Demographic explanations for the recent rise in European fertility

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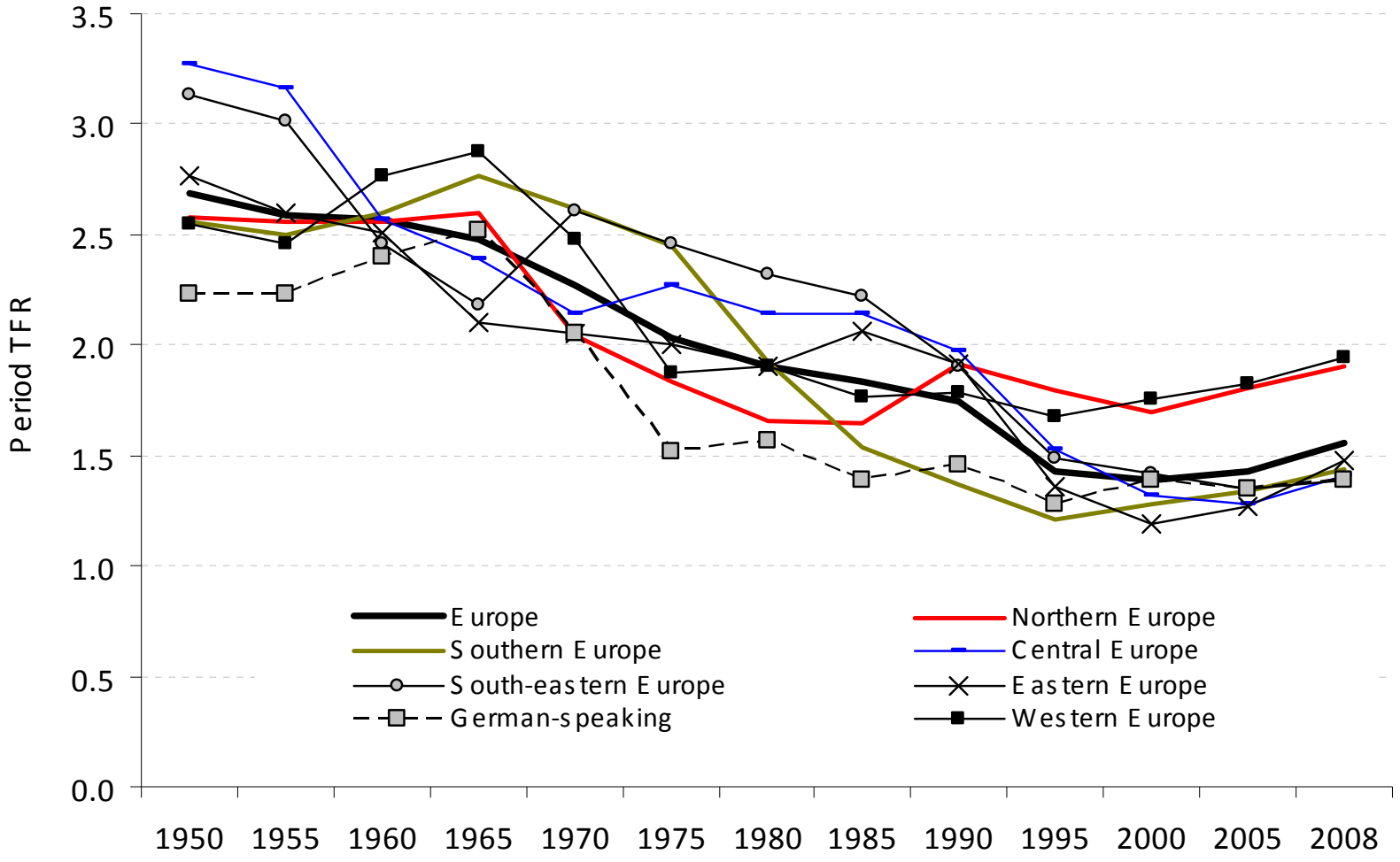
Recent increase in period TFR in Europe



A first concerted rise in period total fertility across most developed regions

Explanations for recent fertility reversals

(Goldstein et al. 2009, Myrskylä et al. 2009, Hoorens et al. (RAND) 2011)

- The deceleration of the ‘postponement transition’: Diminishing tempo effects on the period TFR
- Improving economic conditions in 2000-2008
- New family-related policies, including pronatalist ones
- Influence of higher-fertility migrants
- Reversal of the negative association between development and fertility in the most affluent countries

Our contribution

- Hypothesis: Reduction in the pace of the ‘postponement transition’ had a key role
- Examining a new indicator of fertility, the tempo- and parity-adjusted total fertility (*TFRp*,* Bongaarts and Feeney 2004)

Outline

1 Postponement transition

2 Period vs. cohort changes in fertility

3 Measuring tempo effects: The TFRp*

4 Tempo and quantum effects in the recent TFRp* rise

- Detailed analysis for 4 countries (Czech Republic, the Netherlands, Spain, and Sweden)
- Selected analysis also for Austria, Estonia, Finland, Russia, Denmark, France, Italy and UK
- Source: mostly HFD, also Eurostat & national stat. offices

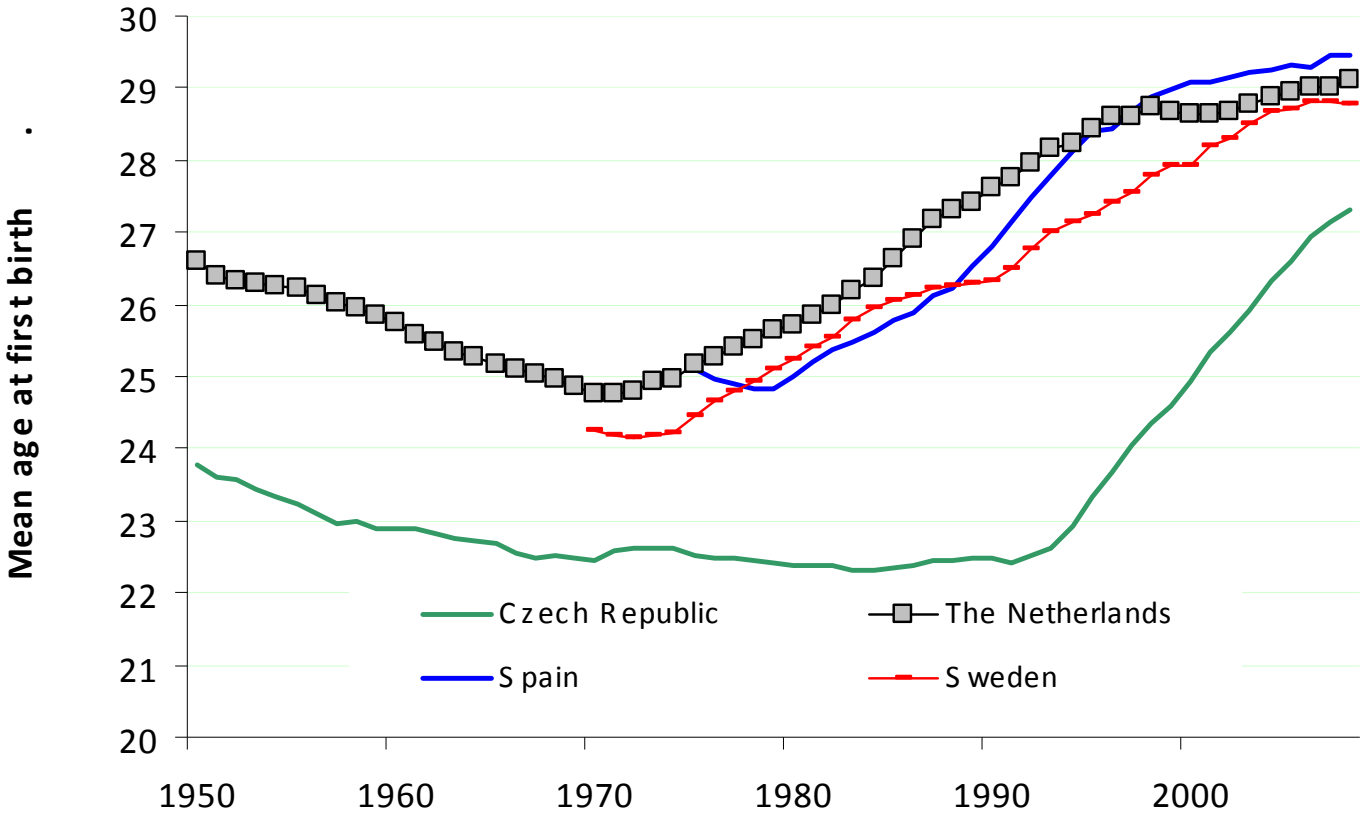
Focus on the period through 2008, before the economic recession began biting…

1. Postponement transition

The *postponement transition*

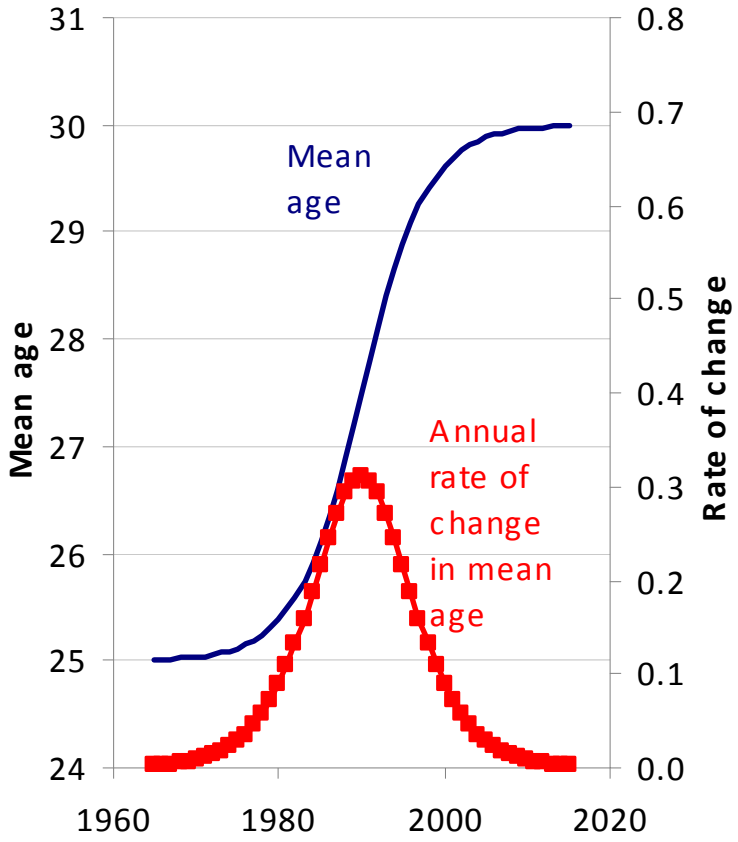
Kohler, Billari & Ortega (2002): Shift from an early to a later timing of childbearing

Mean age at first birth, 4 analysed countries



Simulated course of the *postponement transition*

Parameters: Transition over 50 years (1965-2015), rise in the mean age at childbearing from 25 to 30, constant cohort quantum (0.9)



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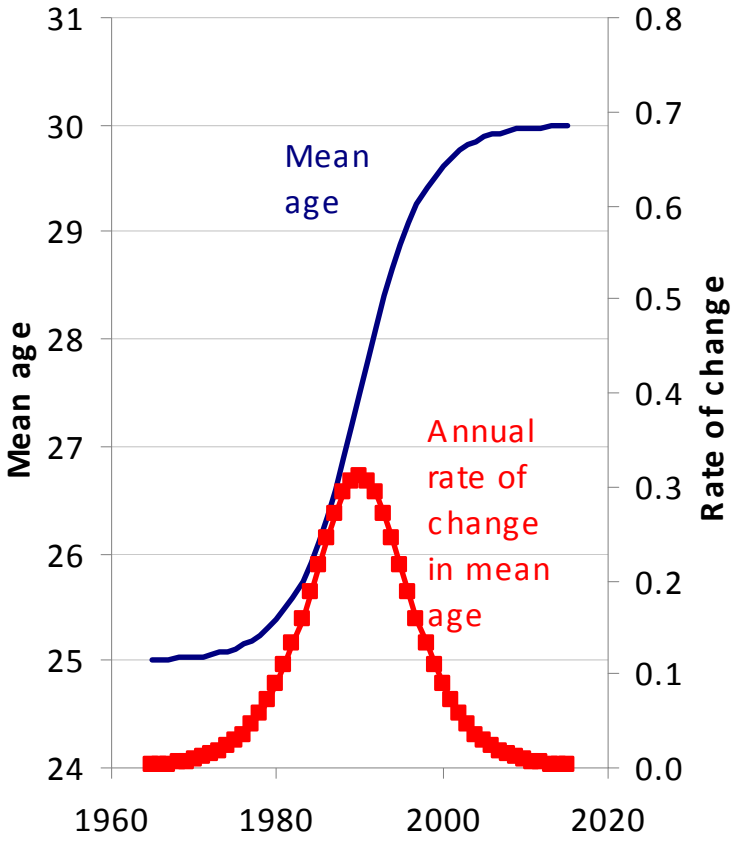
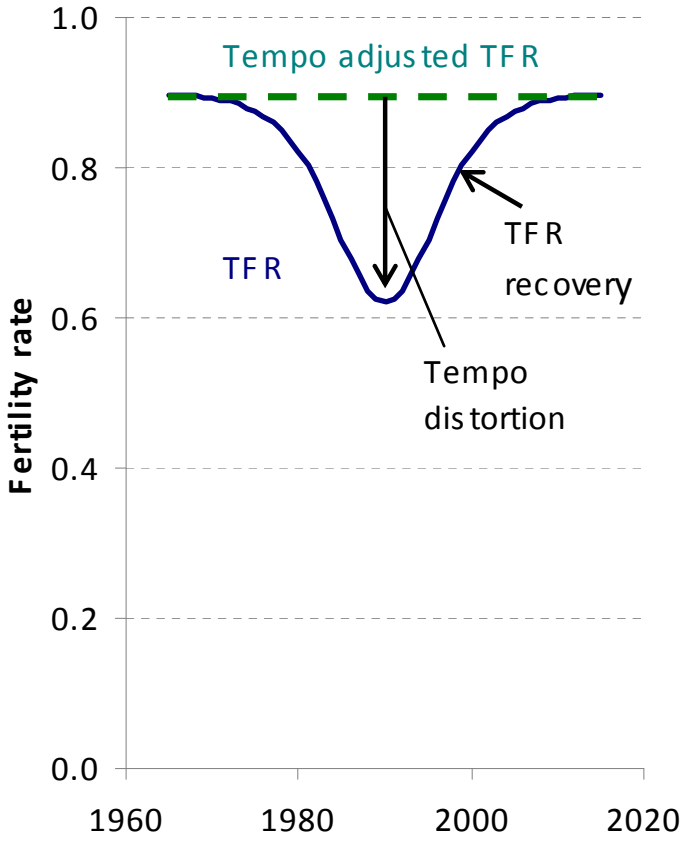


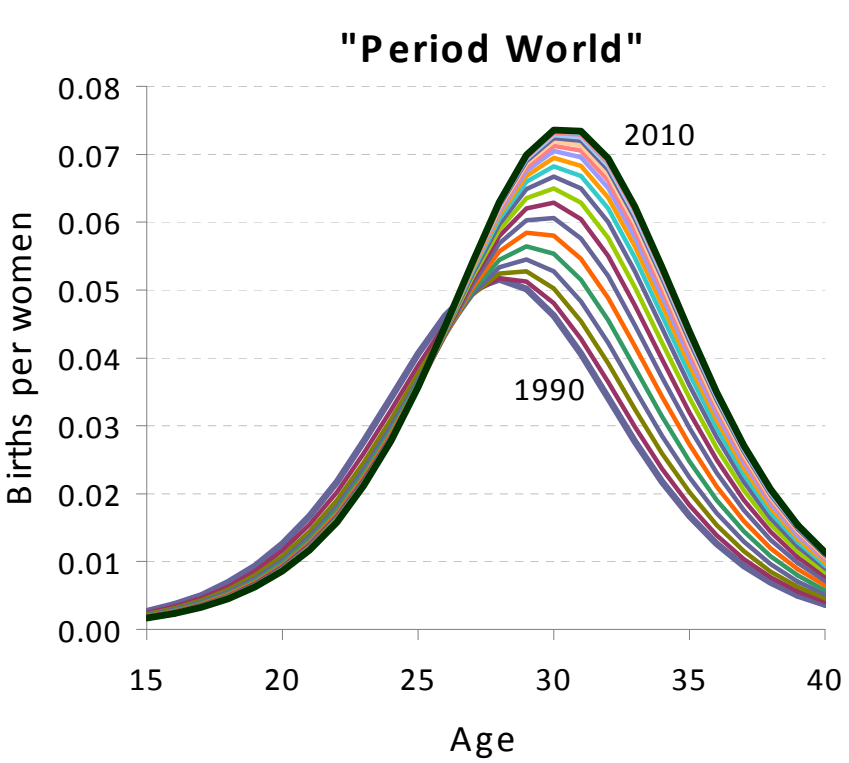


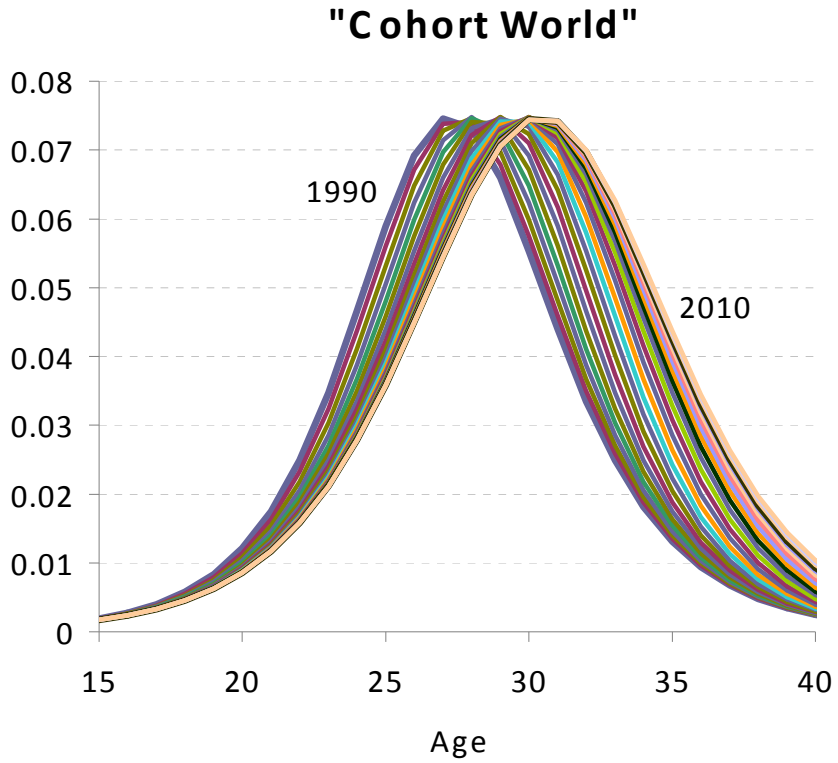
2 Period vs Cohort changes in fertility

Findings from the past studies

- Ryder (1990): “in the model of reproductive behavior, the driving force is change in cohort fertility”
- Ní Bhrolcháin (1992): “period is unambiguously the prime source of variation in fertility rates.”
- Brass (1974): “cohort completed fertility sizes reveal no significant feature that distinguishes them from time averages”
- Ward and Butz (1980): “completed family size is an outcome of a sequence of period-specific decisions” where “couple’s plans are revisable”
- More nuanced cohort view: period matters for the ‘postponement’ stage, but cohort-driven ‘recuperation’ at later ages (Lesthaeghe, Frejka, Goldstein…)

Simulated period- and cohort-driven increase in fertility (a period view, 1990-2010)

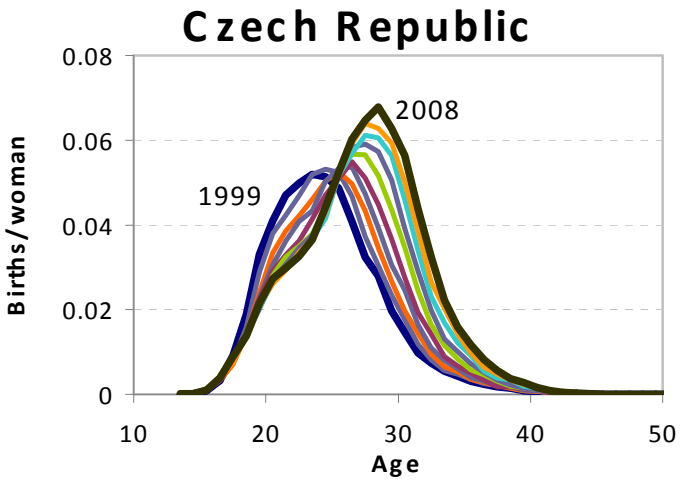


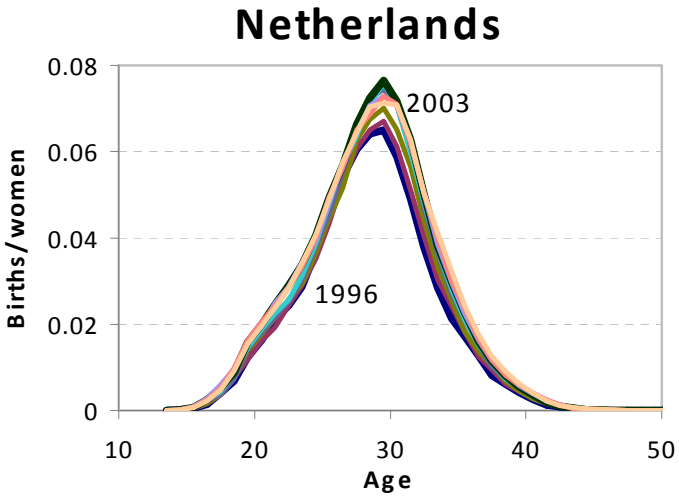


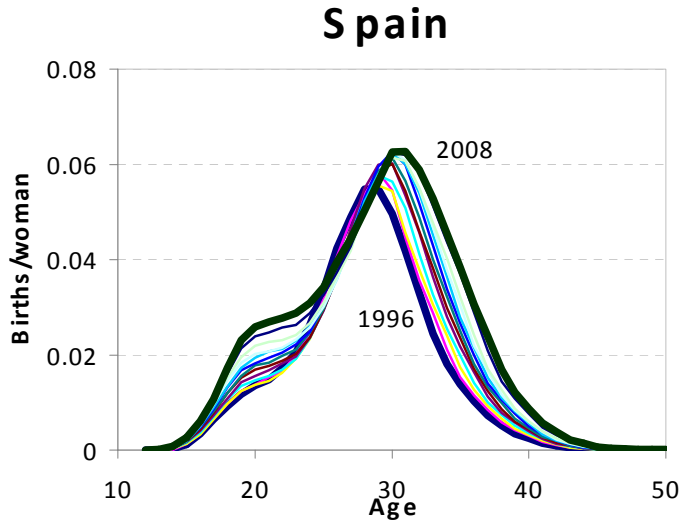
- *Constant variance*
- *Rising mode*
- *Constant shape*

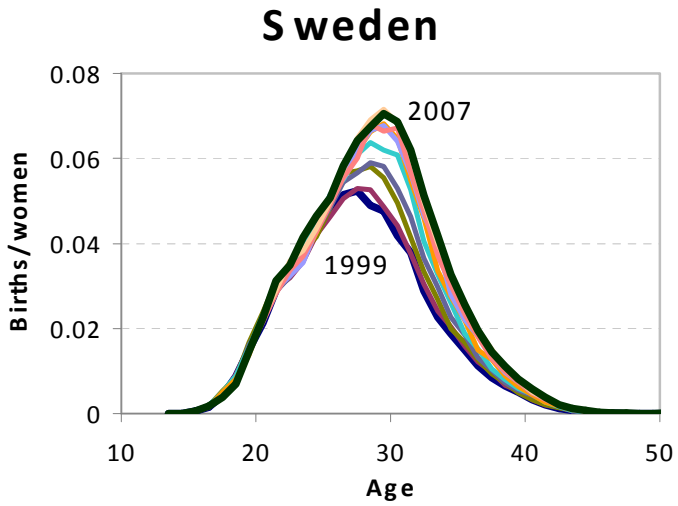
- *Rising variance*
- *Constant mode*
- *Changing shape*

Observed age-specific fertility changes at birth order 1









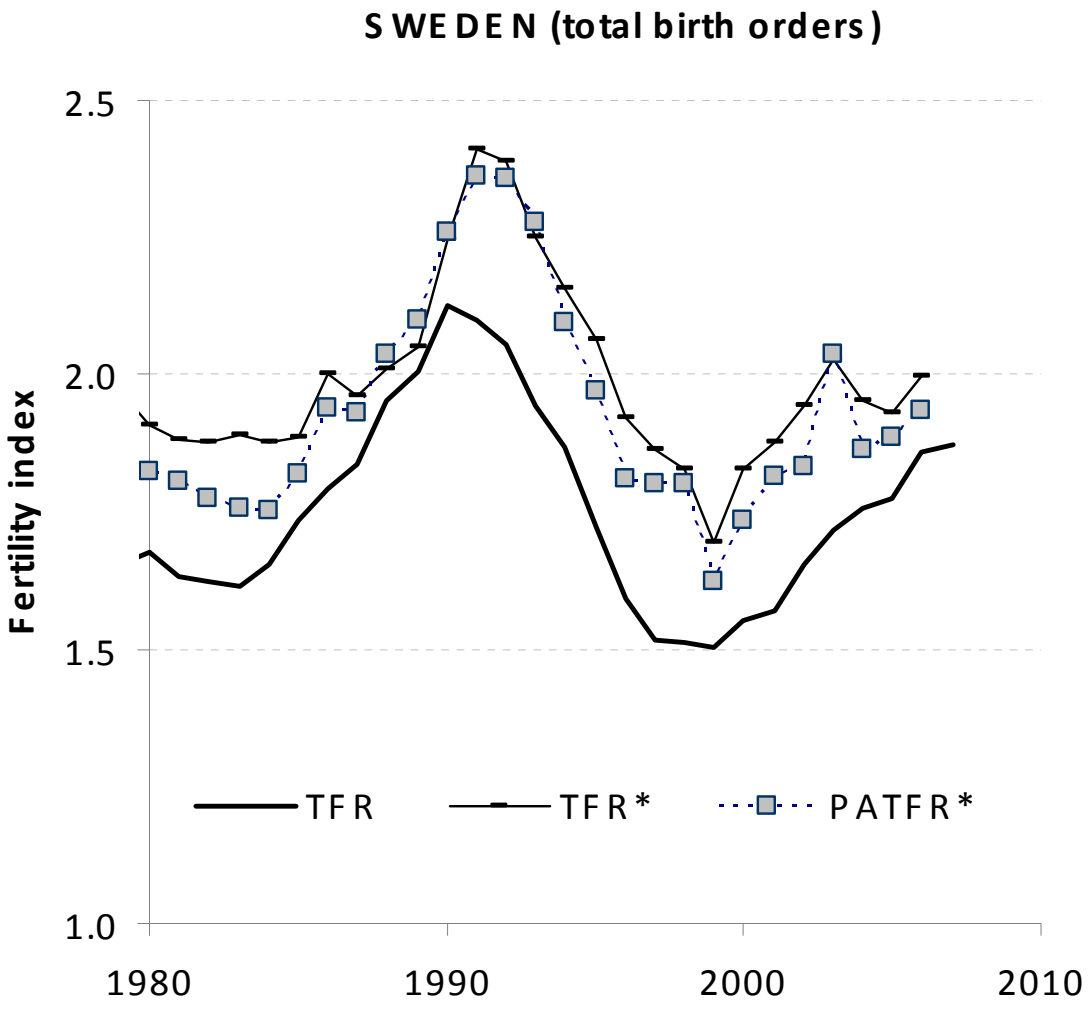
3 Measuring tempo effects:

The *tempo and parity-adjusted total fertility, TFRp**

Analysed measures of fertility quantum

Rates	Rates of the 2nd type (incidence rates)	Rates of the 1st type (hazards, probabilities)	Rates of the 1st type (hazards)
Exposure population (births of birth order i at age x)	Women aged x (all parities)	Women aged x at parity i-1	Women aged x at parities < i
Observed indicator	**TFR**	**PATFR**	**TFRp**
Tempo adjusted indicator	**TFR*** (Bongaarts-Feeney)	**PATFR*** (Kohler-Ortega)	**TFRp*** (Bongaarts-Feeney, Yamaguchi-Beppu)
Fertility table	*(sum of rates by age & birth order)*	Increment-decrement (Births renewable)	Decrement (Births nonrenewable)

Observed and tempo-adjusted TFRs (Sweden)



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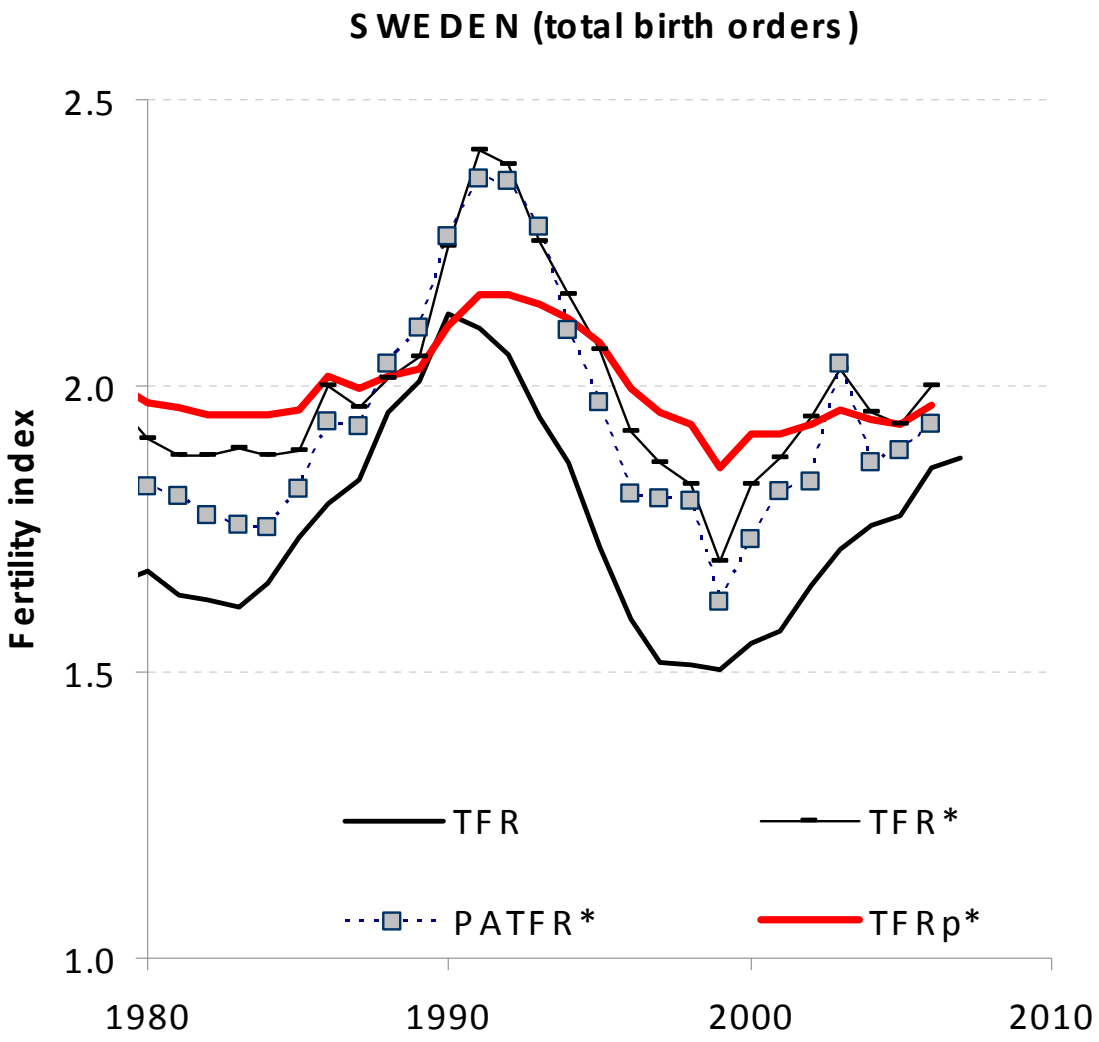


Mean 1980-2006

TFR 1.75

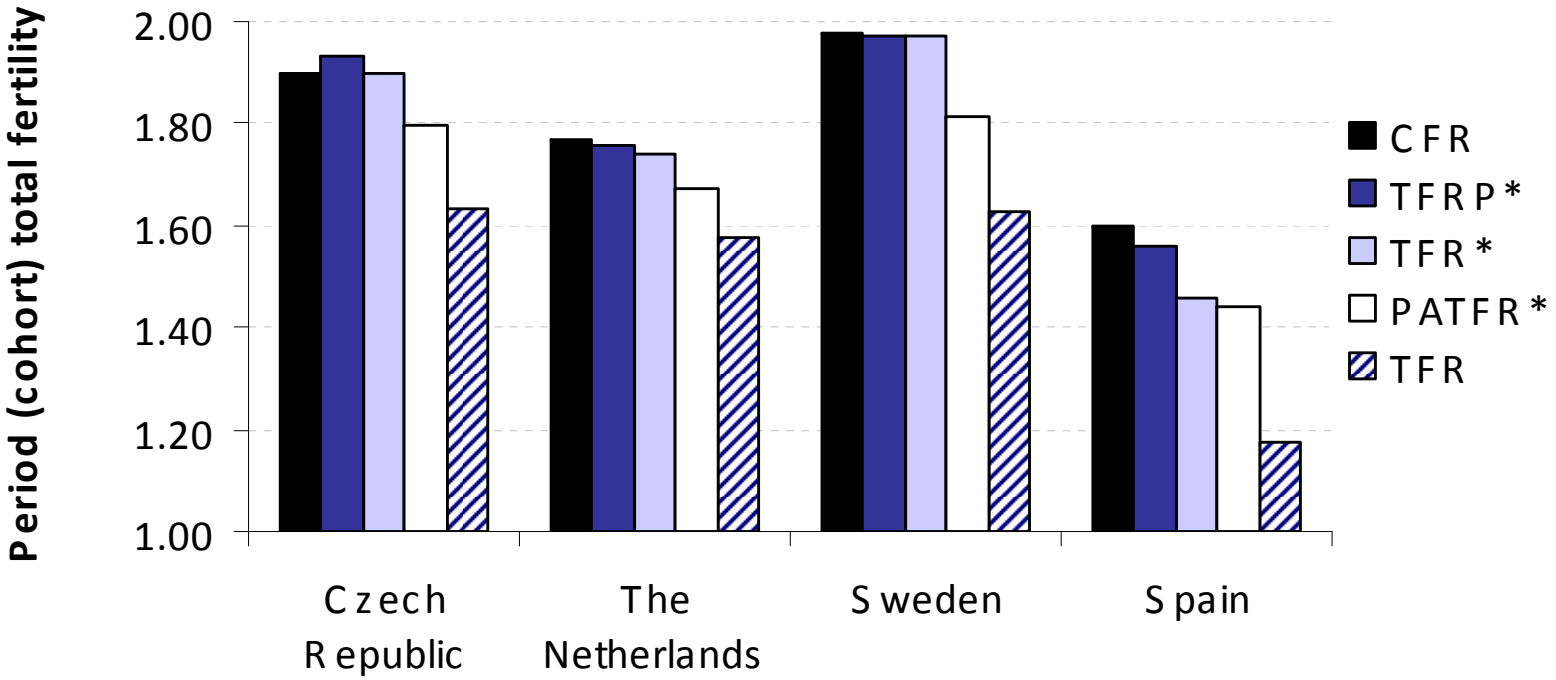
TFR 1.99*

PATFR 1.93*

TFRp 1.99*

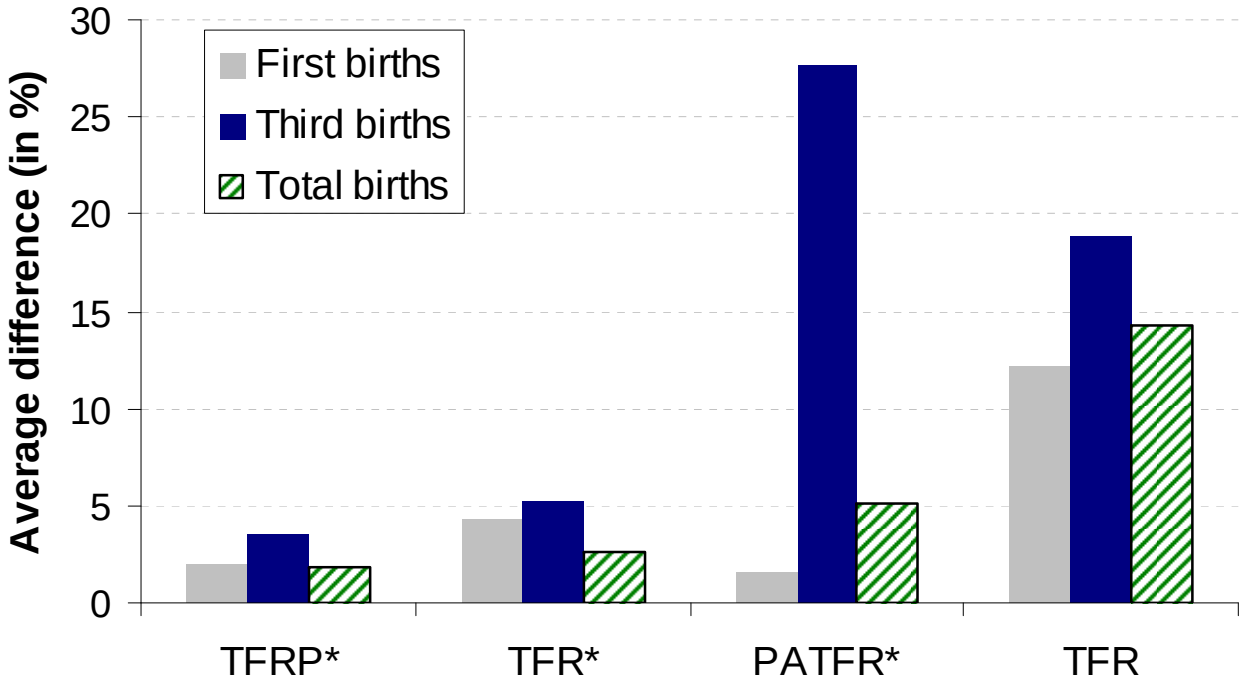
Comparing period and cohort measures (1)

Completed fertility in the 1967 (68) cohort compared with four indexes of period fertility (mean for a 5-year period)



Comparing period and cohort measures (2)

Mean difference between completed cohort fertility (CFR) and period fertility by birth order, cohorts 1960-67 (average for 4 countries)

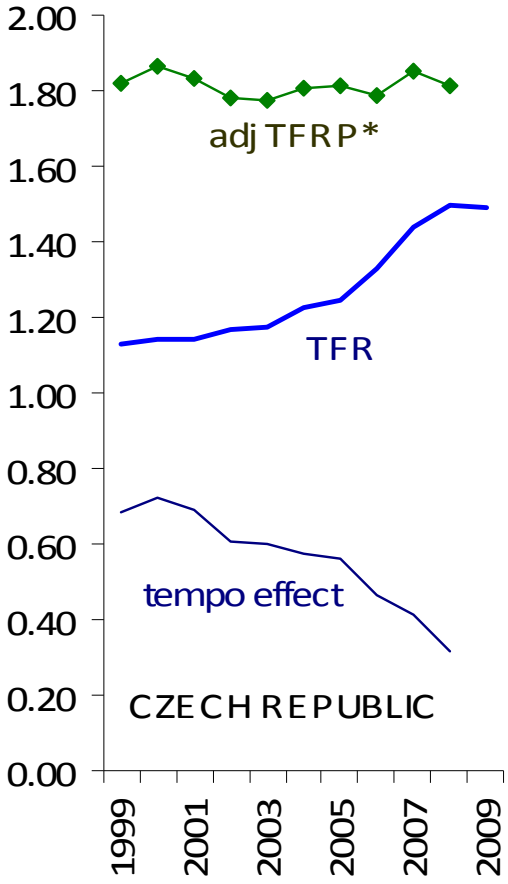


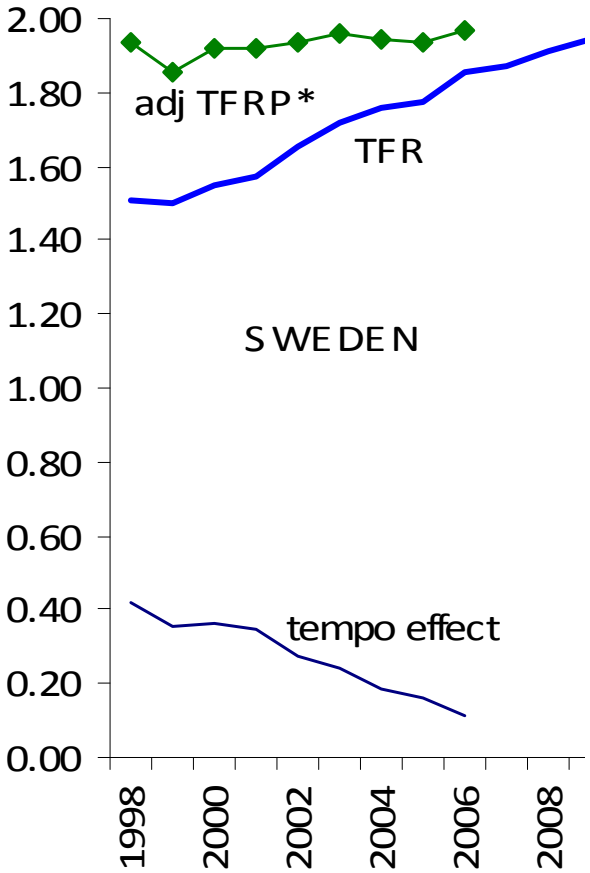
TFRp: Remarkably good correspondence*

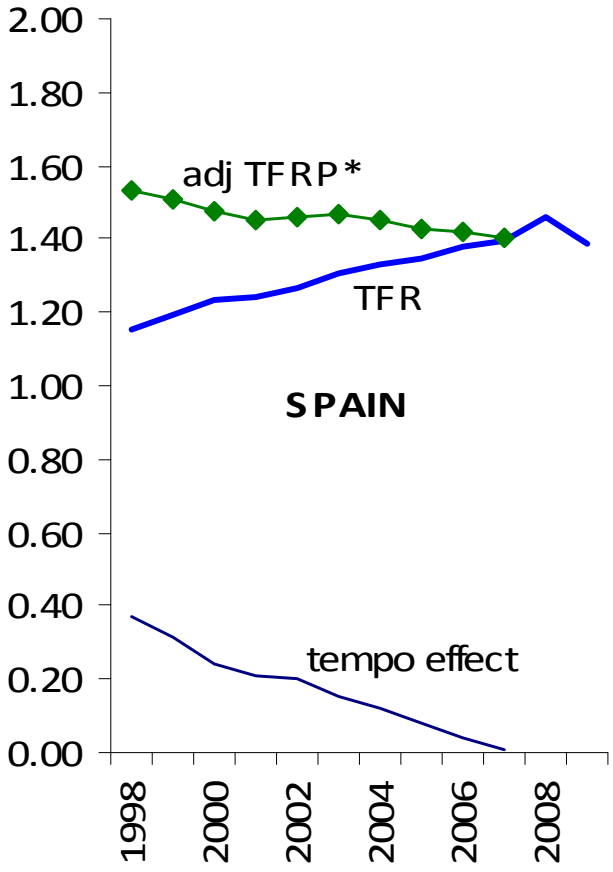
Largest mismatch at higher-order births

4 Tempo and Quantum effects in the recent TFR increase

Can declining tempo effects explain recent TFR upturns?







Estimated portion of TFR increase due to tempo effect

Country	Period	Abs. TFR increase	Percent TFR increase due to tempo effect		
			TFR*	PATFR*	TFRp*
Czech Republic	1999-2008	0.37	56	35	100
Estonia	1998-2006	0.26	3	..	57
Finland	1998-2007	0.14	13	..	82
The Netherlands	1996-2003	0.22	24	30	85
Russian Federation	1999-2007	0.25	41	..	71
Spain	1998-2005	0.19	100	100	100
Spain	1998-2007	0.24	93	..	100
Sweden	1999-2006	0.35	14	12	69

Conclusions

The new indicator (TFRp*): Main advantages

- High stability from one year to the next
- Remarkably good match between period and cohort fertility
- Also excellent fit at higher birth orders

BUT: more testing needed

Substantive conclusions on the postponement transition (*conditional*…)

- Tempo-free fertility higher than previously thought at the time of TFR reaching troughs
- Stable fertility quantum: less decline in the 1990s, smaller or no increase in the 2000s
- Prominent role of tempo effect: 57% (Estonia) to 100% (Czech Republic, Spain) of the observed TFR increases