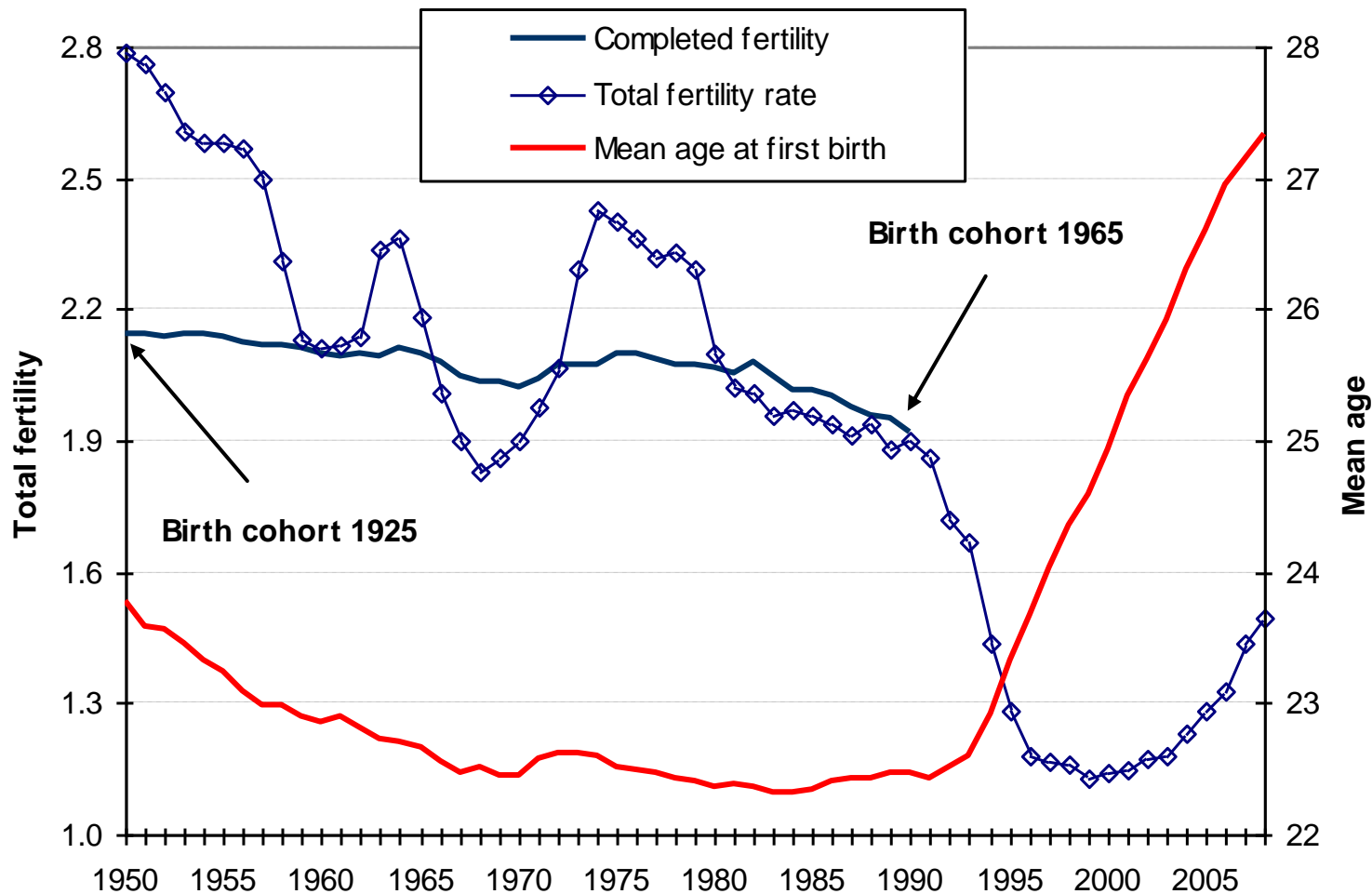




# Second Births in the Czech Republic

Anna Šťastná

# Total fertility rate (1950-2008) and completed fertility (1925-1965), mean age at first birth, Czech Republic

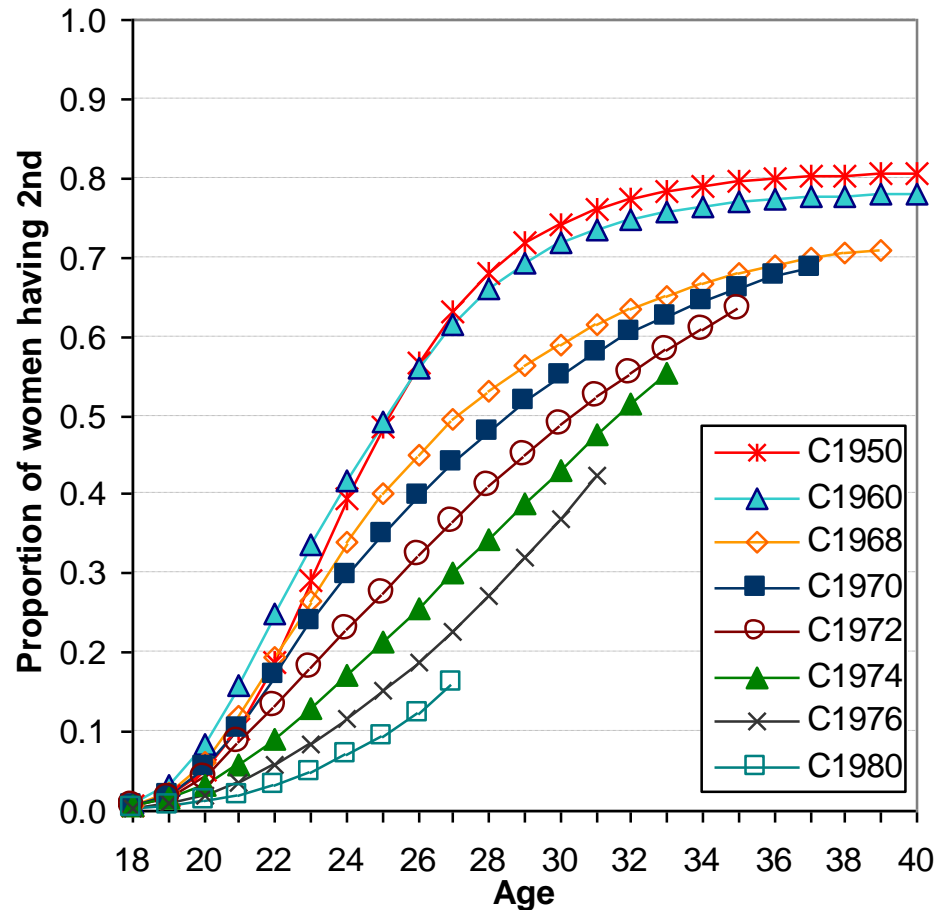


Sources: CZSO, Rychtaříková 2004

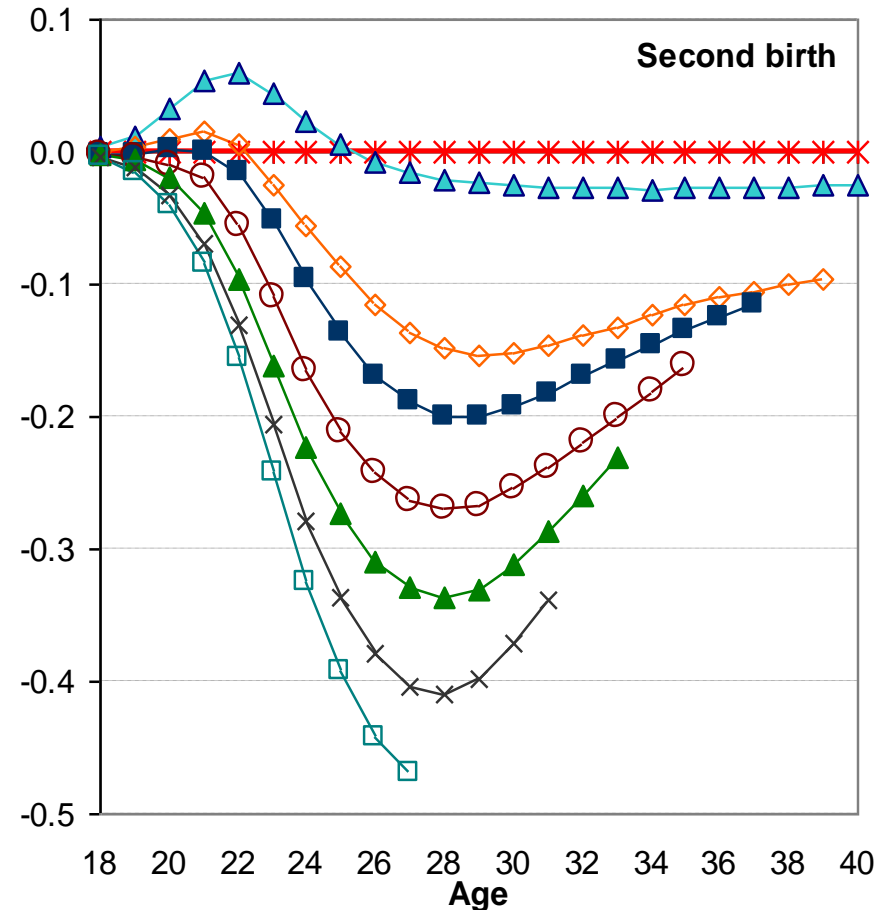
# Czech Republic – changing fertility pattern

- Family formation was postponed and period fertility rates declined sharply; since 1995 **total fertility rates (TFR) below** the 'lowest-low' threshold of **1.3**. Recent increase of TFR to **1.50 in 2008**.
- Transition to a late childbearing pattern - a sharp **rise in the mean age** of mothers **at first birth** - from 22.5 years (1993) to **27.3** (2008).
- Continuing postponement – from the cohorts of late 1960s; large decline - the cohorts of 1970s
- Completed fertility – modest variability by **education** (cohort 1955 – 2.28 basic education, 1.74 university graduated, Rychtaříková 2004). Differences in the distribution of number of children.
- The most characteristic trend in reproductive patterns during the socialist era was a strong orientation towards the **two-child family**.
- Proportion of two child families - from under 40% for the cohorts of the late 1920s to around **55%** in the cohorts of the 1950s and early 1960s.

# Progression to second birth by age – cumulated cohort fertility fate and cumulative absolute change



Source: Human Fertility Database (HFD)



Source: Human Fertility Database (HFD), own calculations

# Transition to second child - theoretical background

- the life course approach- people's lives are uniquely shaped by the timing and sequencing of life events
- basic dimension of event history analysis = **time**
- birth of second child (compared to the transition to parenthood) - specific life transition in which the “normative parental imperative” (*Rindfuss, Morgan, Swicegood 1987*) does not play a role
- Analysis of the transition to second child and the role of education – in Scandinavian countries and West Germany: time-squeeze hypothesis, selection hypotheses, role of partner's characteristics and income effect

# Research questions

Determinants of second childbearing:

- How do the characteristics of the parental home such as number of siblings or the family situation of the parents influence the risk of a second birth?
- How important a role do personal characteristics such as education and partnership history play in the planning and timing of a second birth?

- **Czech Generations and Gender Survey (2005)**

N = 10 006 cases, 4797 men & 5209 women aged 18-79  
response rate 54 %

data restricted to the Czech nationality only

- **Analytical sample used**

women born between 1951 and 1987

&

having 1st child therefore being at risk of 2nd conception

# Method - event history analysis

- Joint model for first and second birth with unobserved heterogeneity factor

## First birth:

$$\ln h_i^c = y^c + \sum_j \beta_{1j}^c x_{ij} + \sum_k \beta_{2k}^c w_{ik} + \varepsilon_i$$

Baseline: age of woman

## Second birth:

$$\ln h_i^e = y^e + \sum_j \beta_{1j}^e x_{ij} + \sum_k \beta_{2k}^e w_{ik} + \varepsilon_i$$

Baseline: age of the first child (= time from the birth of the first child), the baseline log-hazard is a piecewise-linear spline



# Event history model - covariates

- **Time constant:**
    - number of siblings
    - parental break-up
    - religion
  - **Time varying:**
    - education
    - marital status / partnership status
    - calendar period (spline)
- + current age of women included as a regressor spline

# Results I. Transition to second birth

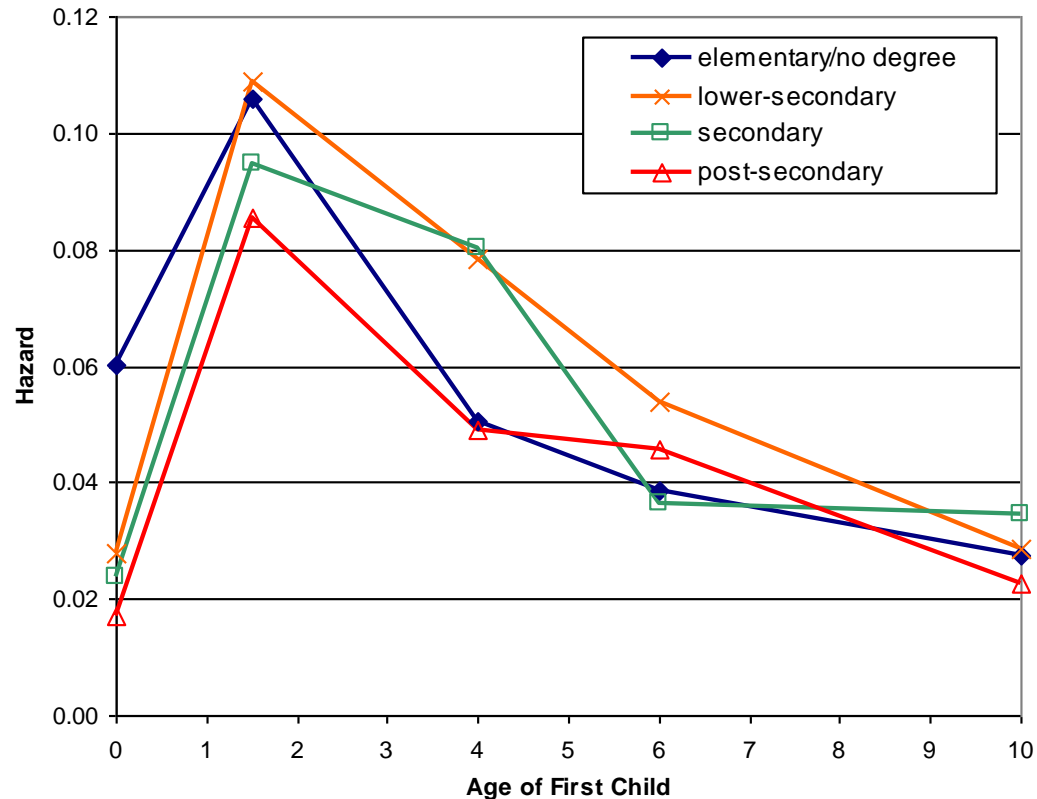
## Single model and joint model with unobserved heterogeneity factor

	Separate model			Joint model with unobserved heterogeneity factor		
	$\beta$	$\exp(\beta)$		$\beta$	$\exp(\beta)$	
<b>Education</b>						
In education	-0.389	0.68	***	-0.6774	0.51	***
Out of education:						
elementary	-0.1116	0.89		0.0681	1.07	
lower-secondary	0.0052	1.01		0.0876	1.09	
secondary		1			1	
post-secondary	0.2054	<b>1.23</b>	**	-0.0211	<b>0.98</b>	
<b>Number of siblings</b>						
None	-0.3200	0.73	***	-0.4290	0.65	***
1 sibling		1			1	
2 siblings	0.1323	1.14	**	0.2556	1.29	***
3 and more siblings	0.2474	1.28	***	0.4835	1.62	***
<b>Divorce of parents before age 16</b>						
No		1			1	
Yes	-0.1802	0.84	**	-0.2566	0.77	**
Other/Missing	0.1001	1.11		0.1586	1.17	
<b>Religion</b>						
Participation at religion services at least once per month	0.1909	1.21	**	0.2819	1.33	***
Participation less often/ no participation		1			1	
<b>sigma</b>		<b>x</b>		<b>0.9220</b>		***
<b>Log-likelihood</b>		-7298.74			-18949.4	

Model is controlled for calendar period (spline), age of woman (spline).

\*\*\* p<0.01; \*\* p<0.05; \* p<0.1

# No tempo effect for highly educated women



*Model is controlled for calendar period, age of woman, number of siblings, parental divorce, religiousness and selectivity effect (common unobserved heterogeneity factor).*

*Source: GGS Czech Republic 2005*

# Results II.

## Transition to second birth – role of partnership

- second birth risk for married women - higher than for cohabiting women and for women in union higher than for those living without partner
- new partner - higher second birth risk

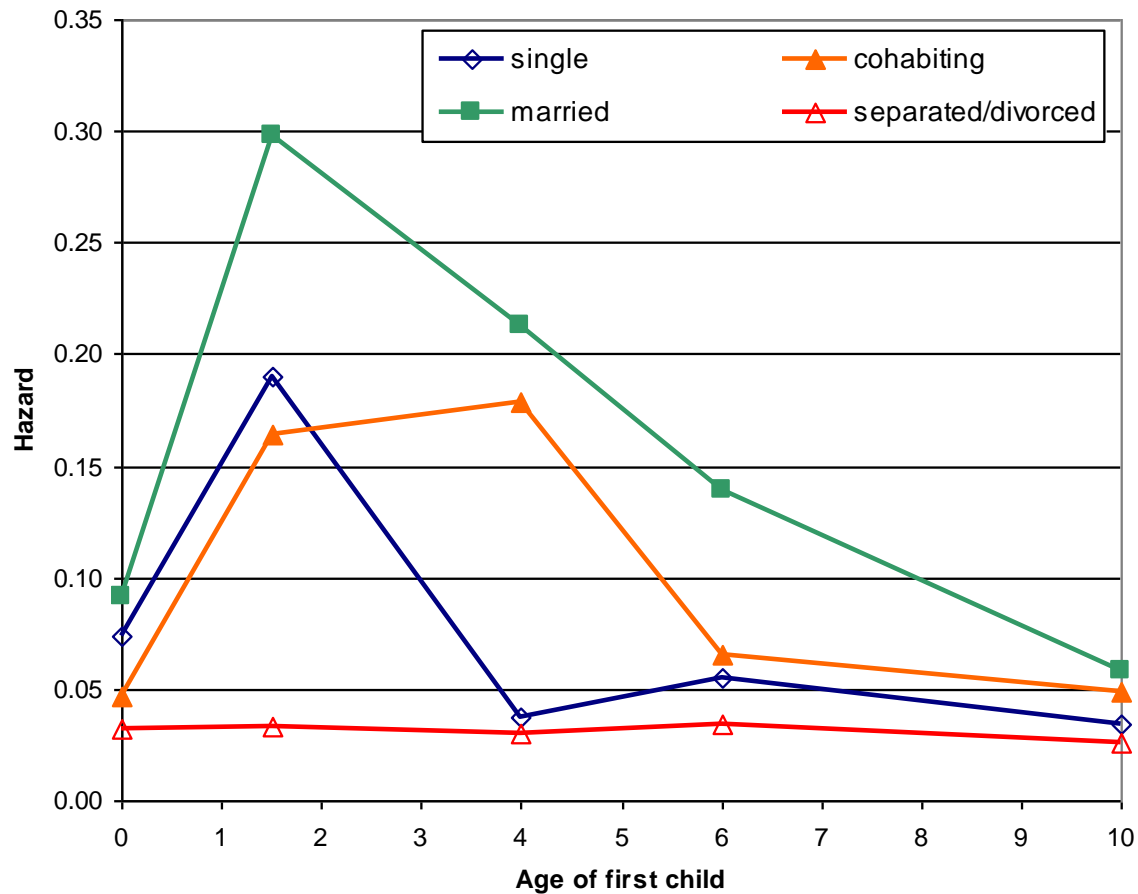
MODEL 2			
	$\beta$	$\exp(\beta)$	
<b>Partnership</b>			
Cohabitation	-0.4721	0.62	***
<i>Marriage</i>		1	
Out of union	-0.9732	0.38	***
		<b>New partner - <math>\exp(\beta)</math></b>	
<b>Number of union</b>	no	yes	
1	1	1.18	
2+	0.91	<b>1.92</b>	***

Model is controlled for current age of women, calendar year, education, number of siblings, parental divorce and religiousness

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

Source: GGS Czech Republic 2005

# Intensity by partnership status – dynamic approach

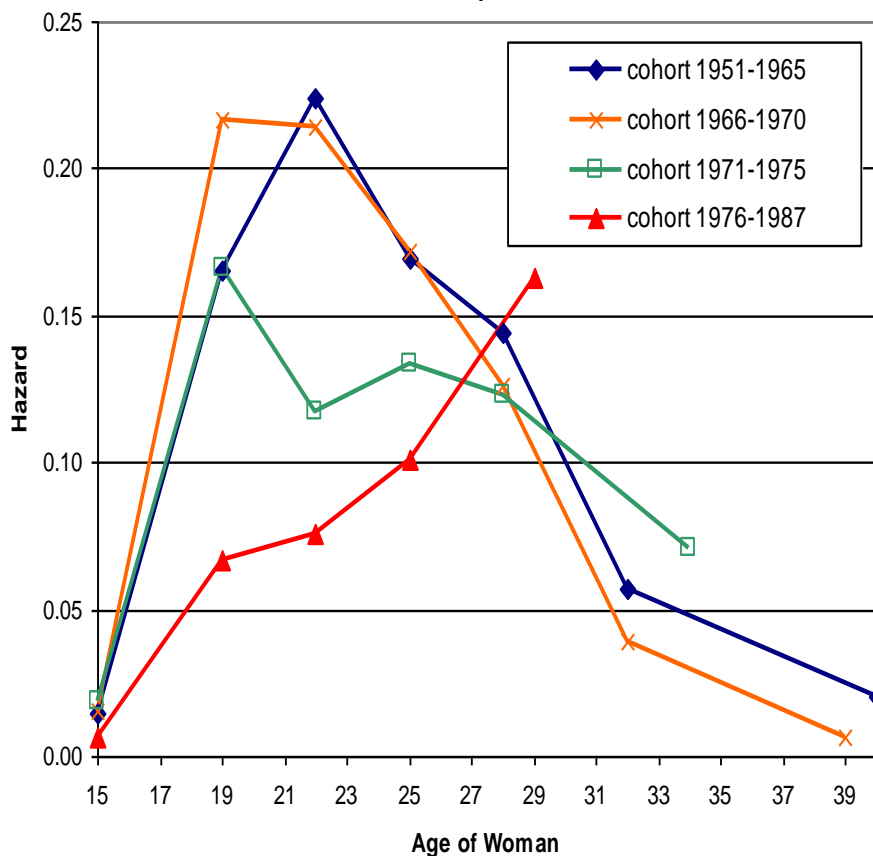


Model is controlled for calendar year, education, number of siblings, parental divorce, religiousness, relative age at first birth, order of union and new partner. Source: GGS Czech Republic 2005

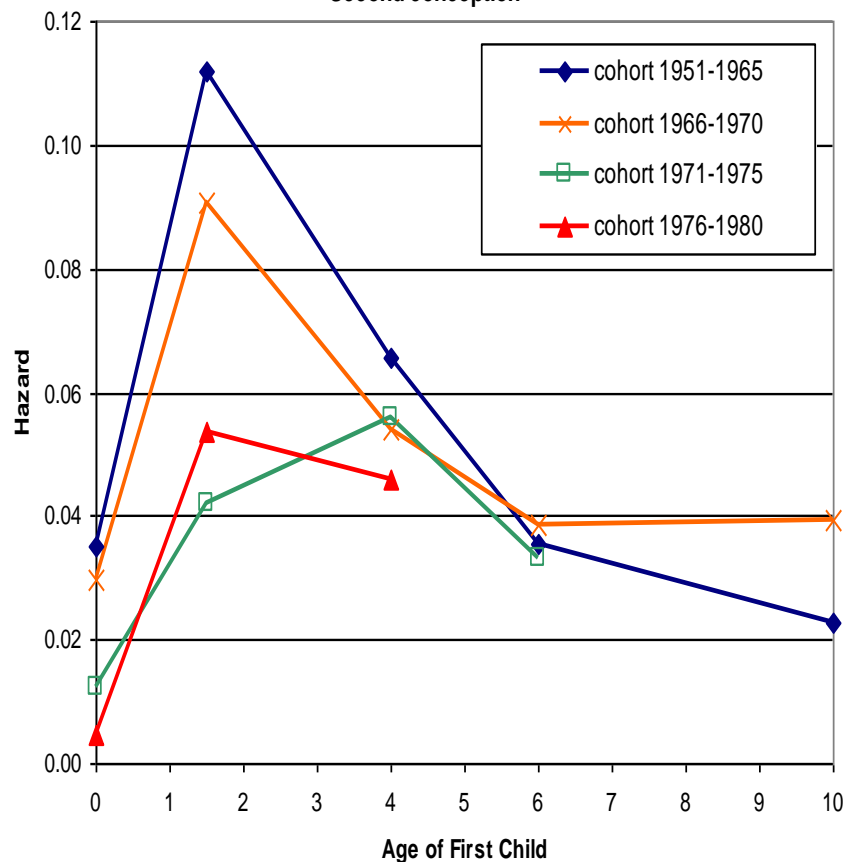
# Results III. - Cohort approach

## – postponement in younger birth cohorts

### First conception



### Second conception



Model for 2<sup>nd</sup> birth is controlled for current age of woman, calendar year, education, number of siblings, parental divorce, religiousness and selectivity effect.

Source: GGS Czech Republic 2005

# Conclusions – second birth determinants

- **education**
  - no significant differences in the risk of second conception according to the highest educational level achieved
- **partnership status**
  - second birth risk - lower for mothers that cohabit or stay in no union at all, higher risk associated with a new partner
- **family background** and early life course experiences
  - higher second birth risk - women with more siblings
  - parental divorce – no significant differences when controlling for partnership status
- membership of a **religious community** - positive impact on the second birth risk
- **cohort shift** in timing and intensity - cohorts 1971 and younger – reaction on societal changes – first and second birth intensities.

# Thank you for your attention!

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