1925–2000)
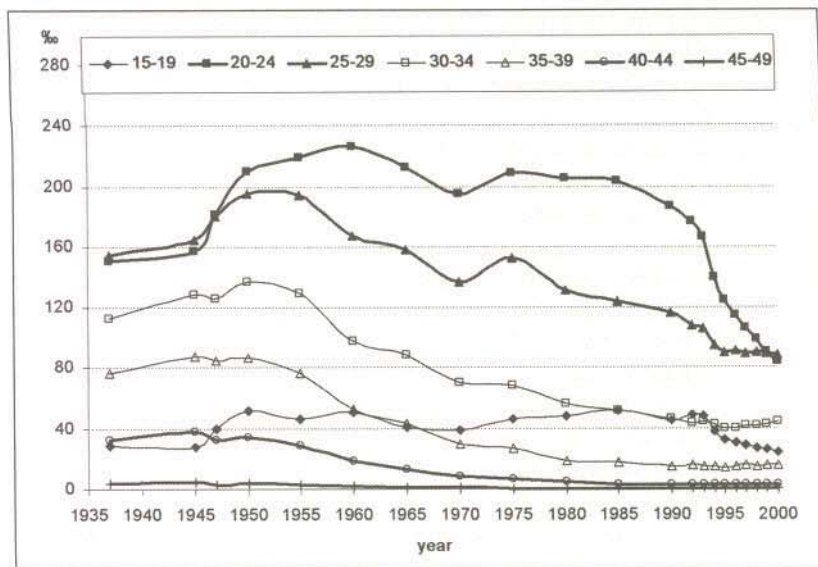
Fig. 4 Development of the age specific fertility rate by 5-years categories in Slovakia (1937–2000)

In Japan is traditionally the highest fertility rate reached in the category 25–29 years and the second highest in the age 30–34 years (Fig. 3). The difference in the fertility rate in the mentioned two categories is steadily diminishing, while to the end of the 50-ies the difference was roughly 100‰, in the year 2000 was it only 5.9‰. In Slovakia was since the end of the 50-ies up to the end of the 80-ies the greatest fertility rate reached at women 20–24 years old (Fig. 4). The second highest fertility rate was in the category 25–29 years. The difference between the fertility rate level of these two categories had been in the 90-ies diminished and in the year 2000 for the first time the fertility rate level in the age 25–29 years reached a higher level.

Also by 1-year age categories will be aproved the basic difference between the SR and Japan in the development trend of the specific fertility rate. While Japan recorded a distinct decrease of the fertility rate in all age categories in the decade of 50-ies, the specific fertility of the Slovak women decreased more slowly up to the end of the 80-ies (Marenčáková, J., 2003). In the course of the 90-ies however came to a distinct decrease of the specific fertility rate of the Slovak women in all age categories distinctly under the level of Japan (Fig. 5).

While in the SR the maximum fertility rate was reached since the 50-ies up to the end of the 80-ies in the age categories 21–23 years, in Japan came it to a distinct shift of the age of the maximum fertility rate. While in the years 1950–1980 the fertility rate had been the highest in the age of 24–26 years, in the year 1990 till in the age of 28. In the 90-ies comes it to a distinct shift of the maximum fertility rate age in the SR, which had been shifted since the year 1990 to the year 2000 from 21 to 25 years, while in Japan from 28 to 29 years.
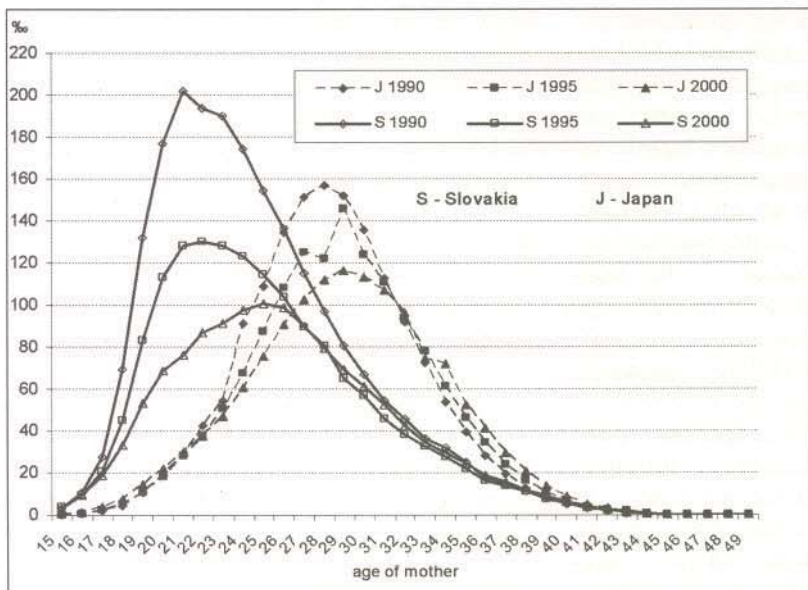
Fig. 5 Development of the age specific fertility rate by 1-years categories in Slovakia and Japan (1990–2000)

1. 2. Development of the natality indicators of the growing trend

1. 2. 1. Development of the average age of the woman at the birth of the first child

The average age of the woman at the birth of the first child does not depend as much on the immediate fluctuations as the measures derivated from the number of the living born children. To the change of its level have influence the deeper transformations of the reproduction behaviour.

In the period before the World War II in Japan the average age of the woman had been low at the birth of the first child and ranged 20–24 years. In the course of Empire transformation after the World War II influenced by the population policy aimed at the family planning and also as the consequence of the education programme this indicator increased. Since the 80-ies had overpassed the limit 26 years, over 27 years surpassed it for the first time in the year 1990 and in the year 2000 reached roughly 28 years. It may be attributed to the economic activity, education and emancipation of the Japan women.

From the long-term perspective the average age of the woman in the SR at the birth of the first child changes relatively slowly. Since the beginning of the 50-ies up to the end of the 60-ies it decreased roughly by 1 year from the level 23.2 years. It follows a period of stagnation up to the end of the 80-ies. Only in the 90-ies begins a more distinct increase by two years. In the year 2000 reached the average age of the woman at the birth of the first child 23.9 years, which was as compared with the year 1950 more by nearly a year.

The difference of the values of this indicator in Japan and SR began though in the recent period to reduce, but continually it exceeds 4 years. While we can rank Japan to the countries with the highest average age of the first-time expectant mother in the world, SR is ranking to the countries with the lowest level of this age in Europe.

1. 2. 2. Development of the coefficient of extramarital births

Up to the end of 80-ies the importance of the alternative forms of the family co-existence did not manifest more significantly in the SR and the proportion of the children born beyond the marriage from the total number of born did not exceed 8%, despite the fact, that the unmarried mothers could use some advantages (extra social benefits, preference at placing of children into nurseries and kindergartens). All these relative advantages were after the year 1989 canceled, but the proportion of the born beyond of the marriage increased, until the year 2000 to more than 18%. This increase is connected with the distinct decrease of the number of born. The proportion of the children born beyond the marriage in the SR is however relatively low as compared with other states of Europe, where in several are born beyond the marriage more than 50% of children (Sweden, Island, Estonia).

While the cohabitations and births beyond the marriage dramaticaly increased in the West Europe already since the 70-ies, in Japan was their growth insignificant. Cohabitations are in Japan nowadays negligible as well as the proportion of the born beyond the marriage, which does not exceed 1.5%. The bond between the natality and the nuptiality is in Japan very strong (Atoh, M., 2000). The slow growth of co-habitations and extramarital births in Japan in the last quarter of the 20th century is connected with conservative attitude to the sex and contraception, but also with the continually enduring presumption of the traditional division of the "roles" according to the sex (man – breadwinner, woman – homemaker) as with marriage pairs so with cohabitating (Atoh, M., 2001).

1. 3. Factors of the natality and fertility indicators development

The natality development is influenced by a number of general factors as economic, political, social, cultural development which are recording a number of differencies be-tween the followed countries and the reflection of which is also the demographic beha-viour of the population, their attitude towards the marriage and parenthood. The changes in the level of the natality and fertility indicators are conditioned in both countries by a complex of changes either social-economic, individual and demographic.

From the point of view of the first factors group we are following the basic difference between the SR and Japan, which is the fact, that the distinct decrease of the natality in Japan will be connected with the economic growth. On the contrary in SR it comes to considerable changes not only in the natality but also in all of the reproduction behaviour in the period of the society transformation in the 90-ies of the 20th century, when it comes to negative changes in the economic situation. In this connection the main socio-economic factors of the natality fall in these countries are different. In Slovakia can be ranked to them the growth of the costs connected with the care for child, fall of the real incomes of the households, but also the change of the social situation of the young people, financial inaccessability of flats, the danger of unemployment, reduction of the newlyweds loans, regulation of the family allowances and so on (Pastor, K., 2000). In Japan it is the change in the position of the woman in the society and in the family, changes in the "value of the child", which becomes an economic burden (Atoh, M., 1994). In the connection with the change of the position

of the woman in the society, respectively in the family, women's participation in economic activities and the proportion of women with higher education are increased. Limiting factor of the number of children becomes the cost height for the child care and the ensurance of his education, which are increasing (Atoh, M., 2000).

The group of individual factors is represented by the value orientation of the people, by the growth of the individualism and of the women emancipation, secularization and similarly, which are common for both states.

For Japan are characteristic still specific factors of the natality decrease connected with the traditions. It handles about the enduring of the traditional wedding behavior as well as acceptation of the role division according to the sex of partners in the family and in the society, which makes difficult the ranking of the woman-mother into the economic life of the society. Particularly these factors also share on the low level of the coefficient of extramarital births (Atoh, M., 2000).

Concomitant phenomena of the changes of the demographic behaviour are also the increase of the average age of the engaged pairs at the marriage, the average age of the woman at the delivery, especially at the first, decrease of the proportion of the married women in the reproduction age, which however did not change in the time in the SR as distinctly as in Japan, but they can be considered as important demographic factors of the decrease of the first group of the natality and fertility indicators (Nakagawa, S., 2002).

2. Ageing of population

One of the general rules of the population development in the majority of the world states are the changes in the age structure of their population, marked as the process of their ageing. From the demographical point of view it handles about such changes, at which the numerousness increases, resp. the proportion of the higher age categories population (ageing from top). Similar changes concern also the decrease of the numerousness and the proportion of the population children component (ageing from down).

Then can be the ageing process as well as the forming of the population age structure considered as a demographical phenomenon with a fairly high degree of complexity. The population age structure complexity is manifesting themself also in her multicausality relations to many population and social phenomena. In the age structure reflect the development of the basic population processes as for example the birth rate, mortality rate, migration movements. On the other hand the age structure of every population can distinctly influence the development level of many population phenomena and processes.

The complexity and importance of the population ageing process reflects themself also in relatively extensive method and techniques set by the help of which will be studied.

Frequently at the population ageing study two different accesses apply. In the first case the effort is oriented to the comparing of several regional population structures (interregional analysis) with orientation to the population age structure differencies knowledge. Another time the main attention is aimed at the age structure time changes of one regional population formation (intertemporal analysis). In the geographical analyses however it shows the advantage and need of connecting of both approaches.

2. 1. Some simple measures of population ageing evaluation

The first measure group represent simple, one component indexes. They characterize only one typical population age category, e.g. indexes of absolute and relative numerousnesses of the population in the postproductive age, postreproduction age, selected age categories (age categories 0–14, 60+, 65+, 70+, 80+).

While aplying some of the simple measures of the population age structures analysis there can be shown some of the specifics of the ageing process of Japan and Slovak population. From the Fig. 6 it is possible to recognise the growing ratio of the older age categories (65+, 80+) in both populations (ageing from top). Especially curves representing the Japaniese population move up more intensively in last years and therefor the difference between both populations is growing significantly. The share of the 65+ inhabitants of the Slovakia was for the long period of the historical development larger and only after 1965 the situation has turned. Similarly the decrease of the children category share in the both populations is quite clear and it shows the ageing from down. Both categories of Japan inhabitants (65+, 0–14) equaled their proportions in 1997 and from this time the older category share is greater than children category share (Fig. 6).
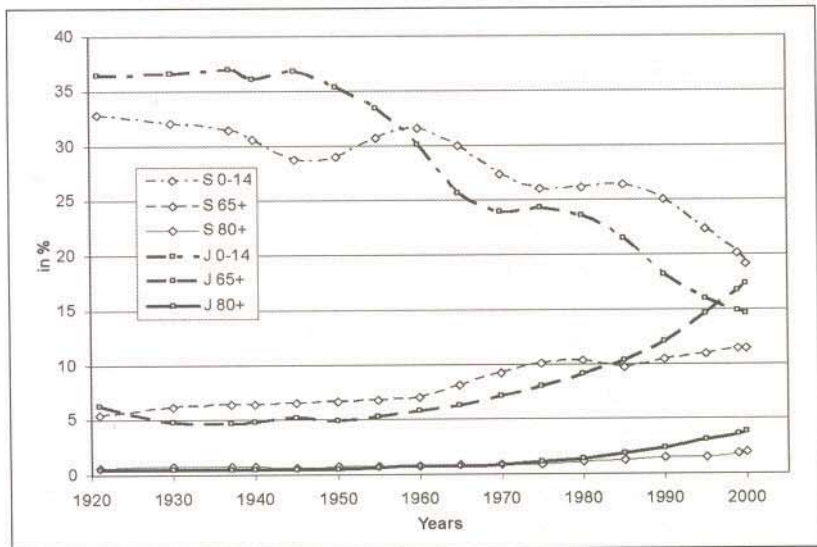

Fig. 6 Development of the age groups in Japan and Slovakia

There was an attempt to evaluate the population ageing space differencies on the regional level of Slovak districts and Japan prefectures.

If we analyse the representation of older age caregories of the population in the districts, the proportion of the older inhabitants is generally higher in West- and South Slovakia and substantially lower in the districts of North- and East Slovakia (Fig. 7).
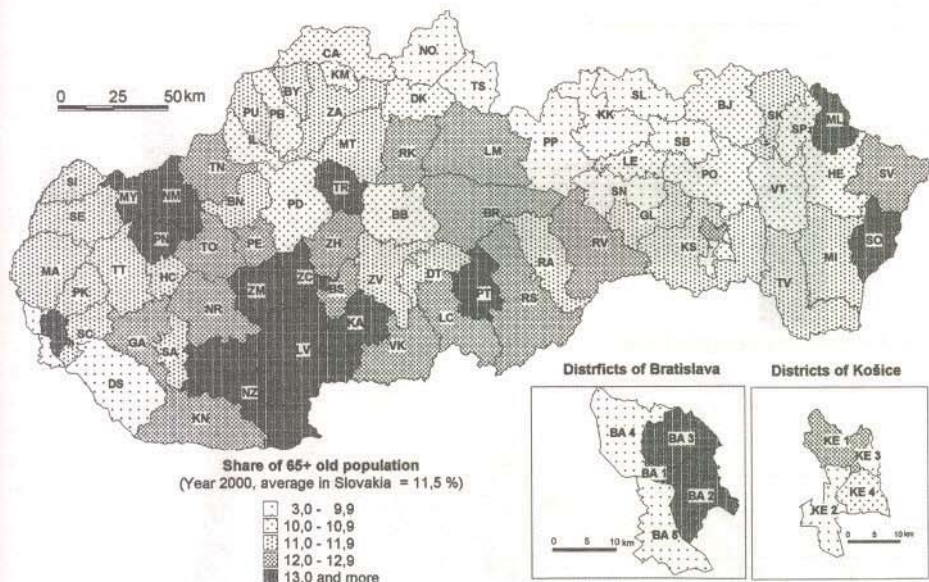
Fig. 7 Age structure of population in Slovakia 1

Similarly the various mosaik of the Japan prefectures created on the map which shows the shares of the 65+ age category of population. It is possible to observe smaller values in two great regions (Fig. 8). The first is located in the surrounding area of the great aglomeration Tokyo, Yokohama. The second one is situated also in the surrounding area of the great aglomerations – Nagoya, Kyoto, Osaka. Except of this two regions the less of the older population have also isolated prefectures – Hiroshima, Fukuoka, Hokkaido, Okinawa. Processes of ageing progressed mostly in the noth-western prefectures of Honshu, in the southern prefectures of Kyushu and in prefectures of Shikoku.

2. 2. Derived and synthetic measures of population ageing

The second group is formed by more complicated population ageing measures at construction of which will be respected several characteristic population age categories, or all population age categories. To this group may be ranked the age index, ageing index, indexes of dependence, Billeter's index, age median, average age.

One of the measures, to which will be awarded a great weight at the population ageing study is Billeter's index, which is defined as the ratio of the difference between children population and postreproduction category to the reproductive population category. The ageing is however in this case indirectly proportional with this value, so the higher is the value of the Billeter's index, the younger is the population.

While applying of the second group of measures for comparing the population ageing processses in Japan and Slovakia it is possible to identify three development
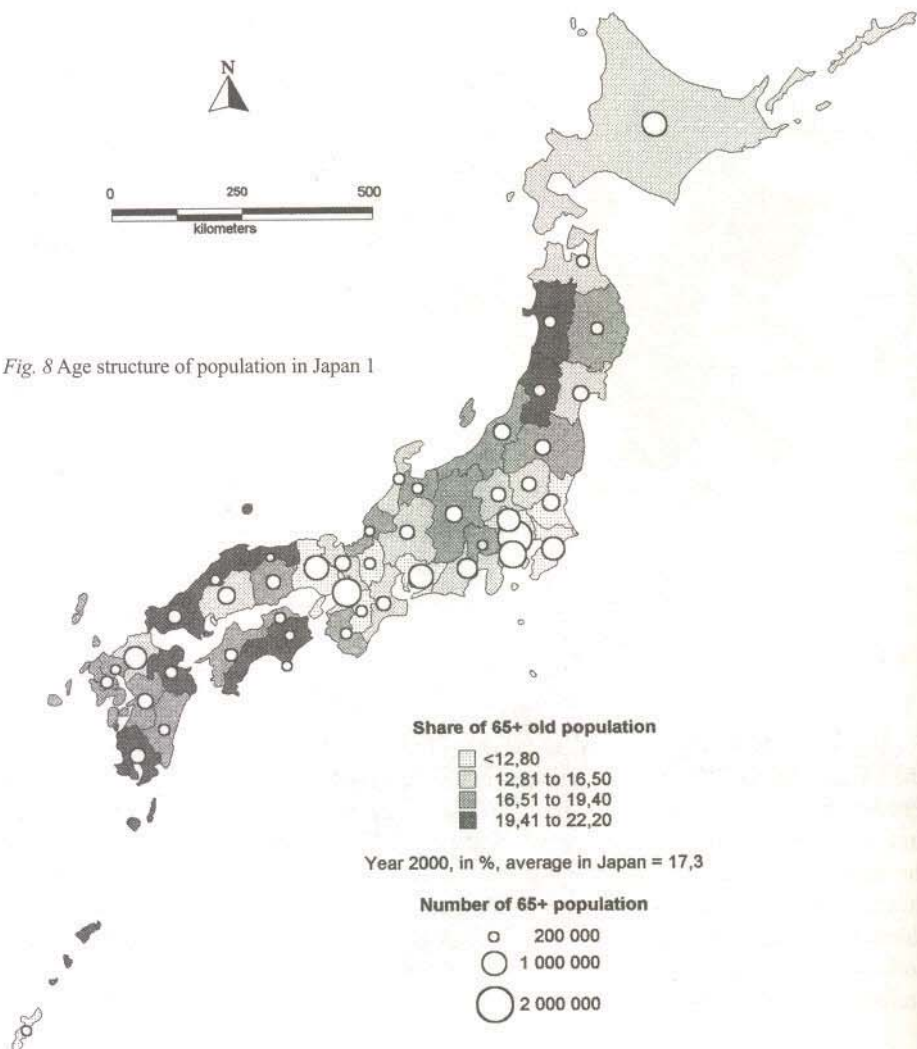
Fig. 8 Age structure of population in Japan 1

Share of 65+ old population

- <12,80
- 12,81 to 16,50
- 16,51 to 19,40
- 19,41 to 22,20

Year 2000, in %, average in Japan = 17,3

Number of 65+ population

- 200 000
- 1 000 000
- 2 000 000

stages (Fig. 9). In the first development stage Slovakia has older population. In the second stage are the population ageing processes in both countries very similar. From the half of 80-ies the diffferent development started again. All ageing measures document its acceleration in Japan population. It is a result of the more significanf decrease of the children category share and of the faster increase of the older population category share as well.

The space differenciation of the Slovak population ageing is well documented by the ageing index and Billeter index on the regional level of districts and prefectures.

In the West- and South Slovakia is this measure scoring already a longer period negative values (Fig. 10). Here will be ranked several districts of Bratislava and of Košice, furthermore districts Myjava (–26.8%), Nové Mesto nad Váhom (–25.8%), Nové Zámky (–24.3%), Piešťany (–24.3%) and in the East Slovakia Medzilaborce
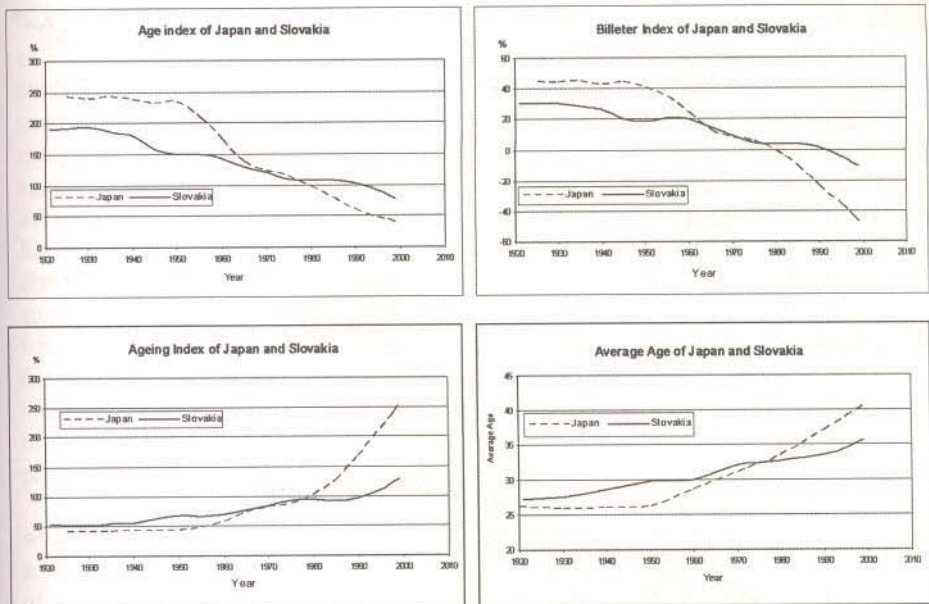
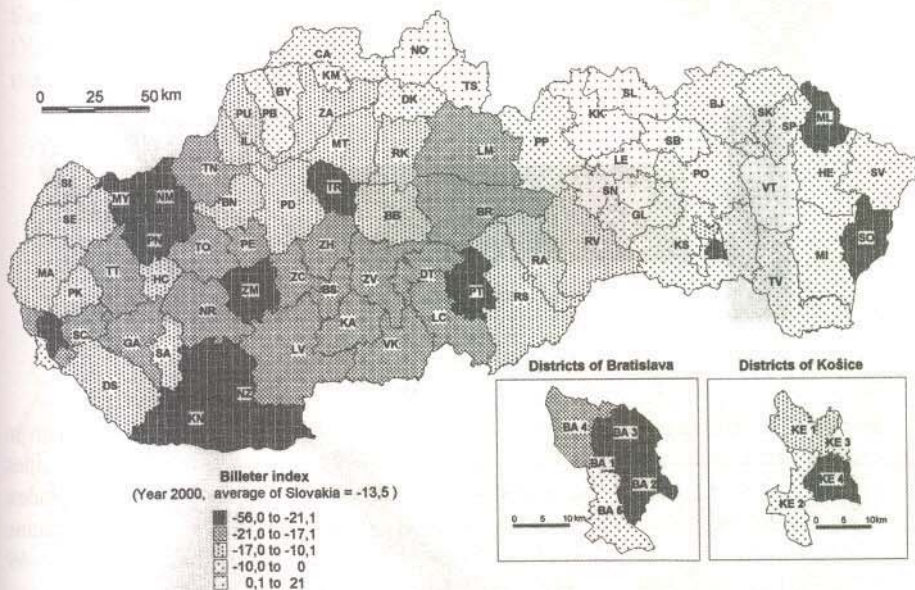Fig. 9 Comparison of the ageing processes in Japan and in Slovakia

Fig. 10 Age structure of population in Slovakia 2

(−30.7%) and Sobrance (−24.3%). Still in the year 1996 were 20 districts with positive values of the measure. About the fact, that the process of ageing is advancing fairly quickly testifies also the decrease of these districts to the year 2000 to 8.
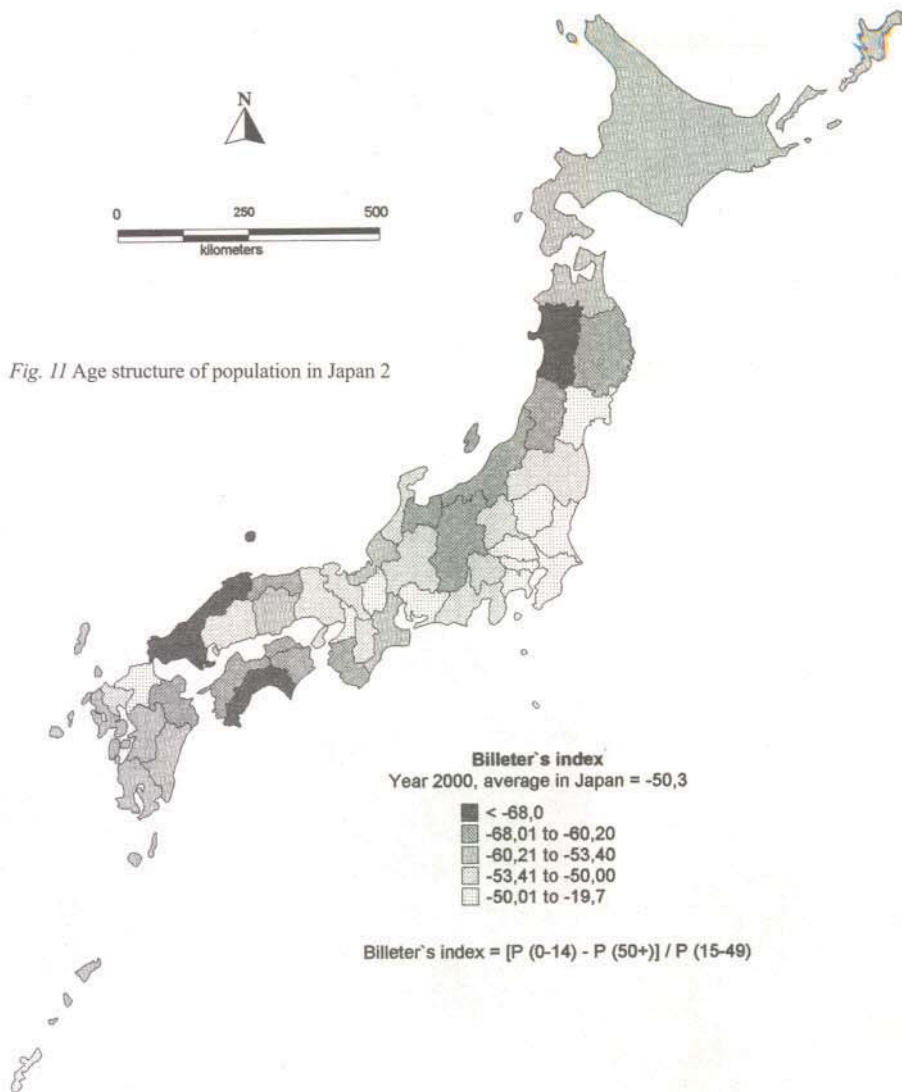
Fig. 11 Age structure of population in Japan 2

Billeter`s index
Year 2000, average in Japan = -50,3

- ■ < -68,0
- ▨ -68,01 to -60,20
- ▩ -60,21 to -53,40
- ▢ -53,41 to -50,00
- ☐ -50,01 to -19,7

Billeter`s index = [P (0-14) - P (50+)] / P (15-49)

The value of Billeters index in Japan is aproximately 4 times lower (−50.3) than in Slovakia (−13.5). Japan prefectures has reached without any exceptions negative values of this index (Fig. 11) just in the year 2000. Even in four of them has Billeters index decreased under the value −70 (Yamaguchi −74.2, Akita −75.6, Kochi −76.1, Schimane −77.1). Also the next 19 prefectures has the value of this index lower (in the interval −69 to −56) than the oldest Slovak district (Bratislava I −55.3).

There is quite justified the effort to obtain more complex image about the population ageing process. Synthetical index of the population ageing should comprise definite functions, which offer some partial characteristics. On the basis of such index we came up to the expression of the achieved ageing grade on the district level in Slovakia and on the prefecture level in Japan.

One of the possibilities to use several partial characteristics to the construction of a synthetic index represents the method of the ball scale. At the ageing processes study of the population of Slovakia and Japan, respectively, their reached level were used some analytical indexes : proportions of the population of the characteristic age categories (0–14, 50$^+$, 65$^+$, 80$^+$, population of the postproductive age), age index, ageing index, Billeter's index, dependence indexes of the young and old population, average age. Every of these partial indexes represented in the set of 79 districts of Slovakia and 47 prefectures of Japan definite population ageing level.The sets of districts and prefectures had been ordered according to the achieved level of the appropriate index. Every district and prefecture so got such value of the ball scale, which corresponded to its order, achieved in the appropriate partial index. The districts of Slovakia and the prefectures of Japan evaluated 21 times, respectively there were used 21 ball scales. Of those has been simply determined the average order of district and prefecture, which is considered as the achieved level in the ageing processes of its population.

From the space viewpoint in Slovakia have been formed two greater regional units with different population ageing grade (Fig 12). The great region in the south and southwest of Slovakia is characterized by a higher ageing grade. Majority of districts of this unit reached in the synthetic evaluation average order in the interval 46–79, respectively the order from the interval 31–45, which can be considered as definite middle level of population ageing. The second unit, spreading in the north and east of Slovakia is the region with relatively lower ageing grade and with younger population. Districts of this region reached the average order in the interval 1–30, respectively from the middle interval 31–45.
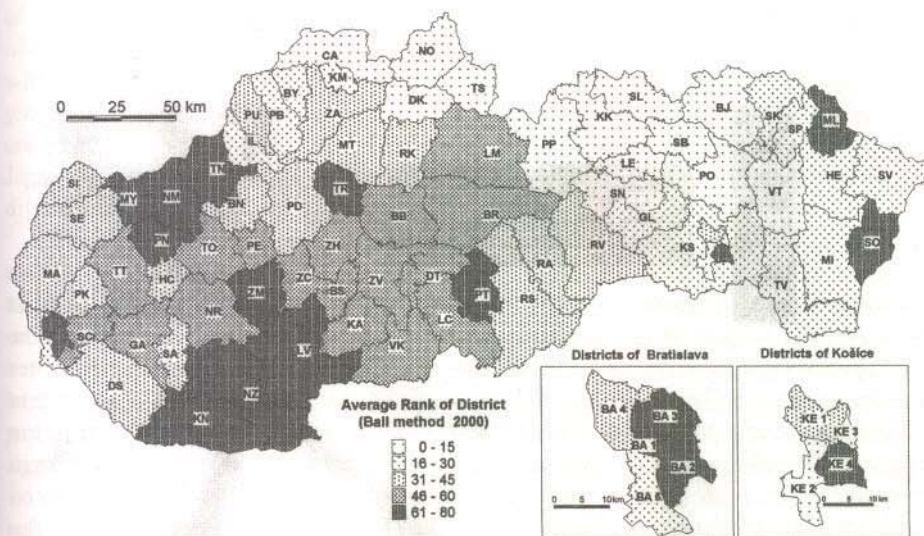

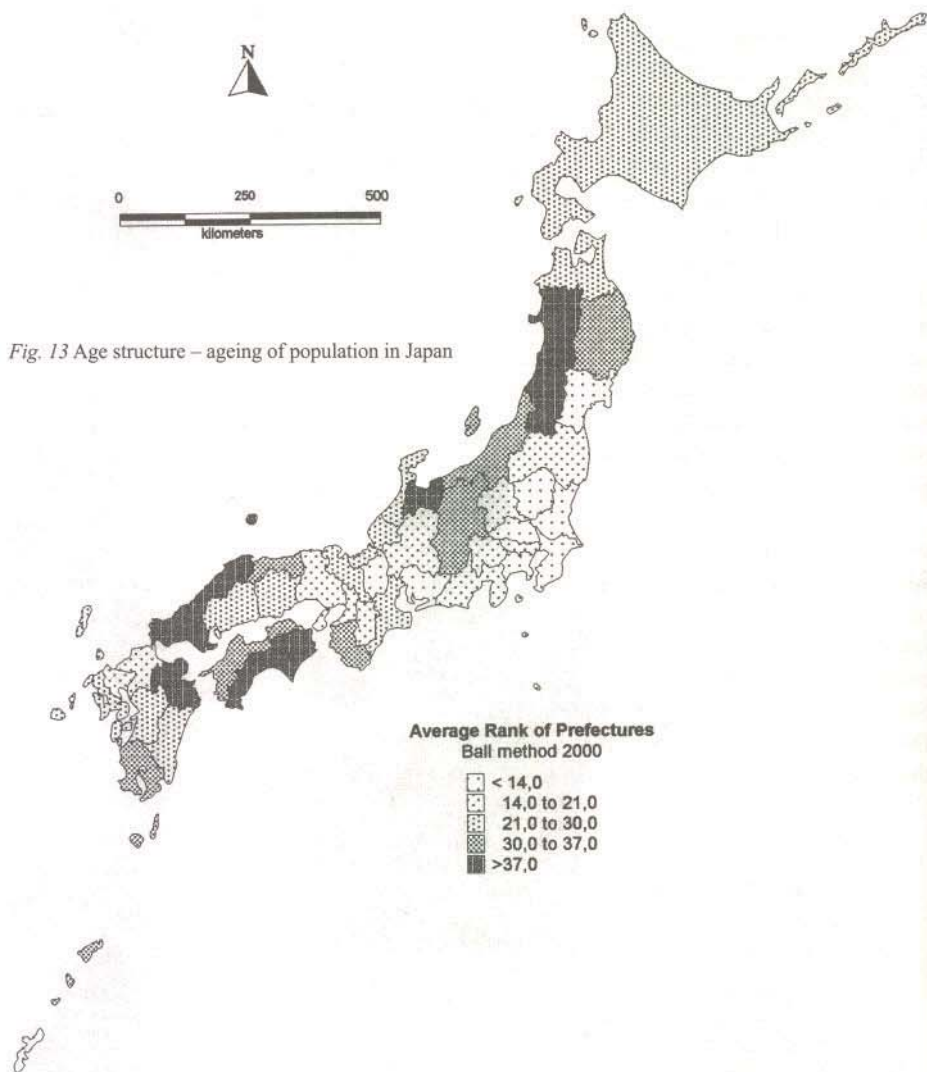*Fig. 12* Age structure – ageing of population in Slovakia

Fig. 13 Age structure – ageing of population in Japan

Average Rank of Prefectures
Ball method 2000

- < 14,0
- 14,0 to 21,0
- 21,0 to 30,0
- 30,0 to 37,0
- >37,0

The synthetic picture of the location of "young" and "old" population in Japaniese prefectures is rather complicated (Fig. 13). The half of prefectures with the youngest population is located in the surroundings of Tokyo, Yokohama aglomerations. The second less significant region of young population presents the group of prefectures in surroundings of Osaka, Nagoya, Kobe. Except of these two regions it is possible to observe the young population in two Kyushu prefectures – Fukuoka and Saga and in Okinawa. Population ageing processes run over more quickly in more areas. One of them represents 6 prefectures that border "Tokyo region" of the young population on the. The second is the region in the south part of Honshu. Four prefectures of Shikoku have old population. Prefectures on the Kyushu island have older population too.

Conclusion

Despite the considerable differencies in the socio-economic, political, cultural etc., characteristics in SR and in Japan there exist several common features of the natality development. The basic similarity is in the development of the crude birth rate, total and general fertility rate, specific fertility rate by age are recording in time with the falling trend. The average age of the woman at the birth of the child respectively of the first child and the age at which had been reached the maximum fertility rate on the contrary indicate the growing trend.

Also we follow in the recent time at several natality indicators especially with the falling trend roughly the same level in Japan and in the SR, though at the beginning of the followed period was different.

Between SR and Japan however exist in the long-term development of the natality indicators also considerable differencies. The basic differencies are in the intensity and velocity of the natality indicators development in time. In the case of the majority of indicators of the falling trend was the development in Japan more gradual and already in the earlier period they got to a relatively low level (in the 60-ies or 70-ies of the 20th century). In the SR they recorded a steep fall only in the last decennium.

What the group of indicators of the growing trend concerns (as the average age of the woman at the child birth, respectively of the first child, the age at which is reached the maximum fertility) the main difference is in their level, which is in the whole period in the majority of them substantially higher in Japan.

A special position has the coefficient of the extramarital birth, which is steeply growing especially in the last decennium in the SR, but in Japan retains already for a half of century at the same very low level.

The changes of the natality and fertility indicators are conditioned by a complex of social-economic, individual and demographic changes. The distinct decrease of the natality in Japan is connected with the economic growth, while in the SR it is connected with the negative changes of the economic situation (the 1990s of the 20th century). The groups of individual and demographic factors are on the contrary very similar in both countries, but demographic factors did not change in time in the SR as distinctly as in Japan. Specific for Japan are factors connected with the traditions (wedding behaviour, division of the roles according to the sexes).

Comparison of the population ageing processes of Japan and Slovakia enables to identify three development stages. In the first development stage which includes the first half of 20. century and lasts till 50-ies Slovakia had older population. In the second stage, which covers 70-ies and 80-ies are the population ageing processes of both countries very similar. From the half of 80-ies the differenciated development begins again. All ageing measures document its significant acceleration in Japaniese population. It is the result of the faster decrease of the children category share and the significantly faster increase of the older population category share as well.

The ageing of population has also regional difference. There are two great regions in Japan with the young population, in which the ageing is getting slowly. The first one is the surrouding area of the great aglomeration Tokyo, Yokohama. The second is similar surrouding area of the aglomeration Nagoya, Kyoto, Kobe, Osaka. Apart from

these have also some individual prefectures young population – Hiroshima, Fukuoka, Hokkaido, Okinawa. More advanced ageing processes show the northwest prefectures on Honshú, in the south prefectures of Kyushú and prefectures of Shikoku.

In Slovakia have been formed two greater regional units with different population ageing grade. The great region in the south and southwest of Slovakia is characterized by a higher ageing grade. The second unit, spreading in the north and east of Slovakia is the region with relatively lower ageing grade and with younger population.

Population ageing processes cause needs to solve a whole line of social problems, which recently meet especially developped countries (the problems of economic character, problems of social-medical character).

References

ATOH, M. (1994): The Recent Fertility Decline in Japan: Changes in Women's Role and Status and Their Policy. In: The Population and Society of Postwar Japan. Based on Half a Century of Surveys on Family Planning. Chapter III. The Population Problems Research Council. Tokyo, The Mainichi Newspapers. p. 49–72.

ATOH, M. (2000): Social Policies in Low-Fertility and Rapidly Aging Societies. The Case of Japan. In: von Maydell, B., Shimomura, T., Tezuka, K., eds. Entwicklungen der Systeme Sozialer Sicherheit in Japan und Europa. Berlin, Duncker & Humblot. p. 75–94.

ATOH, M. (2000b): The Coming of a Hyper-aged and Depopulating Society and Population Policies, the case of Japan. Expert group meeting on policy responses to population ageing and population decline. UN/POP/PRA/2000/9. New York. p. 2–12.

ATOH, M. (2001): Why Are Cohabitation and Extra-marital Births So Few in Japan? Paper Presented at the EURESCO Conference "The Second Demographic Transition in Europe". Bad Herrenalb, Germany, June 2001.

ATOH, M. (2001b):Policy Responces to the Coming of a Hyper-aged and Depopulating Society: Pro-nata-list or Immigration Policies? Lecture in National Institut of Population and Social Security Research. Tokyo.

BILLETER, E. P., (1954): Emine Masszahl zur Beurteilung der Altersverteilung einer Bevölkerung. Schwe-zerische Zeitschrift für Volkswirtschaft und Statistik. 90, p. 496–505.

CHOVANCOVÁ, J. (1999): Fertility of Population in Slovakia in the European Context. Acta FRN UC, Geographica. Supplementum No. 2/II. Bratislava. p. 25–41.

KATSUMATA, Y. (2000): The Impact of Population Decline and Population Aging in Japan from the Perspe-ctives of Social and Labor Policy. . Expert group meeting on policy responses to population ageing and population decline. UN/POP/PRA/2000/9. New York. P. 2–13.

KOBAYASHI, T., KOBAYASHI, K., TOEPFER, H., MIZUTANI, H. (2001): Regional Disparities in an Aged Society. Annual Report of the Faculty of Education. Gifu University. Vol. 49. No. 2. p. 31–65.

KOJIMA, H. (1996): Aging in Japan: Population Policy Implications. Korea Journal of Population and De-velopment. Vol. 24. p. 197–213.

KOJIMA, H. (2001): Attitudes Toward Low Fertility and Family Policy in Japan. In: International Perspec-tives on Low Fertility: Trends, Theories and Policies Working Paper Series. International Union For the Scientific Study of Population. Tokyo, March 2001.

MARENČÁKOVÁ, J. (2003): Natality and Fertility of Population – Comparative Analysis of Japan and Slovakia. Acta FRN UC, Geographica Nr. 43. Bratislava. p. 37–55.

MLÁDEK, J., MARENČÁKOVÁ, J. (2002): The Demographic Development of Slovakia in the European context. In: Kobayashi, K. (Ed.): Changing Regional Structure and Way of Life in Central Europe: the Case of Poland, the Czech Republic, the Slovak Republic and Hungary. Gifu University. 243–283.

NAKAGAWA, S. (2002): Fertility Decline and its Regional Context in Japan. In: Kobayashi, K. ed. Demo-graphic Process and Structure in Japan – Intermediate Research Results of JSPS`s Cooperative Research Project with Slovakia. p. 36–47.

PASTOR, K. (2000): Ekonomické vplyvy na priebeh poklesu pôrodnosti na Slovensku po roku 1990. In: 10. slovenská štatistická konferencia. Smolenice 2000. Bratislava, SŠDS. s. 179–184. [Economic Influences on the Natality Decrease in Slovakia] [in Slovak]

van de KAA, D., J., (1996): Anchored Narratives: The Story and Findings of Half a Century of Research into the Determinants of Fertility. Population Studies, Vol. 50, No. 3, p. 389–432.

van de KAA, D., J., (1998): Postmodern Fertility Preferences: from Changing Value Orientation to New Behaviour. Working Papers in Demography No. 74. Research School of Social Science. The Australian National University, Canberra. p. 1–57.

van de KAA, D., J., (1999): Europe and its Population: the Long View. In: European Populations: Unity in Diversity. European Population Conference, Hague 1999. Kluwer Academic Publisher, Dordrecht. p. 1–50.

STATISTICAL OFFICE OF THE SLOVAK REPUBLIC: Balance of the movement of the Slovak Republic's population by districts in the years 1991–1995.

STATISTICAL OFFICE OF THE SLOVAK REPUBLIC: Statistical Yearbook of the Slovak Republic. Veda. Bratislava 1993–2001.

http://www.census.gov/ipc/www/idbprint.html
http://www.ipss.go.jp
http://www.stat.go.jp
http://www.mhlw.go.jp
http://www.jin.jcic.or.jp