

**The Type of Parenthood According to the  
Sequence of First and Second Birth and Marriage:  
Evidence from Birth and Marriage Records of the Czech Statistical Office in 1991-2006**

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***Abstract***

*Since the 1990s the fertility and nuptiality behaviour of Czech women has changed substantially. Both the sharp decline in fertility and nuptiality levels and the postponement of family formation until higher ages have been extensively analysed. One of the most noticeable trends was the increase in proportion of non-marital childbirths. It is however not clear what proportion of single mothers is cohabiting and how many of them are living alone.*

*In this paper we use statistic records of births and marriages of the Czech Statistical Office, linked according to the unique ID# of woman, to analyse the behaviour of mothers before and after first childbirth. Each woman is followed for six years after her first childbirth, and the occurrences of second childbirth and (for singles) of the marriage are being recorded. On the basis of the sequence of marriage, first childbirth, and second childbirth, we identify five distinct types of behaviour – traditional marital childbirth, marital childbirth with premarital conception, birth in premarital cohabitation followed by marriage, birth in cohabitation as an alternative to marriage, and lone motherhood. We observe characteristics of women by distinct types of behaviour and its incidence over two periods (1991-96 vs. 2001-06).*

*The main finding of the paper is that the increase of proportion of non-marital births was counterbalanced especially by the decrease of premarital conceptions: Contrary to the past, when pregnancy was a strong impetus to marry promptly before birth delivery, women now tend to stay single. About half of single mothers does experience neither marriage nor second childbirth until next six years, and they are considered as lone mothers. Other quarter marry after childbirth, while last quarter bear also second child without entering marriage.*

*Family formation pattern is closely related to the age at childbirth, suggesting high risk of lone motherhood after teenage pregnancy and also higher proportion of “shotgun marriages” and cohabitation at lower ages. Traditional conception in marriage is prevalent at age over 25.*

*Furthermore, we found wide differences between educational categories of women. While low-educated women tend to be lone mothers or to cohabit even after second childbirth, university educated mostly conceive and even concept their first child traditionally after marriage.*

*Our results are confronted with the results of two other recent studies, Social and economic conditions in motherhood (SEPM) study from 2006 and the Czech Statistical Office vital statistics data on fathers from 2007. There were not found substantial discrepancies between the results of these three studies.*

*In this paper we show that the basic vital statistic records of births and marriages of the Czech Statistical Office can be used in more sophisticated way to estimate otherwise unknown extent of changes in family formation processes, and to identify the recent changes in traditional family, cohabitation and lone motherhood.*

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## **1. Introduction**

Since the 1990s the fertility and nuptiality behaviour of Czech women has changed substantially. Both the sharp decline in fertility and nuptiality levels and the postponement of family formation until higher ages have been extensively analysed by many authors. Czech society has been facing a rapid transformation of fertility and nuptiality behaviour accompanied by the weakening of the coupling of the two processes, a spread of cohabitation, an increase in non-marital childbearing, and the decrease in the proportion of “shotgun” marriages (where bride is pregnant).

In this paper we use statistic records of births and marriages of the Czech Statistical Office, linked according to the unique ID# of woman, to analyse the behaviour of mothers before and after first childbirth. Each woman is followed for six years after her first childbirth, and the occurrences of second childbirth and (for singles) of the marriage are being recorded. On the basis of the sequence of marriage, first conception and childbirth, and second childbirth, we identify five distinct types of family-formation behaviours – traditional marital childbirth (with/without premarital conception), birth in cohabitation (premarital or as an alternative to marriage), and lone motherhood. We observe the change in the proportion of distinct groups during the period change (1991-96 vs. 2001-06), basic characteristics of the groups, and their incidence by age at childbirth and by the highest attained education of mother.

Our findings are further confronted with results of other studies on marital and non-marital childbearing and cohabitation in the Czech Republic after 1989. In chapter 3 we bring existing evidence on cohabitation and lone motherhood. Data and research strategy of our study is presented in chapter 4 and the results are introduced in the following chapter 5. In chapter 6 we compare our findings with results of other studies. Chapter 7 concludes and discusses the phenomenon of non-marital childbearing in the Czech Republic.

## **2. Czech Republic – Background**

The first marriage in the Czech Republic traditionally interplayed with childbearing; in the late 1980s and early 1990s, the proportion of first children who were conceived before marriage but delivered inside marriage exceeded 50% and so about six out of ten first-marrying brides got married while pregnant. A total of more than 80% of children were delivered within 2 years of marriage. The proportion of non-marital births was small, not exceeding 10%, but among some specific groups the proportion was relatively high even at that time (e.g. among primary educated the proportion of first births out of marriage was 28% in 1986 and 39% in 1990). During the later 1990s the strong link between marriage and childbearing weakened:

the proportion of non-marital births increased significantly, the pressure to marry in case of pregnancy has relaxed, and the utilisation of premarital and non-marital cohabitation and other types of informal ties was spreading (Zeman, 2003).

One of the most noticeable trends was the increase in proportion of non-marital childbirths, and hence, of single mothers. It is however not clear what proportion of single mothers is cohabiting and how many of them are living alone. Until recently, there has not been conducted any representative study about the proportion and characteristics of cohabiting and lone women among single mothers.

Cohabitation is seen as being equal to marriage in many aspects in the Czech society; however there is still high level of esteem for the institution of marriage (Sobotka et al., 2003). Cohabitation in the Czech Republic was already present as a living arrangement for divorced or widowed partners in the first half of the twentieth century, and since the 1980s it has also been spreading as a premarital phase of partnership, initially among lower-educated young people (Možný, 1987; Rychtaříková, 1994).

In the past 15 years, the spread of modern contraception and the improvement of sexual education contributed to a drop in teenage pregnancies and abortions, which were used during socialism as a “contraception *ex post*”. However, the phenomenon of unwanted pregnancy resulting in teenage motherhood still persists especially among girls from families of lower socio-economic status, who then often enter the group of lone mothers (Vašková, 2006).

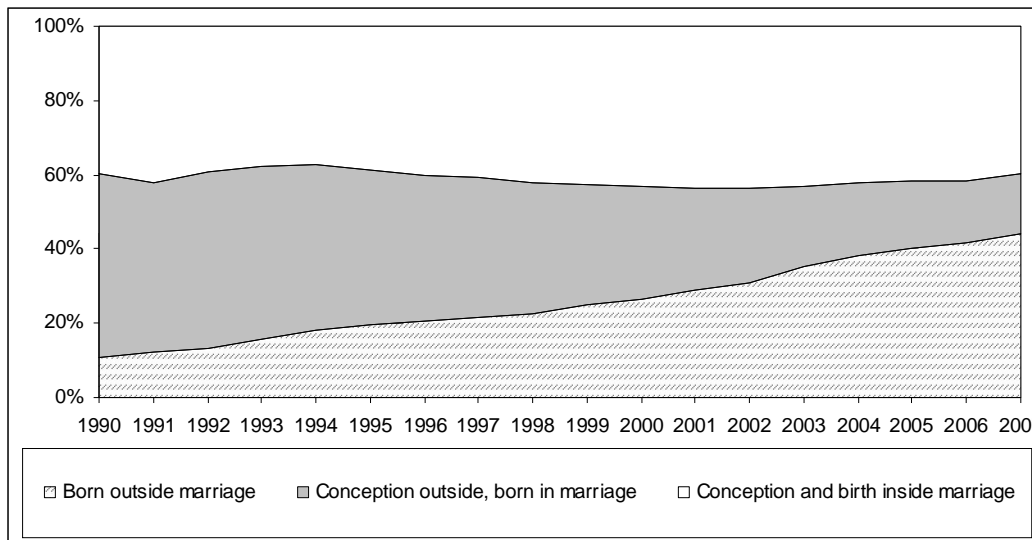
The table 1 brings brief overview of the changes in reproductive behaviour in the Czech Republic in past two decades regarding number of live births and their distribution according to marital status of mother. The fast drop in fertility levels during the 1990s, the increase of proportion of non-marital childbearing, and the aging of mothers, were already well analysed in the literature (e.g. Rychtaříková, 2000, Rabušic, 2001, Sobotka et al., 2003, Zeman, 2007a).

**Table 1: First childbirths according to marital status of mother**

|  | 1991          | 1996          | 2001          | 2006          |
|--|---------------|---------------|---------------|---------------|
| <b>TOTAL number of first live births</b> | <b>64,762</b> | <b>42,103</b> | <b>43,333</b> | <b>51,822</b> |
| Births inside marriage                   | 56,859        | 33,450        | 30,873        | 30,287        |
| - incl. premarital conceptions           | 29,577        | 16,537        | 12,008        | 8,786         |
| Births outside marriage                  | 7,903         | 8,653         | 12,460        | 21,535        |
| Mean age of mothers - total 1st births   | 22.4          | 23.7          | 25.3          | 26.9          |
| Mean age of mothers - single             | 21.6          | 22.3          | 23.7          | 25.3          |
| Mean age of mothers - married            | 22.5          | 23.9          | 25.9          | 27.9          |
| Mean age of mothers - div.+wid.          | 27.0          | 28.0          | 29.7          | 31.2          |
| proportion of nonmarital births          | 12%           | 21%           | 29%           | 42%           |

As we can see already from the simple graph (figure 1), the proportion of traditional childbirths remains approximately constant during last two decades. What is changing is the proportion of non-marital births (increase) and the “shotgun marriages” (decrease). The aim of our study is to figure out what is not visible from the graph: What proportion of women who are staying single are lone mothers and what proportion has a stable partnership in unwed cohabitation.

**Figure 1: Proportion of 1st births by type of conception and confinement**



### 3. Existing evidence on cohabitation and lone motherhood

Until 2006, there has not been conducted any systematic research on cohabitations in the Czech Republic and also the figures from the population census cannot be used without caution. In the Population Census 1991 and 2001 the union was considered as a ‘factual marriage’ only if the spouses explicitly declared that they lived in cohabitation and at the same time were registered at the same place of residence. Because a substantial part of young people officially live in their parental home or another place, the data are underestimated to an unknown extent (Rychta íková, 1994). The proportion of cohabiting women at age 15-44 among those living in a partnership was 3.6% according to the 1991 census and 7.2% according to the 2001 census (Zeman, 2003).

Proportion of cohabiting women derived from surveys is substantially varying, but always higher than that determined from Population Census: Family 1994 (ISSP) places the proportion of women aged 18-54 cohabiting on 9.7%, according to the Family and Fertility Survey conducted in 1997, the share of cohabiting women among all women living in unions at age 15-44 was 10.2% (FFS, 1997), and the Generation and Gender Survey (GGG, 2005) places the figure in 2005 at 15.9%. However, in this paper we are interested rather in the situation of mothers, i.e. women who enter the motherhood, while cited surveys mostly

studied the living arrangement of women irrespective of their situation regarding children. The proportion cohabiting is negatively correlated to the level of education of women. The SEPM study<sup>A</sup> in 2006 was the first survey designed specifically in order to determine the family situation of mothers (Hamplová et al., 2007). Among women who had their first child in 1996-2006, 73% responded they were married during childbirth, 14% stated they were cohabiting and 13% were lone mothers. As we will show latter, these numbers pretty correspond with the result of our analysis. More results will be shown in chapter 6.

#### **4. Data and research strategy**

We use individual records of births and marriages in 1991-2006 provided by the database of the Czech Statistical Office. The data contain several variables for each recorded birth or marriage, including the information on the woman's current age and highest attained education level and her unique ID number. The information about father was however until 2006 included only among marital births, which forces us to hold several assumptions, as followed.

For the identification of family formation pathways we start from the first live births in 1991 (and 2001, respectively), and follow the mothers of first children for next six years, until 1996 (2006), recording subsequent birth and/or marriage (for single mothers). Marital births in 1991 (2001) are confronted with the day of marriage, distinguishing between premarital conceptions (where date of birth minus date of marriage is lower than 243 days<sup>B</sup>) and traditional marital births. Divorced and widowed mothers are taken separately. According to the sequence of marriage, conception and birth, and second birth, we identify five types of family formation:

1. Traditional – both conception and birth of first child is located into marriage.
2. Premarital conception – first child is conceived before marriage but born after marriage; woman is marrying as pregnant.
3. Childbirth in premarital cohabitation – children is born to single mother who is entering marriage during next 6 years; marriage is assumed to be concluded between parents of a child.
4. Childbirth in cohabitation as an alternative to marriage – first childbirth is followed by a second one but not by (or sooner than) a marriage; parents of both children are assumed to be identical and to have a stable partnership.
5. Lone motherhood – first childbirth to a single mother is not followed by either marriage or second childbirth during next 6 years; mother is assumed to live alone, without father of a child.

The rest are children born to divorced or widowed mothers and women with invalid ID#.

For each category we compute the prevalence, mean age at first childbirth and the relative level of the highest educational attainment of mother<sup>C</sup>. We compare the situation in the beginning of the 1990s (1991-1996) with recent situation (2001-2006), concentrating on identification and interpretation of trends in family formation in the light of the recent demographic and societal changes.

## 5. Results

We took 64,762 first live births from 1991 and 43,337 first live births from 2001 and analysed them according to subsequent events (second childbirths or marriages) of mothers according their unique ID#. Only 478 records from first file (0.7%) and 431 from second file (1.0%) were invalid and could not be linked to subsequent events. Other 0.8% of children in 1991 and 1.8% in 2001 were born to divorced or widowed women, who are out of scope of our interest.

Table 2 identifies five types of family formation behaviour according to the sequencing of conception and birth of first child, first marriage and second childbirth, and describes the changes in this behaviour during past two decades. Besides the overall drop in the total number of births, the proportion of those who conceive the first child after marriage has not changed dramatically, but bold changes were observed in the behaviour of single pregnant women. Contrary to the past, when pregnancy was a strong impetus to marry promptly before birth delivery, women now tend more to stay single, either in cohabitation or as lone mothers. Traditional mothers are about 2 years older than those who marry pregnant and they have also higher level of education in average.

**Table 2: First childbirth in 1991 and 2001 according to marital status of mother and following family-formation events**

| Type | Name                        | Sequence           |                    |                    | 1991   |          |           |       | 2001   |          |           |       | Relative increase |
|------|-----------------------------|--------------------|--------------------|--------------------|--------|----------|-----------|-------|--------|----------|-----------|-------|-------------------|
|      |                             | 1st                | 2nd                | 3rd                | number | mean age | mean edu. | prop. | number | mean age | mean edu. | prop. |                   |
| 1    | Traditional                 | Marr               | Conc               | 1 <sup>st</sup> ch | 27,067 | 23.5     | 2.7       | 42%   | 18,659 | 26.6     | 2.9       | 43%   | +1%               |
| 2    | Premarital conception       | Conc               | Marr               | 1 <sup>st</sup> ch | 29,443 | 21.2     | 2.4       | 45%   | 11,940 | 24.6     | 2.6       | 28%   | -18%              |
| 3    | Premarital cohabitation     | 1 <sup>st</sup> ch | Marr               | ...                | 2,622  | 20.3     | 1.9       | 4%    | 2,755  | 23.7     | 2.2       | 6%    | +2%               |
| 4    | Cohabitation as alternative | 1 <sup>st</sup> ch | 2 <sup>nd</sup> ch | ...                | 1,438  | 20.0     | 1.6       | 2%    | 3,032  | 22.7     | 1.9       | 7%    | +5%               |
| 5    | Lone mother                 | 1 <sup>st</sup> ch | -                  |                    | 3,179  | 22.6     | 2.0       | 5%    | 5,753  | 24.3     | 2.1       | 13%   | +8%               |
|      | <i>Other</i>                | <i>Div/Wid</i>     |                    |                    | 535    | 27.1     | 2.4       | 1%    | 767    | 29.2     | 2.5       | 2%    | +1%               |
|      | <i>invalid ID</i>           |                    |                    |                    | 478    |          |           | 1%    | 431    |          |           | 1%    |                   |
|      | <b>TOTAL</b>                |                    |                    |                    | 64,762 | 22.2     | 2.5       | 100%  | 43,337 | 25.3     | 2.6       | 100%  |                   |

Among single mothers, both the proportion and the distribution according to the types of family formation have changed significantly. Overall there was an increase in the proportion of single motherhood from 11% in 1991 to 27% in 2001. We identified sharp increase of proportion of single mothers who do not marry in six years following the

childbirth. From 2001 cohort of single mothers, about half have experienced neither marriage nor second childbirth until next six years, and they are considered as lone mothers. Other quarter married after childbirth, while last quarter gave also second childbirth without entering marriage<sup>D</sup>. Interestingly, lone mothers are relatively older than cohabiting mothers. In the early 1990s they had also slightly higher mean education level than cohabiting ones, which however levelled until the recent period.

Family formation pathways according to age of mother at first birth are described in table 3. In 1991, most of teenage mothers were experiencing “shotgun marriage”, marrying promptly before confinement. After age 20 the situation changed and more than a half of first children were born traditionally, after conception inside marriage. In the early 1990s, premarital cohabitation had higher prevalence only among teenage mothers, while the cohabitation without following marriage was almost unknown. On the other hand, lone motherhood was rather matter of older women over age 30. However, at that age our categorisation according to subsequent events might be misleading, because older women have lower probability to have subsequent childbirth and hence some of them would rather fall into category of cohabiting mothers.

The situation dramatically changed during ten years. In 2001, majority of teenage mothers were cohabiting or lone mothers and the traditional pattern prevailed only after age of 25. Among single mothers, lone motherhood is detected over whole life span, while cohabitation is rather rare over age 25. Substantial part of mothers of fist child at age 35+ was divorced. At the same time the age distribution changed substantially, mirroring the increasing control over own reproduction with drop in pregnancies at younger ages and the postponement of fertility towards older ages.

**Table 3: Family-formation sequence of events according to age of mother at first childbirth**

| Type | Name   | 1991        |        |        |       |       | 2001  |       |        |        |       |       |
|------|--|-------------|--------|--------|-------|-------|-------|-------|--------|--------|-------|-------|
|      |  | <i>Age*</i> | -19    | 20-24  | 25-29 | 30-34 | 35-39 | -19   | 20-24  | 25-29  | 30-34 | 35-39 |
| 1    | Traditional  |             | 15%    | 49%    | 63%   | 56%   | 51%   | 4%    | 34%    | 57%    | 54%   | 46%   |
| 2    | Premarital conception                              |             | 65%    | 42%    | 25%   | 22%   | 22%   | 25%   | 35%    | 23%    | 18%   | 15%   |
| 3    | Premarital cohabitation                            |             | 8%     | 2%     | 2%    | 2%    | 3%    | 15%   | 8%     | 4%     | 4%    | 5%    |
| 4    | Cohabitation as an alternative                     |             | 5%     | 1%     | 1%    | 1%    | 1%    | 28%   | 7%     | 4%     | 4%    | 3%    |
| 5    | Lone mother  |             | 6%     | 4%     | 6%    | 11%   | 14%   | 27%   | 15%    | 9%     | 13%   | 19%   |
|      | <i>Other</i>                                       |             | 0%     | 1%     | 2%    | 5%    | 6%    | 0%    | 1%     | 2%     | 6%    | 9%    |
|      | <i>invalid ID</i>                                  |             | 1%     | 1%     | 1%    | 3%    | 3%    | 0%    | 1%     | 1%     | 2%    | 3%    |
|      | <b>TOTAL (100%)</b>                                |             | 18,600 | 34,353 | 9,278 | 1,835 | 605   | 3,402 | 17,266 | 17,981 | 3,829 | 753   |
|      | <i>proportion of births by education of mother</i> |             | 29%    | 53%    | 14%   | 3%    | 1%    | 8%    | 40%    | 41%    | 9%    | 2%    |

\* Age categories 40-44 and 45-49 not shown due to low numbers

Education attained at first childbirth was a strong covariate of the type of family formation already in the 1990s and it remains such, or even stronger, also nowadays (table 4). While primary-educated women tend to be lone mothers or to cohabit even after

second childbirth, university educated mostly conceive and even concept their first child traditionally after marriage. However, we must keep in mind that the education of woman is not the variable exogenous to the process of family formation. Higher educated women tend to postpone family formation until later ages (Hoem, 1986, Liefbroer and Corijn, 1999) and, vice versa, an early childbirth or marriage can induce a woman to drop out of education (Marini, 1984, Billari and Philipov, 2003)<sup>E</sup>. But the main message is clear: Cohabitation and the lone motherhood in the Czech Republic are spreading especially among low-educated women. Higher educated women tend to bear children inside marriage.

**Table 4: Family-formation sequence of events according to the highest attained education of mother**

| Type | Name   | 1991           |             |             |            | 2001           |             |             |            |
|------|--|----------------|-------------|-------------|------------|----------------|-------------|-------------|------------|
|      |  | <i>Primary</i> | <i>Sec-</i> | <i>Sec+</i> | <i>Uni</i> | <i>Primary</i> | <i>Sec-</i> | <i>Sec+</i> | <i>Uni</i> |
|      | <i>Education</i>                                   |                |             |             |            |                |             |             |            |
| 1    | Traditional  | 19%            | 37%         | 48%         | 70%        | 11%            | 36%         | 51%         | 68%        |
| 2    | Premarital conception                              | 39%            | 52%         | 46%         | 24%        | 18%            | 32%         | 29%         | 20%        |
| 3    | Premarital cohabitation                            | 13%            | 4%          | 2%          | 1%         | 13%            | 7%          | 5%          | 3%         |
| 4    | Cohabitation as an alternative                     | 12%            | 2%          | 1%          | 0%         | 25%            | 7%          | 3%          | 3%         |
| 5    | Lone mother  | 15%            | 5%          | 3%          | 3%         | 30%            | 16%         | 9%          | 5%         |
|      | <i>Other</i>                                       | <i>1%</i>      | <i>1%</i>   | <i>1%</i>   | <i>1%</i>  | <i>1%</i>      | <i>2%</i>   | <i>2%</i>   | <i>1%</i>  |
|      | <i>invalid ID</i>                                  | <i>1%</i>      | <i>0%</i>   | <i>0%</i>   | <i>0%</i>  | <i>1%</i>      | <i>0%</i>   | <i>0%</i>   | <i>0%</i>  |
|      | <b>TOTAL (100%)</b>                                | 6,859          | 26,768      | 26,045      | 5,090      | 4,679          | 14,730      | 18,875      | 5,053      |
|      | <i>proportion of births by education of mother</i> | <i>11%</i>     | <i>41%</i>  | <i>40%</i>  | <i>8%</i>  | <i>11%</i>     | <i>34%</i>  | <i>44%</i>  | <i>12%</i> |

Finally we analysed the length of intervals between distinct transitions. Table 5 shows the events subsequent to the marriage or to the first childbirth by duration, and the proportion of those who have not experienced subsequent event, censored at end of 1996 (2006). There are two main findings emerging from the confrontation of 1991-96 and 2001-06 periods. First the proportion of early transitions diminished, second the mean duration increased. As for marriages of single mothers, the proportion of marrying in the first year after childbirth fell from 16% to 7% and the mean duration rose by more than half a year, from 1.8 to 2.4 years (see also Polášek, 2005). At the same time the share of not marrying increased from 61% to 73% (see figure 2a). Concerning second child, the proportion of those who gave second childbirth until two years since the first one decreased for both single and married women, from 14% to 9%. The mean birth interval thus increased from 2.7-2.8 to 3.1 years. The proportion of women who stay with one child only did not change substantially and this figure is naturally higher for single women – about 60% compared to less than half among married mothers.

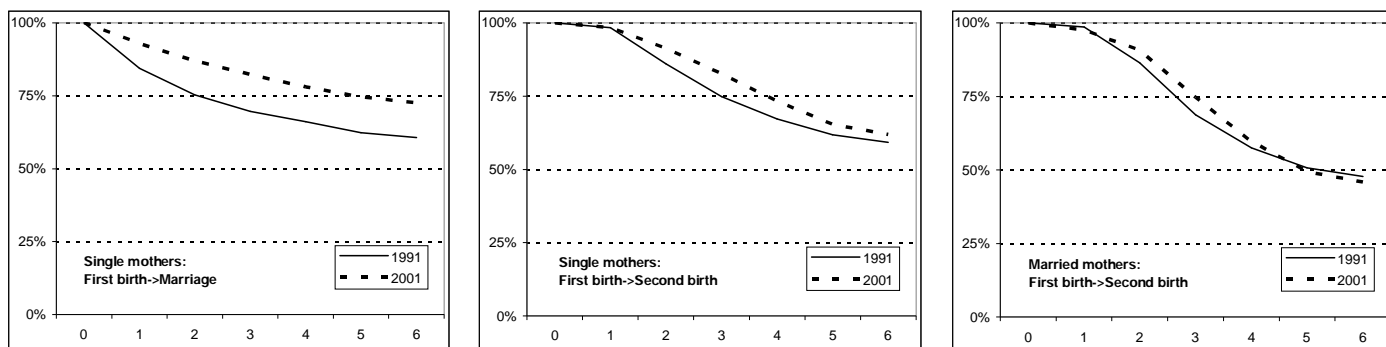


**Table 5: Number of subsequent events by duration since first childbirth (years)**

| Year            | Single mothers->marriage |               | Single mothers->second birth |               | Married mothers->second birth |               |
|-----------------|--------------------------|---------------|------------------------------|---------------|-------------------------------|---------------|
|                 | 1991                     | 2001          | 1991                         | 2001          | 1991                          | 2001          |
| 1 <sup>st</sup> | 1,124 16%                | 817 7%        | 122 2%                       | 189 2%        | 823 1%                        | 756 2%        |
| 2 <sup>nd</sup> | 658 9%                   | 684 6%        | 890 12%                      | 824 7%        | 6,843 12%                     | 2,123 7%      |
| 3 <sup>rd</sup> | 417 6%                   | 541 5%        | 809 11%                      | 994 9%        | 10,001 18%                    | 4,873 16%     |
| 4 <sup>th</sup> | 255 4%                   | 488 4%        | 555 8%                       | 1,091 9%      | 6,341 11%                     | 4,601 15%     |
| 5 <sup>th</sup> | 271 4%                   | 395 3%        | 385 5%                       | 908 8%        | 3,852 7%                      | 3,136 10%     |
| 6 <sup>th</sup> | 118 2%                   | 231 2%        | 187 3%                       | 382 3%        | 1,641 3%                      | 1,062 3%      |
| censored        | 4,396 61%                | 8,384 73%     | 4,291 59%                    | 7,152 62%     | 27,009 48%                    | 14,048 46%    |
| <b>TOTAL</b>    | <b>7,239</b>             | <b>11,540</b> | <b>7,239</b>                 | <b>11,540</b> | <b>56,510</b>                 | <b>30,599</b> |
| mean dur.       | 1.8                      | 2.4           | 2.7                          | 3.1           | 2.8                           | 3.1           |

Figure 2 shows the survivors in the previous stage by the type of transition. While the relative transition of mothers of first child towards second childbirth did not change substantially during last two decades (figure 2b and 2c), the transition of single mothers towards marriage changed its path. The figure 2a shows that the proportion of survivors in family status single is much higher in 2001-2006 period than it was in the 1990s.

**Figure 2a-c: Transition to subsequent event according to years since first childbirth (survivors)**



## 6. Comparison with other studies

Recently published results from the SEPM study (Hamplová et al., 2007) contains first reliable figures on family situation of single and married mothers in the Czech Republic after 1989. The study covers the behaviour in 1995-2006, which roughly corresponds with the time scope of our analysis. The main results are depicted in tables 6 and 7. From 1,152 women giving first childbirth in last ten years, 73.3% were married, 13.8% were cohabiting and 12.9% were lone mothers. These numbers surprisingly well correspond with our results, where after omitting widowed and divorced mothers and cases with invalid ID, 72.6% of

women having first child in 2001 were married, 13.7% were identified as cohabiting and 13.7% as lone mothers.

Concerning age at first childbirth, teenage mothers were in 37% alone according to SEPM, while proportion of lone mothers in older ages fluctuated from 7 to 14%. While proportion of married mothers increased with age, the proportion cohabiting amounted to 12-17% through the reproductive life span (table 6).

**Table 6: Family situation of women at first childbirth according to age at childbirth, SEPM study, 2006**

| Family status<br>of mother | Age of mother at first childbirth |       |       |       | Total |
|----------------------------|-----------------------------------|-------|-------|-------|-------|
|                            | 15-19                             | 20-24 | 25-29 | 30-34 |       |
| Married                    | 46%                               | 72%   | 81%   | 72%   | 73%   |
| Cohabiting                 | 17%                               | 14%   | 12%   | 14%   | 14%   |
| Lone                       | 37%                               | 13%   | 7%    | 14%   | 13%   |

Note: Age categories 35-39, 40-44 and 45-49 not shown due to low numbers

Table 7 show results of SEPM study according to the highest attained education of mothers. Also these results are very similar to those of our study: The higher is the finished educational level of mother, the lower is the prevalence of cohabitation and especially of lone motherhood and the higher is the proportion of childbearing in marriage. The only wider difference between CZSO 2001-2006 and SEPM 2006 data sets are the proportions of family types among primary educated, but this is imposed by underestimation of non-marital childbearing among primary educated mothers in SEPM study (Hamplová, 2007: 14).

**Table 7: Family situation of women at first childbirth according to the highest attained education of mother, SEPM study, 2006**

| Family status<br>of mother | Education of mother |         |          |            | Total |
|----------------------------|---------------------|---------|----------|------------|-------|
|                            | Primary             | Sec. I. | Sec. II. | University |       |
| Married                    | 45%                 | 70%     | 78%      | 86%        | 73%   |
| Cohabiting                 | 17%                 | 15%     | 14%      | 7%         | 14%   |
| Lone                       | 38%                 | 15%     | 9%       | 8%         | 13%   |

Second study used for confrontation is the statistics of data on fathers from 2007 vital statistics of CZSO (denoted CZSO Fathers 2007). Since 2007, Czech Statistical Office collects information also on fathers of non-marital children (previously only on husbands of married mothers). From 54,050 live births in 2007, 56% were born in marriage and 44% outside marriage; from which 32% records included the data on father, while in 12% of records the data on fathers were not stated. Therefore we may estimate that about 32% of mothers live in some part of stable partnership while 12% may be considered as lone

mothers. Compared to the results of our study, the most important difference is in the proportion of non-marital births, which however corresponds to the sharp increase in non-marital childbearing in the last decade (compare table 1). Nevertheless, the gap in proportion of marital births is counterbalanced almost wholly by the increase in proportion of cohabiting mothers, while the proportion of lone mothers in 2007 remains similar to that of 2001.

Age specific family forms according to CZSO Fathers 2007 stress even more strongly the emergence of teen-age motherhood in regards of missing partners: 41% of records of first children born to teen-age mothers had missing information on father of child. The proportion of mothers that can be considered as lone decrease until the age 25-34 and again increase afterwards. On the contrary, the proportion born inside marriage is highest at age category 25-29 where it reaches two thirds.

**Table 8: Family status of mothers at first childbirth and availability of information about father according to the age of mother at first childbirth (CZSO Fathers 2007)**

| Marital status |            | Age of mother at childbirth |       |       |       |       |       | Total |
|----------------|------------|-----------------------------|-------|-------|-------|-------|-------|-------|
| Mother         | Father     | 15-19                       | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 |       |
| Married        |            | 11%                         | 41%   | 66%   | 62%   | 55%   | 43%   | 56%   |
| Non-married    | stated     | 48%                         | 41%   | 26%   | 29%   | 32%   | 41%   | 31%   |
| Non-married    | not stated | 41%                         | 17%   | 8%    | 9%    | 14%   | 16%   | 12%   |

According to 2007 records on father, the type of family formation is strongly connected to the educational level of mother. While primary educated women already bear first child into marriage quite rarely (table 9), and moreover they are very often lone mothers, university educated mothers are mostly married, and if not, they state the information on father in majority of cases. Again, the trend is clear: proportion of extra-marital children as well as the proportion of missing information about father goes down with increasing level of education of mother.

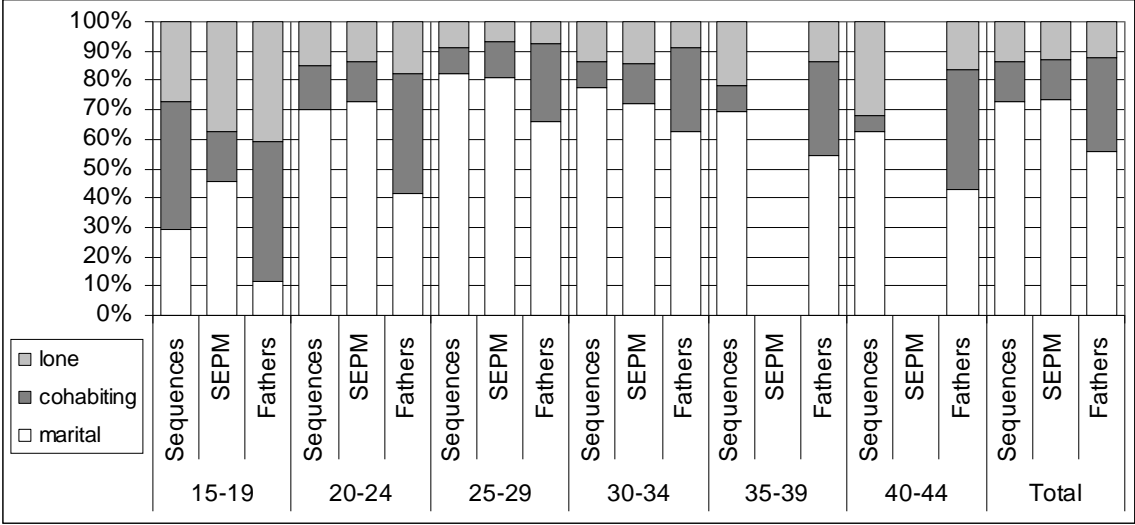
**Table 9: Family status of mothers at first childbirth and availability of information about father according to the finished education of mother (CZSO Fathers 2007)**

| Marital status |            | Education of mother |         |          |            | Total |
|----------------|------------|---------------------|---------|----------|------------|-------|
| Mother         | Father     | Primary             | Sec. I. | Sec. II. | University |       |
| Married        |            | 18%                 | 44%     | 62%      | 77%        | 56%   |
| Non-married    | stated     | 43%                 | 40%     | 30%      | 18%        | 31%   |
| Non-married    | not stated | 39%                 | 15%     | 8%       | 5%         | 12%   |

As shown in figure 3, except lowest age category, affected by lower number of occurrences, the results of SEPM are very close to those of our analysis. This gives up conviction that determining family form by the analysis of subsequent events is the correct method. Data derived from 2007 birth records on fathers show lower proportion of married

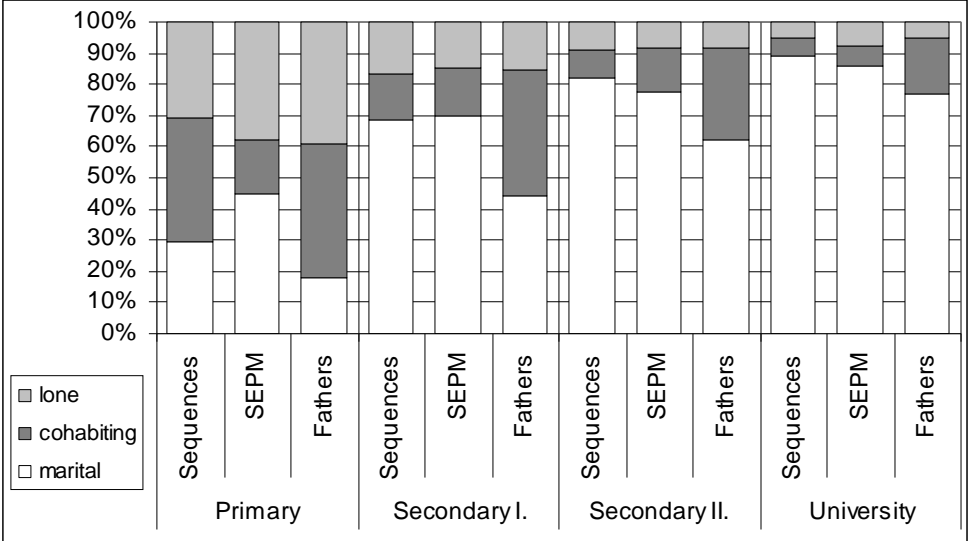
partnerships, which corresponds to the overall trend of increasing non-marital fertility, but the proportions of lone mothers are similar to our study. Increasing proportion of marital births with age and disappearing lone motherhood with age is evident from all three studies.

**Figure 3: Comparison of family status of mothers by age, CZSO sequences 2001-2006, SEPM 2006 and CZSO Fathers 2007**



Comparison of results according to educational level of mothers sounds like in previous paragraph: The results of all three studies are very similar, with the exception of higher proportion of cohabiting mothers detected in the CZSO Fathers 2007 study.

**Figure 4: Comparison of family status of mothers by finished education, CZSO sequences 2001-2006, SEPM 2006 and CZSO Fathers 2007**



## 7. Conclusions and discussion

The main finding of the paper is that the increase of proportion of non-marital births was counterbalanced especially by the decrease of premarital conceptions. While until the early 1990s the couples living in cohabitation or living apart together, or unstable partnerships in case of unwanted pregnancy, married before the childbirth, nowadays the couples do not hasten the marriage but either marry after the childbirth, or even stay in unwed partnership also after the second childbirth. On the other hand, the proportion of lone mothers increased substantially. About half of single mothers experience neither marriage nor second childbirth until next six years, and they are considered as lone mothers. Other quarter marry after childbirth, while last quarter bear also second child without entering marriage.

Apart of the influence of the age of mother at first childbirth, we found wide differences between educational categories of women. We may conclude with Chaloupková (2007: 76), family formation connected to first childbirth depends on the educational level of women, on her age, and on the perspective of future family life. The higher is the educational attainment of woman, the more conservative is her pathway of family formation. While low-educated women tend to be lone mothers or to cohabit even after second childbirth, university educated mostly conceive and even concept their first child traditionally after marriage. According to Oppenheimer (2003), the spouses with less attractive matches (in economic terms) postpone the marriage in favour of staying in unwed partnerships. Since poorly educated women tend to have relationships with poorly educated men (Srb, 2006), these matches are less favourable and have a lower propensity to end in marriage; a larger proportion tends to live long-term in cohabitation, which alone is more prone to dissolve than marital union (Zeman, 2003). Moreover, the occurrences of further transitions of single women (marriages and second childbirths) decreased, or were postponed during last two decades.

After 1989, the Czech society went through turbulent changes, including the fast market change and the broad change in values and attitudes of the post-modern world. On the other hand, the relics of socialist state interfere with the emergencies of market society. There has been extensive discussion about the evaluation of demographic processes that immediately followed. While some stress the positive sides of demographic change, like firm control over own reproduction, postponement of marriage and childbearing towards older age, or premarital cohabitation (Rabušic, 2001, Sobotka et al., 2003), and connect them to the value change that could be summarized under the concept of second demographic transition (Lesthaeghe and Van de Kaa, 1986), others attend rather to adverse phenomena of non-marital childbearing and lone motherhood, arguing that proportion of non-marital births increased most significantly among economically weaker population (Rychta íková,

2000, Katr ák, 2006). According our previous paper (Zeman, 2007b), two different types of “trendsetters” can be identified in Czech society. The trendsetters of non-marital childbearing are mothers with primary education who frequently have children in cohabitation or as lone mothers, while the trendsetters of fertility postponement are university and higher-secondary educated, who postpone the childbearing and marriage until age around 30, but on the other hand they are behaving traditionally in terms of timing the first childbirth inside marriage. There is no general explanation of the transitional behaviour, as women of different education levels are reacting differently to the social and economic changes, and hence also the demographic changes after 1989 cannot be evaluated unequivocally.

In this paper we show that the basic statistic records of births and marriages of the Czech Statistical Office can be used in more sophisticated way to estimate otherwise unknown extent of changes in family formation processes, and to identify the recent changes in traditional family, cohabitation and lone motherhood.

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## Notes:

<sup>A</sup> The survey *Sociální a ekonomické podmínky v mateřství* (SEPM, Social and economic conditions in motherhood) was conducted in 2006 by Public Opinion Research Centre (Centrum pro výzkum ve veřejném mínění) that works by the Institute of Sociology of the Academy of Sciences of the Czech Republic, Prague. In this survey 1,160 women of age 14-44 who had at least one child during past ten years were surveyed about their social, economic and family situation during and after childbirth. From total number of responses, 8 were invalid, so we use 1,152 of them.

<sup>B</sup> In the Czech statistics, premarital conception is traditionally regarded as birth of child until 8<sup>th</sup> month since marriage (i.e. 0-7 months since marriage). The border of 243 days is computed as  $365 \cdot 8/12$ .

<sup>C</sup> We use four levels of finished education measured at the time of first childbirth: primary education; lower secondary education including vocational training; higher secondary education with the "maturita" qualification and university education. Mean education means the average level of education on the scale 1-4.

<sup>D</sup> From those who got married after first childbirth, about half gave second childbirth later after marriage. From those who gave also second childbirth as single, only about 15% married in later observed time span, while the majority remained cohabiting.

<sup>E</sup> We assume that education is finished at first childbirth (see also Marini, 1984, Rindfuss et al., 1980), arguing that in the Czech Republic, education enrolment and childcare are generally incompatible (Kantorová, 2004, Sobotka et al., 2003). Observing the data set we found that from women who have delivered both their 1<sup>st</sup> and 2<sup>nd</sup> children in 1991-2006, only 17% of primary educated and 5-7% of the others progressed in education between 1<sup>st</sup> and 2<sup>nd</sup> childbirth.