# A CENTURY OF FERTILITY TRANSITION IN SLOVAKIA[1)]

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## ABSTRACT

Over the past more than 100 years several changes in the fertility process have occurred in Slovakia. Over a relatively short time these changes significantly transformed the character of reproduction. The main aim of the paper is to point out some of the main changes in fertility on its trajectory from a high to a low and then to a very low level during the 20th and the early 21st century. Using a long time series we analyse trends in the fertility quantum and tempo. We point to a significant decline in fertility from more than 5 children to below the threshold level of 2 children, both in a cross-sectional and a cohort approach. These changes were affected by a significant transformation in the structure of women by parity and parity progression ratios. We describe an inter-cohort decline in family size and the gradual dominance of a two- and three-child family model with a very low rate of childlessness and a small share of women with one child. We analyse in detail the postponement transition among the youngest cohorts born in the second half of the 1970s and the first half of the 1980s. In reference to the results of our analysis, we also attempt to forecast the possible future completed fertility levels and parity distributions. The most probably scenario is found to be a rapid increase in the proportion of one-child families with a slight rise in the level of childlessness and a decrease in the proportion of families with two or more children.

**Keywords:** low and very low fertility, total fertility rate, completed cohort fertility, parity progression ratio, postponement, recuperation, Slovakia

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## INTRODUCTION

Fertility development in Slovakia over the past 100 years can be divided into three major phases. The first, which started at the end of the 19th century and ended after the Second World War, was associated with the transformation from an agrarian society with large families towards a modern and increasingly urban and industrialised society with prevailing fertility control.

During the second phase, from the second half of the 1950s until the collapse of state socialism in 1989, population development in Slovakia were influenced by the communist dictatorship, centrally planned economy, and socialistic greenhouse, which gave rise to a particular so-called socialistic reproductive regime (see, e.g., *Sobotka*, 2004). Fertility was situated within a very specific environment for family formation and childbearing, which resulted in early motherhood and early childbearing, an increasingly dominant orientation towards the two-child family model, a low rate of childlessness, and fertility being squeezed into a narrow age span (e.g. *Potančoková et al.*, 2008; *Sobotka*, 2004, *Sobotka*, 2011).

The third and so far the last phase started at the beginning of the 1990s and has basically lasted

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to the present. The collapse of the autocratic and centrally planned system led to rapid changes in the cultural, economic, social, and political contexts of reproduction. The discontinuity of living conditions brought about a significant transformation of reproductive behaviour. A pattern of early childbearing, which was typical in Slovakia until the end of the 1980s, was replaced by a pattern characterised by delayed motherhood. The dynamic decline in fertility to a very low (lowest-low) level, a more heterogeneous age pattern of childbearing, and a decrease in the universality of parenting, marriage, and the two-child model are some of the major changes that have occurred (*Potančoková et al.*, 2008). However, in the last more than 10 years, we can observe a fertility recovery. The total fertility rate rose to more than 1.5 children per woman and Slovakia no longer ranks among the countries with lowest-low fertility. This trend is due to the increase in fertility, especially in the second half of reproductive age, resulting from the start of the recuperation phase of deferred births.

The main objective of this paper is to describe in a long-term perspective the changes in fertility that have occurred in the Slovak population in the last approximately 100 years. The article does not seek to analyse or discuss these changes in detail or to compare them to other works devoted to this issue. Instead, on the occasion of the 100th anniversary of the independence of Czechoslovakia, we want to recall some of the known and less-known facts relating to the fertility of women in Slovakia. In addition, we will try to present some new findings. We will focus on the impact of changes in parity progression ratios on the completed cohort fertility decline. The main question is how the parity transformation influenced and which parity contributed most to the decline in cohort fertility to such low levels. Another objective is to analyse the impact of the transformation of reproduction on cohort fertility. By using the benchmark model, we will describe the postponement transition observed in the cohorts of women born from the late 1960s to the mid-1980s. The research question is how significantly postponement influenced the decline in fertility at a younger age and, at the same time, how successful women were in making up for postponed reproductive intentions in connection with birth parity. In reference to the knowledge we obtain from this we then try to simulate possible developmental scenarios for completed cohort fertility rate and the structure of women by parity.

The article is structured as follows. Following the introduction and the section on data and methods, we provide some basic information about fertility trends in Slovakia over the past 100 years. First, we look at the period fertility trends and then we analyse fertility development using the cohort approach. In the next section, we discuss changes in the structure of women by parity and the parity progression ratio and their effect on completed cohort fertility rate. In the last part, special attention is given to the postponement transition and its possible impact on completed cohort fertility and the structure of women by parity.

## DATA AND METHODS

Our study is based on two main approaches. In the period view we used age-specific fertility rates and the total fertility rate as the main indicators of intensity and mean age at first birth as a timing indicator. The main problem is the availability of input data. Data necessary to calculate age-specific fertility rates are not available until 1900 in Hungarian statistics. From 1925 on, absolute birth[3)] figures are combined not only with the age at birth, but also with true birth order. This is an essential input for calculating the mean age at first birth using age- and birth-order-specific fertility rates ('rates of the second kind'; for more information about historical data on fertility, see *Šprocha – Tišliar*, 2017). In the period approach we take into account three major fertility thresholds. We can speak of a low fertility rate when fertility is below replacement level. Very low fertility is reached when the total fertility rate falls below 1.5 children per woman (*Billari*, 2005). And finally, the lowest-low fertility is when fertility is below 1.3 children per woman (*Kohler et al.* 2002). In addition, we also use Coal's indexes (e.g. *Pavlík et al.*, 1986) and the Coale-Trussell fertility model

3) Data refer to all births - both live- and still-born - combined.

(*Coale – Trussell*, 1974, *Coale – Trussell*, 1978). The index of marital fertility (Ig) and the parameter ('*m*') is what indicates the degree of fertility control in marriage. Both indicators determine the level of conscious regulation of marital fertility. Coale's indices are based on indirect standardisation, where the Hutterite religious community - a population that is assumed not to practise fertility control - is used as the standard. The Coale-Trussell model defines fertility control as a married couple's conscious decision to avoid having more children based on the number of children they already have. Such a decision will be reflected in the age-specific birth rates for married women. Consequently, in populations that practise fertility control, the frequential fertility curve should decrease faster in proportion to age than in populations with natural fertility. According to Coale and Trussell (*Coale – Trussell*, 1978: 203) the model hypothesises that in any population the ratio of marital fertility $m_x$ to natural fertility $n_x$ at an age (x) is given by:[4)]

$$\frac{m_x}{n_x} M\, exp^{(m \cdot v_x)}.$$

To calculate the marital fertility rate $m_x$ we used available census data from the years 1880, 1890, 1900, 1910, 1921, 1930, 1950, and 1961. The higher the parameter ('*m*'), the more widely fertility control is practised. Values lower than 0.3 and negative values are typical for a population with very low or no fertility control (*Coale – Trussell*, 1978).

Using population censuses between 1950 and 2011 we will also try to point out some of the major changes in cohort fertility in Slovakia. In the cohort perspective, low fertility is when the completed cohort fertility rate drops below 2 children per woman. Very low cohort fertility is when the completed cohort fertility rate falls below 1.75 children per woman (see *Zeman et al.*, 2018).

In the cohort approach we examine the development of the completed fertility rate, the structure of women by their number of children, and the cohort parity progression ratio. The cohort parity progression ratio (PPR) to the first birth for childless women in cohort (C) is calculated as follows:

$$PPR_C^{0,1} = CFR_C^1.$$

For higher birth orders (i>1) the equation is:

$$PPR_C^{i-1,i} = \frac{CFR_C^i}{CFR_C^{i-1}},$$

where $CFR_C^i$ is the cohort fertility rate as an average number of children of birth order (i) born to women in a given cohort (C).

Another important part of our analysis was the decomposition of the decline in the completed fertility rate by changes in the parity progression ratio. We applied the decomposition method designed for this purpose and applied by *Zeman et al.*, 2018. This approach takes into account the sequential character of childbearing as a chain of transitions from lower to higher parities (more *Zeman et al.*, 2018). For the purpose of a more detailed analysis of cohort fertility changes in the youngest cohorts of women - born from the late 1960s to the mid-1980s - we closely examined the process of postponement and recuperation according to birth order using the benchmark model (for more, see *Sobotka et al.*, 2011).

A cohort analysis of the postponement transition enabled us to analyse the onset, dynamics, and ultimately the scale of this transformation. By using the classic cohort benchmark model (see *Sobotka et al.*, 2011) we are able to identify the rate at which fertility was postponed, the rate at which recuperation took place, and finally the level of total decline of completed fertility at the end of reproductive age. Combining these results with projection scenarios for recuperation levels, we created a prediction of the hypothetical development of the completed cohort fertility rate for Slovak women born between 1975 and 1985.

Following *Sobotka et al.*, 2011, we constructed four indicators:

1) the postponement measure as the maximum difference in cumulated cohort fertility between the benchmark cohort and the analysed cohort;
2) the recuperation measure as the absolute fertility increase in the analysed cohort, from the age at which maximum postponement is reached until the end of reproductive age;
3) the final difference as the total difference in the completed cohort fertility of the analysed cohort

4) The five-years values of $n_x$ and $v_x$ were drawn from paper *Coale and Trussell*, 1978, Table 1, p. 205.

at the end of reproductive age compared to the benchmark cohort;

4) the recuperation index as the ratio of the recuperation and the postponement measure.

These four indicators of the postponement transition were used to formulate five projection scenarios for the completed cohort fertility and the structure of women by parity. The first is a constant scenario using a fixed recuperation index from the last known cohort. The second scenario is a development scenario where we used the mean value of the recuperation index in the last five available cohorts (1970–1974). The remaining three scenarios were based on the hypothetical continued growth of the recuperation index from the last empirically derived value in the 1974 cohorts up until the 1985 cohort using a growth rate of 5%, 10%, and 15%-10%-5%, respectively. The last mentioned scenario attempts to simulate the divergent levels of recuperation between individual birth orders. We only considered scenarios with a growth in the recuperation index because a further decline is not supported by the trend in the period fertility rates.

## PERIOD FERTILITY TRENDS

In the past more than 100 years Slovakia has had periods of very high and very low fertility within the European area. It witnessed periods of relative stability in fertility patterns and also ones of abrupt changes (*Potančoková et al.*, 2008).

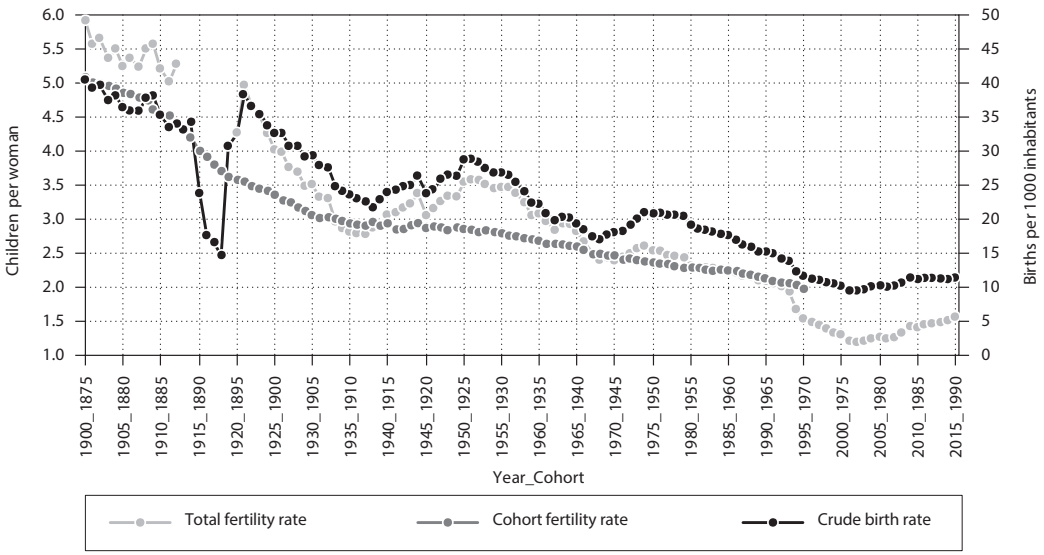
Slovakia had one of the highest fertility rates in Europe throughout the 20th century (*Frejka – Sardon*, 2004). This is confirmed by the development of the total fertility rate (TFR) (Figure 1). At the beginning of the 20th century the TFR only gradually declined. Although we do not have the necessary data for the wartime period, we can expect that the TFR fell sharply at that time. This is indirectly confirmed by the marked decline in the crude birth rate (CDR). After the First World War, we can see a significant increase in the crude birth rate (38‰ in 1921) and the TFR. However, the positive effect of the compensatory post-war phase was quickly exhausted and the TFR began to decrease dynamically. By 1937 it had fallen to below 2.8 children per woman. The interwar period is considered a key period in the spread of the conscious control of fertility as part of the first demographic transition (e.g. *Šprocha – Tišliar*, 2017). As well as the significant decline in the TFR, there are some other findings that confirm this.

First, between 1925 and 1937 the contribution of women aged 35 and over to the total fertility began to decline. The main factor behind the TFR's decline was the decrease in higher-order births. The sharp increase in the birth intervals for higher-order births and a value of below 0.5[5] for Coale's index of marital fertility suggest fertility control started and began to spread in Slovakia from the late 1920s (see *Šprocha – Tišliar*, 2017). Further evidence of conscious fertility regulation is the development of parameter ('*m*') from the Coale-Trussell fertility model (*Coale – Trussell*, 1978). The first decade of the 20th century shows only very little evidence of fertility control. The value of parameter ('*m*') before the First World War was 0.26 (1900) and 0.31 (1910). In contrast, by 1930 parameter ('*m*') had reached almost 0.5, which is clear evidence of the gradual society-wide implementation of deliberate fertility control.

The years of the Slovak Republic were accompanied by a slight recovery in the TFR, mainly due to favourable social developments, a significant drop in unemployment, and the adoption of a whole range of family-policy measures (e.g. the introduction of family wages, family allowances, allowances for civil servants, Christmas help, maternity protection – the prohibition of induced abortion, the sale and promotion of contraception). The maximum TFR was reached in 1944 (3.4 children per woman). In contrast to the preceding period, the last year of the war was marked by unfavourable developments, as military operations took place directly on the territory of Slovakia and living conditions deteriorated. Fertility declined as a result, which was followed by a temporary increase in fertility up to the year 1951. The first half of the 1950s marks the onset of a steady fertility decline. This trend was reinforced by the deterioration of

5) A decline in marital fertility caused by deliberate fertility control is observed if Coale's index of marital fertility drops below 0.5 (*van de Walle*, 1974).

**Figure 1: Crude birth rate, total fertility rate (1900–2016) and completed cohort fertility rate (1875–1970)**




**Note:** In order to be comparable to the period total fertility rate, the cohort fertility rate was shifted by 25 years.
**Source:** Népmozgalma 1900–1912; Pohyb obyvatelstva (Population Dynamics) 1919–1937; Štatistické zprávy (Statistical Reports) 1942–1943; Pohyb obyvateľstva na Slovensku (Population Dynamics in Slovakia) 1945–1948, 1949–2017; Věkové složení obyvatelstva v letech (Age Structure of the Population in the Years) 1920–1937 a 1945–1979; SO SR DATAcube; Census 1950–2011, authors' calculations.

welfare conditions after the 1953 monetary reform was introduced and induced abortions were made available on demand in 1957, which significantly affected the intensity of fertility. Consequently, the TFR dropped below 3 children per woman. Coale's index of marital fertility (below 0.35)[6] and the small '*m*' of the Coale-Trussel fertility model (above 1.0 in all age groups) indicates the society-wide implementation of deliberate fertility control (*Šprocha – Tišliar*, 2017).

Fertility continued to decline until a series of family policy measures were adopted (e.g. extending basic maternity leave, increasing the birth allowance, special maternity grants, and loans to newlywed couples) in the early 1970s. These resulted in a temporary increase in the TFR. The main effect was on the tempo of fertility whereby it became concentrated within a narrow age interval (*Potančoková et al.*, 2008). From the second half of the 1970s the TFR declined steadily to reach replacement level at the end of the 1980s.

The abrupt termination of the autocratic and centrally planned system in Slovakia, and the ensuing political, social, and economic transition generated rapid changes in family formation, partnership relationships, and childbearing (*Frejka* 2008). The TFR quickly dropped from replacement level to 1.5 children per woman in the early 1990s. At the end of the 1990s and the beginning of the 21st century the total fertility rate fell to the lowest-low level (1.3 children per woman; see *Kohler et al.* 2002) and then stabilised at a very low level (up to 1.5 children per woman). The low period TFR at the beginning of the 21st century was the result of the low fertility of older women born in the 1950s and 1960s, who still behaved according to the socialist model and by this period their reproduction had already ended, and also a result of the low fertility of young women born during the 1970s, who postponed their reproduction to an older age. The decline in fertility associated with the postponement of fertility at a younger age

6) This value is generally considered to definitively mark the end of the first demographic transition (e.g. *Pavlík et al.*, 1986).

and the changes in the timing of birth (especially first births) significantly affected the values of the period fertility indicators. On the other hand, developments in recent years have shown an increase in fertility rates aged 27+, probably as a result of recuperation. In the period approach, however, analysing these changes is problematic. Therefore we will try to analyse them through a cohort approach (see below) that better describes the nature of the spread of the postponement transition.

Delaying parenthood has become a universal feature of Slovak fertility trends since 1989 (*Potančoková et al.*, 2008). In the last more than two decades, we have seen an intensive trend of the postponement of childbearing. The mean age at first birth rose between 1990 and 2016 from 22.6 years to 28 years.

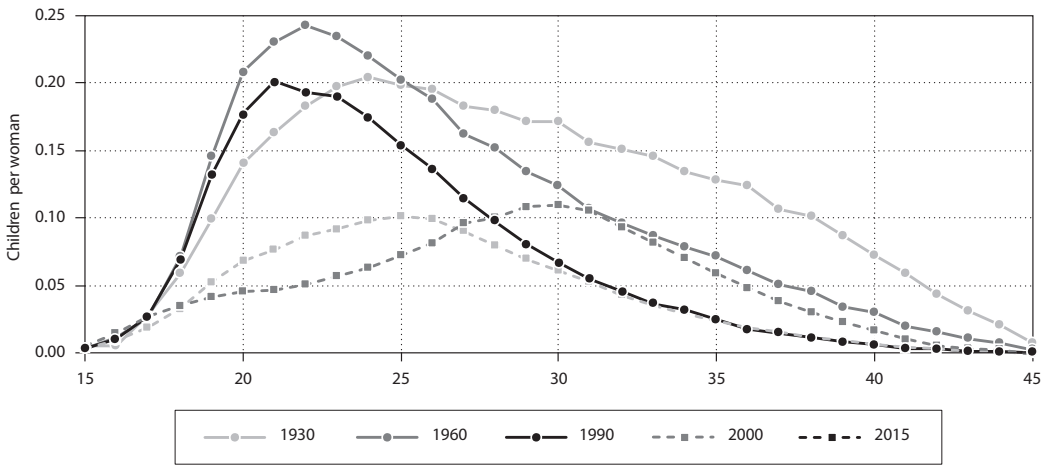
Fertility postponement is reflected in the transformation of the age pattern of fertility (Figure 2). Period fertility rates below age 25 have fallen markedly since the beginning of the 1990s. This fall in intensity at a young age is only to a limited extent offset by an increase in fertility among women aged 27+. In addition, this recuperation has only occurred in the last decade. As *Bongaarts and Sobotka* (2012: 83) point out, the demographic explanation for these changes lies in the weakening of period tempo effects and a cohort-driven recuperation at a later age of the births that were postponed at a younger age. As a result of these changes, the current total fertility rate (1.52 children per woman) in Slovakia is still significantly below the replacement threshold (2.1 children per woman).

## COHORT FERTILITY TRENDS (1875–1969)

The long-term changes in period fertility described in the previous section were reflected in the cohort fertility rate and in fertility age patterns. Unlike the period view, the cohort approach allows us to analyse the real intensity of fertility. Changes in cohort fertility only occur only if there is a long-term and significant transformation of reproductive behaviour. Cohort indicators are therefore characterised by a considerable rate of inertia against random short-term changes, which period indicators often respond to significantly.

The cohort fertility rate of women born in the second half of the 1870s reached levels close to 5 children per woman (see Figure 1). Beginning with these cohorts, the cohort fertility rate starts to decline. We can assume that these were the first cohorts to experience the onset of the demographic transition,

**Figure 2: Age-specific fertility rates in selected years**




**Source:** Pohyb obyvatelstva (Population Dynamics) 1928–1930, Pohyb obyvateľstva na Slovensku (Population Dynamics in Slovakia) 1945–1948, 1949–2017; Věkové složení obyvatelstva v letech (Age Structure of the Population in the Years) 1920–1937 and 1945–1979; SO SR DATAcube; authors' calculations.

but the fastest decline in cohort fertility was observed among women born between 1885 and 1895. The decline then continued in subsequent cohorts, but at a slower pace (see *Šprocha – Tišliar*, 2017). The start of the next gradual decline in completed cohort fertility can be observed in the cohorts born in the second half of the 20th century. This trend continued up until the youngest cohorts that have completed reproduction (see Figure 1). The completed cohort fertility rate of women born at the beginning of the 1970s dropped below two children per woman.

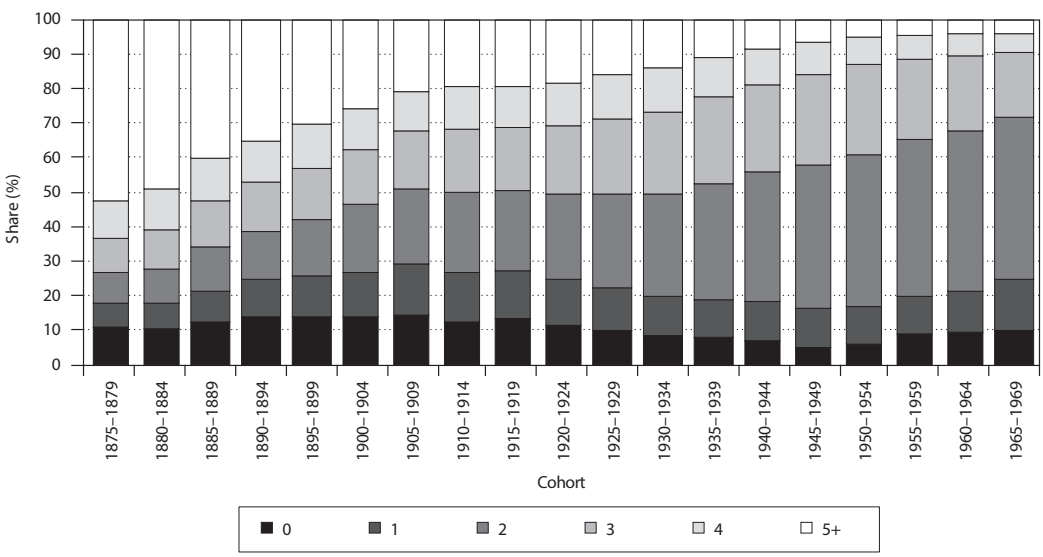
Fertility decline is in all the phases studied here coupled with changes in the parity composition of women. Over 50% of women born in the late 1870s gave birth to 5 or more children on average. Beginning with the cohort born in 1885 this share began to decline and in the cohorts born at the end of the 19th century (1890–1894) only one-third of women had 5 or more children. This downward trend continued with the next cohorts (Figure 3). In contrast, the share of women with two or three children rose. During the state-socialist era, an orientation towards a two-child family began to prevail (*Potančoková et al.*, 2008) and the share of women with two children increased. The proportion of women with two children reached its highest level (46–47%) among women born in the 1960s.

Childlessness among older cohorts was a more widespread phenomenon. As demonstrated by research on childlessness in the wider European area (e.g. *Rowland*, 2007, *Sobotka*, 2017), it was not just in Slovakia that it was common. The highest proportion of childless women (more than 14%) was observed in the cohorts born at the end of the 19th and the beginning of the 20th century. These cohorts were the ones most severely affected by the adverse conditions of the Great War and by the economic crisis of the 1930s. Childlessness among women who were of childbearing age during the state-socialist period was not common: only 6–10% women from the 1930–1969 cohorts never had a child.

Among Slovak women the one-child family model was also unusual. The highest proportion (14–15%) of women with one child was in the cohorts from the beginning of the 20th century. It was only 11% among women born in 1930–1959. In younger cohorts it has increased to 15%.

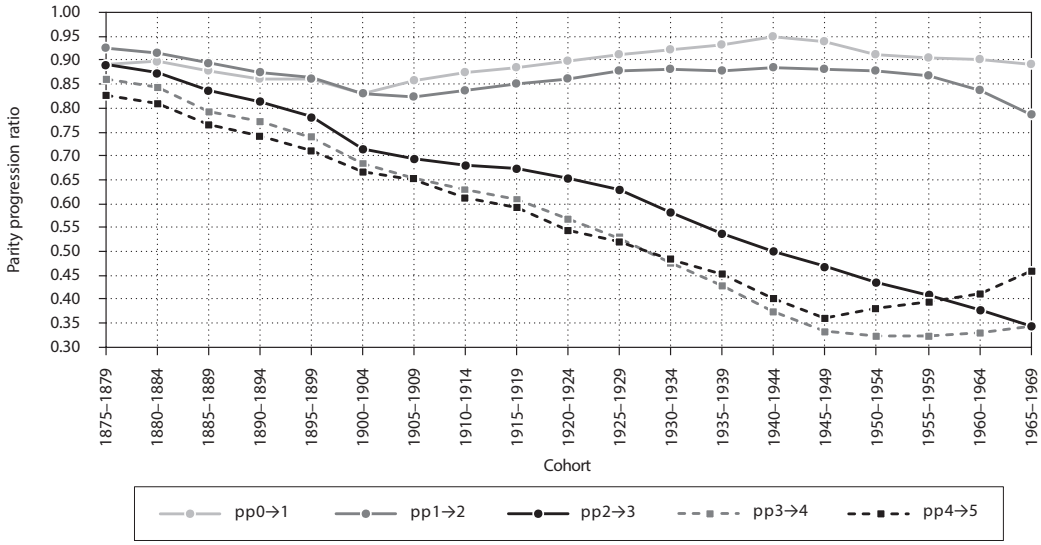
The decrease in family size was also reflected in a significant decline in the parity progression ratio to

**Figure 3: Cohort parity distribution among women born in 1875–1969**



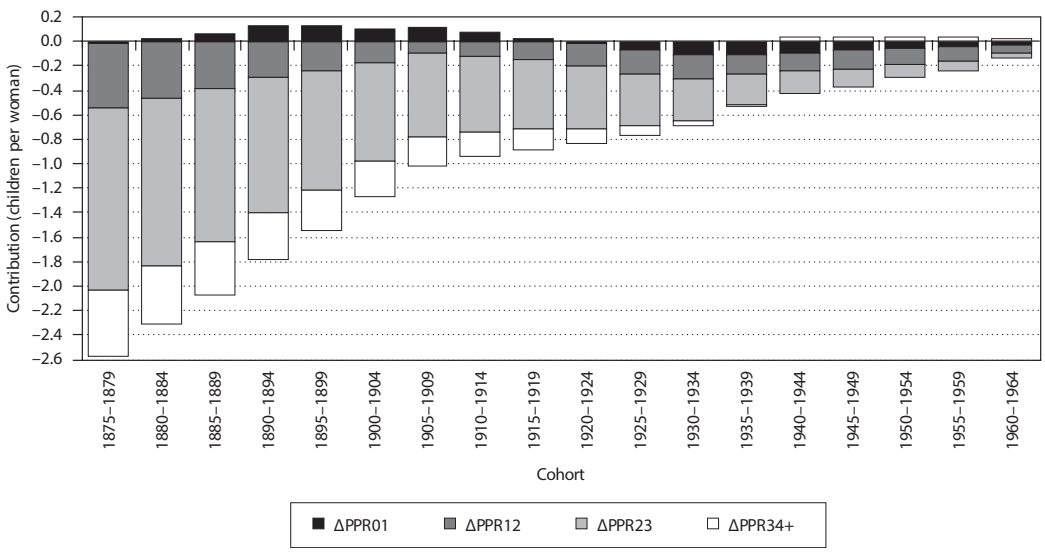

**Source:** Census 1950–2011, authors' calculations.

**Figure 4: Parity progression ratios among women born in 1875–1969**




**Source:** Census 1950–2011, authors' calculations.

**Figure 5: How changes in the parity progression ratio to first (ΔPPR01), second (ΔPPR12), third (ΔPPR23), fourth and higher-order births (ΔPPR34+) have contributed to the decline in completed cohort fertility among women born in selected cohorts (1875–1979, 1880–1884 etc.) and 1965–1969**




**Source:** Census 1950–2011, authors' calculations.

third- and higher-order births (Figure 4). Due to the low rate of childlessness and the gradual predominance of the two-child family, the probability of a first and a second child remained high. Only younger cohorts were affected by a slight decrease in parity progression ratios (Figure 4).

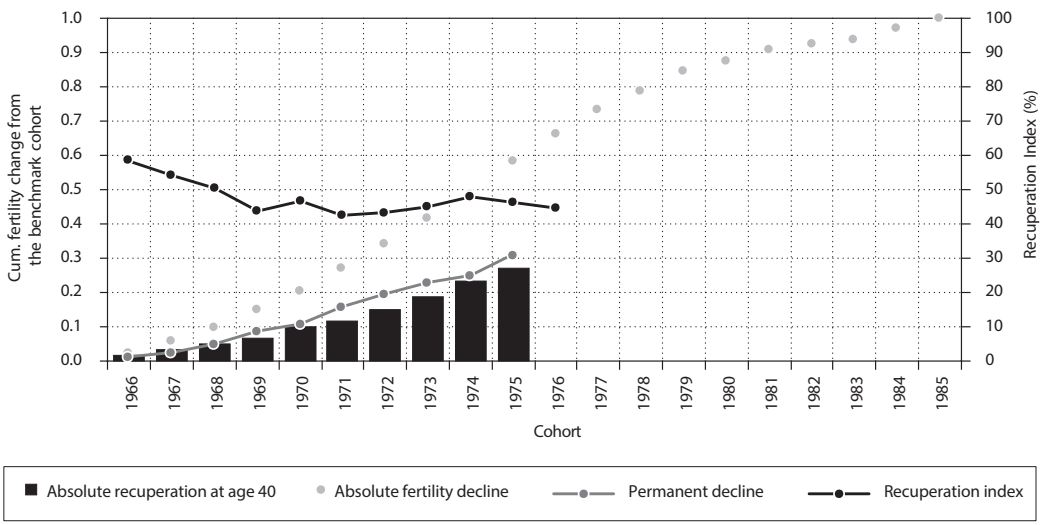
A very important question is which parity changes contributed most to the decline in cohort fertility to below replacement level. To find an answer this question we used the decomposition method (see *Zeman et al.*, 2018), which takes into account the sequential character of childbearing as a chain of transitions from lower to higher parities. The fertility decline has been driven by the decrease in transitions to third births in the cohorts born in 1875–1944. The decline among the cohorts 1945–1964 was mostly due to a decrease in transitions to second and especially first births (Figure 5).

## POSTPONEMENT AND RECUPERATION FROM A COHORT PERSPECTIVE

Fertility postponement is one of the most prominent trends that can be observed in the demographic behaviour of the Slovak population after 1989, and it is reflected in a significant drop in the cohort fertility rate starting with the cohorts born in the second half of the 1960s. One of the main characteristics of reproductive behaviour in Slovakia used to be early motherhood. The cohort mean age at first birth for women born in 1935–1965 remained at a stable value of 22.0–22.5 years. This long-term trend was first disrupted in the cohorts from the mid-1960s. Subsequent cohorts are characterised by a sharp increase in cohort mean age at first birth. The postponement of childbearing can already begin to be seen in the cohorts born in 1965–1969. We therefore selected the 1965 birth cohort as the benchmark cohort (more *Sobotka et al.*, 2011).

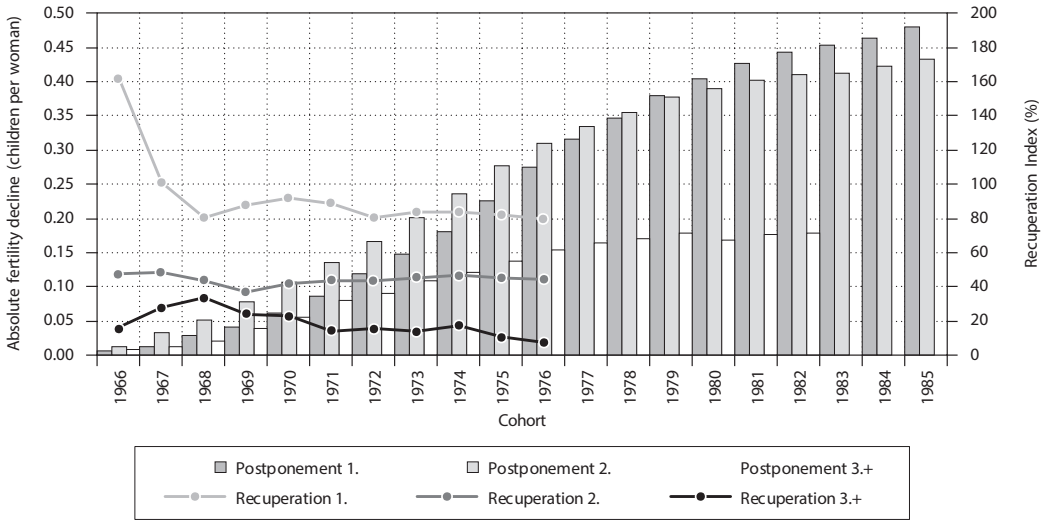
The differences in the cumulative cohort fertility rates between the observed cohort and the benchmark cohort continue to grow wider up until the cohorts from the early 1980s, after which postponement begins to slow down. As we can see in Figure 6, fertility postponement accelerated in the cohorts born in the early 1970s. The political and social changes ushered in by 1989 are obviously what had the most profound impact on the reproduction of women born in the early 1970s. By the age of 27 or 28 (when the postponement effect peaked), women born in the mid-1980s had on average one child fewer than women from the 1965 benchmark cohort.

**Figure 6: A summary of the postponement and recuperation process**




**Source:** Authors' calculations.

**Figure 7: Postponement rates and recuperation index according to birth-order**




**Source:** Authors' calculations.

The extent of the final differences in the completed cohort fertility rate between each observed cohort and the benchmark cohort depends also on the recuperation rate. However, it is necessary to note that the effect of postponement and subsequent recuperation differs widely by birth order (*Sobotka et al.*, 2011). First-birth postponement is the most frequent in the postponement transition (Figure 7). We can assume that the final differences in the completed cohort fertility rates of the observed and benchmark cohorts will be saturated by a weak recuperation effect in second- and higher-order births. The transformation of the cohort fertility of women born in the 1970s and 1980s indicates that their completed fertility will be considerably lower than two children per woman.

Having surveyed the total postponement rates for the cohorts of women born between 1975 and 1985, we can now prepare projection scenarios for recuperation levels and then create a forecast for the hypothetical development of the CCFR for Slovak women born between 1975 and 1985.

It is immediately apparent that if there is on significant change in the observed recuperation (constant and development scenarios), the CCFR would continue to decline in the 1975–1985 cohorts. The average number of children per woman would fall well below 1.6 children (Figure 8). According to the 5% scenario, the completed cohort fertility rate would stabilise among women born in the first half of the 1980s at 1.6 child level. Only if the recuperation index increases more rapidly in the near future, will we be able to speak of a trend towards a slight increase in the completed cohort fertility rate among the cohorts from the 1980s (to 1.68 children per woman in the 1985 cohort).

Different levels of assumed first-birth recuperation lead to significant differences in future childlessness rates. In the constant and development scenarios there would be a further gradual increase beyond the 20% threshold. The 5% scenario would see the level stabilise at 18%. Only a more dynamic first-birth recuperation could lead to some reduction in the level of childlessness (Figure 9).

Despite the different recuperation scenarios, it is clear that the cohorts born between 1975 and 1985 will have different parity distributions than older cohorts. This is because the postponement of the transition to motherhood affects the transition to subsequent births. If the recuperation of second and higher-order births does not strongly intensify in the near future we will witness a trend towards a rapid increase in the proportion of one-child families and a decrease in the proportion of families with two or more children (Figure 10 and 11).

**Figure 8: Observed and projected completed cohort fertility rates according to various projection scenarios**

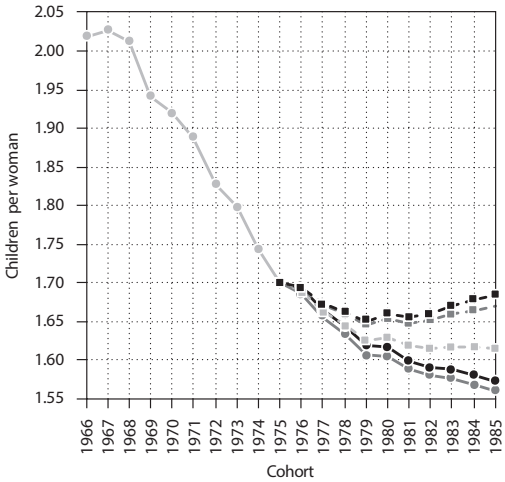
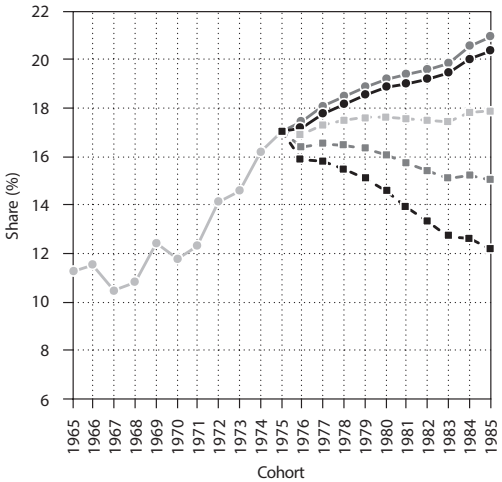
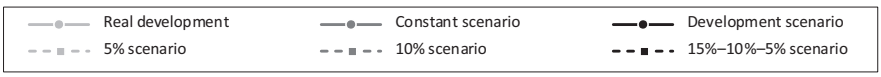



**Figure 9: Observed and projected childlessness according to various projection scenarios**




**Source:** Authors' calculations.

**Figure 10: Observed and projected share of women with 1 child according to various projection scenarios**

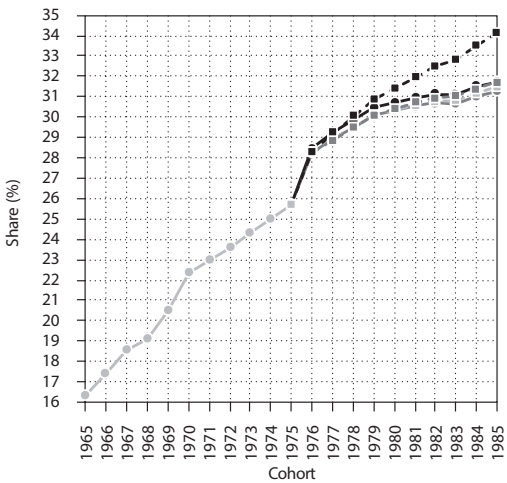
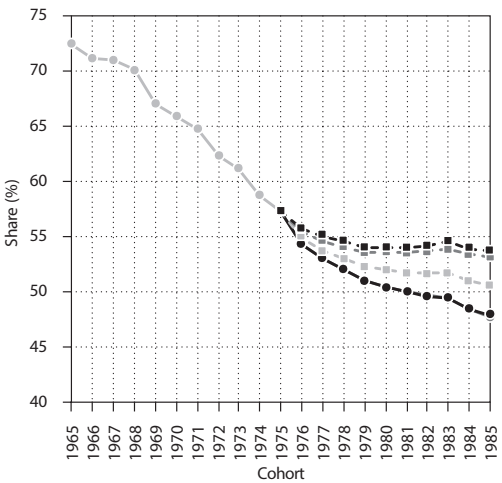
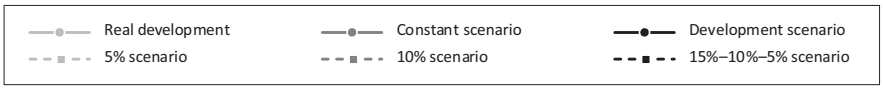



**Figure 11: Observed and projected share of women with 2 or more children according to various projection scenarios**




**Source:** Authors' calculations.

## CONCLUSION

Over the last 100 years, the fertility process in Slovakia has undergone very important changes. The intensity, tempo, and character of age-specific fertility rates transformed significantly. The total fertility rate dropped between the start of the 20th century and the end of the 1980s from almost 5 children per woman to replacement level. The break-up of the Soviet bloc and the overall transformation in the 1990s dramatically influenced the further development of fertility. A significant postponement of fertility and an overall change in childbirth timing have resulted in a very dynamic decline in fertility intensity. For over a decade Slovakia ranked among the countries with the lowest birth rate in the world. However, in the last approximately 10–15 years, we have seen some recuperation and fertility has been slowly increasing.

In the cohort view, it is possible to identify a substantially continuous decline in completed cohort fertility. This trend was the result of the rise and spread of the demographic transition and (in younger cohorts) a gradual drift towards the two-child family model. These changes were affected by a significant transformation in the structure of women by parity and parity progression ratios. We can identify a decline in family size and the gradual prevalence of the two- and three-child family model, with a very low level of childlessness and small share of women with one child. The last dynamic transformation of fertility took place after the collapse of the previous political regime. Delayed parenthood has become a universal feature of Slovak fertility trends since 1989. This delay in childbearing has been reflected in a transformation of the age pattern of fertility with a significant drop in the period and cohort fertility rates.

According to our projection, women born in the second half of the 1970s and the first half of the 1980s will end up with the lower completed cohort fertility, well below very low cohort fertility, and with a different parity distribution than older cohorts. In our opinion, the most likely scenario is a rapid increase in the proportion of one-child families and a decrease in the proportion of families with two and more children

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