

European Fertility Trends and Prospects

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on *Recent and Future Trends in Fertility*

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BACKGROUND

- Despite recent rise, period fertility remains 'low' in most European countries

Many demographers suggested that very low fertility is here to stay:

David S. Reher (2007): Extremely low fertility “has been around for too long” ...

W. Lutz - V. Skirbekk - M. Rita Testa (2006): The “*Low fertility trap*” hypothesis

Peter McDonald (2006): cultural divide; TFR of 1.5 a ‘dividing line’

➤ *Is extreme low fertility difficult or impossible to reverse?*

Phil S. Morgan (2003): There is nothing inevitable about very low fertility; largely caused by structural and institutional factors (“obstacles”)

AGENDA

REVIEW OF RECENT TRENDS, PERIOD AND COHORT

- 1. Recent turnaround in the TFR: The end of 'lowest-low' fertility?
- 2. Decelerating postponement, falling tempo effect: Trends and consequences
- 3. Insights based on cohort fertility trends
- 4. Fertility intentions: still centred at two children
- 5. Selected drivers of recent fertility trends: Policies, economy and migration

THE NEXT 30 YEARS: Fertility in Europe through 2040

- The next five years: Economic recession
- The next 30 years: Reasons why fertility is more likely to rise than decline

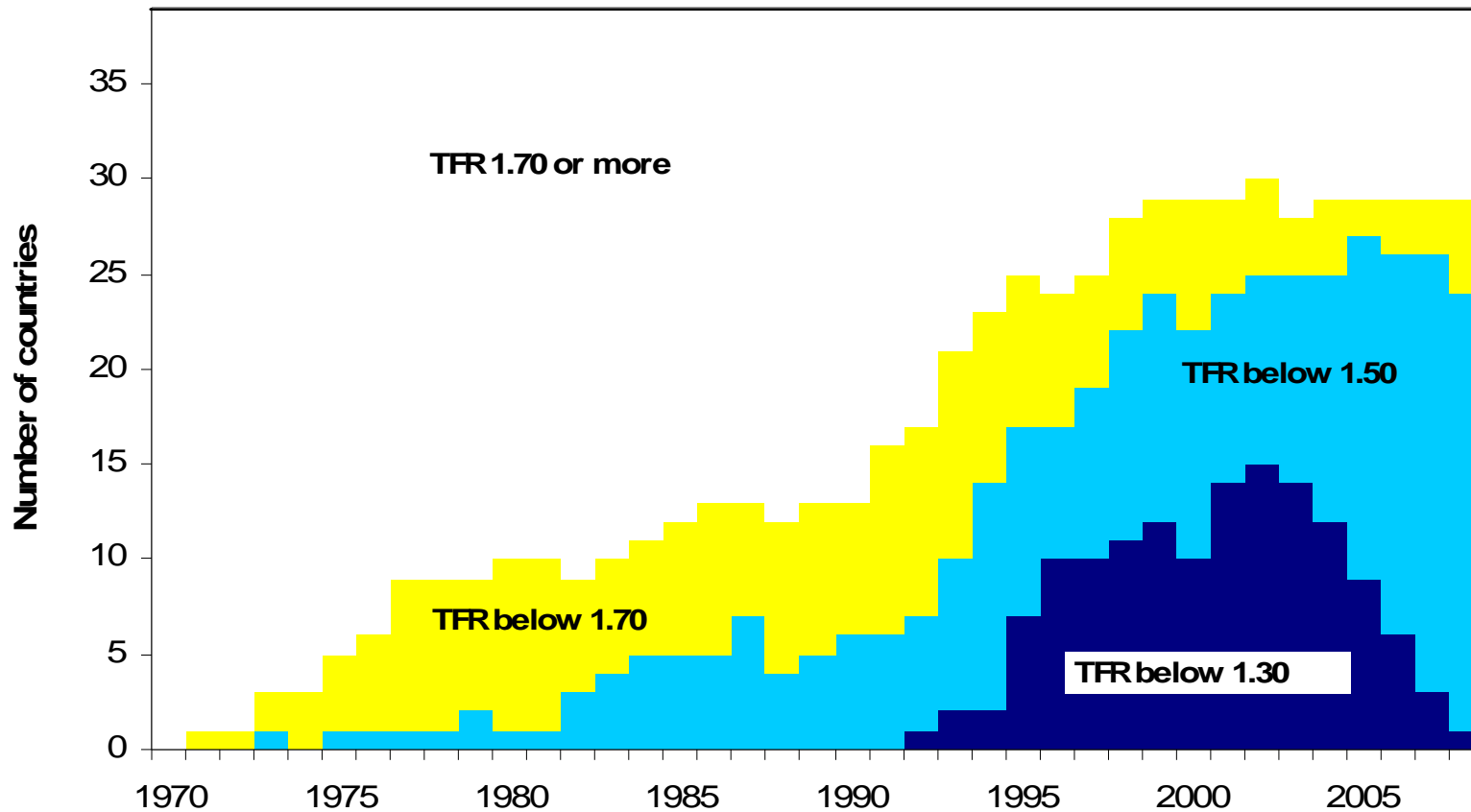
SUMMARY & DISCUSSION

Data: Vital statistics, Census data, surveys

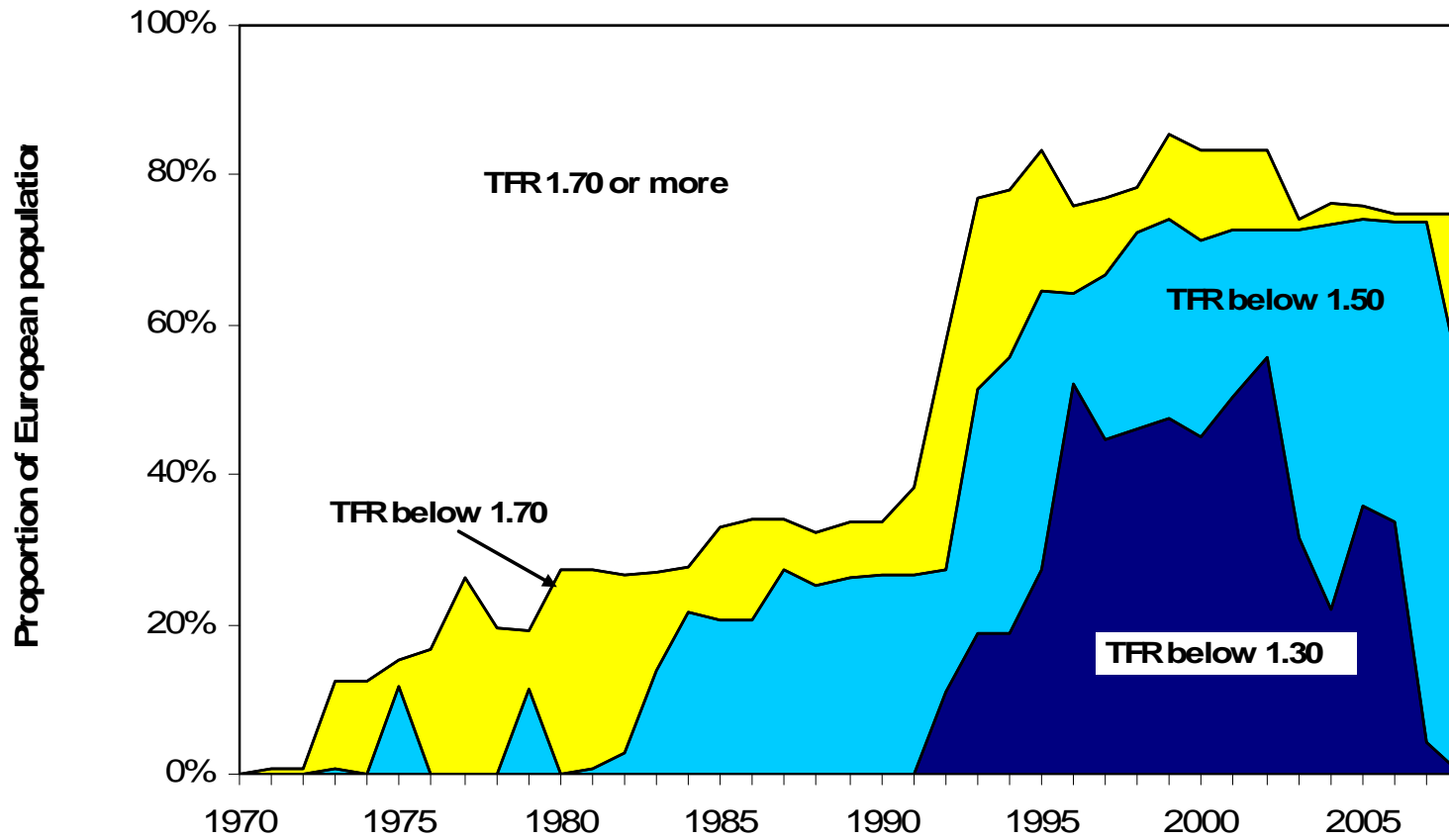
Eurostat, National Statistical offices, Human Fertility Database and other databanks

1. RECENT TURNAROUND IN THE TFR: THE END OF 'LOWEST-LOW' FERTILITY?

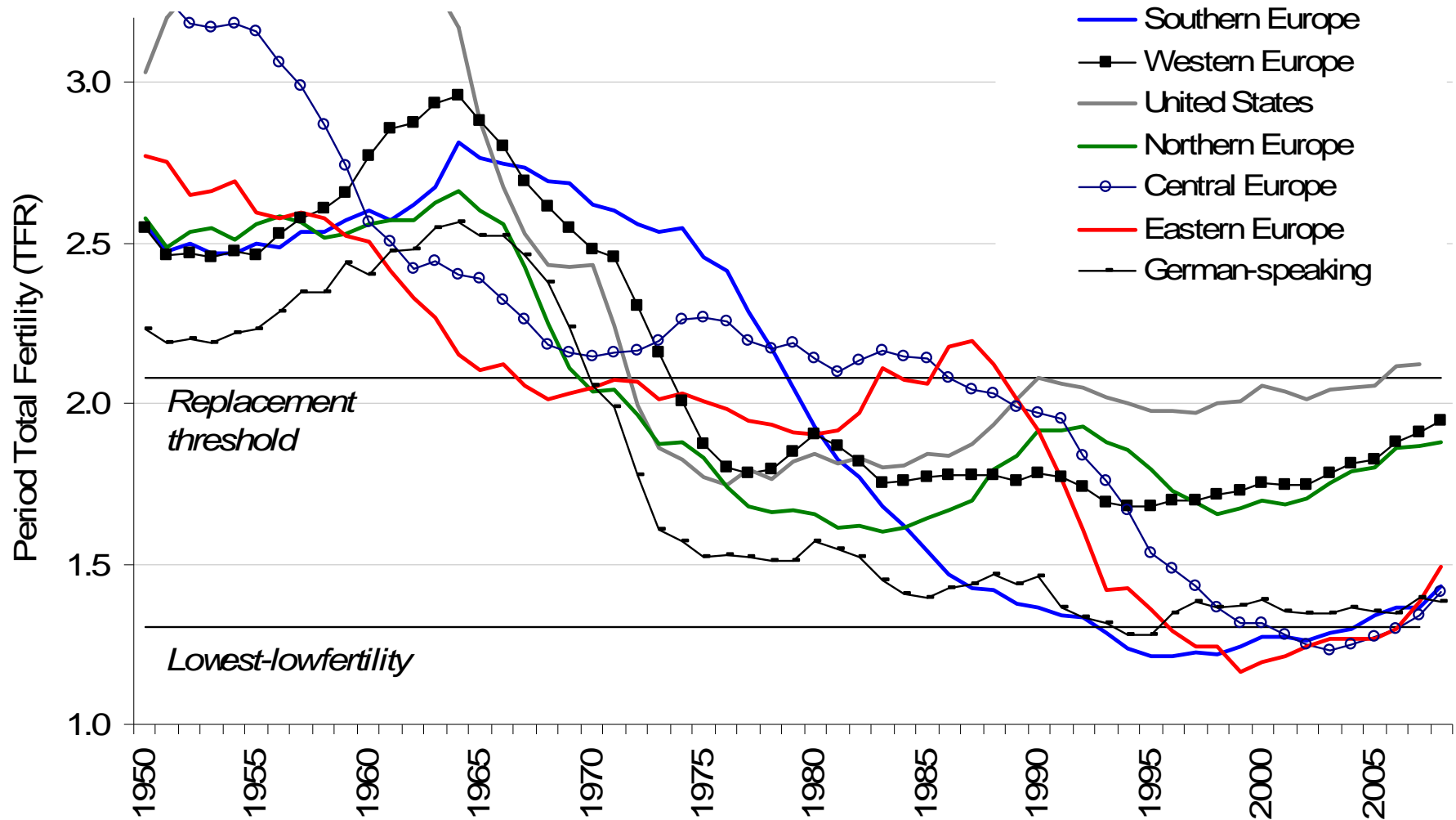
Countries by the period TFR level, 1970-2008



European population by country TFR level, 1970-2008



TFR: Regional contrasts in recent upturn



No upturn in Germany + Austria

TFR: Regional contrasts in recent upturn

Often, consistent regional patterns in fertility trends; one country may represent the whole region (also data availability):

Western Europe: The Netherlands (France / UK)

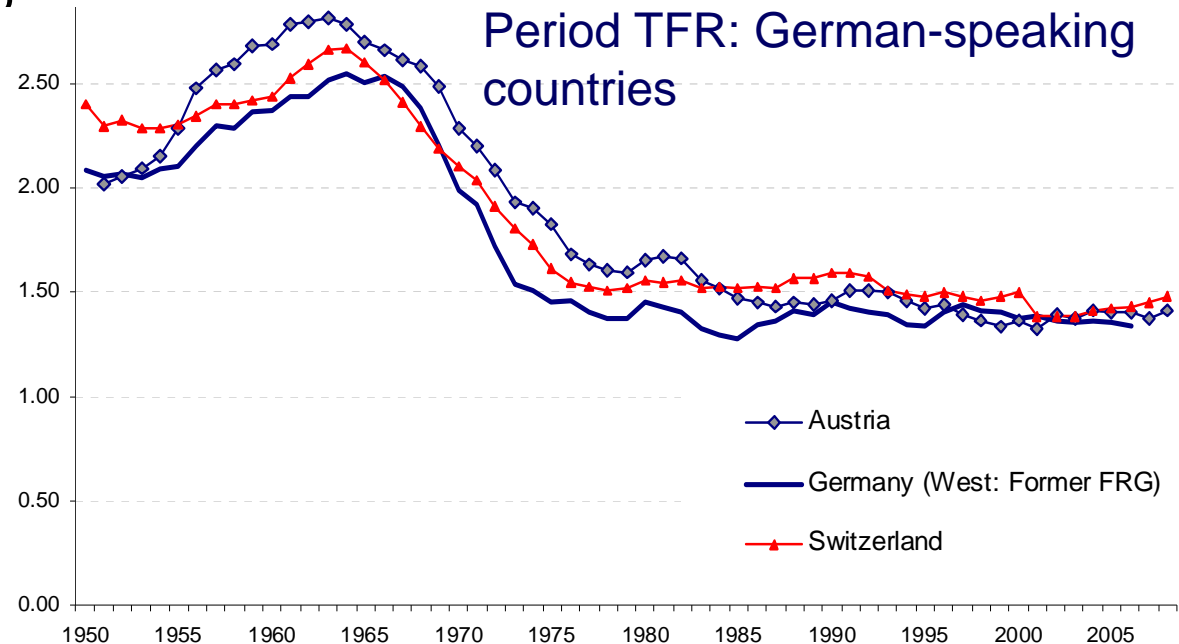
German-speaking countries: Austria (Germany)

Southern Europe: Spain

Northern Europe: Sweden (Denmark)

Central Europe: Czech Rep

Eastern Europe (Russia)



Many developed countries have seen a substantial TFR rise

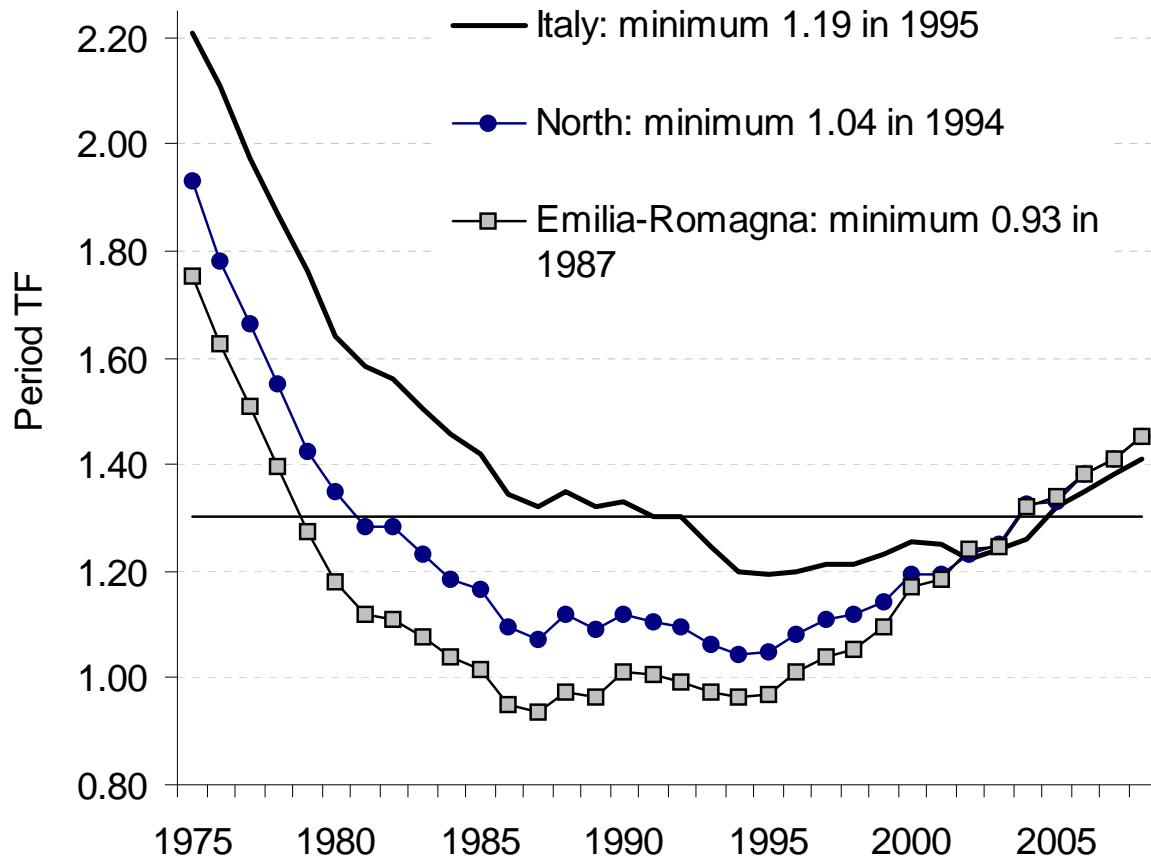
	Minimum TFR	Year	TFR in 2008	Abs. difference
East Germany	0.77	1994	1.40	0.63
Ukraine	1.08	2001	1.46	0.38
Bulgaria	1.09	1997	1.48	0.39
Latvia	1.10	1998	1.45	0.35
Armenia	1.11	2000	1.42	0.31
Czech Republic	1.13	1999	1.50	0.37
Spain	1.16	1998	1.46	0.30
Russia	1.16	1999	1.51	0.35
Slovenia	1.20	2003	1.53	0.33
Estonia	1.21	1998	1.66	0.45
Denmark	1.38	1983	1.89	0.51
The Netherlands	1.47	1983	1.77	0.30
Finland	1.49	1973	1.85	0.36
Sweden	1.50	1999	1.91	0.41
Belgium	1.51	1985	1.82	0.31
United Kingdom	1.63	2001	1.96	0.33
France	1.66	1993	2.00	0.35
Norway	1.66	1983	1.96	0.31
United States	1.75	1976	2.12	0.38
New Zealand	1.89	2002	2.18	0.30

Countries with the largest TFR increase through 2008 (increase by 0.30 or more)

In some countries highest TFR level since the 1970s reached in 2008

Note: Most recent data for Armenia & the US pertain to 2007

Remarkable TFR rise also in the 'trendsetting regions' of Italy and Spain



Spain:

Catalonia: TFR 1.15 in 1995, 1.58 in 2008

Basque country: 0.91 in 1994, 1.33 in 2008

Outside Europe:

Quebec: 1.36 in 1987, 1.74 in 2007

There is nothing inevitable about extreme low fertility!

2. WAS THE FERTILITY INCREASE 'REAL'? THE ROLE OF THE 'POSTPONEMENT TRANSITION'

Universal trend to later childbearing across the developed world:
the '***postponement transition***' (Kohler et al. 2002)

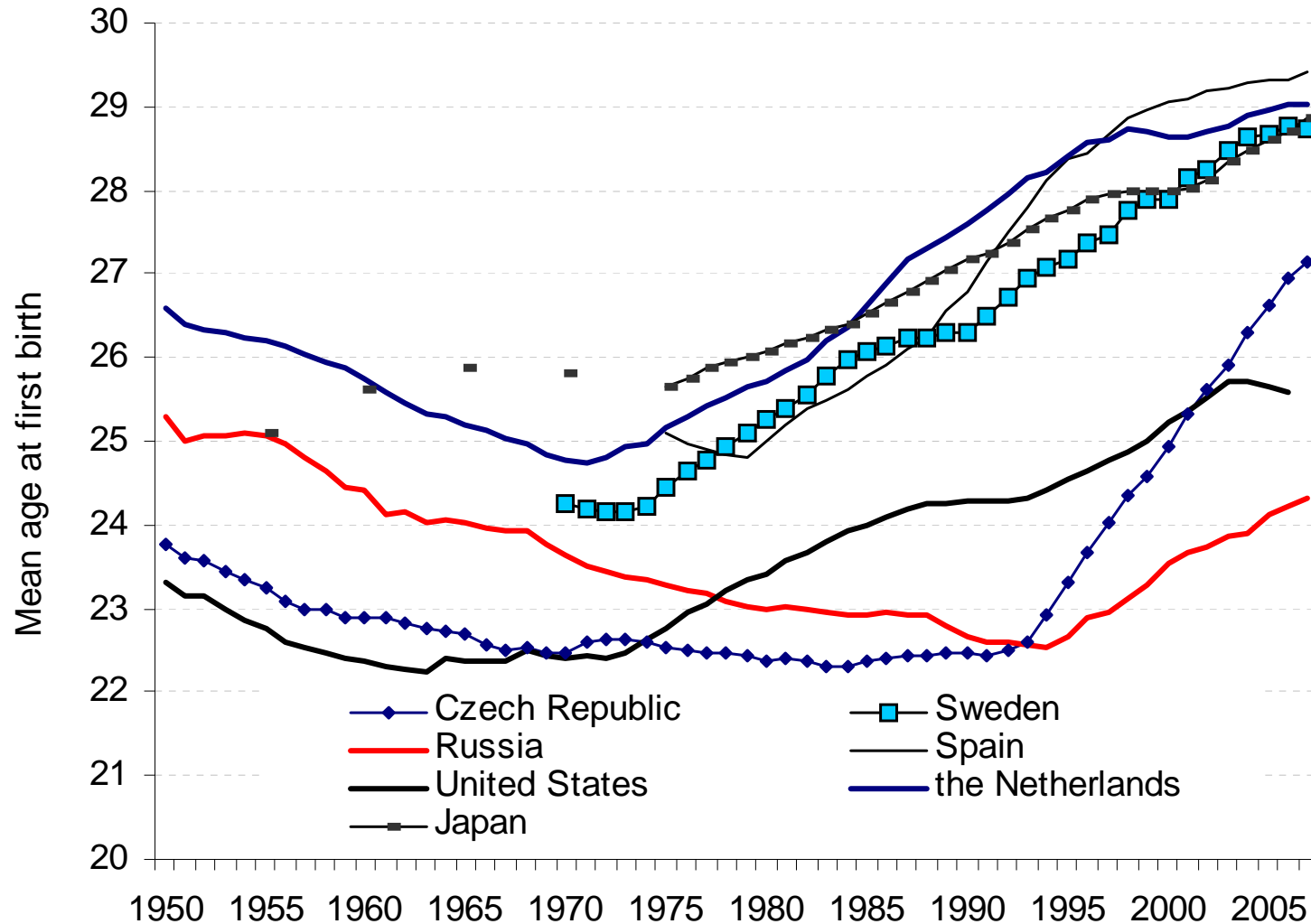
Tempo distortions: Affected period fertility rates (TFRs) from the
1970s (Europe, US, Japan)

Efforts to compute tempo-free TFRs (period fertility quantum;
Bongaarts-Feeney 1998, Kohler-Ortega 2002,)

Adjusted TFR: assumptions, and interpretation:

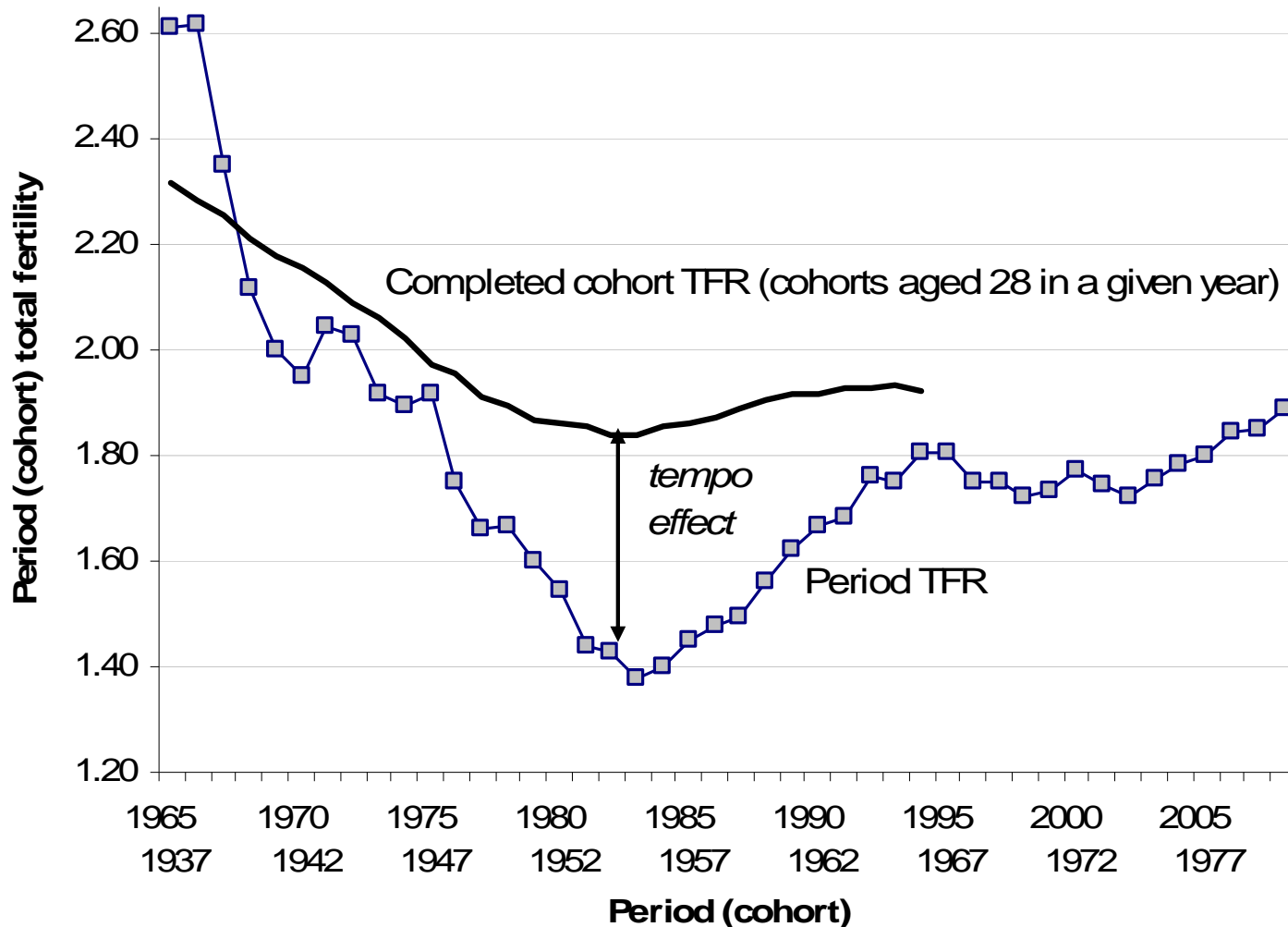
- Hypothetical TFRs in the absence of birth postponement
- Not universally accepted
- Suggesting the future TFR levels if there is no change in the 'underlying' fertility quantum
- Closer approximation of cohort fertility?

A convergence to a high mean age at first birth?



Why do tempo effects matter? Period and cohort TFR may diverge over long periods of time

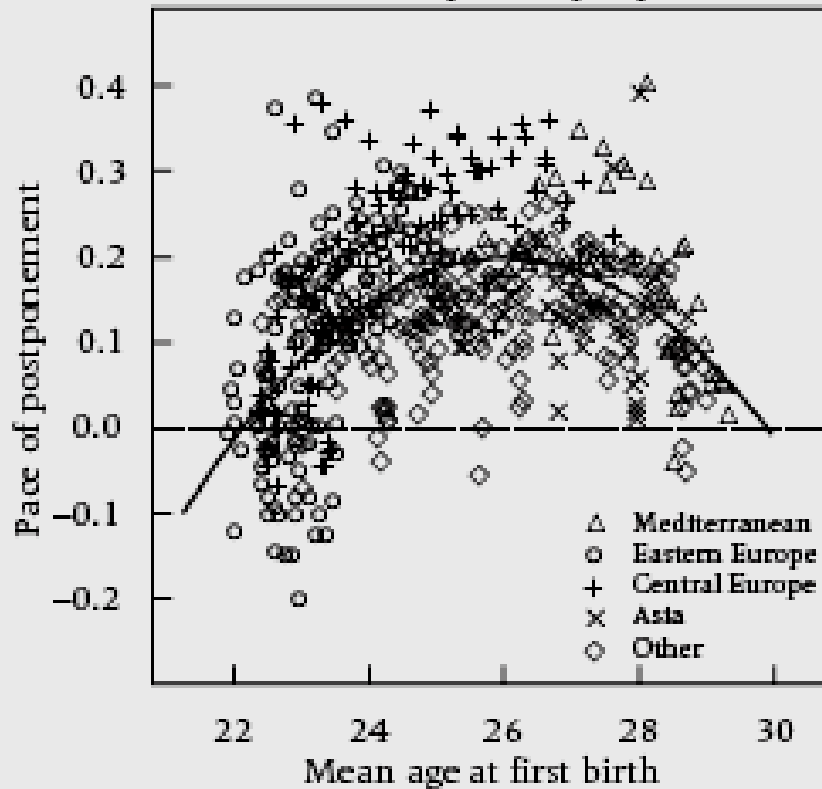
Period TFR (1970-2008) and completed cohort TFR (1942-1964) in Denmark



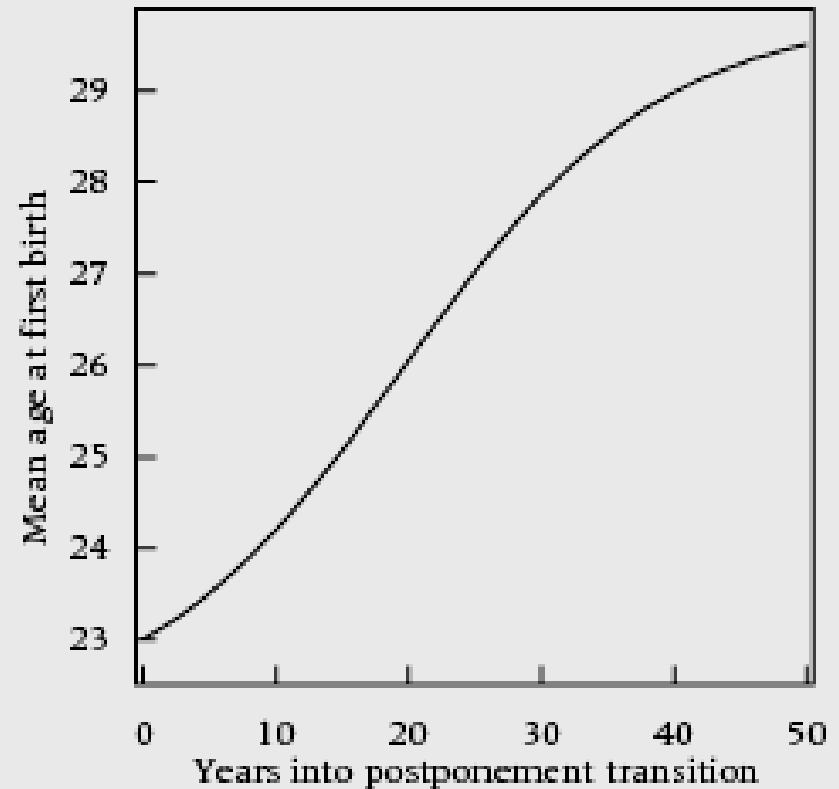
DENMARK
1983:
Period
TFR=1.38;
Completed
TFR of
women born
in 1955: 1.84
(increasing for
the younger
cohorts)

'Postponement transition': a stylised view (1)

A) Relationship between mean age at first birth and pace of postponement



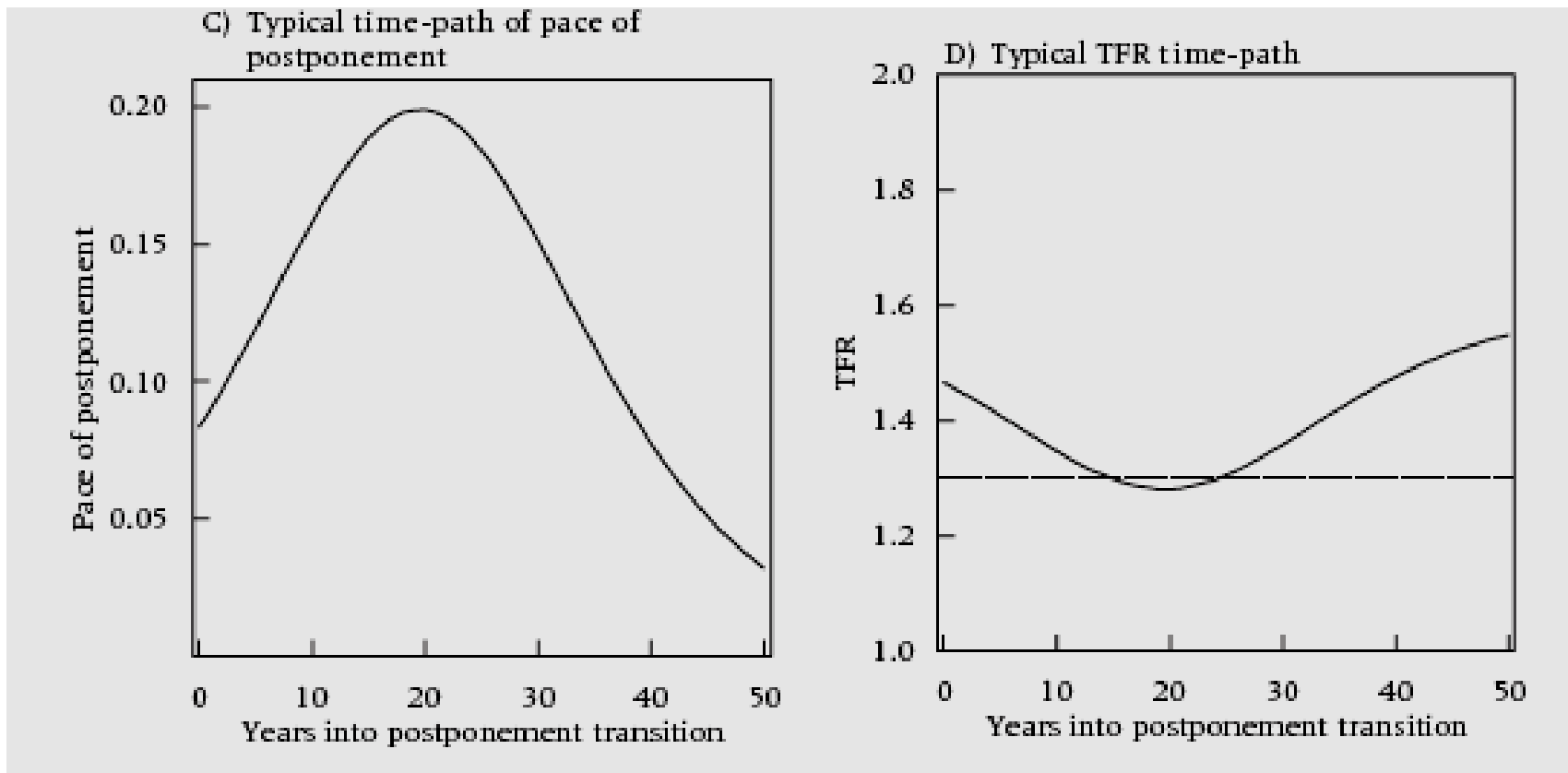
B) Typical age at first birth time-path



Source: Goldstein et al. 2009

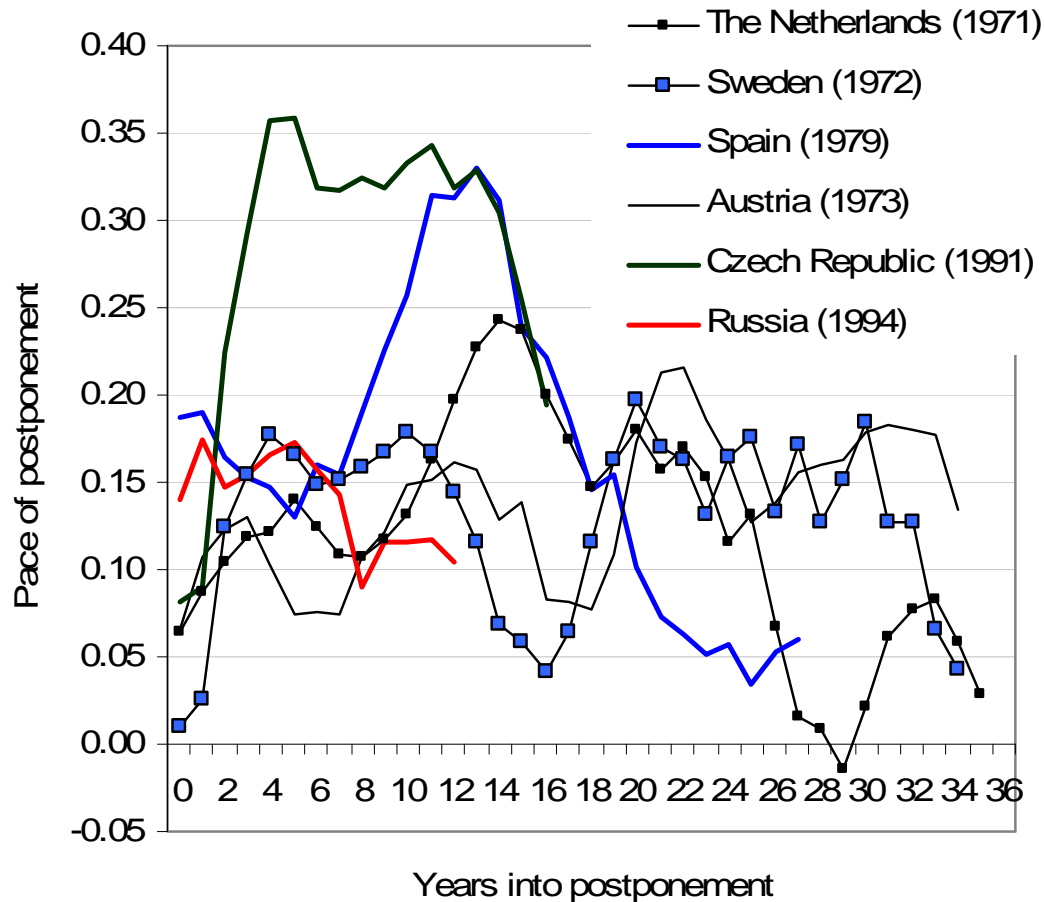
'Postponement transition': a stylised view (2)

A 'typical TFR time pathway': Low-fertility population with a constant cohort TFR at 1.6



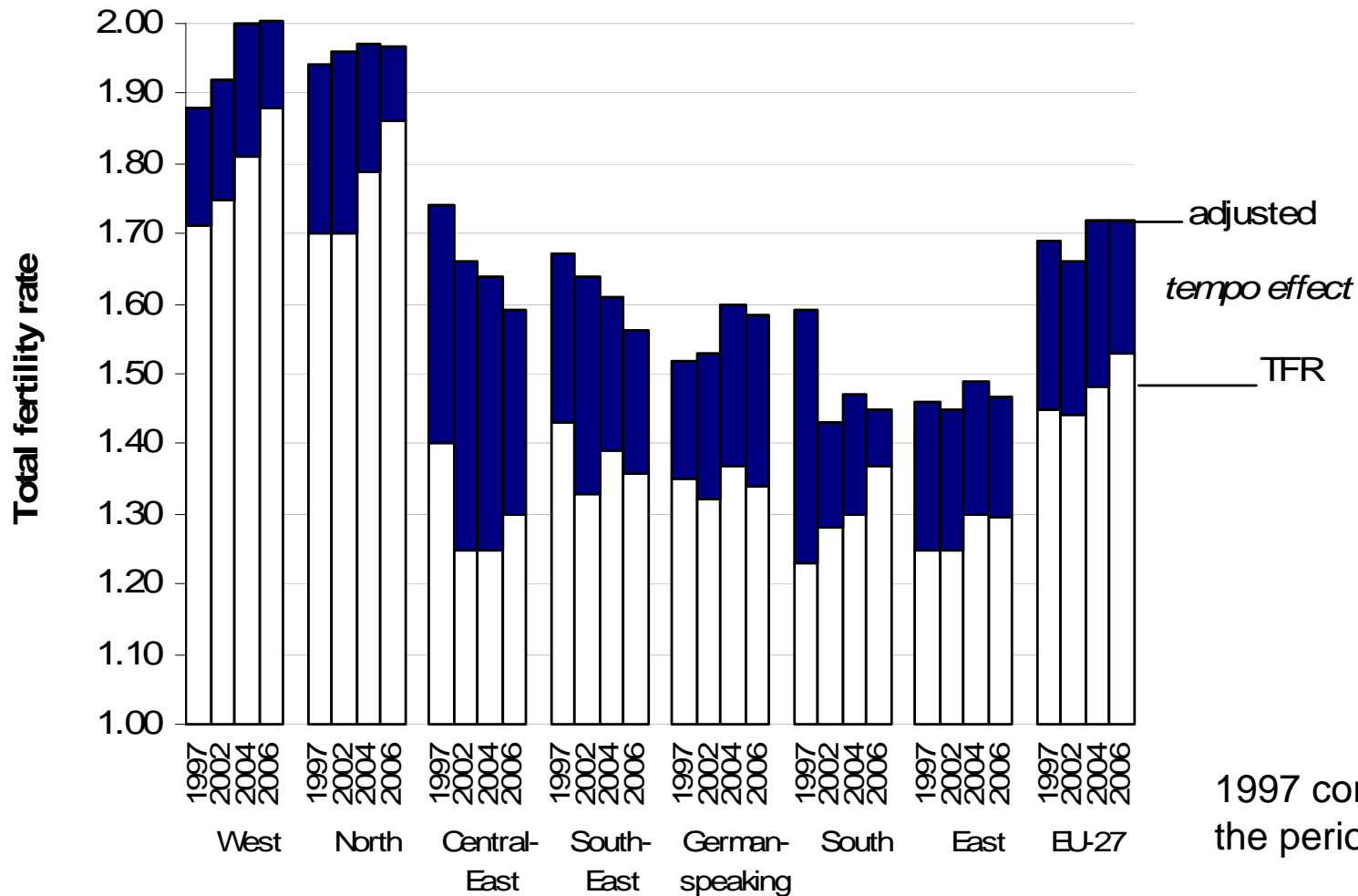
Source: Goldstein et al. 2009

'Postponement transition': selected countries



The peaks in postponement and the largest tempo distortions appear to be over
A 'low scale' postponement may continue for 1-2 decades

Tempo effects in the period TFR in Europe, 1995-2006: Regional diversity



Estimates using the Bongaarts-Feeney (1998, 2000) method

Postponement has slowed down but has not completely run its course: Europe, US and Japan around 2004-2006

- Still some scope for a modest TFR rise

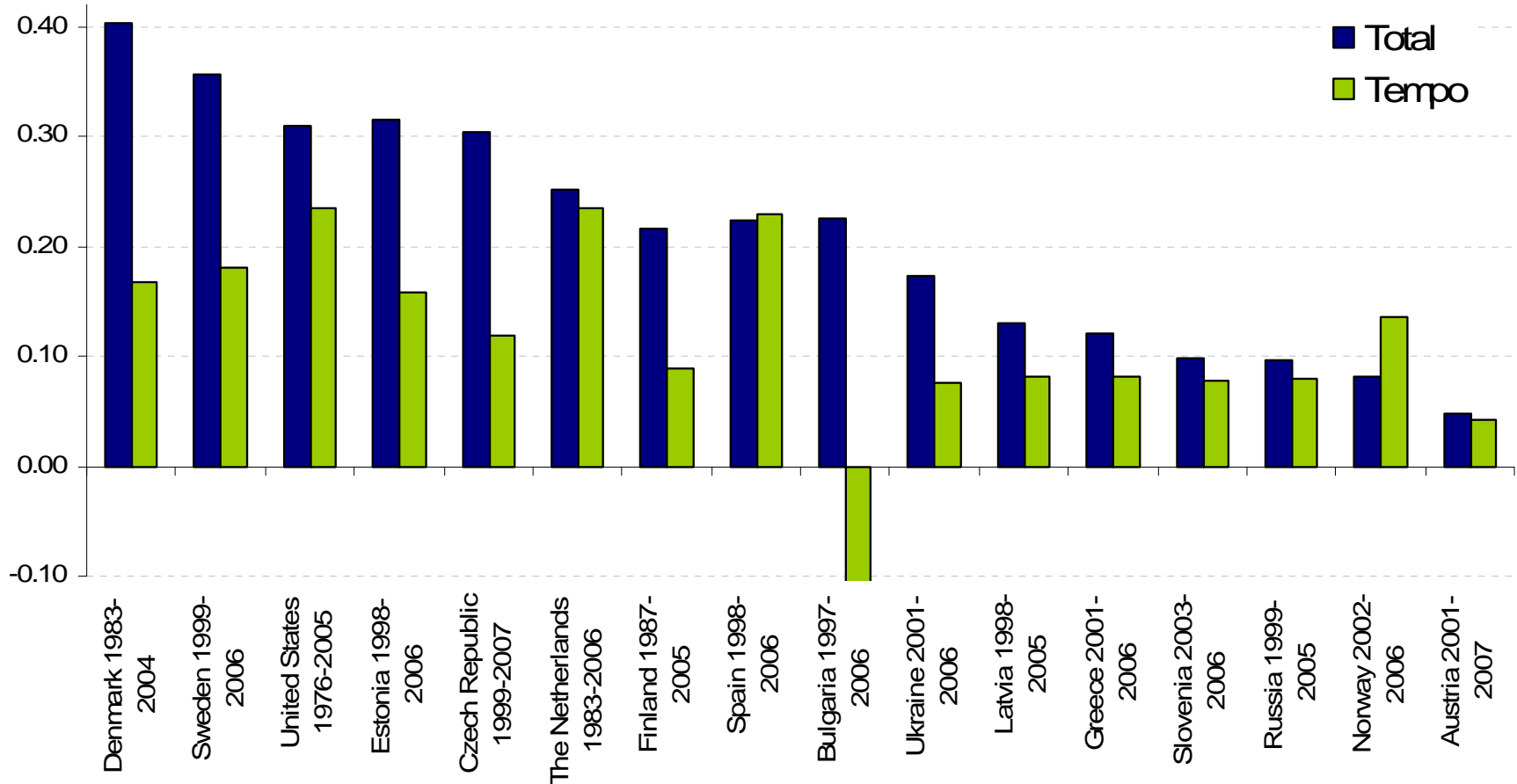
	Population (2006, mill.)	Observed TFR	Adjusted TFR	Tempo effect
Western Europe	153.3	1.88	2.00	-0.12
Northern Europe	24.6	1.86	1.97	-0.11
Germany, Austria, Switzerland	98.2	1.34	1.58	-0.24
Southern Europe	125.4	1.37	1.45	-0.08
Central-eastern Europe	77.4	1.30	1.59	-0.29
South-eastern Europe	39.5	1.36	1.56	-0.20
Eastern Europe (incl. Russia)	204	1.29	1.47	-0.18
EU-27	491.4	1.53	1.72	-0.19
United States (2004)	299.2	2.05	2.13	-0.08
Japan	127.8	1.29	1.42	-0.13

- Regional differences persist
- Adjusted TFR does not decline below 1.4

Estimates using the Bongaarts-Feeney (1998, 2000) method

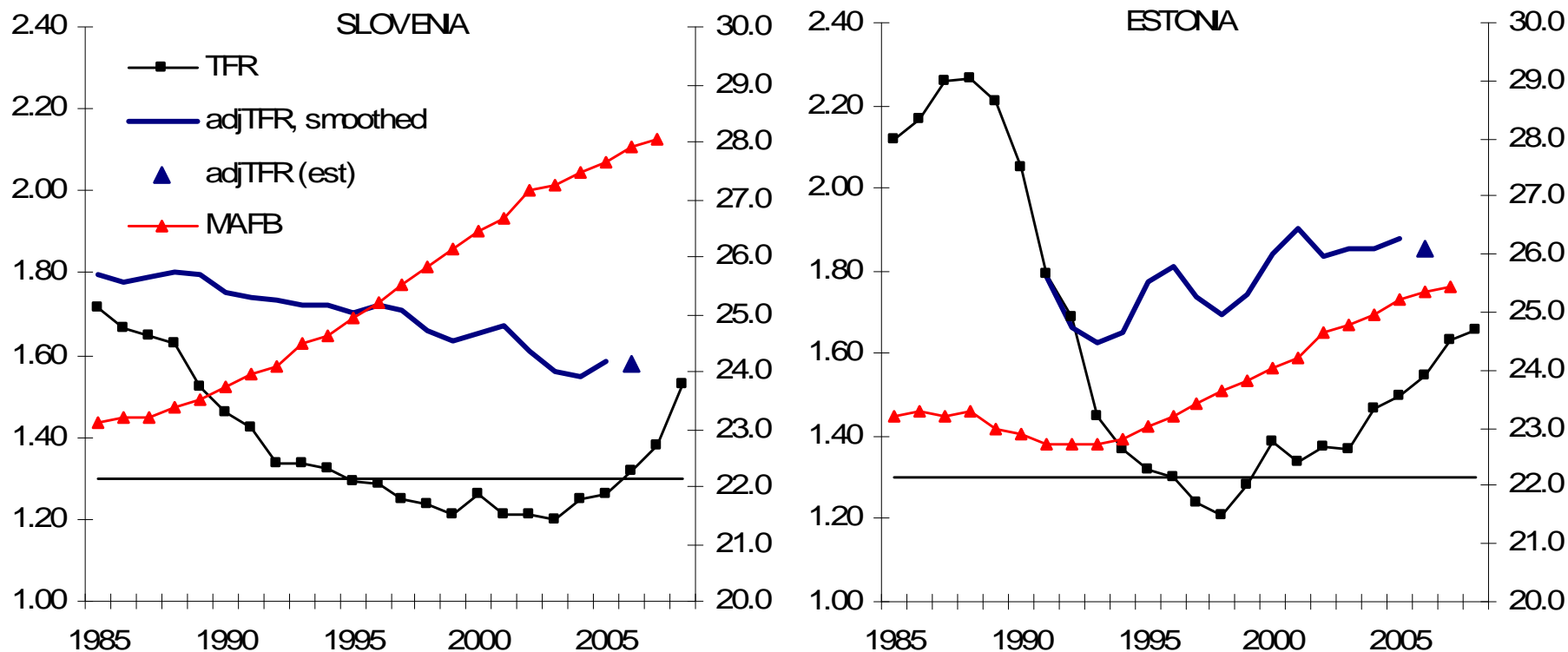
Can declining tempo effects explain recent TFR upturns?

- Yes, to a large extent (typically, 40% or more)
- But if BF model gets it right, some of the TFR rise was due to 'genuine' rise in fertility quantum -> scope for other explanations of the TFR rise



Can declining tempo effects explain recent TFR upturns?

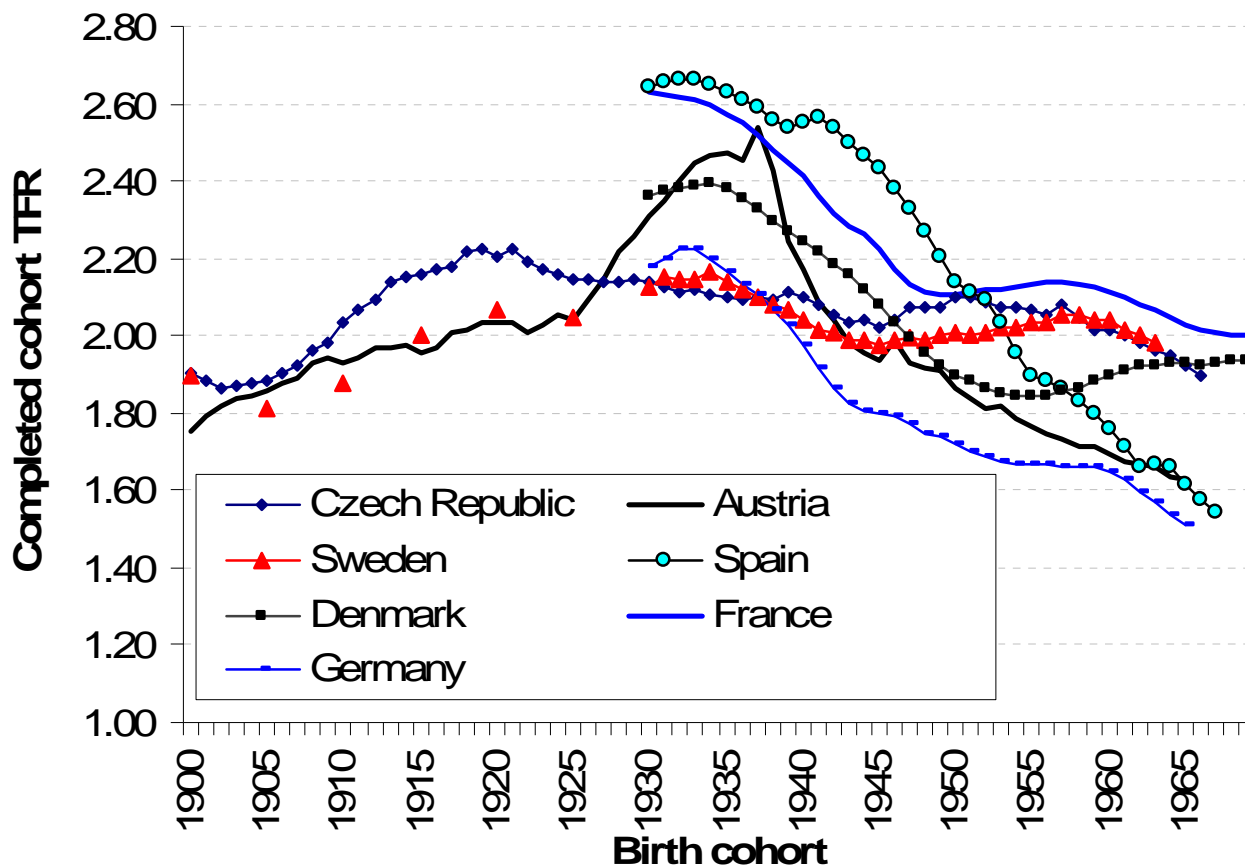
- Huge cross-country diversity in the pathway of the TFR, adjusted TFR and tempo effects



Estimates using the Bongaarts-Feeney (1998, 2000) method, 3-yr. smoothed average

3. INSIGHTS BASED ON COHORT DATA

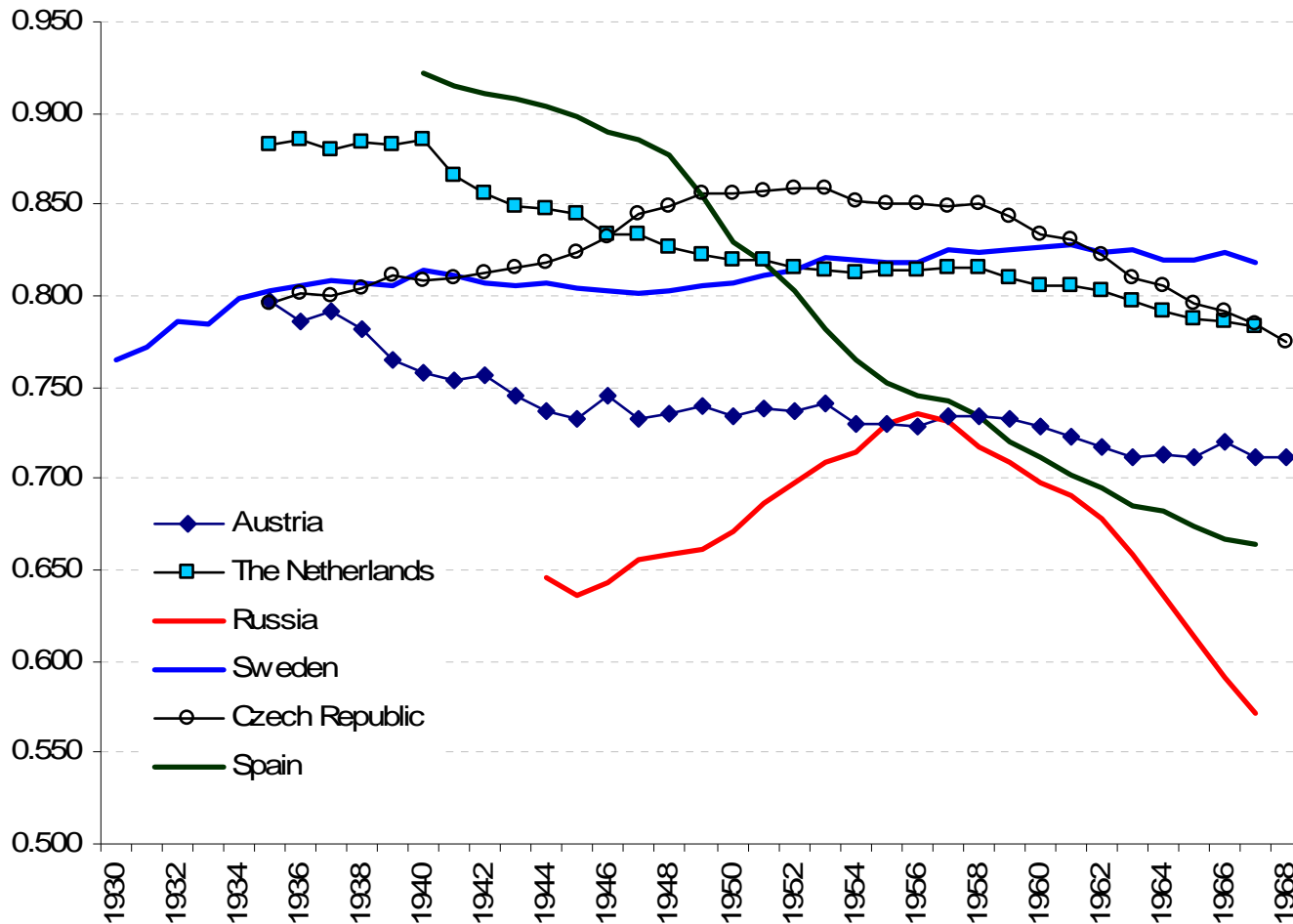
Regional contrasts similar to the adjusted TFR;
Some countries of Northern & Western Europe likely to retain the
CTFR close to replacement threshold



Sources: Council of Europe (2006), Prioux (2006), national statistical offices, own computations from Eurostat (2008)

Regional contrasts in cohort CTFR: Low & falling fertility

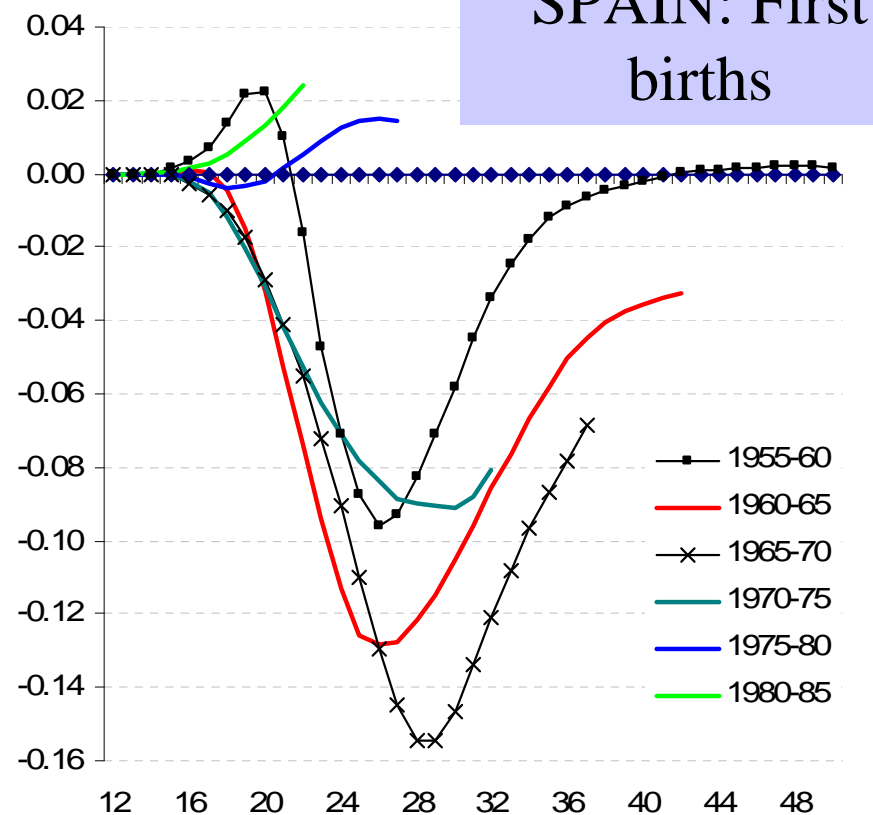
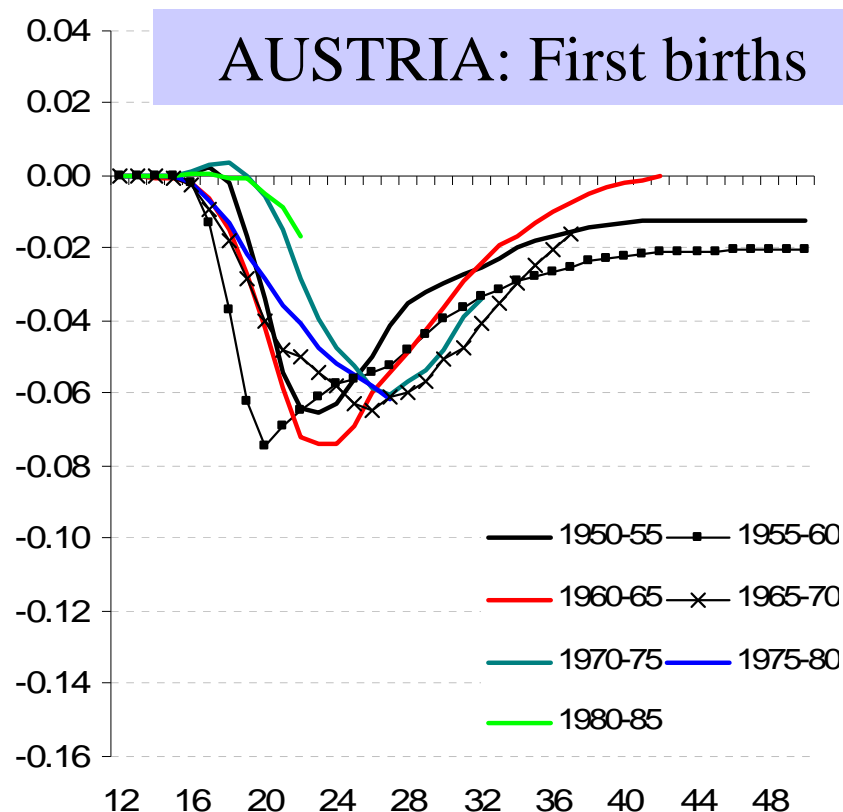
- Southern & Eastern Europe: falling second birth rates
- German-speaking countries: high childlessness (ca 20% in AT, CH, higher in D), but not very low second birth rates



Contrasting trends in second birth parity progression ratios, cohorts born until 1968 (PPR measured at age 40)

Can also trends in cohort fertility reverse?

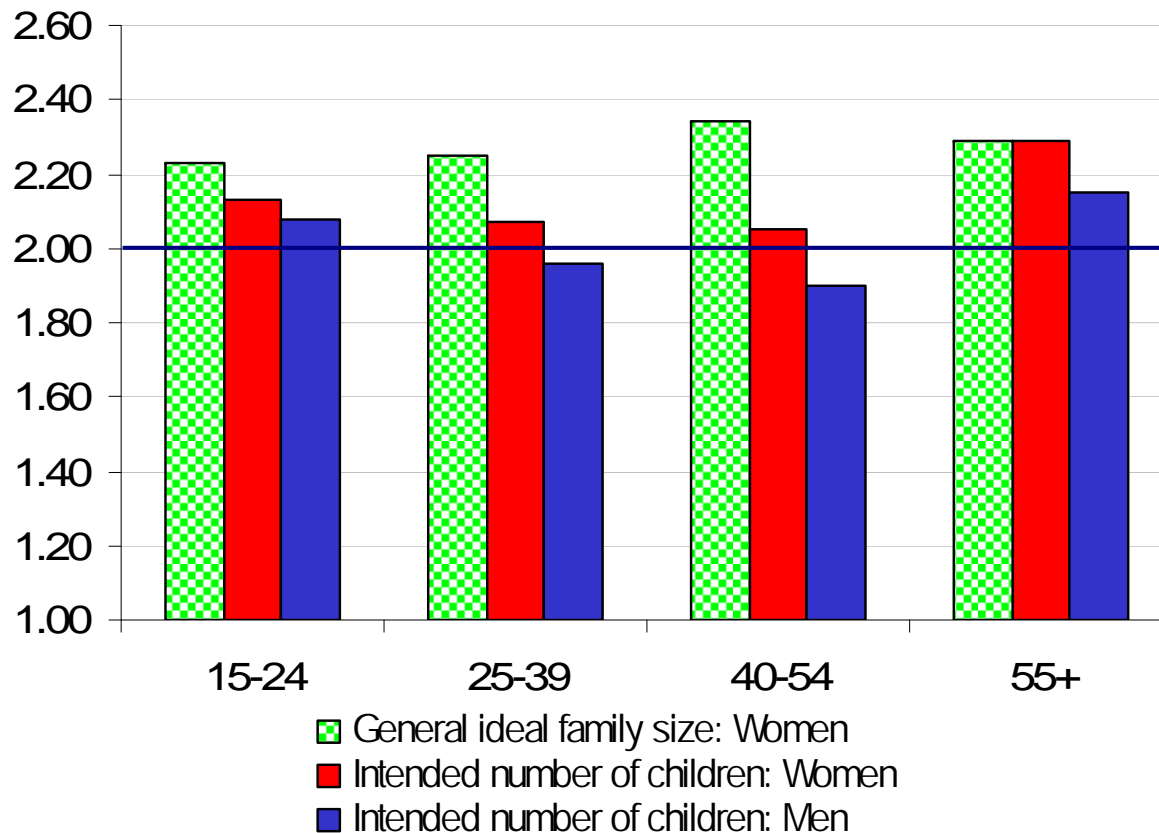
Spain: End of cohort postponement & stabilisation of younger cohorts' first birth rates at ages < 26



Also in some other countries early fertility rates do no decline any longer (Frejka-Sardon 2009)

4. FERTILITY INTENTIONS

EUROBAROMETER 2006: Intended family size remains remarkably close to two in most parts of Europe (data for EU-25 adopted from Testa 2006)



Evidence on the pervasiveness of a desire for two children „when and if one can afford them and care for them“ (Morgan and Hagewen 2005)

Young adults in some countries desire small family size

Mean intended, expected or desired family size among young adult women in selected countries of Europe, around 1996 and 2002

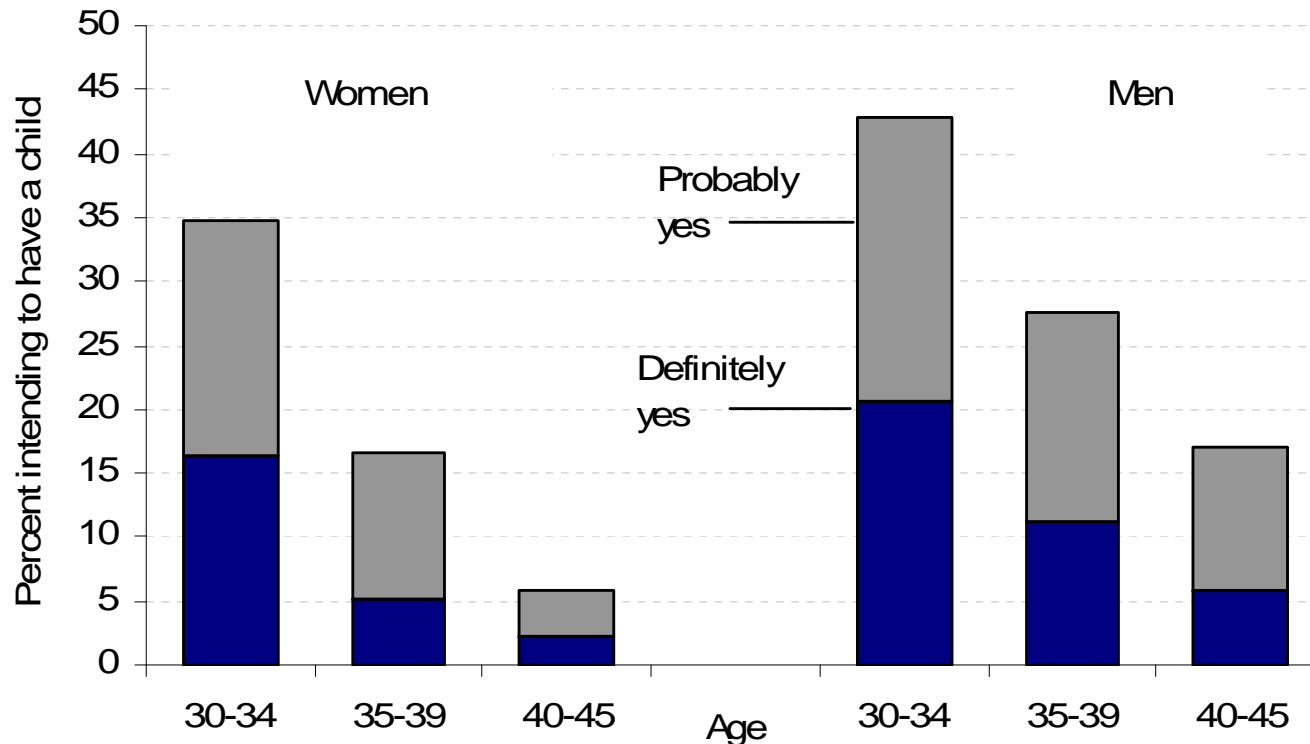
Country	Age	Period: 1995	Period: 2002
Austria:			
Main variant	20-25	1.72 (1996)	1.62 (2001)
High variant (excluding uncertainty)	20-25	1.88 (1996)	1.76 (2001)
Czech Republic	18-24	1.92 (1997)	1.85 (2005)
England and Wales:			
Main variant (excluding uncertainty)	21-23	2.13 (1994-96)	2.14 (1998, 2000-01)
Alternative var. (including uncertainty) ^a	21-23	1.73 (1994)	1.85 (1998, 2000-01)
Hungary (both men and women)	20-24	n.a.	1.82 (2004-05)
The Netherlands	23-27	1.77 (1998)	1.81 (2003)
Spain	20-24	2.20 (1995)	1.80 (1999)

Sources: See Sobotka 2009

Notes: ^a Estimate in Option (a), T. 4 in Smallwood-Jefferies (2003: 21). Question wording differed between the surveys listed; see the paper

Many men and women intend to have a child at ages 35+

Austria: Percent men and women intending to have a child within the next three years (2008)



Source: Own computations from the Generations and Gender Programme survey

Mean intended family size: Can it serve as a higher boundary for projecting fertility?

European regions: Mean intended family size of women aged 18-34, EUROBAROMETER 2006

	Actual + intended family size
Western Europe	2.36
Northern Europe	2.35
Southern Europe	1.81
Austria + Germany	1.88
Central-Eastern Europe	2.04
EU-27	2.06

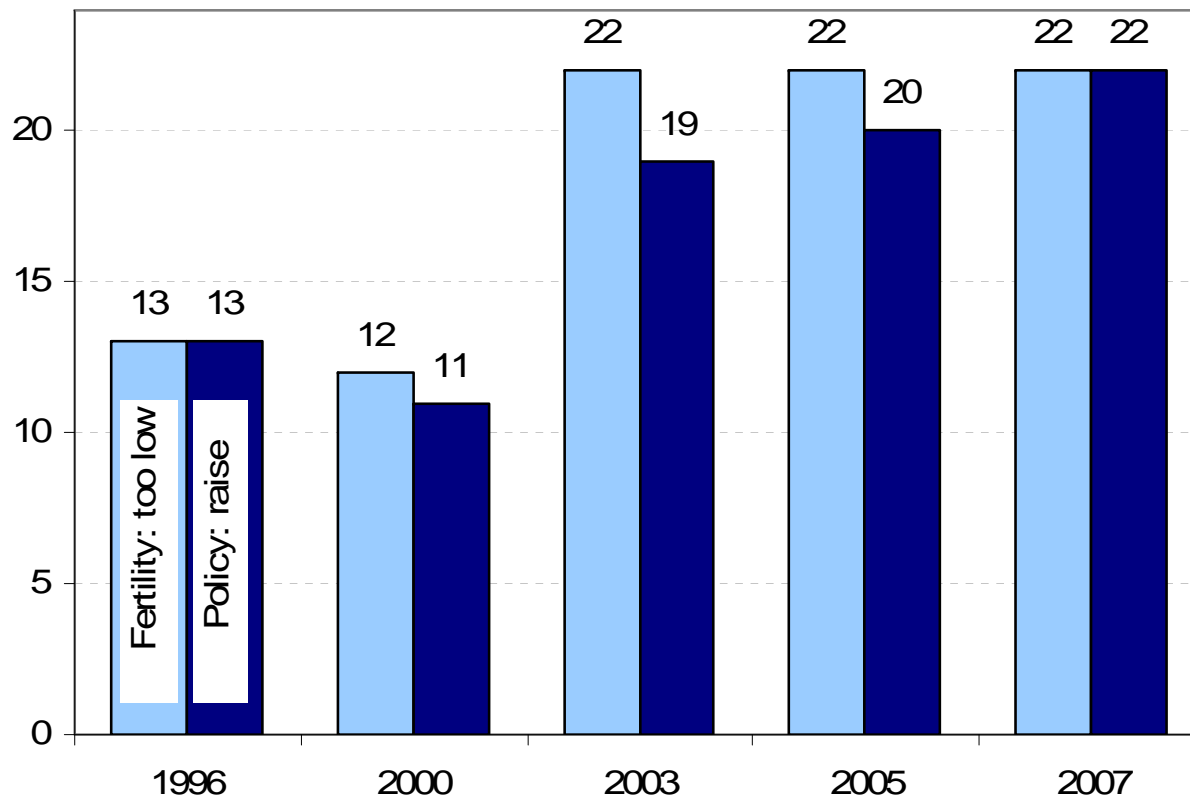
- Intentions by about 0.3-0.4 higher than the likely levels of completed fertility

5. BEYOND TEMPO EFFECTS: SELECTED EXPLANATIONS OF RECENT TFR UPTURNS IN EUROPE

(based on Goldstein-Sobotka-Jasilioniene 2009)

POLICY INTERVENTIONS: RETURN OF PRONATALISM

Governments view on fertility and policy intentions, 22 countries ever experiencing 'lowest-low' fertility



Source:

UN, *World Population Policies*, various volumes

Policy interventions

RETURN OF PRONATALISM

Wide array of new policies, but unclear how much they contributed to TFR upturn

SPAIN: 2007: 'baby bonus' of 2,500 EUR; the TFR rise +1% in 2007, +5% in 2008 (double the rise in IT, POR, GRE)

ESTONIA: parental leave compensating 100% of women's income for 455 days as of 2004, followed by a strong TFR rise

RUSSIA: Putin: urgent demand to 'counteract fertility decline'; generous 'maternal capital' to mothers of second births as of 2007, strong rise in the TFR between 2006 (1.30) and 2008 (1.51)

'COUNTERFACTUALS':

JAPAN: Numerous policies from the early 1990s, no noticeable effect

UKRAINE: no major policy shift, but a strong rise in the TFR between 2006 (1.30) and 2008 (1.46)

Migrants' fertility

- Higher fertility of migrants & high immigration rates after 2000 could have pushed the TFR upward
- Relevant only for Southern, Western & Northern Europe (& English-speaking countries overseas)

Immigrants contributed to a small portion of the TFR rise:

	UK	Sweden	Denmark	France	Spain
	2004-7	2002-7	2001-4	1999-2004	1998-2006
Change in TFR: all women	0.14	0.23	0.09	0.11	0.20
Change in TFR: native women	0.11	0.21	0.10	0.08	0.17
Change in TFR: contribution of immigrar	0.03	0.01	-0.01	0.03	0.03
Percent change due to immigrants	19	5	-15	27	16

Sources: Computations based on national statistical offices & demographic yearbooks

Positive economic conditions

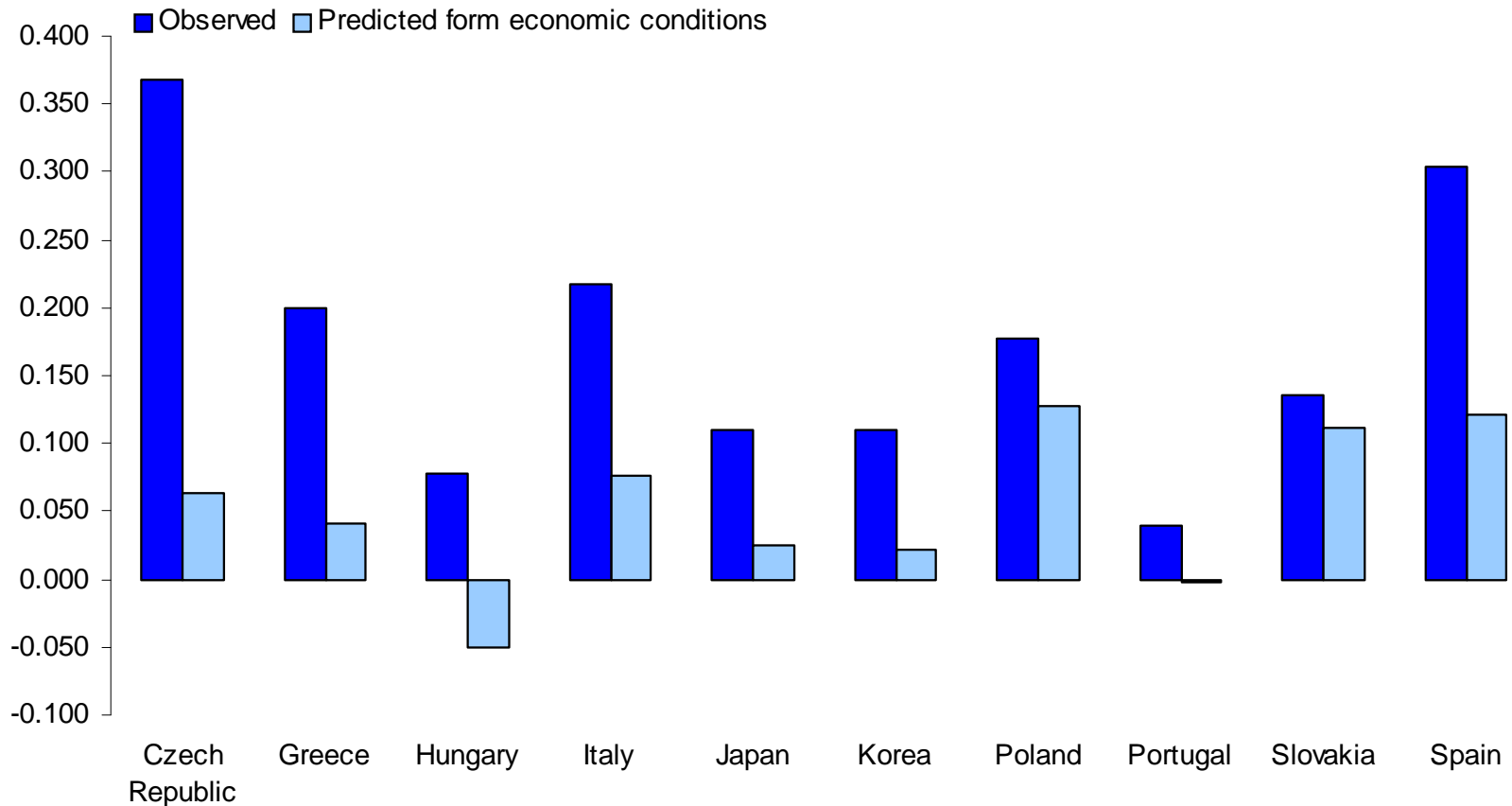
Adsera (2004 & 2005): Key role of unemployment (also gender gap in unemployment and % self-employed) on depressing fertility rates in Europe

After 2000: Falling unemployment in highest-unemployment countries (ESP, GRE, BG, PL, SK > 15% F unemployed in 2000)

- A close association between declining unemployment and rising TFR in some countries
- An independent positive effect of the GDP growth
- Declining unemployment rate from 10% to 5% estimated to bring a TFR rise of 0.09
- Very simple analysis: May capture effects of other (uncontrolled for) factors

Positive economic conditions

Predicted upturn in the TFR attributable to economic conditions



REVIEW OF RECENT TRENDS, PERIOD AND COHORT: Major conclusions

- 'Lowest-low' TFR levels are over for now; all countries except Moldova have TFRs above 1.3
- Some countries and regions have seen impressive TFR gains by 0.3-0.5
- Broader regional differences retained, both in period and also in cohort CTFR trends
- Paramount importance of the 'postponement transition' and tempo effects in driving the TFR upturn
- Western and Northern European countries as well as the US, Australia, and New Zealand have TFRs close to or above 2
 - Return to (or even above) replacement-level TFRs possible!
- Still a pervasive desire to have a two-child family

THE NEXT 30 YEARS: FERTILITY IN EUROPE THROUGH 2040

Why 2040?

- Roughly a length of one generation
 - Intentions unlikely to change radically
 - Meaningful time horizon for speculating about social and economic changes (*“how a society may look like 30 years from now?”*)
-
- The next 5 years: Economic recession
 - The next 30 years: Factors that may lead to rising fertility

THE NEXT 5 YEARS: ECONOMIC RECESSION

- Economic recession likely to put a downward pressure on the TFR for 2-5 years
- In countries where TFR was rising, the rise may stop
- A few countries may temporarily slide back below 1.3
- Not a major effect, in the order of 0.05-0.15
- Only short-term, unless the crisis (unemployment) protracted

Economic recession and the period TFR in 26 OECD countries

Period 1980 and later, 1-year time gap

	Spells	TFR decline	TFR increase	% decline
Recession (GDP growth <0.0%)	62	50	12	81
Stagnation (GDP between 0.0 and 0.99%)	60	39	21	65
Economic growth (GDP growth > 1.0%)	568	297	271	52
TOTAL	690	386	304	56

Source: Sobotka-Skirbekk-Philipov 2009, GDP data based on OECD (2009)

THE NEXT 30 YEARS

Argument: Period and eventually also cohort TFR more likely to rise than decline

- Period TFR: Ending of the Postponement transition & negative tempo effects

Other factors, affecting also cohort fertility

- Institutional changes
- Compositional changes in the population
- Changing relationship between socioeconomic conditions and fertility
- Technological changes

1. INSTITUTIONAL CHANGE

FAMILY & PRONATALIST POLICIES

- Return of pronatalism: Governments intend to increase fertility
 - The “Green Paper” (Eur. Commission, 2005): low birth rate “challenge for the public authorities”; “return to demographic growth” essential priority
- Better childcare, parental leave, part-time and flexible jobs, more gender equality *likely to have some effect* (McDonald 2002 etc.)
- Innovative and unconventional policies may be tried;
 - subsidising childbearing in larger families (Demeny 2008, Hakim 2003)
 - linking retirement pension to the number of children (Demeny)
- Policies supporting earlier timing (*Tempo policies?*) (Lutz & Skirbekk 2005, Rindfuss & Brauner-Otto 2008)

1. INSTITUTIONAL CHANGE

ECONOMIC ADJUSTMENTS: THE POWER OF THE YOUNG?

- Deteriorating position of young adults in the 1980s-1990s at odds with their shrinking numbers
- **Southern Europe:** high youth unemployment one of the main reasons for low fertility (Adsera 2005)
- In the long run, labour market functioning may improve in many countries, pushing down unemployment
- Will economic position of the young adults improve as smaller cohorts enter labour market? (*Easterlin connection*)

Labour market reforms and lack of qualified labour may reduce unemployment and improve economic position of the young, which may increase fertility at ages <30

1. INSTITUTIONAL CHANGE

FAMILY ADAPTATION TO NEW SOCIETAL CONDITIONS

- Countries with most complete family transformation have highest fertility (Billari & Kohler 2004, Sobotka & Toulemon 2008)
- Societies not easily accepting extra-marital sex, residential independence of the youth, cohabitation, divorce and egalitarian family roles have low fertility and rapid postponement (also East Asia)
 - Prevailing societal norms, policies and parental control at odds with preferred lifestyle of younger women and men?
 - Partnership instability may increase fertility in low fertility settings (Thomson et al. 2009)

Changing family norms and acceptance of new behaviours may bring higher fertility

1. INSTITUTIONAL CHANGE

‘FEMALE FUTURE’: TOWARDS CHILD-FRIENDLY SOCIETY?

- Women overtaking men in educational attainment, but not (yet) in wages, job careers and political positions
- This disparity likely to diminish, men may be the ‘losers’ of this transformation
 - Will societies increasingly led and ‘dominated’ by women become more children-friendly and family-friendly?
 - ‘Female future’ might also mean higher fertility

2. COMPOSITIONAL CHANGE

THE RISE OF MIGRANTS & ETHNIC MINORITIES

Migration main engine of population growth in the EU

- core EU-15 countries annual immigration over 0.5% in 2001-2007

Western & Southern Europe: immigrant F 'push' the TFR slightly upwards, usually by 0.05-0.10 (Sobotka 2008)

Northern Italy: foreign women increase local TFR up by 0.16 in 2008 (1.29 vs. 1.45)

US: high fertility persists across generations of Hispanic-origin immigrants (Frank & Heuveline 2005)

- their high fertility (TFR of 3.0 in 2007) pushes the country-level TFR up by around 0.2 (1.9->2.1) (NCHS 2008)

Central & Eastern Eur.: Persistent high fertility in some groups of Roma

Will more countries be like the US?

3. CHANGING RELATIONSHIP BETWEEN SOCIO-ECONOMIC FACTORS, FAMILY, AND FERTILITY

A new branch of literature & contributions since ca. 2004: Changing correlations between socio-economic and cultural factors and period TFR in cross-country comparisons (most developed countries)

SOME REVERSALS:

- Richer = more fertile?
- High share of working women = higher fertility?
- Gender equal = more fertile?
- Low marriage rates = more children?

CAUTION:

- Correlations, NO CAUSALITY
- Usually based on problematic measure of fertility – the period TFR
- Cross-country comparisons, no individual-level findings

BUT these findings still important

3. CHANGING RELATIONSHIP BETWEEN SOCIO-ECONOMIC FACTORS, FAMILY, AND FERTILITY

WOMEN'S LABOUR FORCE PARTICIPATION

Rindfuss et al. (2003): Reversal in the correlation between female labour participation (FLFP) and period TFR; mid-1980s

- Moderately strong positive correlation
- Country-specific institutional responses: better compatibility of work & childrearing in higher-F-LFP countries

Engelhardt-Prskawetz (2004):

- Not a causal relationship, other factors responsible

Recent period TFR rise fast in many high-LFP countries

- Changing nature of female work and higher relative wages may positively contribute (Feyrer et al. 2008)

The future: More women at work = better work-family combination and more men's domestic work = higher fertility?

3. CHANGING RELATIONSHIP BETWEEN SOCIO-ECONOMIC FACTORS, FAMILY, AND FERTILITY

HIGH EDUCATION MAY NOT HAVE A NEGATIVE EFFECT

- Women with university education: higher childlessness and lower fertility rates (Skirbekk 2008)
- Countries with lowest fertility: steepest education gradient and highest childlessness of the higher-educated

Will further increase in education lead to lower overall fertility?

Nordic countries:

- Declining education gradient for women (Andersson et al. 2009)
- Emergence of positive association between education and fertility for men (Norway, Kravdal & Rindfuss 2008)

If other countries follow, the fertility-depressing effect of education may be attenuated

3. CHANGING RELATIONSHIP BETWEEN SOCIO-ECONOMIC FACTORS, FAMILY, AND FERTILITY

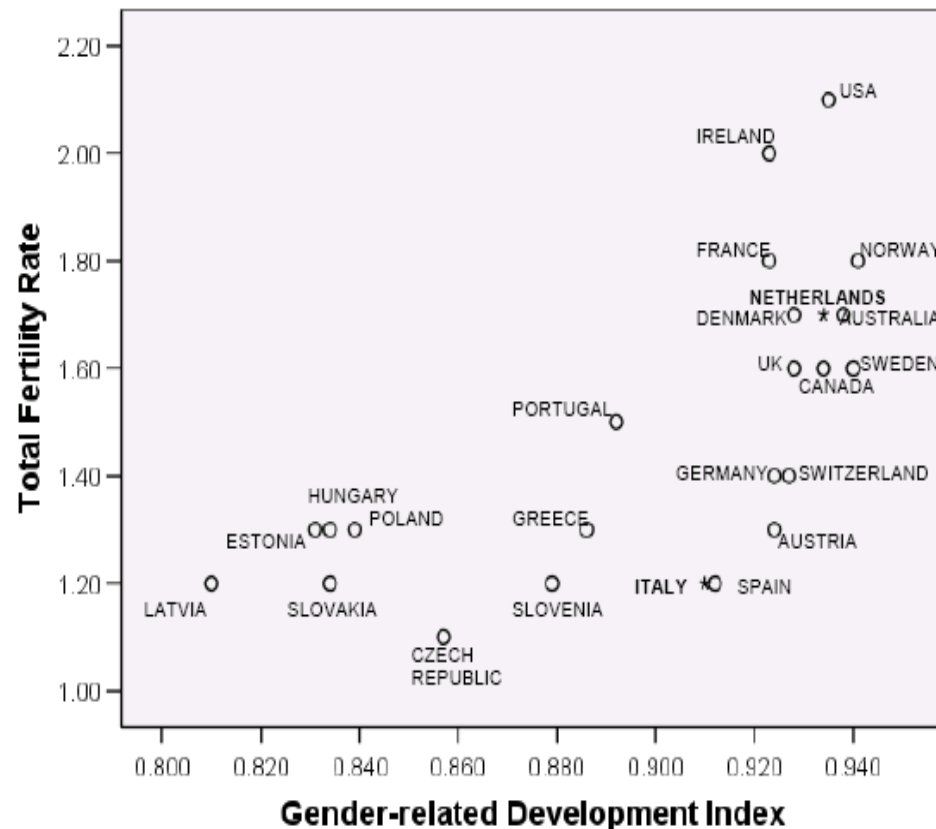
WILL MORE GENDER EQUALITY LEAD TO HIGHER FERTILITY?

- Countries with high gender equality have higher TFR (except German-speaking; Mills et al. 2008)
- Men's share of housework positively linked to the TFR (Feyrer et al. 2008)
- Intentions affected when household division unequal & women face heavy work burden (Mills et al. 2008 on Italy & NL)
- Also women's perception of the stressfulness of housework & little control over their work negative effect (Mills 2008)

As gender equality rises & household division of labour becomes less unequal, fertility may increase

3. CHANGING RELATIONSHIP BETWEEN SOCIO-ECONOMIC FACTORS, FAMILY, AND FERTILITY

Figure 1: Total Fertility Rate (TFR) and gender-related development index for selected countries



WILL MORE
GENDER
EQUALITY LEAD
TO HIGHER
FERTILITY?

Melinda Mills et al.
2008:

Gender-related
Development
Index and TFR in
2001

4. TECHNOLOGICAL ADVANCES: ASSISTED REPRODUCTION AND BEYOND

INFERTILITY TREATMENT: WIDER COVERAGE, HIGHER EFFECTIVENESS

- Assisted reproduction (ART) often subsidised only for specific groups: married, heterosexual, with no children, below age 40...
- Very limited success rates above age 40
- Trends towards re-definition of infertility as a 'disease' or 'medical condition' -> broader access to ART
- Efforts to make ART a part of pronatalist policies (Grant et al. 2006)
- Technological advances: cryopreservation ('egg freezing'), embryo donations, higher success rates

Wider access, higher acceptance and improved success rates likely to lead to a slight increase in the ART contribution to fertility up to the current maximum values of 4-5 % (Denmark, Israel)

SUMMARY & DISCUSSION

What importance attached to different factors?

Potentially strong effect:

- “*Completing the second transition*” – gender equality and new family arr.
- An end of tempo distortions (only for period fertility)
- Labour market functioning & improved income of the young

Potentially moderate effect:

- The rise of higher-fertility ethnic and religious groups
- Pro-natalist and family-oriented policies
- Higher wealth, more affluence
- Higher education no longer negatively linked to fertility

Potentially small effects

- Partnership instability
- Wide provision of infertility treatment, improved technology

SUMMARY & DISCUSSION

Two (plus) pathways towards higher fertility:

1. **More countries like Sweden:** Gender equal, developed welfare, advanced family transformation, cheap housing, high female LFP, high childcare provision and close-to-replacement fertility

2. **More countries like the US:** Competitive labour market, rather low unemployment, large share of high-fertility migrant & ethnic groups, and around-replacement fertility

(Plus): **More countries a bit like France:** Wide system of pronatalist and pro-family policies & around-replacement fertility

WHAT KIND OF SCENARIOS FOR EUROPE?

Europe in 2040-2050

- Regional heterogeneity likely to persist
- Some countries may reach above-replacement TFRs
- Current intentions may constitute higher boundary, TFR unlikely to rise above 2.3 - 2.4 in the West and in the North and above 1.8-2.0 in German-speaking countries, in the South & in the East
- Current adjusted TFR may constitute a main (medium) variant for the West & North (2.0)
- In other regions, assuming that the above-listed factors will have some impact, medium variant may lie at 1.7-1.8
- Lower variant: Assuming declining intentions & unfavourable economy: West & North at 1.6, other regions 1.4

WHAT KIND OF SCENARIOS FOR EUROPE?

UN Probabilistic Scenarios

- Realistic for Europe, close to the scenarios sketched above

Impressive, but:

- Entirely theory-free
- Work with tempo-distorted TFRs
- Do not account by design for the 'postponement transition'
- Do not take into account cohort fertility trends
- Do not allow long-term continuation of regional differences
- Take an arbitrary level of 2.1 as an endpoint without saying why
- A few odd trajectories for Europe (ireland,Iceland)

HUMAN FERTILITY DATABASE

www.humanfertility.org

- High-quality, detailed data on period and cohort fertility in the developed countries

- Age, period, cohort, parity/birth order dimensions

Free access, detailed, comparable, documented

- Launched October 2009

- 6 countries as of now (US, Russia, Austria, Czech Republic, the Netherlands, Sweden)

- 10-12 countries in April 2010