

Seek Project:

The Effects of (Relative) Wages and Human Capital on Fertility Choices

Lessons from East Germany's Fertility Decline after the Unification

Abstract

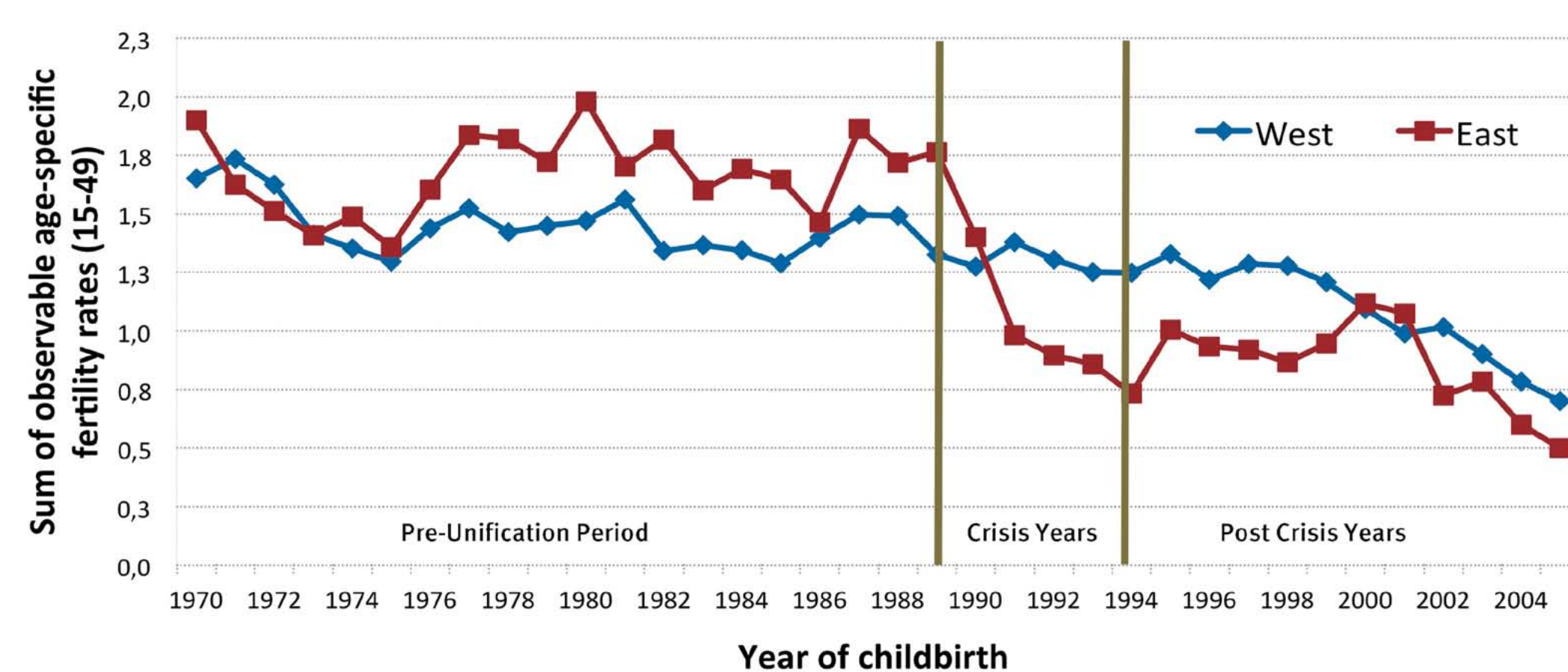
Understanding the link between the labour market and fertility is important for policy-makers who wish to combine high female participation rates and fertility around replacement, especially among high-skilled women. This project seeks to shed light on the link between labour market conditions and fertility behaviour by analysing the causes of the dramatic decline in fertility rates in East Germany. Our conjecture is that the observed changes are a rational response to changes in

the labour market and in particular the wage structure. Based on a newly available dataset that includes full employment and fertility biographies of East and West German women before and after the unification, we want to exploit the shifts in the wage and employment structure as labour demand adjusted to the new skill requirements of a market economy. As a first step, we analyse observed fertility patterns and derive a number of testable hypotheses.

Research Team

- **Melanie Arntz**, ZEW/ University of Heidelberg
- **Martha Bailey**, University of Michigan
- **Christina Gathmann**, University of Heidelberg

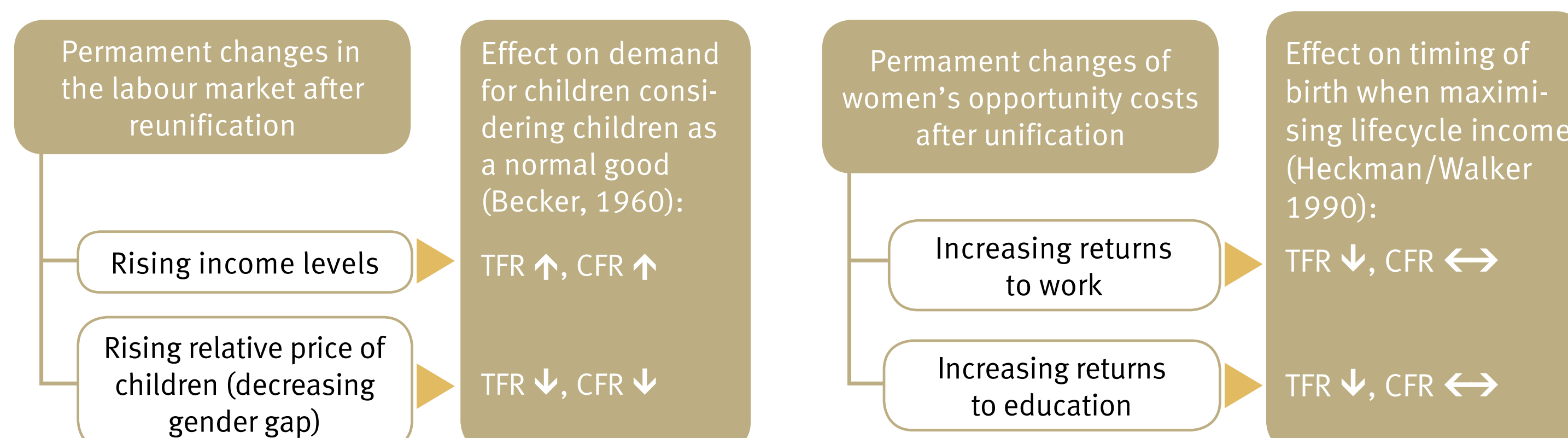
Fertility Indicators



Source: Own calculation based on VSKT 2007 pension data (see description below)

- **Age-specific Fertility Rate (AFR):**
Number of children born in a particular year by women of a particular age
- **Total Fertility Rate (TFR):**
Sum of all AFRs for women aged 15–49 at a particular point in time
- **Cohort Fertility Rate (CFR):**
Sum of all AFRs between 15–49 years of age of a particular cohort

Theoretical Considerations Regarding Fertility Patterns



Research Questions

- Does the decline reflect a permanent drop in the demand for children or an adjustment of the timing of births?
- Are the observed patterns a rational response to the changing labour market context such as
 - rising income levels,
 - increasing wages of women compared to men,
 - increasing returns to labour force attachment, and
 - increasing returns to education?

The Fertility Crisis Mainly Reflects an Adjustment of the Timing of Birth

	% with at least one child until 2007	avg. age at 1 st child in years	% with at least two children until 2007	avg. age at 2 nd child in years	Number of children born per women until 2007
East German women					
1940s	93.1%	22.2	64.9%	25.4	1.94
1950s	91.9%	22.5	62.4%	26.1	1.74
1960-1964	90.3%	22.7	58.4%	26.0	1.65
1965-1969	87.8%	23.7	51.9%	27.5	1.54
1970-1974	74.7%	25.0	34.7%	28.2	1.19
1974-1977	58.9%	25.5	25.1%	28.2	0.88
West German women					
1940s	87.8%	23.3	64.7%	26.1	1.94
1950s	80.7%	24.0	57.0%	27.3	1.68
1960-1964	77.7%	25.9	56.1%	28.6	1.61
1965-1969	73.7%	26.9	50.9%	29.1	1.46
1970-1974	60.4%	26.5	36.5%	28.8	1.09
1974-1977	46.2%	26.1	25.7%	27.2	0.78

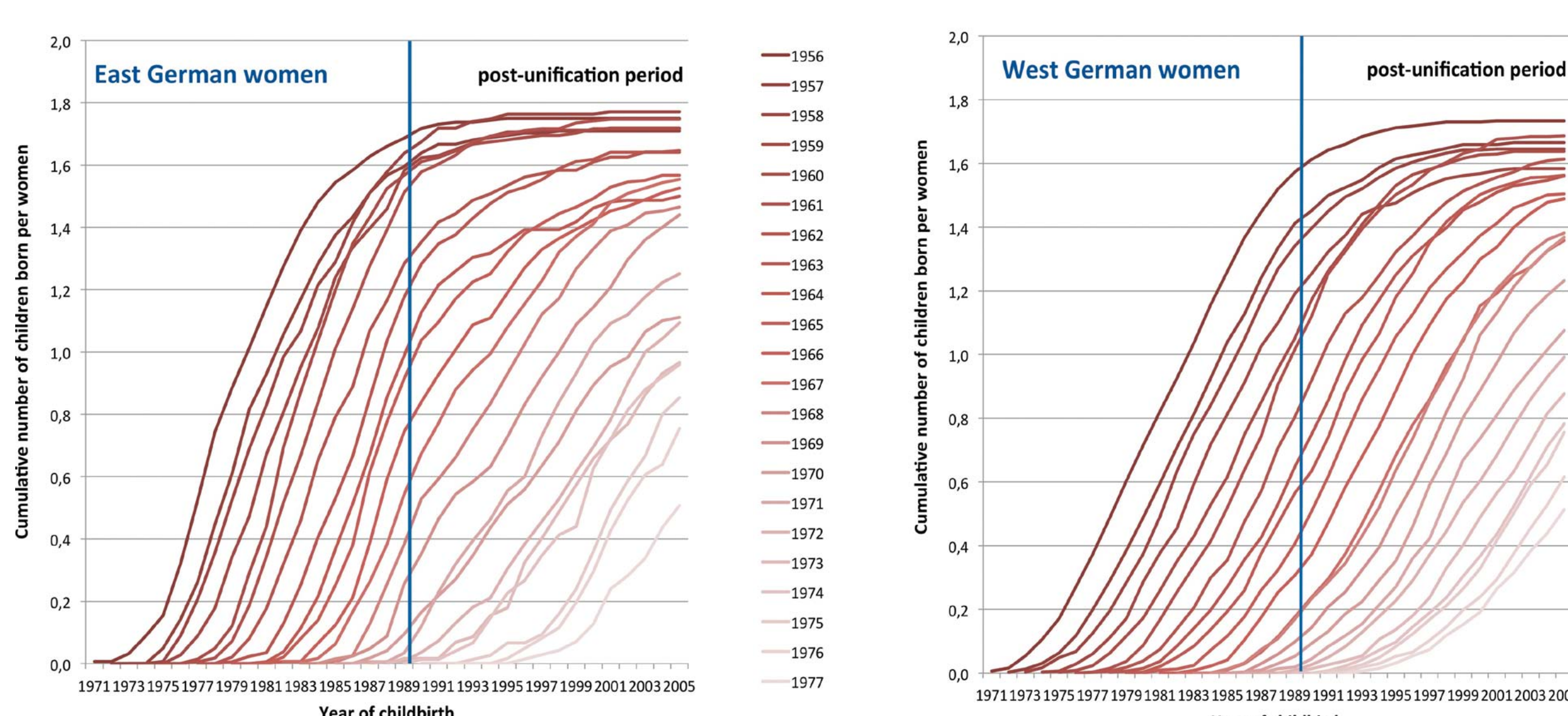
No evidence for a permanent drop in fertility

Evidence for an adjustment in the timing of birth

Biography Data: VSKT 2007

- Administrative data from the German Federal Pension Fund that contains employment and fertility histories of West and East German women prior to and after the German Unity
- 1 per cent sample of all birth cohorts from 1940–1977
- Monthly information on different labour market states as well as childbearing

Complete CFR (Cohorts prior to 1960) and Incomplete CFR (Cohorts after 1960)



Preliminary Results and Outlook

- Decline in fertility after the German Unity mainly reflects a postponement of births among cohorts whose fertility decisions had not taken place by the time of the unification (cohorts 1965–1970 and later)
- Next steps
 - verify descriptive impressions by simulation of fertility rates under different adjustment scenarios
 - estimate determinants of the age-specific fertility rate by cohort x year x education x region as a function of labour market conditions (i.e. wage profiles, relative wages) prior to and after the unification

References:
Becker, G. S. (1960), An economic model of fertility, in: Demography and economic change in developed countries, Universities-NBER Research Conference Series 11, Princeton, 209-231.
Heckman, J. J., and J. R. Walker (1990), The relationship between wages and income and the timing and spacing of births: Evidence from Swedish longitudinal data, *Econometrica*, 58, 1411-1441.