

Lower and later fertility in Europe: Recent trends and future prospects

Tomáš Sobotka

VIENNA INSTITUTE OF DEMOGRAPHY

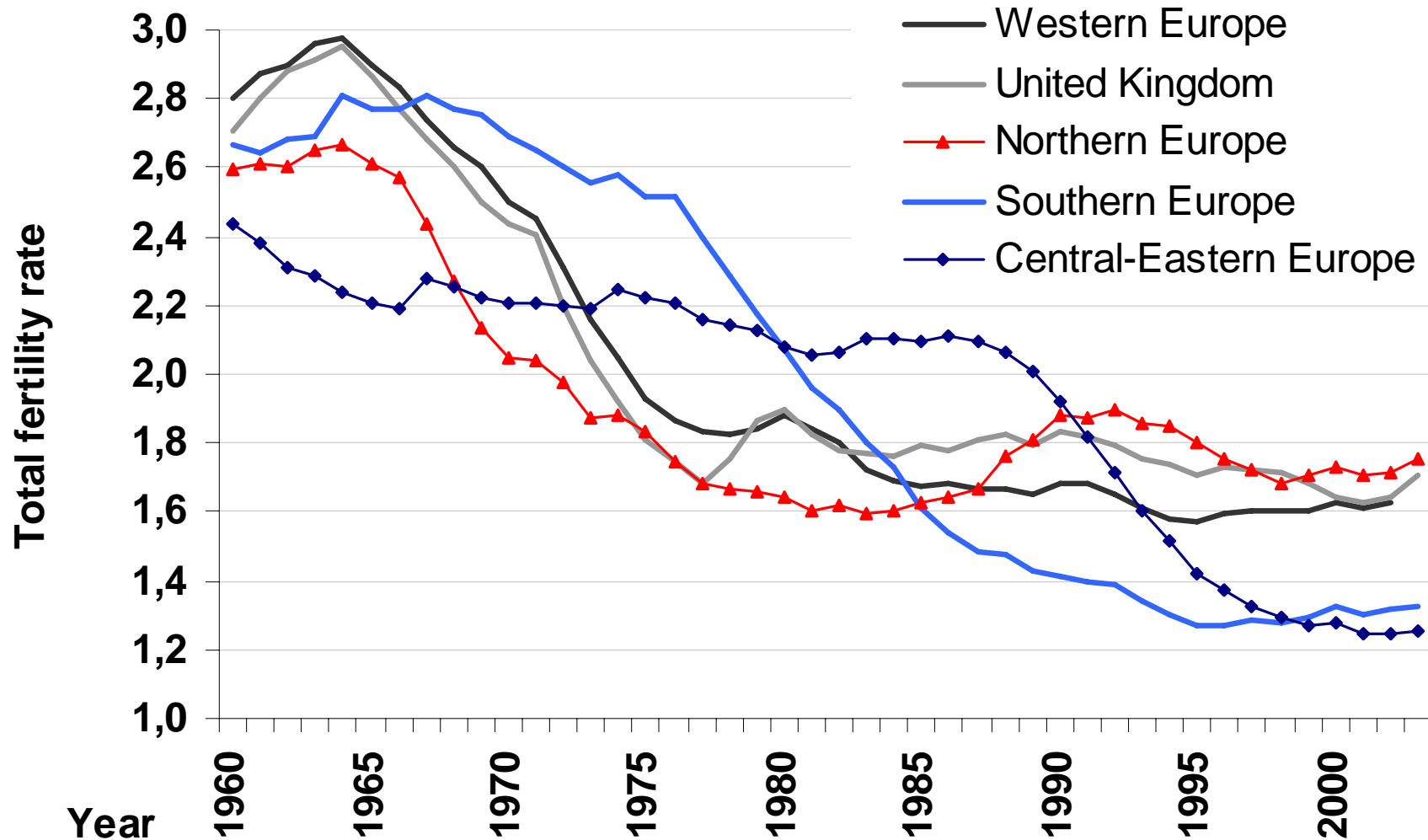
ILC-UK and BSPS Conference on “The consequences of
later and lower fertility”, 26 April 2005, LONDON



THREE PROMINENT TRENDS IN EUROPEAN FERTILITY:

FERTILITY:

1) Decline of total fertility rates to very low levels



...and the emergence of “lowest-low fertility”

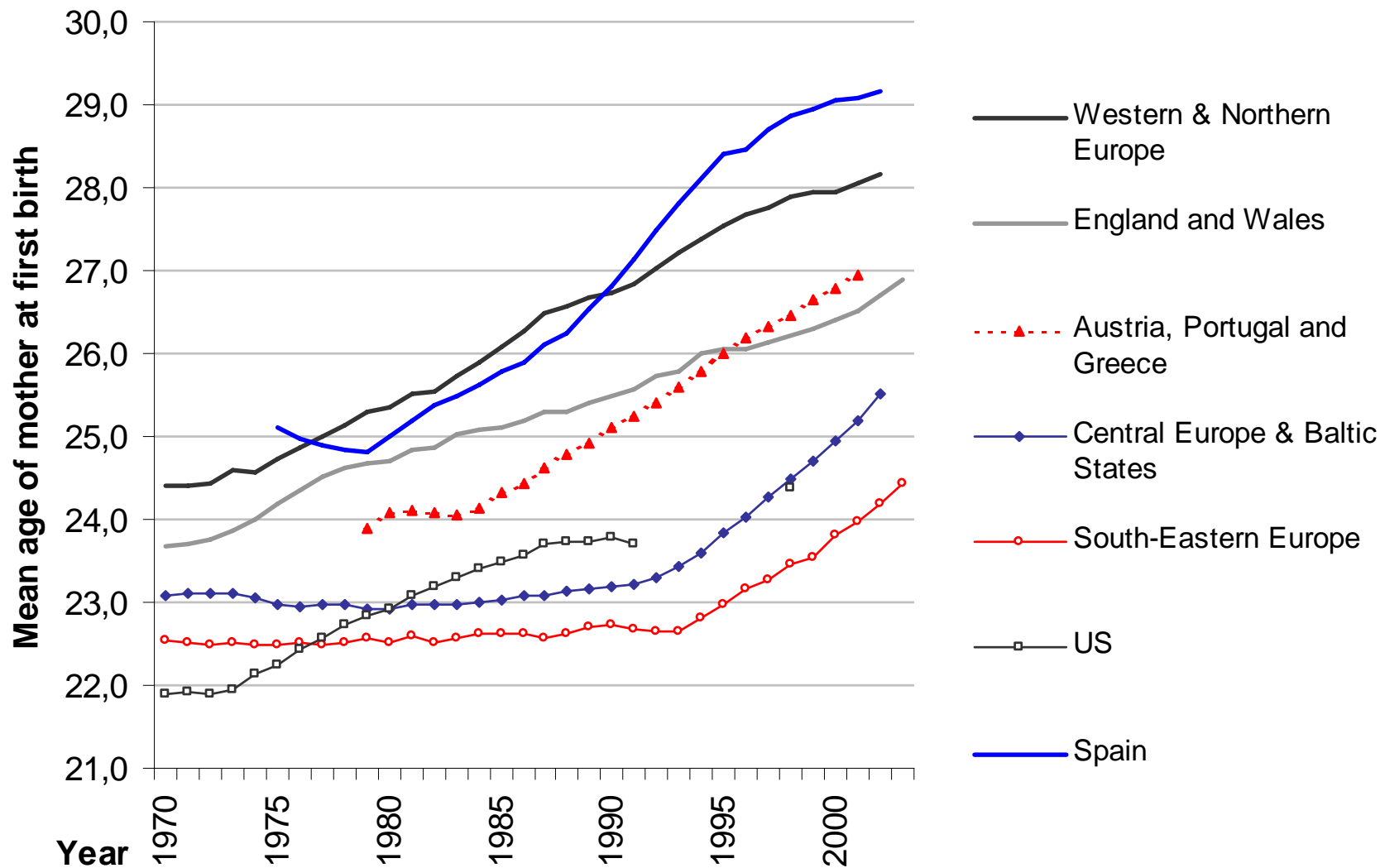
(Kohler, Billari, and Ortega 2002)

EUROPEAN FERTILITY CRISIS?

	1990	1995	2000	2001	2002
TFR 1,30 or lower					
Number of countries	0	7	12	15	15
Population (million)	0	201,3	339	409,4	273,2
% European population	0	28.0 %	47.2 %	57.0 %	38.1 %
TFR 1,40 or lower					
Number of countries	3	14	20	20	21
Population (million)	105,6	453,5	516,6	515,8	520,8
% European population	14.8 %	63.1 %	71.9 %	71.8 %	72.6 %

Data sources: Council of Europe (2004-05), Sobotka (2004)

2) Postponement of parenthood towards later reproductive ages



Data sources: Council of Europe (2004-05), EUROSTAT (2004-05), and national stat. offices

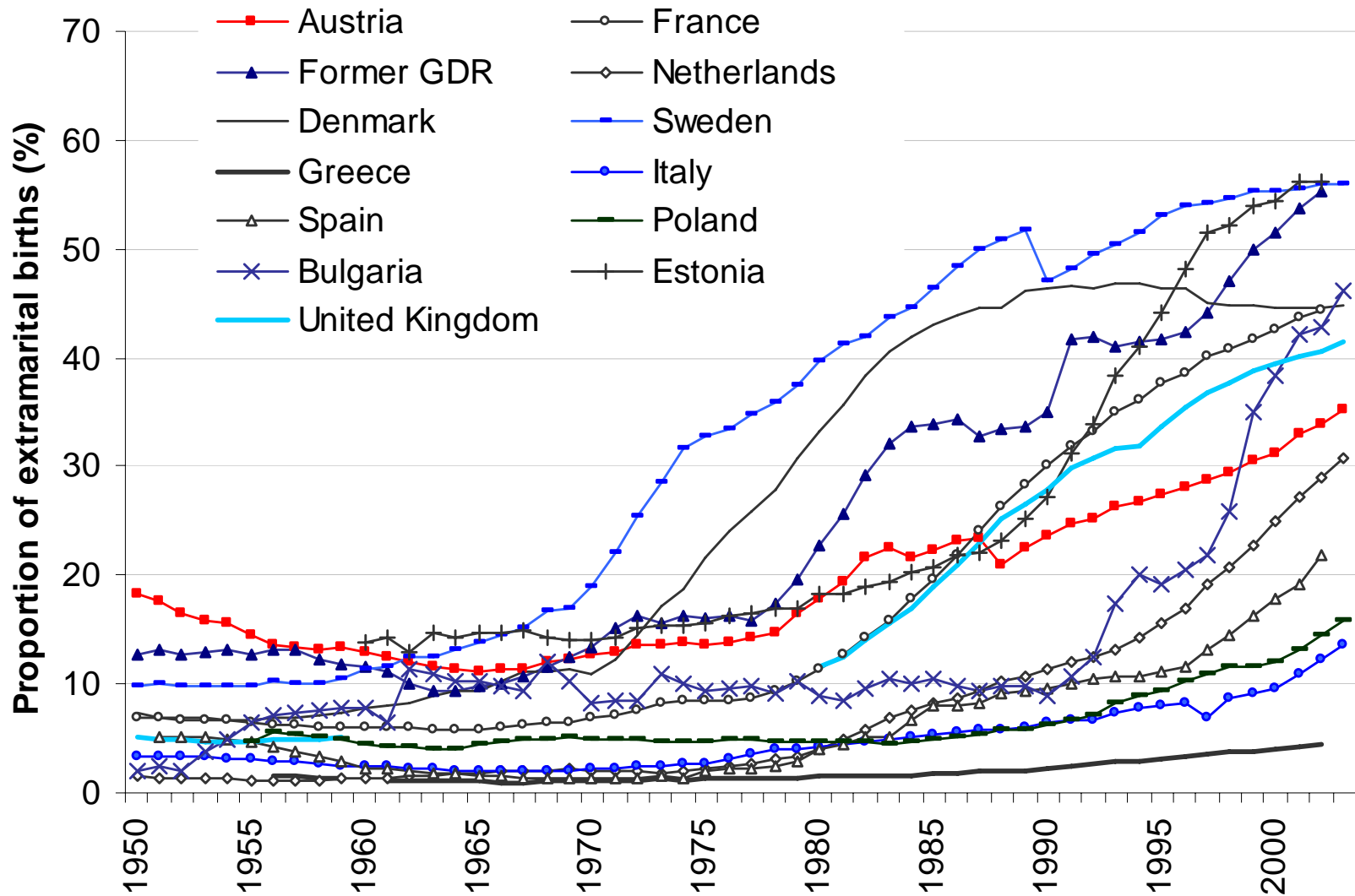
...and increasing 'polarization' in first birth timing

England and Wales: Age when a given proportion of first birth rates realised

	1970	1980	1990	1995	2000
10%	18.4	18.9	18.8	18.8	18.7
25%	20.3	21.2	21.3	21.4	21.3
Median age	23.0	24.4	25.2	25.9	26.3
75%	26.2	27.7	29.1	30.0	30.7
90%	29.7	30.8	32.6	33.6	34.5
Interquartile range (75-25%)	5.9	6.5	7.8	8.6	9.4
Interdecile range (90-10%)	11.3	11.8	13.8	14.8	15.7

Source: Own computations based on data estimated by Smallwood (2002)

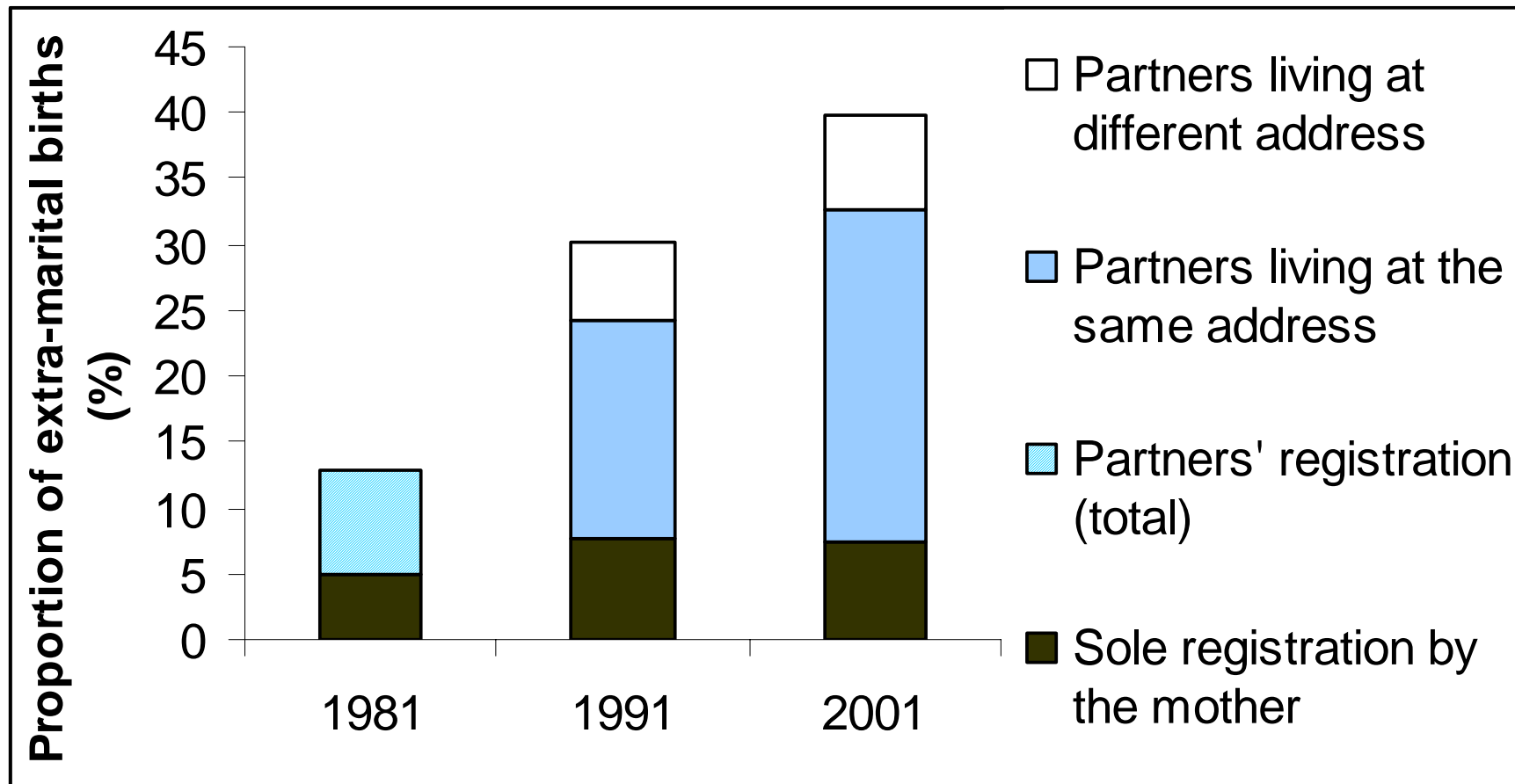
3) Changing family context of childbearing: rise of extra-marital childbearing



Data source: Council of Europe (2004-05)

...taking place in diverse living arrangements

Distribution of extra-marital births in England and Wales by the recognition of father (%)



Source: Population Trends 109, 2002, p. 73

RESEARCH QUESTIONS:

- How are these trends related to each other?
 - Focus on fertility postponement
- Is very low fertility likely to persist in European countries?
 - Discussing future prospects

MAIN ARGUMENT: In the long-run, sustained very low fertility rates likely to be a regional rather than a European problem

STRUCTURE of the talk:

- Fertility postponement and low fertility rates
- New institutional and socioeconomic context of childbearing: Sweden vs. Spain
- Future prospects: A cautious optimism
- Conclusions, final remarks

Fertility postponement and very low fertility rates

Changes in fertility timing affect commonly used indicators of fertility; postponement ‘deflates’ the period total fertility rates (TFR)

⇒ period TFR may considerably differ from the completed cohort fertility (CTFR) for several decades

ARGUMENTS FOR AND AGAINST USING THE TFR:

Positive:

TFR linked to the number of births experienced in a given year

- determines the future age structure composition

Negative:

Possible misinterpretation of fertility levels and trends

- may lead to erroneous projections of the future period & cohort fertility
- apparent cross-country differences might be caused by differential extent of fertility postponement

Period TFR is a distorted indicator of fertility level ('quantum'), but...

...How to measure the 'underlying' fertility quantum?

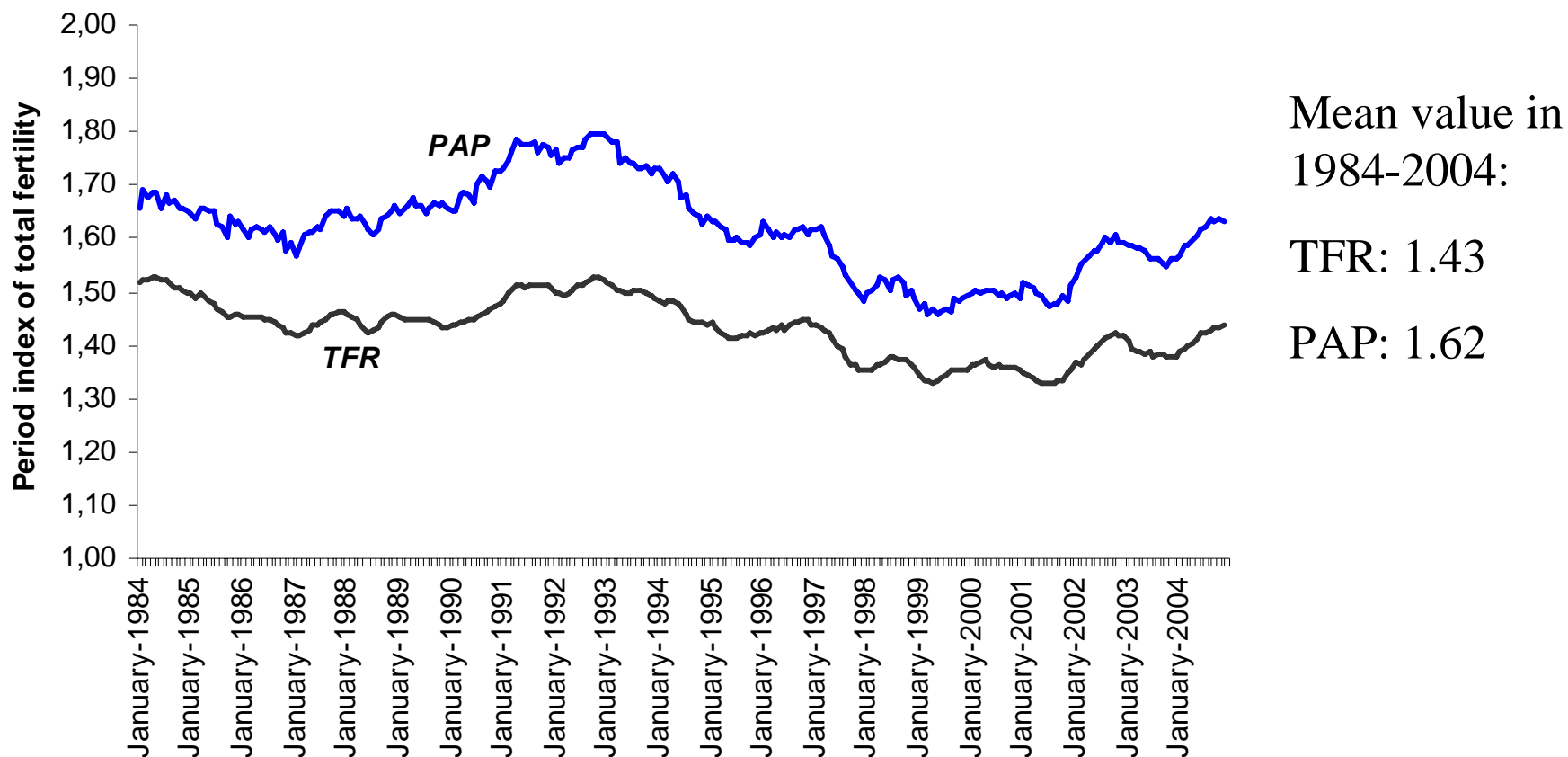
- There is no established and unambiguous alternative
-

THREE SOLUTIONS:

- 1) Abandoning use of the 'synthetic cohort' period indicators, focus on cohort fertility (impractical)
- 2) Using more precise and sophisticated fertility indicators
 - Considering birth order: parity progression measures
 - Using exposure-based indicators rather than 'incidence rates':
Fertility tables based on age and parity; birth interval (duration) fertility data
- 3) Adjusting fertility indicators for tempo distortions
 - Various methods proposed since 1998 (Bongaarts & Feeney 1998, Kohler & Ortega 2002)
 - Disadvantages & criticisms: Interpretation / Underlying assumptions / Strong fluctuations (e.g. van Imhoff 2001)
 - Supporting arguments: More realistic values than the TFR / Closer approximation of the completed cohort fertility (Sobotka 2004)

More precise indicators: Fertility index based on parity progression rates in Austria

PAP – “period average parity,” constructed from age-based fertility table for birth order 1 and duration-based period parity progression rates for orders 2 to 6+



Tempo-adjusted fertility indicators:

Period fertility quantum in Europe estimated with Bongaarts-Feeney adjusted TFR (1995-2000)

	Population size, (millions, 2001)	Average of 1995-2000			CTFR (cohort born 1960)
		TFR	adjTFR	Tempo effect	
Western Europe	246,6	1,57	1,74	-0,17	1,88
Northern Europe	23,9	1,70	1,94	-0,24	2,00
Southern Europe	118,8	1,23	1,59	-0,36	1,74
Central Europe	66,5	1,41	1,75	-0,34	2,12
Baltic countries	7,2	1,30	1,64	-0,34	1,92
South-eastern Europe	47,7	1,43	1,67	-0,24	2,14
Eastern Europe	208,1	1,25	1,46	-0,21	1,85
EUROPE	718,8	1,40	1,63	-0,23	1,89
EU (15 countries)	377,6	1,47	1,70	-0,23	1,84
EU (10 accession countries 2004)	73,7	1,39	1,74	-0,35	2,10
EU (25 countries)	451,3	1,46	1,71	-0,25	1,88

Intrinsic rate of population growth: TFR 1.46 = -1.13%
TFR 1.71 = -0.60%

Source: Sobotka 2004

The influence of fertility postponement on period and cohort fertility: A summary

1) ‘Temporary’ distortion of period fertility levels

- Does not influence final cohort fertility distribution
- ‘Missing births’: postponement associated with low period number of births that negatively affects the age structure of population --- this effect likely to be replicated in the subsequent generations (Goldstein, Lutz, and Scherbov 2003, Smallwood and Chamberlain 2005)
- May last many decades (Western and Northern Europe: more than 30 years of fertility postponement)

2) “Postponement - quantum interaction”:

- The shift towards later childbearing may be associated with declining cohort fertility quantum (Kohler, Billari, Ortega 2002)
- Biological (infertility) and other factors (e.g. personal circumstances)

Which of these two influences more important?

- First effect (period tempo distortion) appears to have a prominent influence

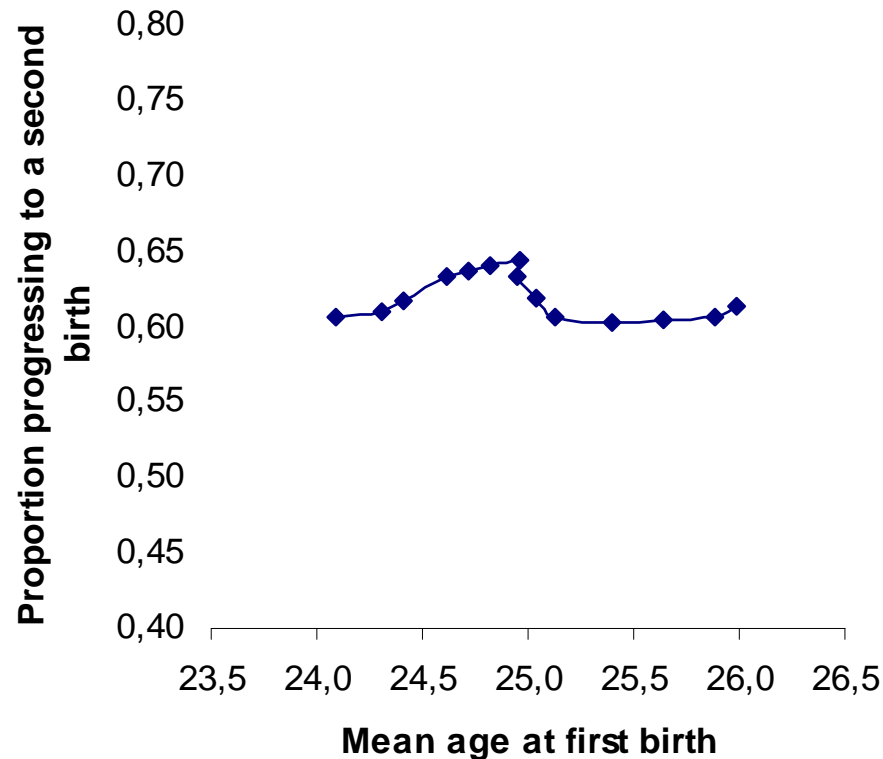
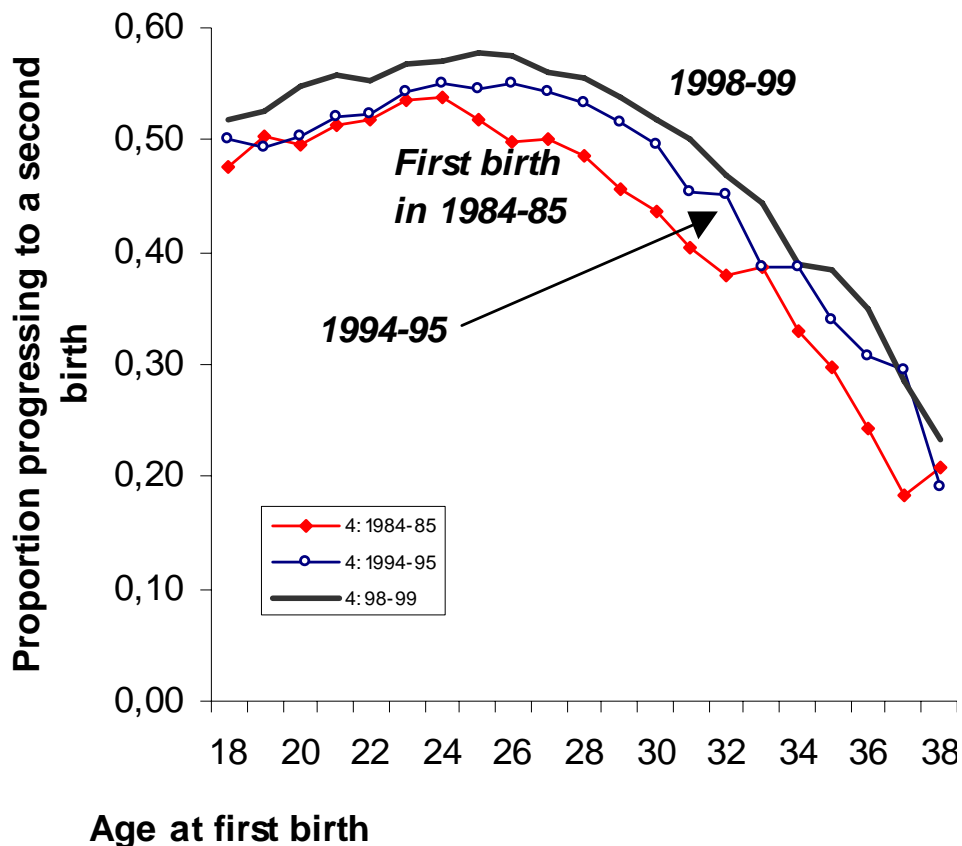
Estimated annual number of live births 'missing' due to fertility postponement in the Czech Republic, the Netherlands and Spain

		Czech Republic 1991-2001	The Netherlands 1981-1999	Spain 1982-1999
Mean annual live births	(1)	101590	188279	411891
Mean annual births with no tempo effects	(2)	129109	209600	457184
Estimated mean annual 'missing births'	(3) = (2)-(1)	27519	21321	45293
Proportion of 'missing births' (percent)	(4) = - (3) / (2)	-21,3%	-10,2%	-9,9%

Source: author's computations

Second effect more country-specific:

the effect of a general decline in the intensity of childbearing with age may be compensated by a shift in the age-intensity profile



AUSTRIA: age at first birth and the proportion of women progressing to a second birth within the next 4 years

AUSTRIA: mean age at first birth and the proportion of women having a second birth in the next 6 years

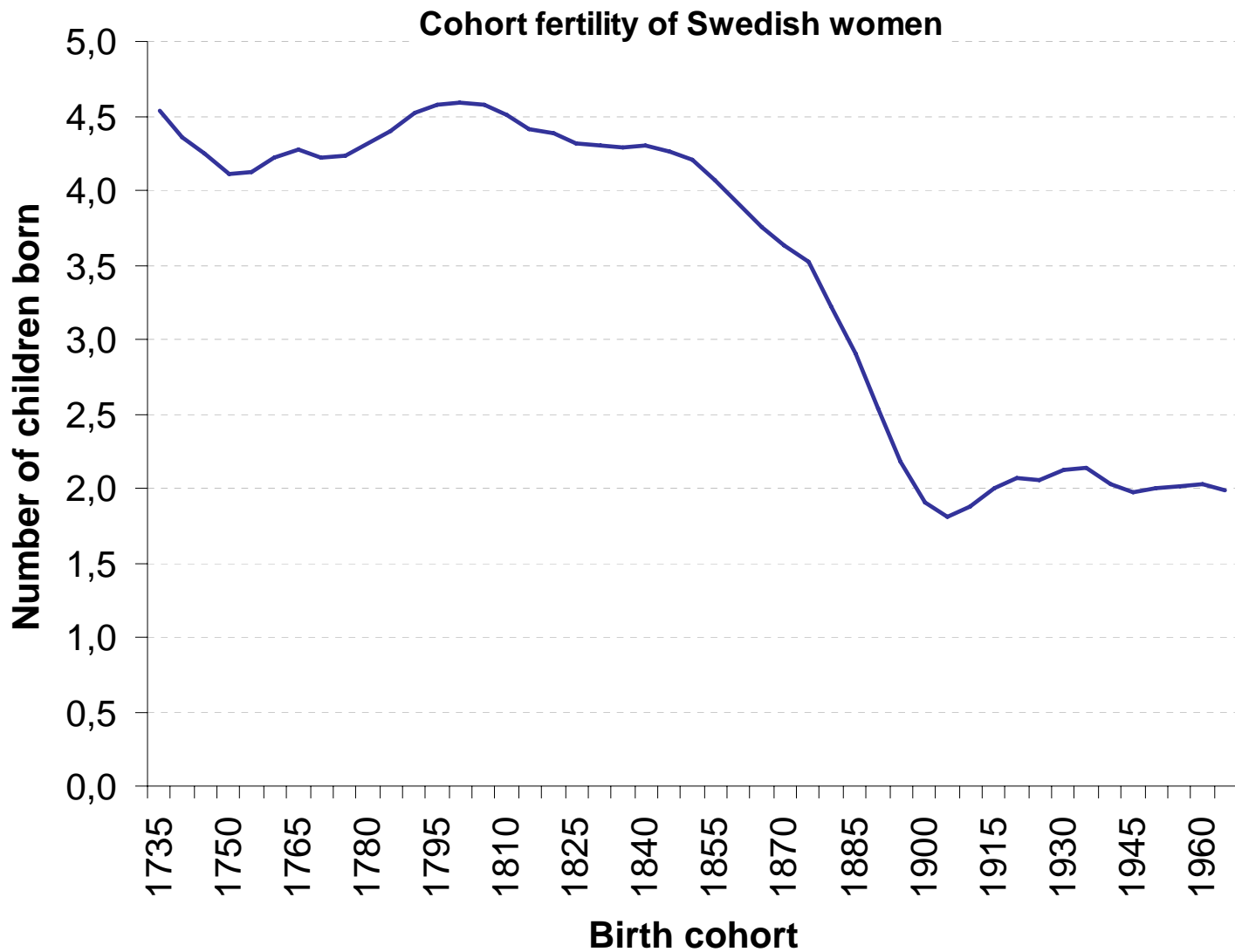
Institutional and socioeconomic context of fertility

- How does the character of the welfare state influence fertility decisions?
 - Durable cross-country differences (Mayer)
 - Does Scandinavian “social democratic” welfare regime remove many obstacles to parenthood?
- Reversal of traditional associations between period total fertility rates and marriage rates, labour participation of women, divorce rates, and extra-marital childbearing (Billari and Kohler 2004)
 - Different possible explanations
 - ‘Postmodern’ family context characterised by high partnership instability and plurality of living arrangements is not linked to very low fertility

Very low fertility is not a hallmark of the Second Dem. Transition

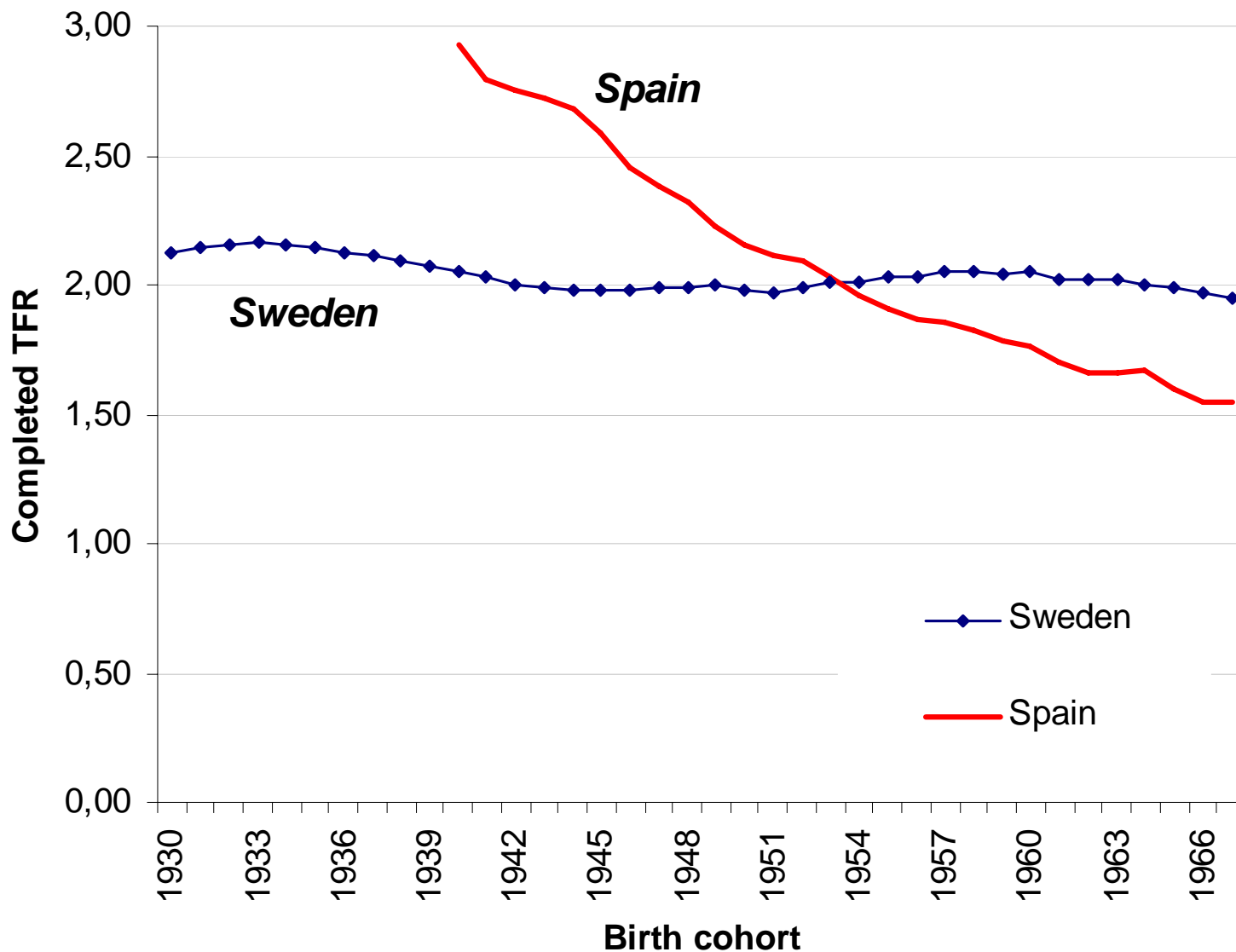
Van de Kaa (2001): no (negative) relationship between postmaterialism and fertility preferences; postmaterialists may have lower fertility due to excessive postponement (effect of education?)

Sweden: Most stable fertility level in Europe: Completed cohort fertility among women born 1735-1963



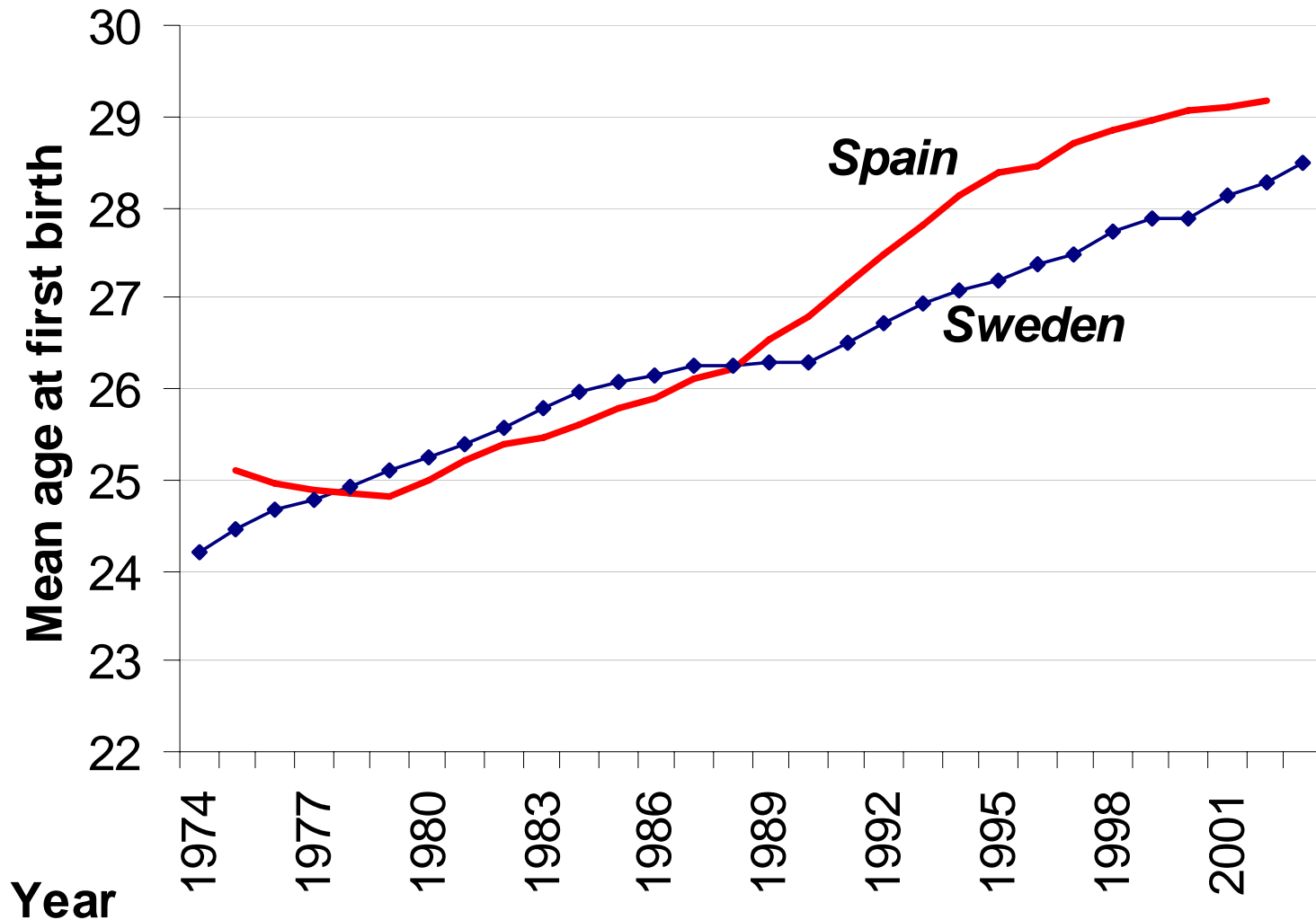
Source:
Statistics
Sweden

Sweden vs. Spain (1): contrasting cohort fertility trends



Source:
author's
computations
based on
Eurostat
(2004, 2005)

Sweden vs. Spain (2): similar shift towards late parenthood..

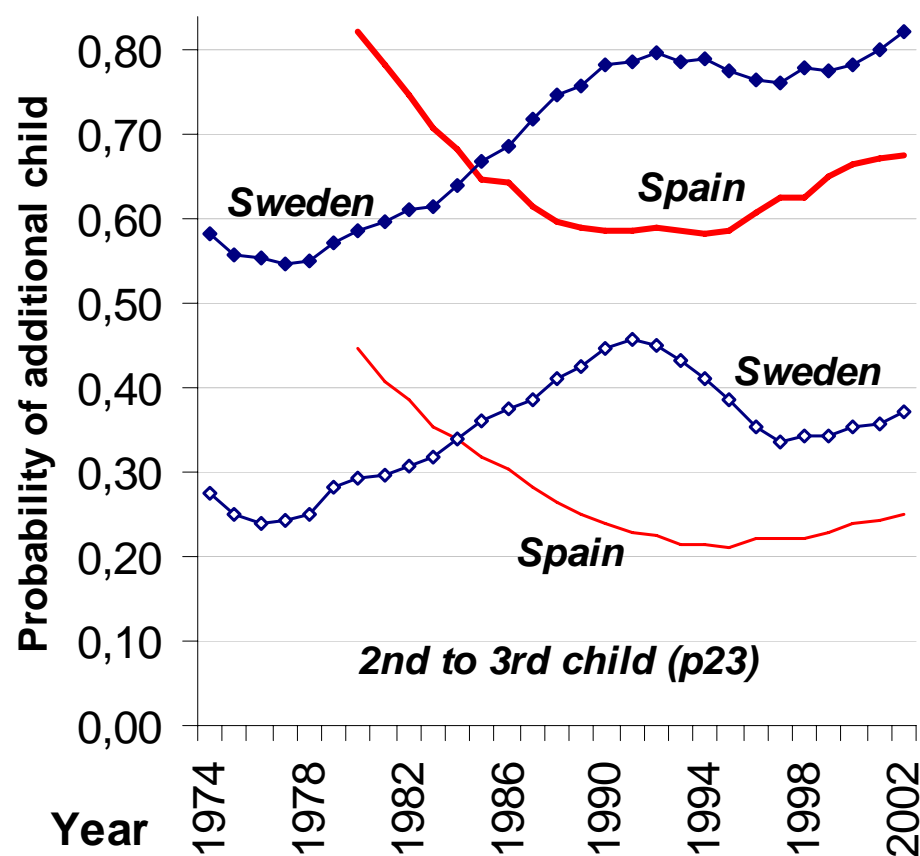
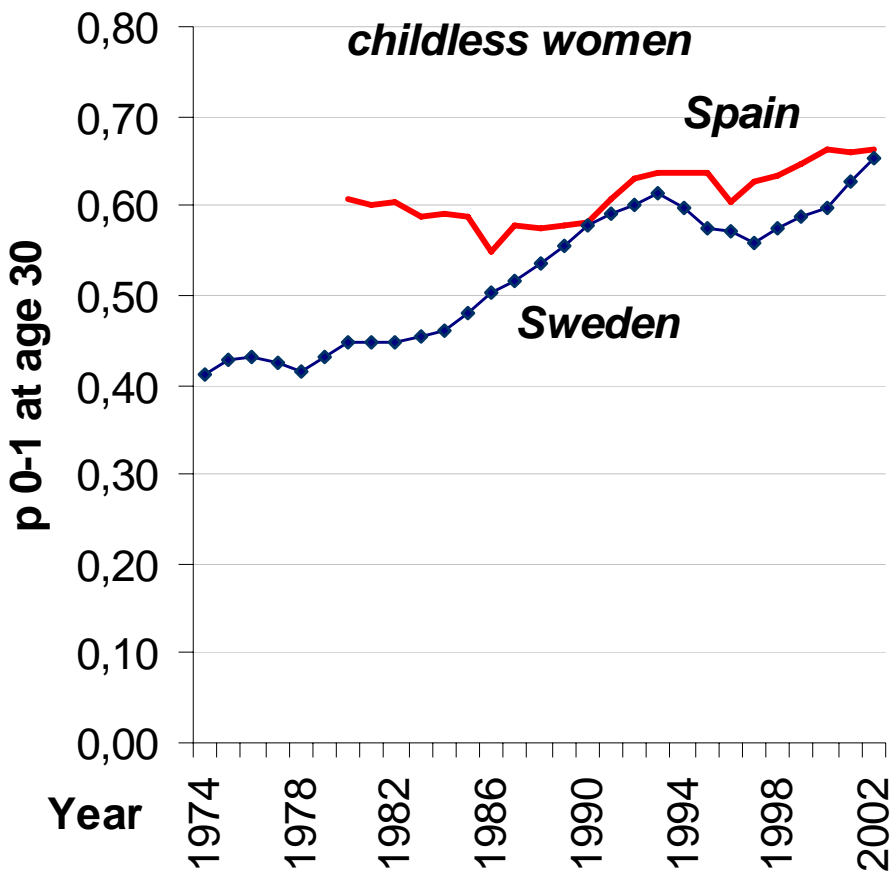


Source:
author's
computations
based on
Eurostat
(2004, 2005)

...but different extent of fertility recuperation among women after age 30

Lifetime probability of having a(nother) child among women aged 30

1st to 2nd child (p12)



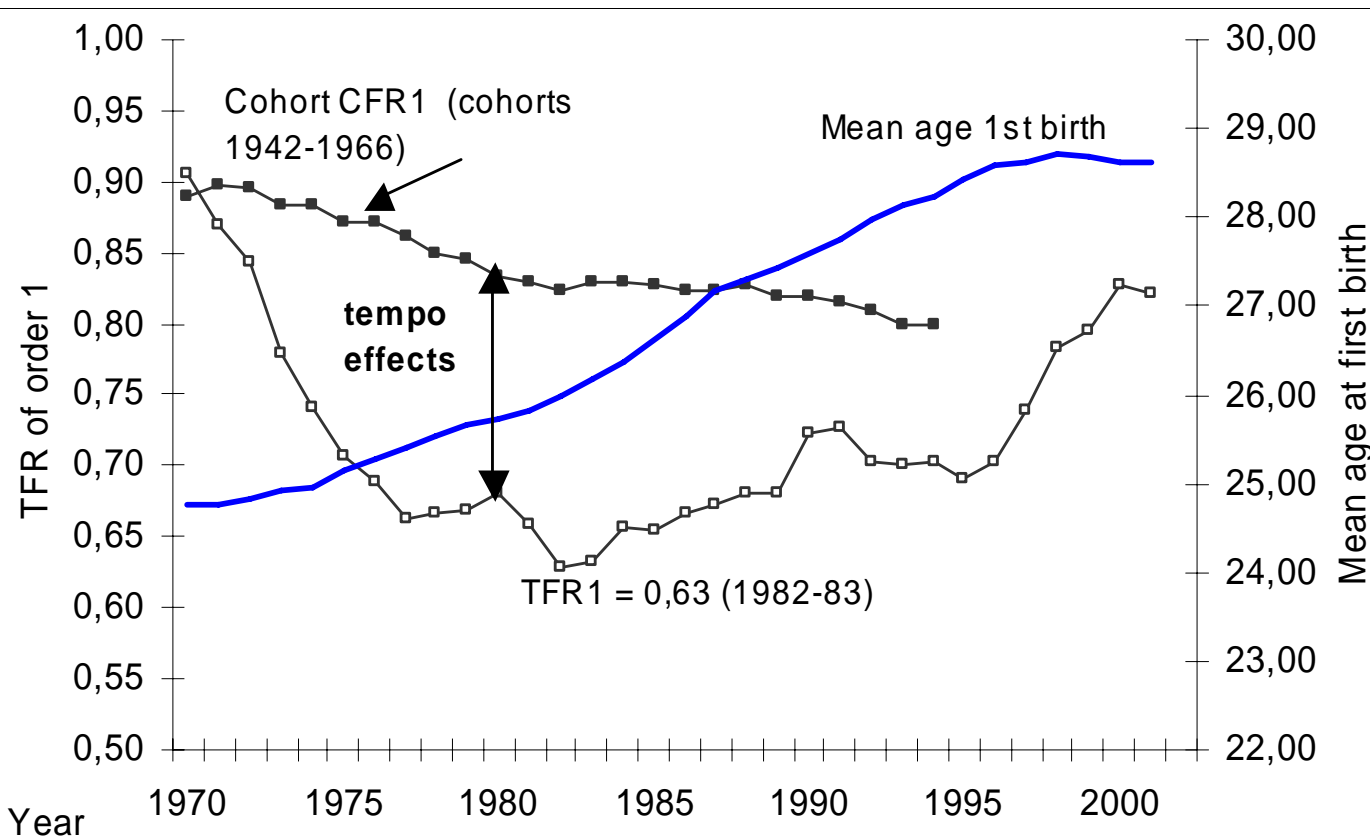
Progression rate toward second child crucial for explaining cross-country variation

Future outlook (1): a cautious optimism

- **ARGUMENT 1:** Most European countries unlikely to experience further decline in period total fertility rates
- **ARGUMENT 2:** Lowest-low total fertility rates appear to be a temporary phenomenon
 - The observed low total fertility rates associated with rapid fertility postponement, which is unlikely to intensify further
- **ARGUMENT 3:** In the medium-term perspective (10-15 years), a modest recovery of period (total) fertility rates may be expected in most societies
 - Moderate „recuperation“ linked to the slowing-down or ending of fertility postponement (parity-specific and country-specific differences)
 - The influence of migrants on fertility rates
 - Some positive influence of governments' policies? (more interest in low fertility rates)

Future outlook (2): Will the end of fertility postponement bring an increase in the period fertility rates?

- Country-specific and parity-specific differences in the extent of 'catching up' at higher reproductive ages
- First birth probabilities increasing after age 30 in almost all countries



Stages of fertility postponement and 'recuperation': the case of first births in the Netherlands

Future outlook (3): Migration likely to have a slightly positive influence on fertility rates

Migration has become a crucial component of population growth in many countries, both directly (high immigration rates) and indirectly (fertility of migrants)

Despite large heterogeneity, most migrants of non-European origin have higher fertility rates

- Switzerland: without international migration after 1945, population size would stabilise or slightly decline since the mid-1970s, reaching 5.2 million in 2000 as contrasted with the 7.2 million actually recorded (Council of Europe 2002)
- England and Wales: 18.6 % births in 2003 to mothers born outside UK (12.1 % in 1993; ONS 2004)

The impact of migrants on fertility likely to increase further

- Recent stabilisation or increase of higher-order fertility rates (3+) in many European countries probably linked to immigration

Future outlook (4): Many governments will take the issue of low fertility more seriously

2005: Green Paper (Commission of the European Communities): “*Confronting demographic change: a new solidarity between the generations*”

- “If Europe is to reverse this demographic decline, families must be further encouraged by public policies that allow women and men to reconcile family life and work”.

BUT: direct incentives to encourage childbearing either too costly or with a limited impact (e.g. Gauthier 1997, 2001)

- Such policies often have a temporary influence, may have a stronger impact on fertility timing, and may have unintended consequences

More promising: policies without direct pronatalist motivation that broaden individual freedom of choice:

- Accommodating diversity of living arrangements and childbearing contexts
- Supporting various combinations of parental leave, childcare, and labour force participation

CONCLUSIONS and final remarks (1)

The shift towards later parenthood important in explaining current European fertility level and cross-country differences

- **Challenge for interpretation of fertility trends:** using more appropriate indicators specified by parity, considering both period and cohort fertility
- **Challenge for fertility projections:** using explicit assumptions about the future pace and duration of fertility postponement and the extent of 'catching up'
- Still considerable scope for further fertility postponement: What are the limits of late parenthood?

Second Demographic Transition marked by delayed parenthood, but not necessarily by (very) low fertility levels

While lowest-low fertility is likely to be a temporary phenomenon, very few European countries may experience fertility rates at or above replacement level

- Unless the impact of migration is incorporated into the concept of generation 'replacement' (Calot and Sardon 2001)

CONCLUSIONS and final remarks (2)

- Emerging fertility differentiation of Europe:

“HIGHER FERTILITY BELT“: Ireland, UK, France, Belgium, the Netherlands, Northern Europe (‘underlying’ levels of period fertility at 1.7-2.1)

- High progression rate towards second child, considerable proportion of women having third child
- With moderate levels of immigration, low fertility does not pose a serious threat to these societies (Sweden)

“LOW FERTILITY REGIONS“: Italy, Greece, Spain, Germany, Switzerland, Eastern Europe (Bulgaria, Romania, former Soviet Union), parts of Central Europe (Poland?)

- Underlying’ levels of period fertility around 1.5
- Low progression rates towards second and third child
- Low fertility may constitute a challenge to the long-term stability, especially in combination with negative migration balance and lacking social systems adjustments
 - Rapid population decline in Bulgaria, Ukraine, and East Germany
 - Northern Italy: High immigration rates may partly offset negative effects of very low fertility (Dalla Zuanna, Michielin 2003).

⇒ Very low fertility does not constitute an all-European problem

- See more on fertility postponement at www.ub.rug.nl/eldoc/dis/rw/t.sobotka

Comments?

Suggestions?

- Please send email to:
tomas.sobotka@oeaw.ac.at

Tempo-adjusted fertility indicators: Kohler-Ortega (2002) adjusted PATFR; AUSTRIA 1984-2004

