



After the demographic transition in the developing world

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‘Demographic maturity’ – the end-product of the demographic transition

Fewer babies

Longer lives

Ageing populations

Diversity in parenting

More immigrants

But is the ‘end’ yet in sight?

Birth rates at the ‘end’ of the transition

Births and birth rates more volatile – under voluntary control. Cohort and period measures diverge.

Disruptive effects of recession, war, ‘baby boom’.

Below-replacement fertility achieved in 1930s – without modern contraception.

Fear of population decline – advent of new pronatalist policies between the World Wars.

Childlessness, lone child families frequent.

Beginning of the end of WEMP in late 1930s.

Will birth and death rates return to ‘equilibrium’?

Vital rates in England / England and Wales 1730-1991.

Vital Rates, England / England and Wales 1730 - 1991.

all rates per thousand population. Sources: up to 1837 Wrigley and Schofield 1981, for England only. 1838 onwards, civil registration for England and Wales.

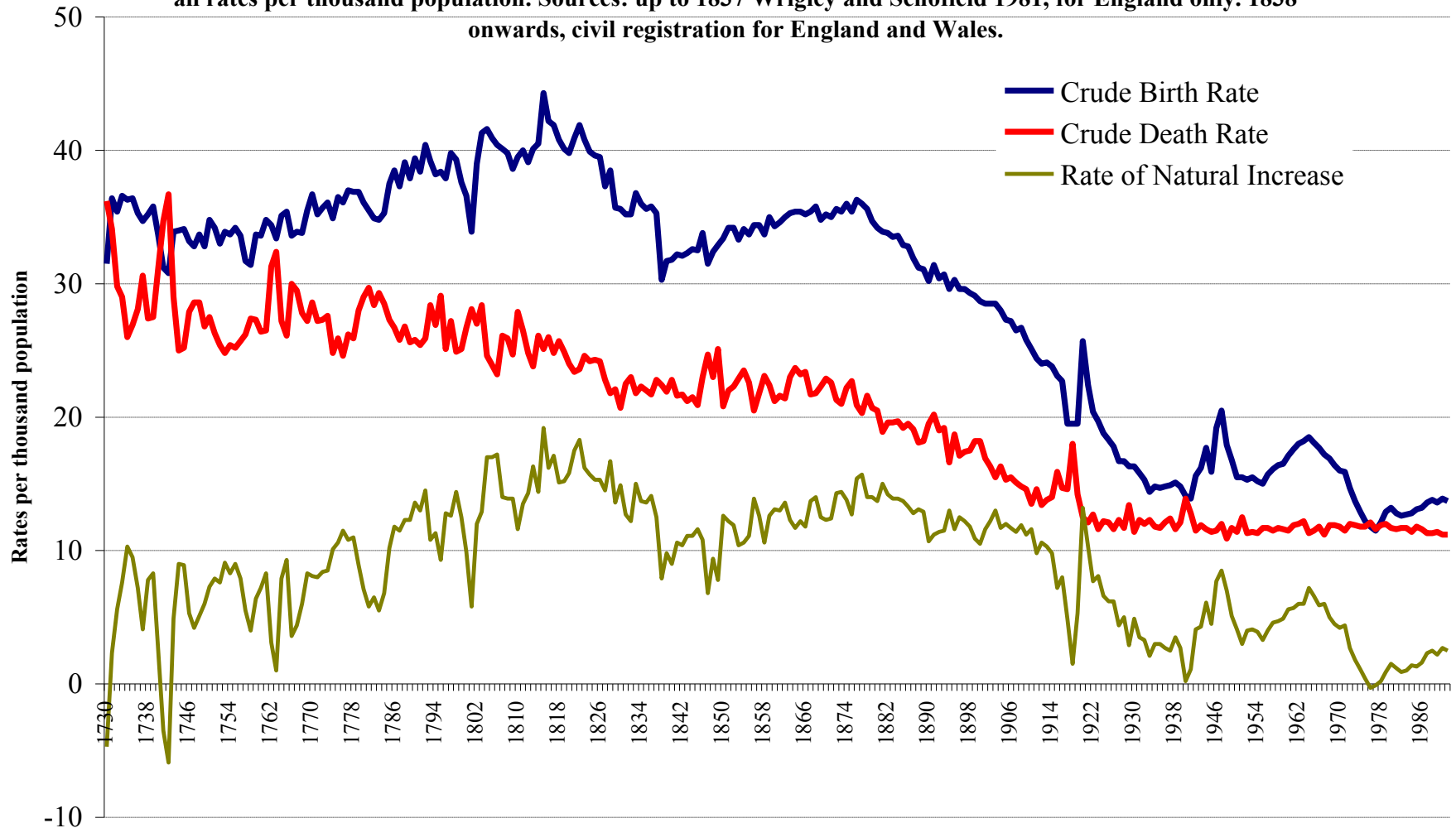
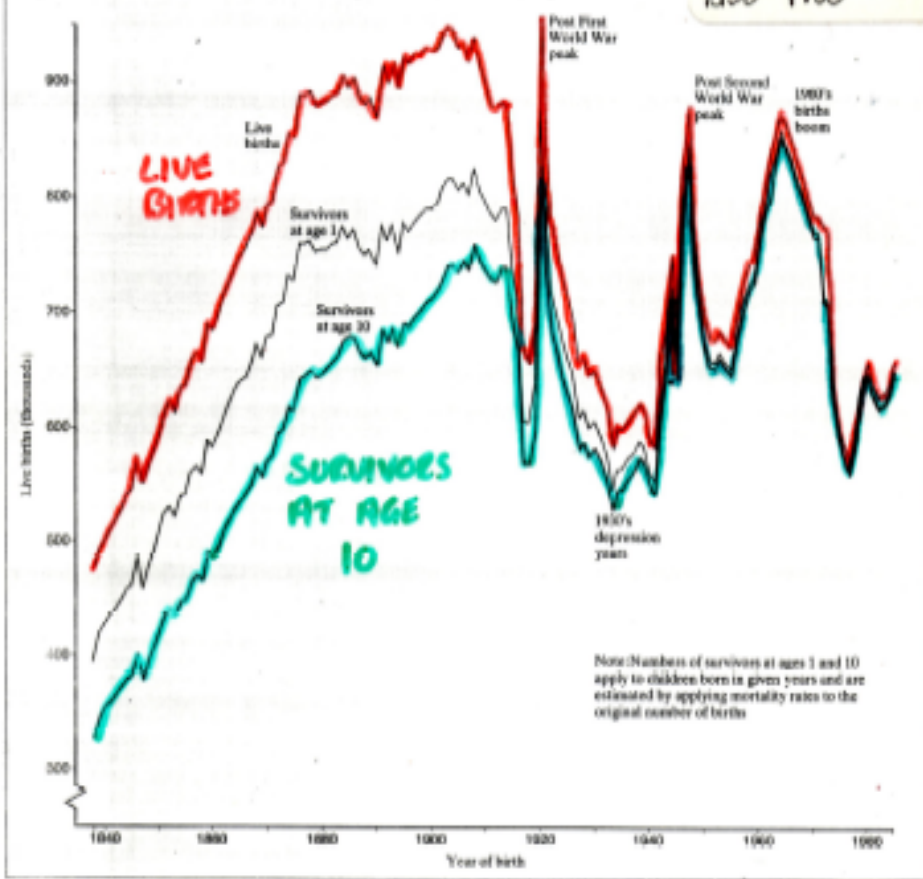


Fig 1 Live births and numbers of survivors at ages 1 and 10, 1838-1985, England and Wales



TRENDS IN
RURAL BIRTHS
1838-1985

twentieth centuries. During recent decades these mortality rates between the 1870s and early 1930s, reaching a level of around 15

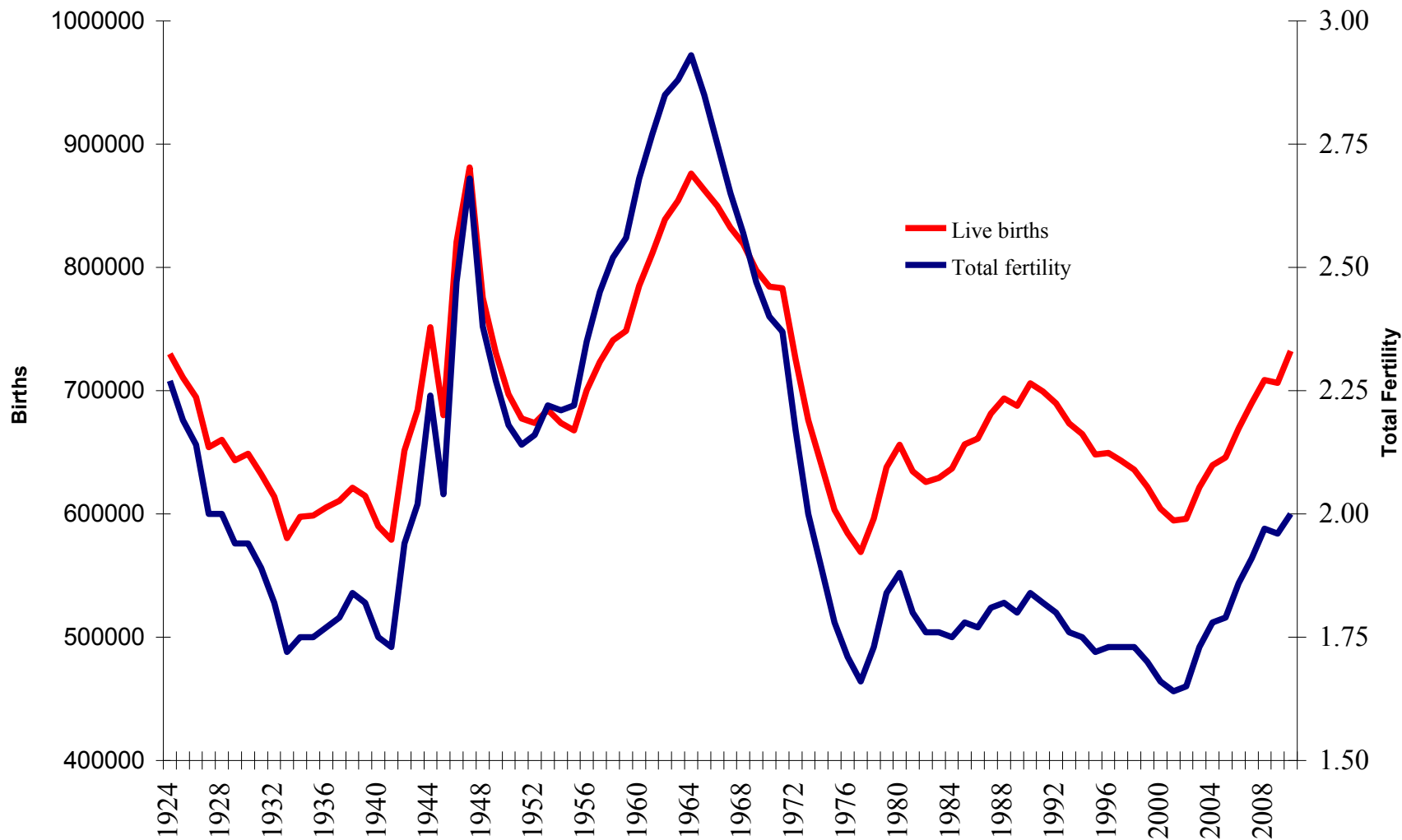
— LIVE BIRTHS
— SURVIVORS TO AGE 10

England and Wales 1924 – 2010

. Trend in live births and TFR.

Source: ONS.

Trends in live births and total fertility, England and Wales 1924 - 2010



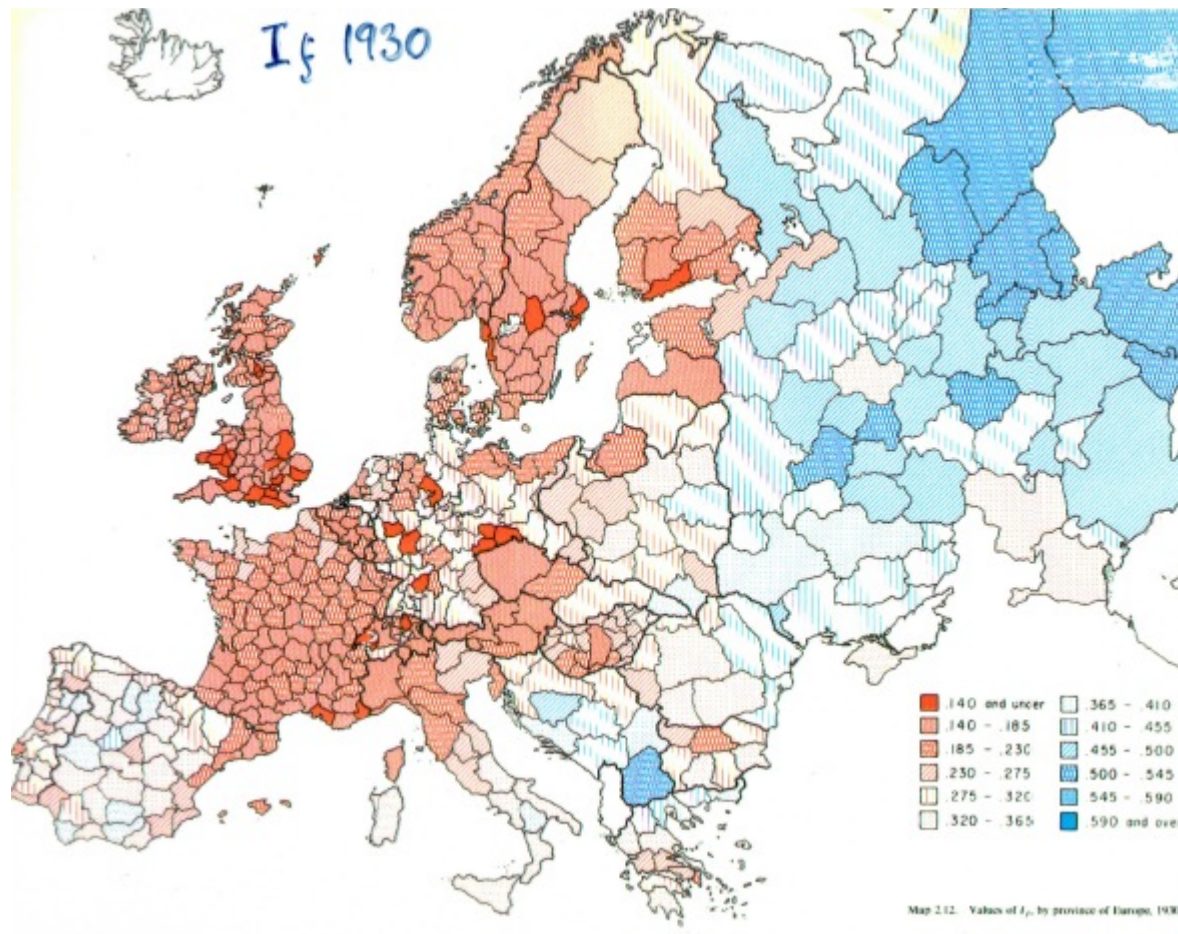
Total fertility and Net Reproduction, 1930s to 2000s

	Year	1930s		2000		2007
		TFR	NRR	TFR	NRR	TFR
Australia	1932/4	2.15	0.96	1.70	0.82	1.93
Canada	1931	3.19	1.32	1.48	0.71	1.57
England and Wales	1935	1.78	0.76	1.65	0.79	1.91
France	1935	2.06	0.87	1.89	0.91	2.00
Germany	1933	1.64	0.91	1.38	0.69	1.37
Italy	1930/2	3.29	1.24	1.24	0.58	1.29
New Zealand	1933	2.16	0.98	2.01	0.96	2.17
Sweden	1934	1.67	0.75	1.54	0.75	1.85
United States	1933	2.14	0.94	2.14	1.05	2.05

Sources: Glass and Blacker 1938 t.5, Eurostat, National Statistical Yearbooks.

Index of overall fertility (I_f), 1930.

Source: Coale and Watkins 1996



After the demographic transition, what next?

developed country fertility in the 21st century

Return to replacement fertility?

Chronic depression? TFR universally below two children except USA, New Zealand, Iceland.

Divergence and diversity –almost two-fold international differences in period fertility (US, France : Taiwan, Korea).

‘High’ TFRs only where extramarital births common.

Immigrant fertility – up to 25% of births; adds 0.1 – 0.2 to TFR

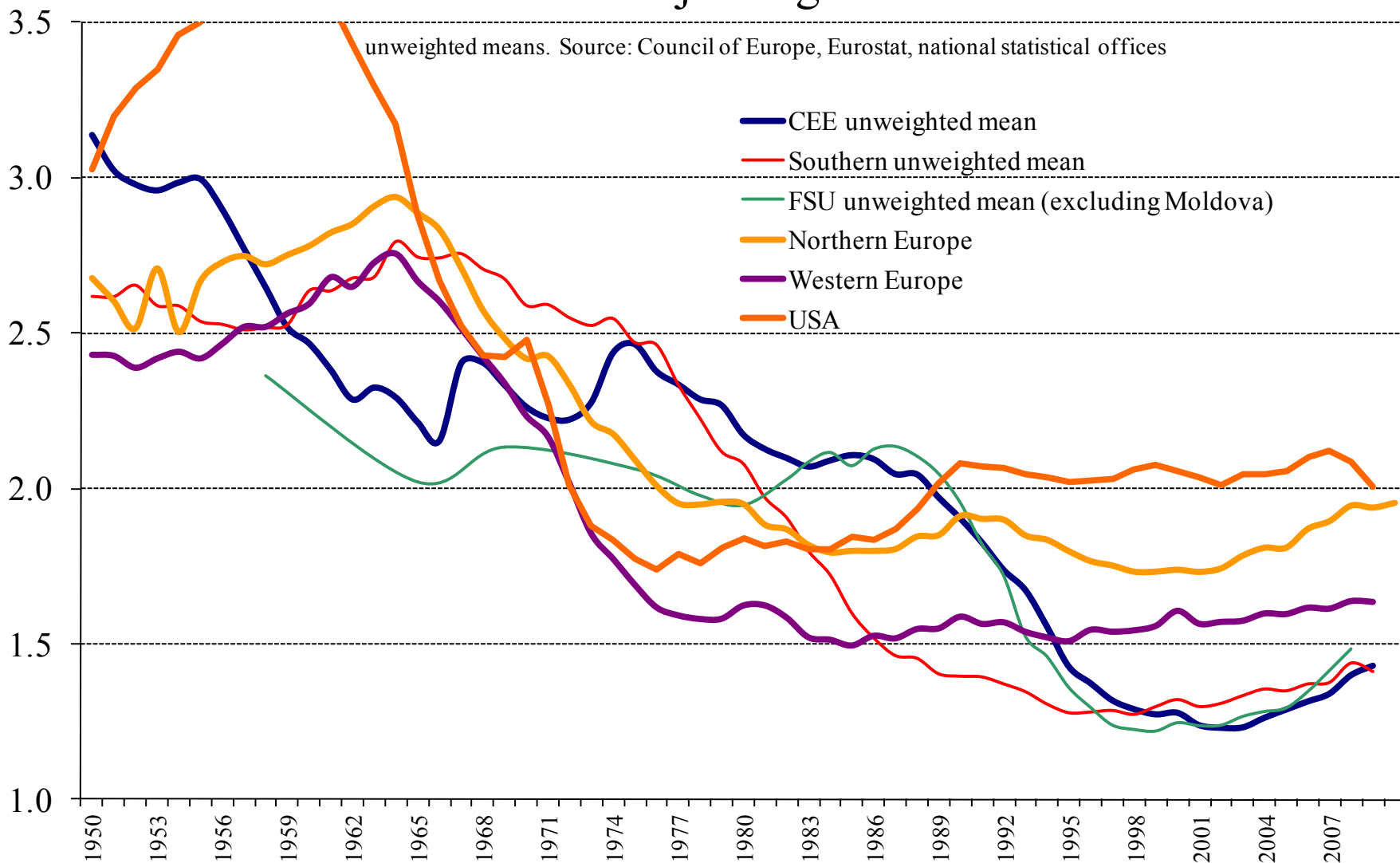
Delay / postponement and recuperation – the depression of period fertility and its recovery

Relatively modest recent time-trends in Western Europe, more volatile in Eastern Europe post-1989; recent increases widespread but unequal.

Now affected by recession.

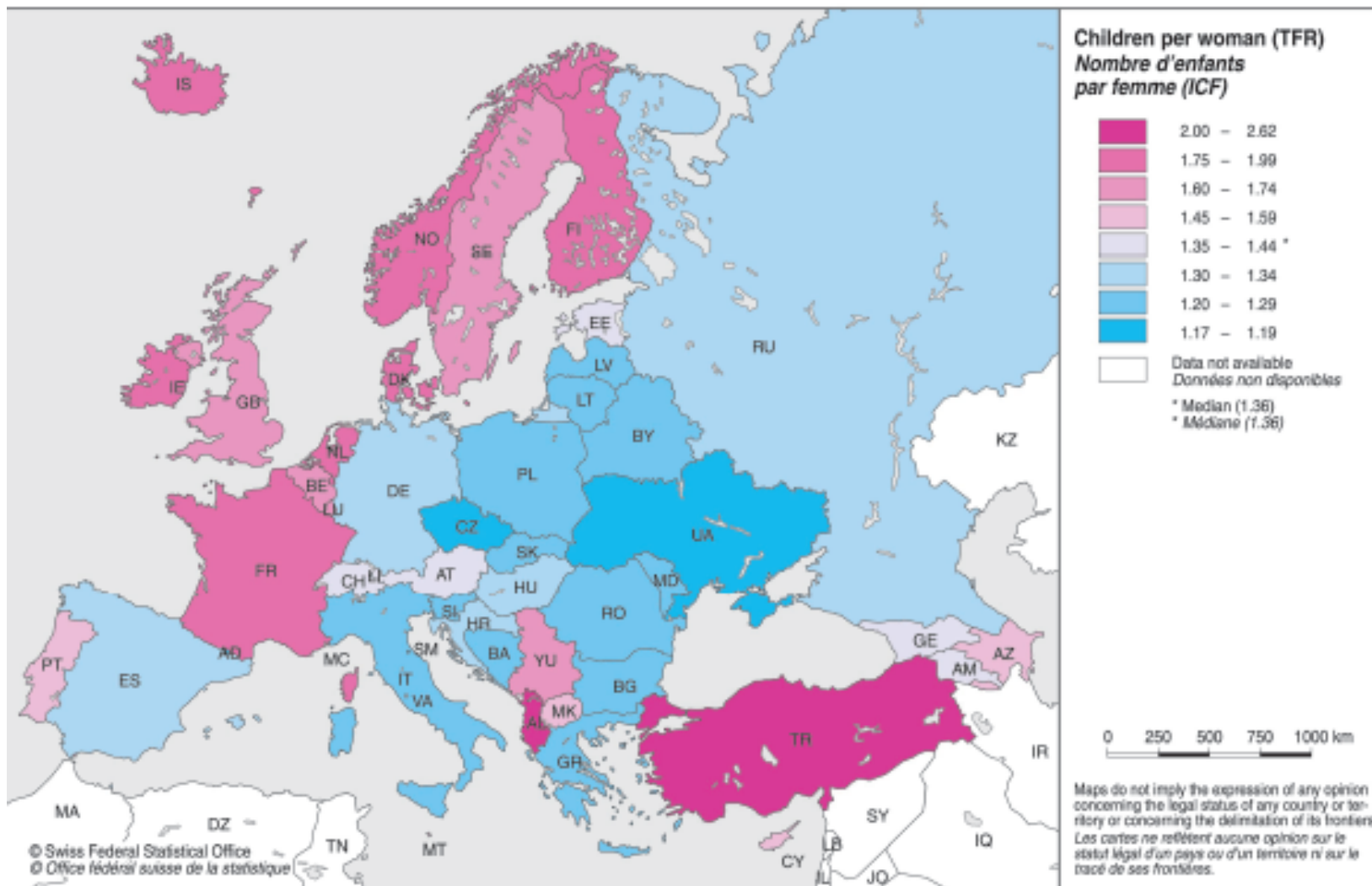
The end of post baby-boom decline

TFR trends Major Regions 1950 - 2010



Total fertility rate, Europe 2003. Source: Council of Europe 2004.

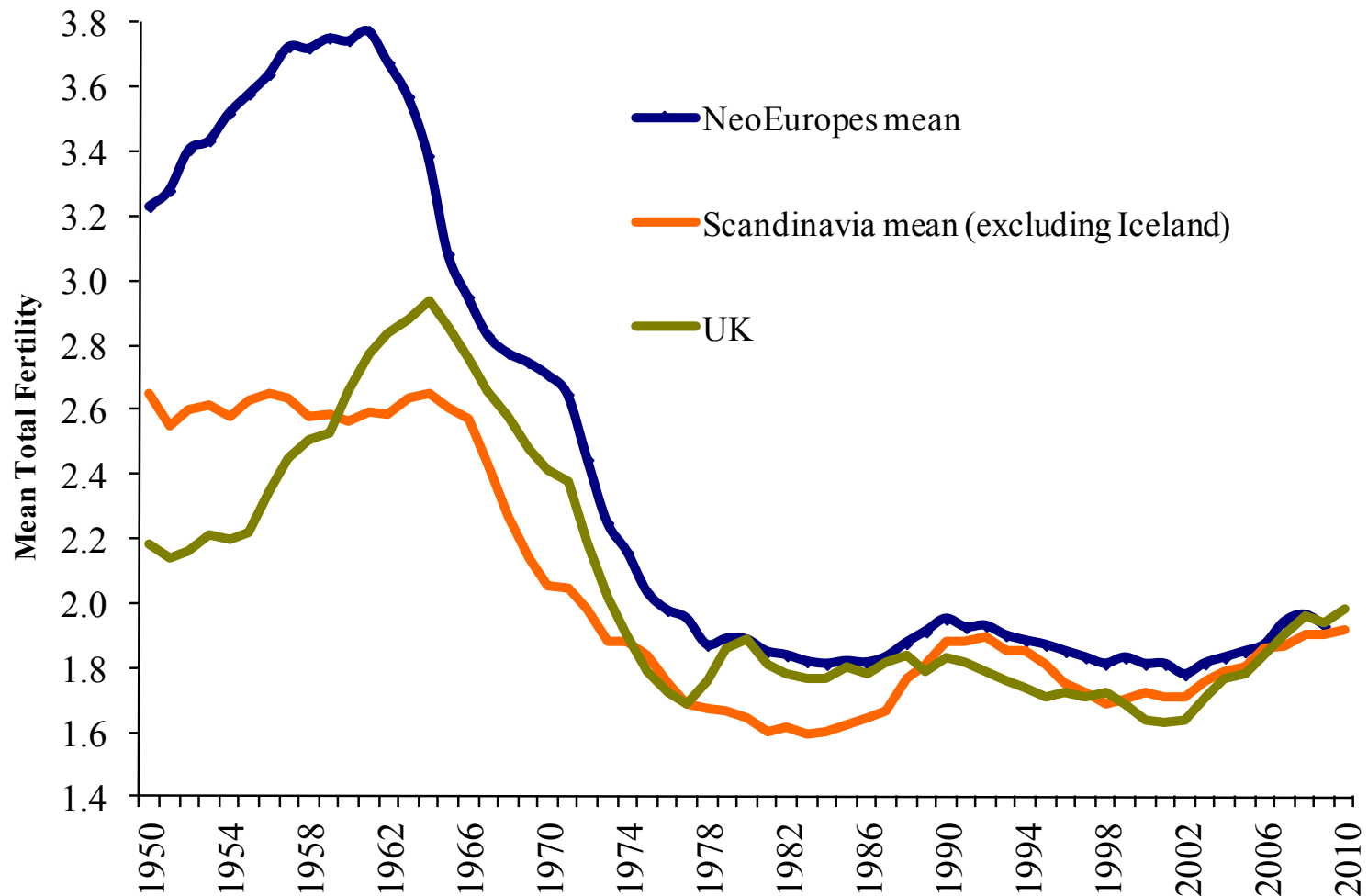
Map 7 Total fertility rate (TFR) around 2003
Carte 7 Indicateur conjoncturel de fécondité (ICF) vers 2003



Transatlantic similarities

Total Fertility trends, UK, Northern Europe and 'Neo-Europes' 1950 - 2010 (unweighted means)

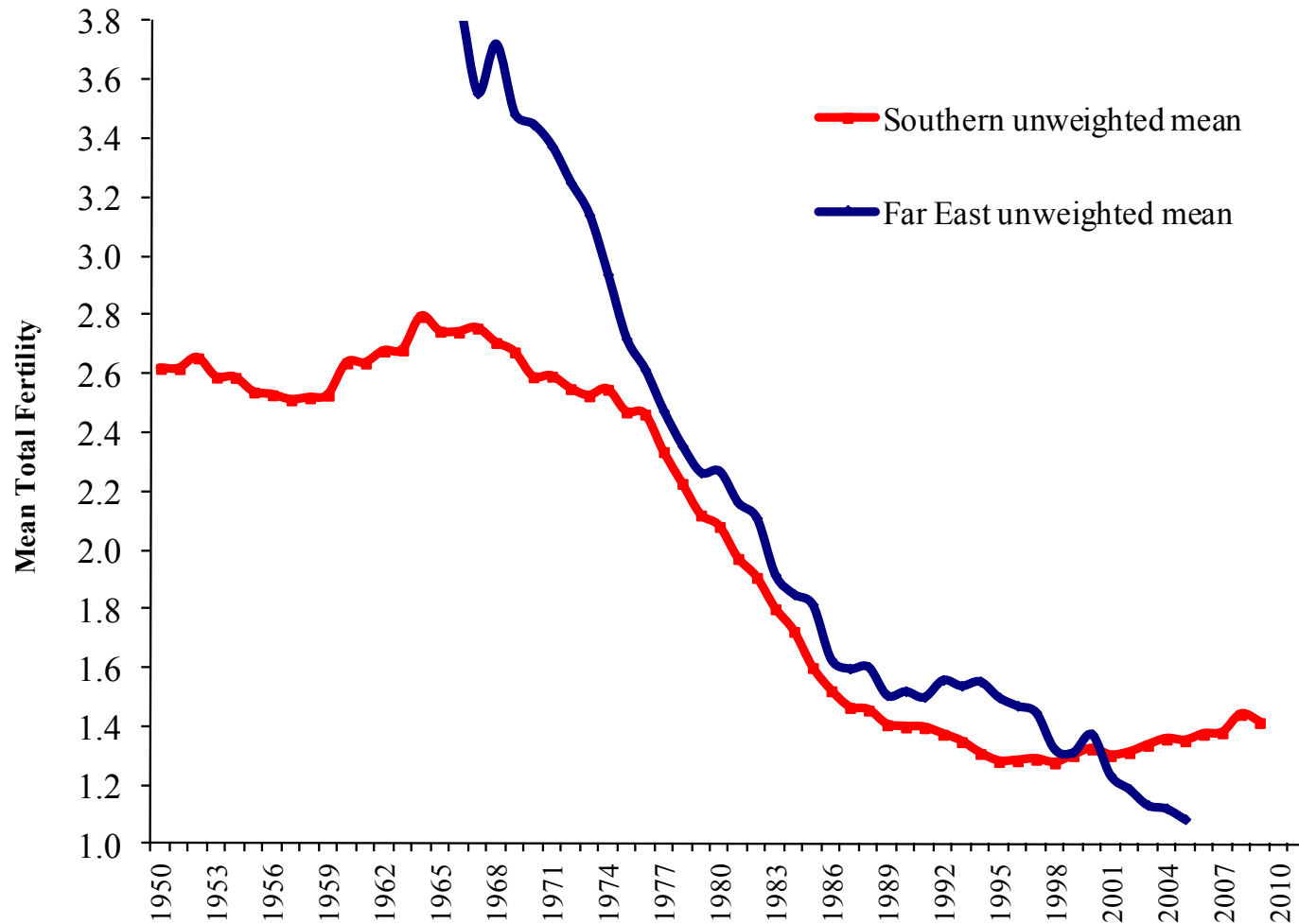
Sources: Council of Europe, Eurostat and National Statistical Yearbooks



Strong family: the enemy of family size?

Total Fertility trends, Far Eastern and Southern European countries 1950 - 2009

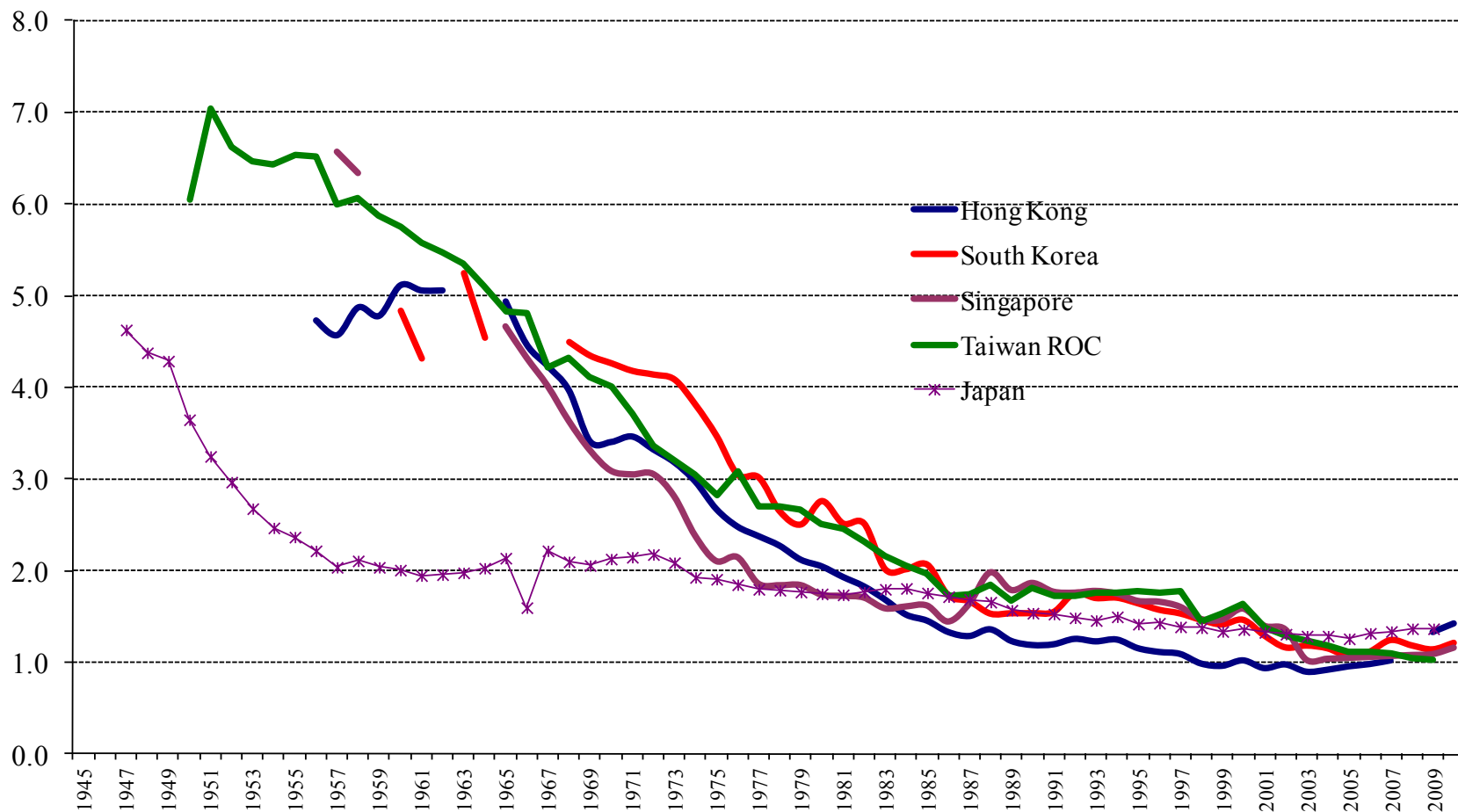
Source: Council of Europe and national statistical yearbooks



TFR: Japan and Far East 'Little Dragons'

Total fertility trends, Japan and the Far East 'little dragons' to 2010

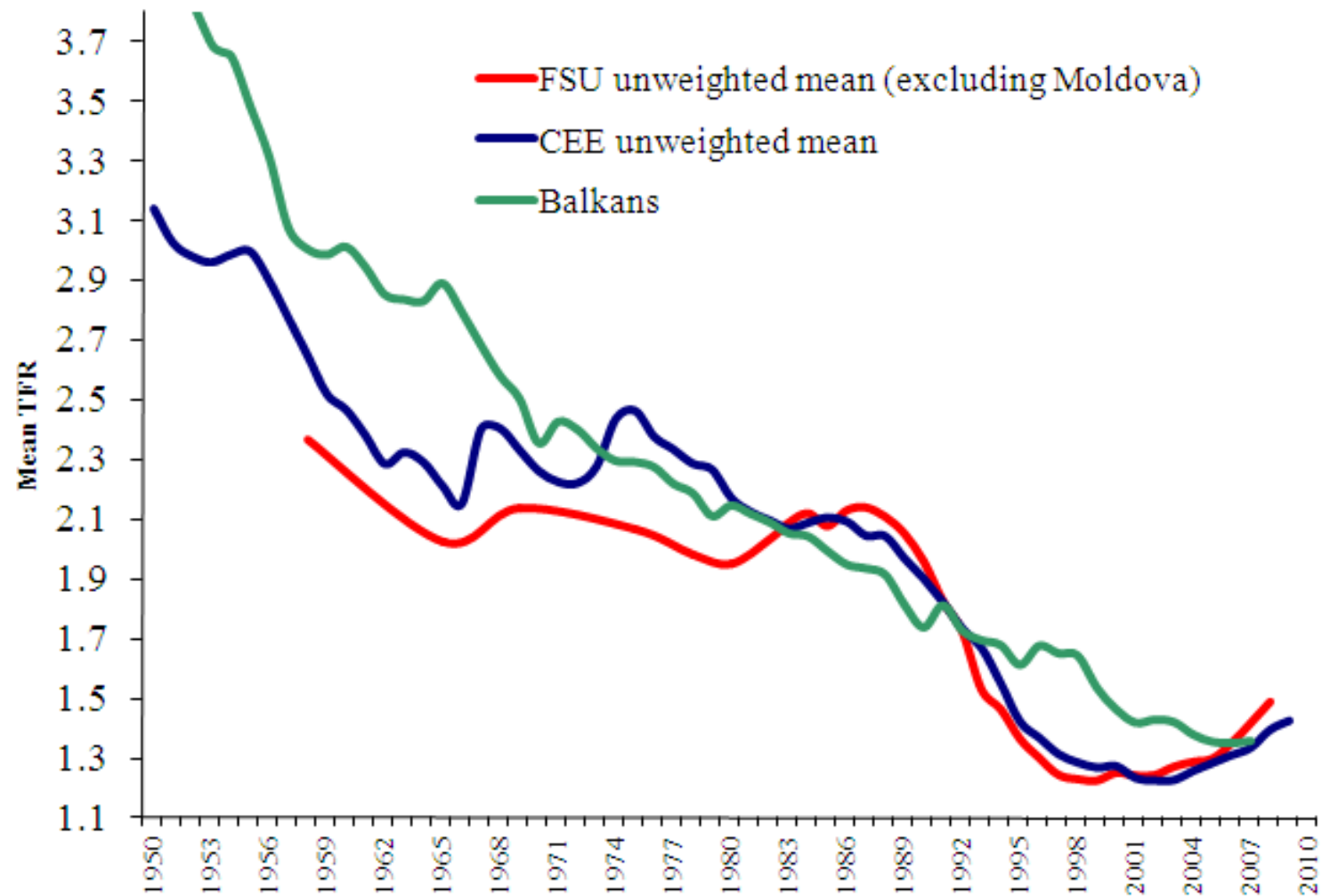
Source: national statistical offices.



TFR trends, former Communist countries 1950 – 2009.

TFR trends, former Communist countries 1950 - 2009

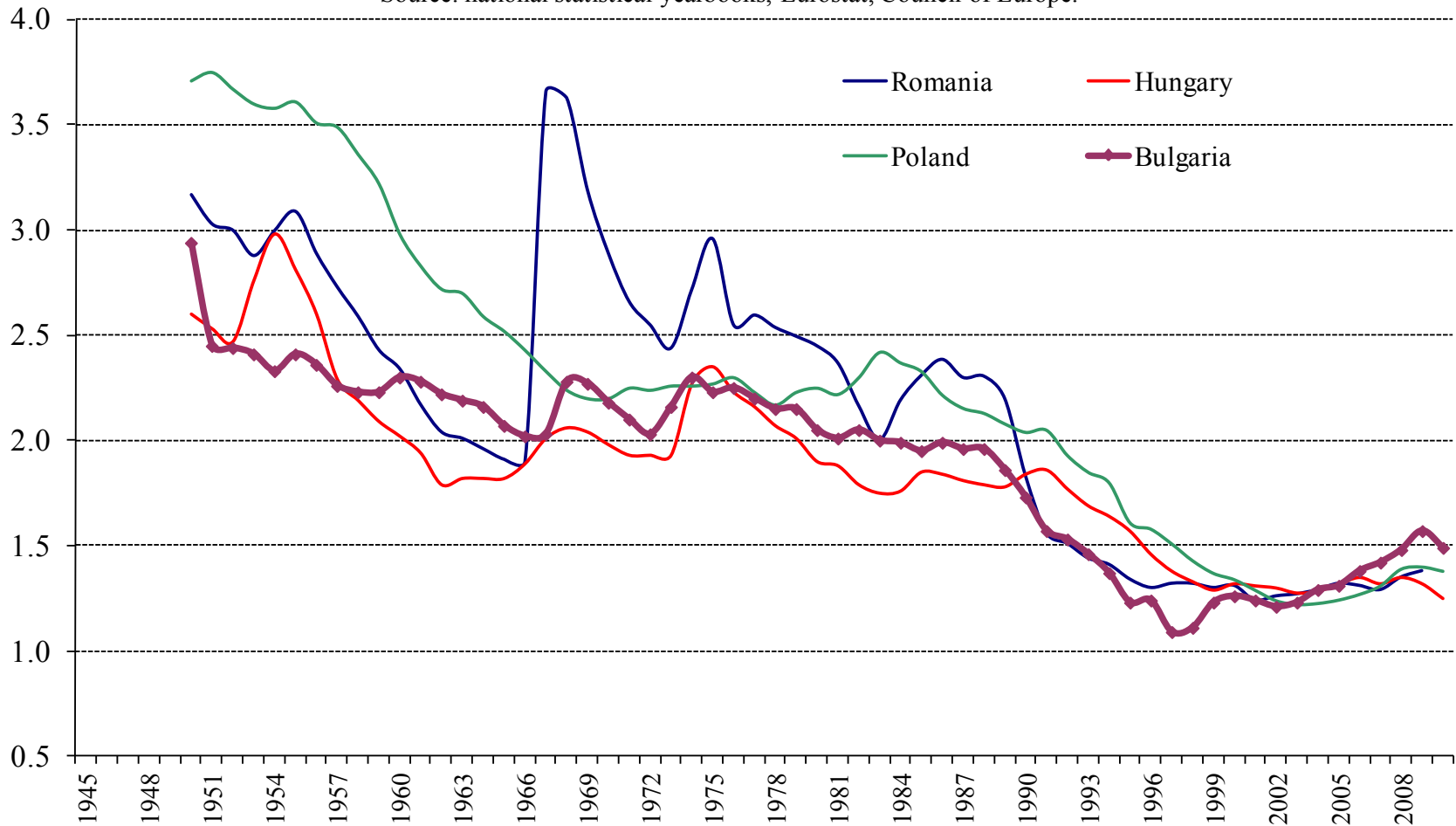
Source: Council of Europe, Eurostat.



A more detailed look at Central and Eastern Europe

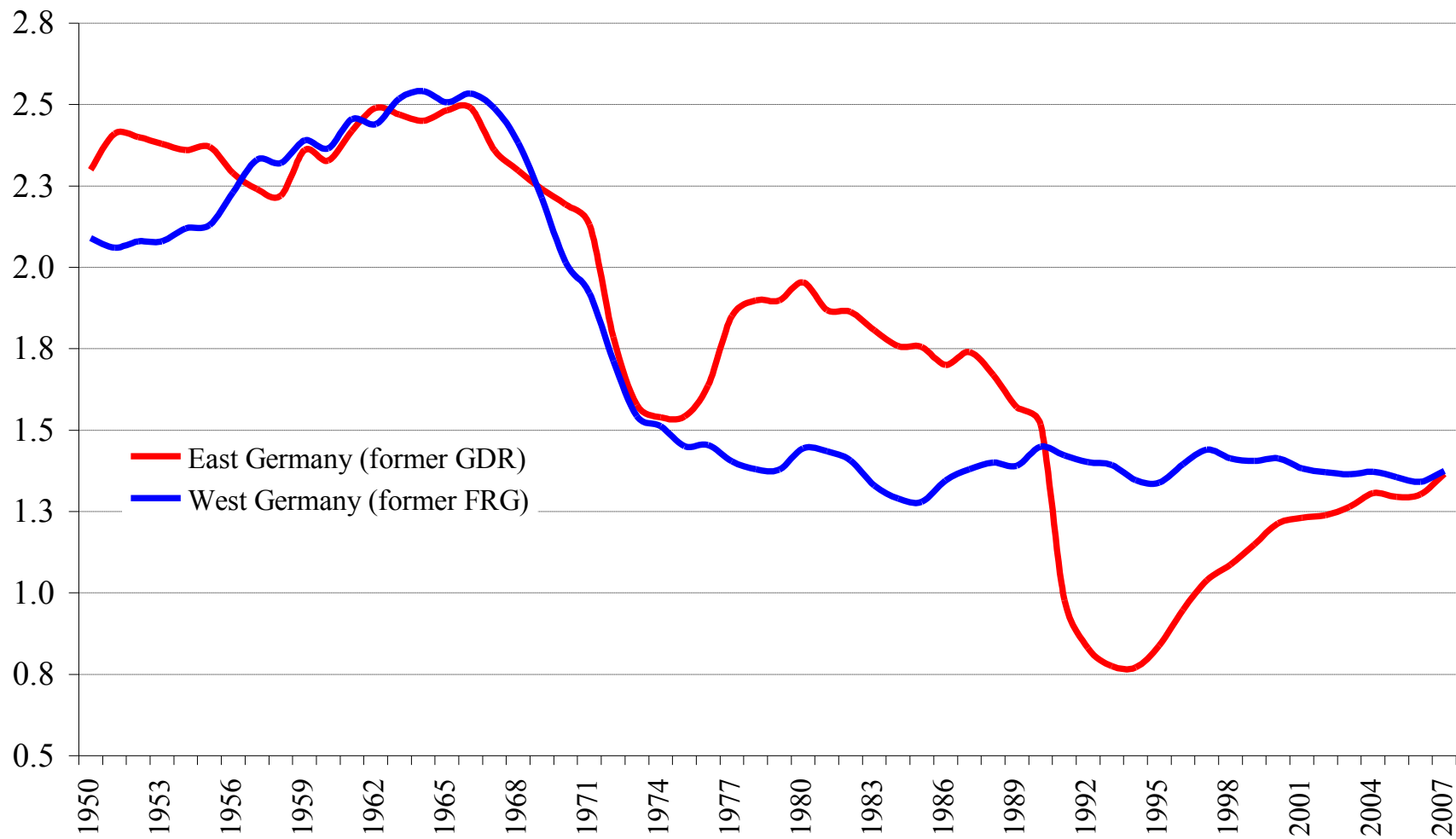
TFR trends, Selected Eastern and Central European countries 1948 - 2010.

Source: national statistical yearbooks, Eurostat, Council of Europe.



Divergent neighbours; TFR of the two Germanies, 1950 - 2007

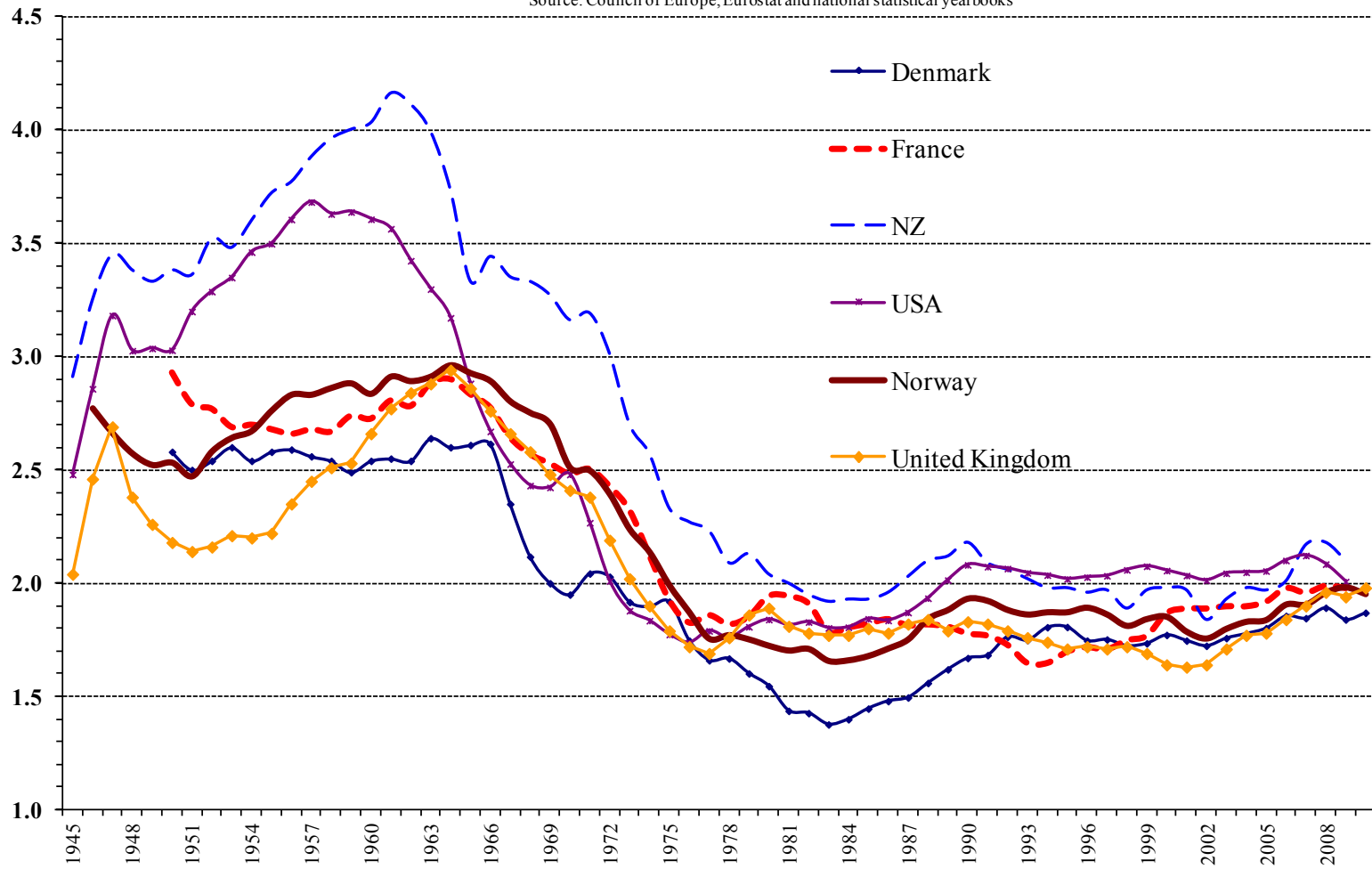
TFR trends, Federal German Republic and German Democratic Republic, 1950 - 2007



Long term increase in total fertility, selected countries 1945 - 2010

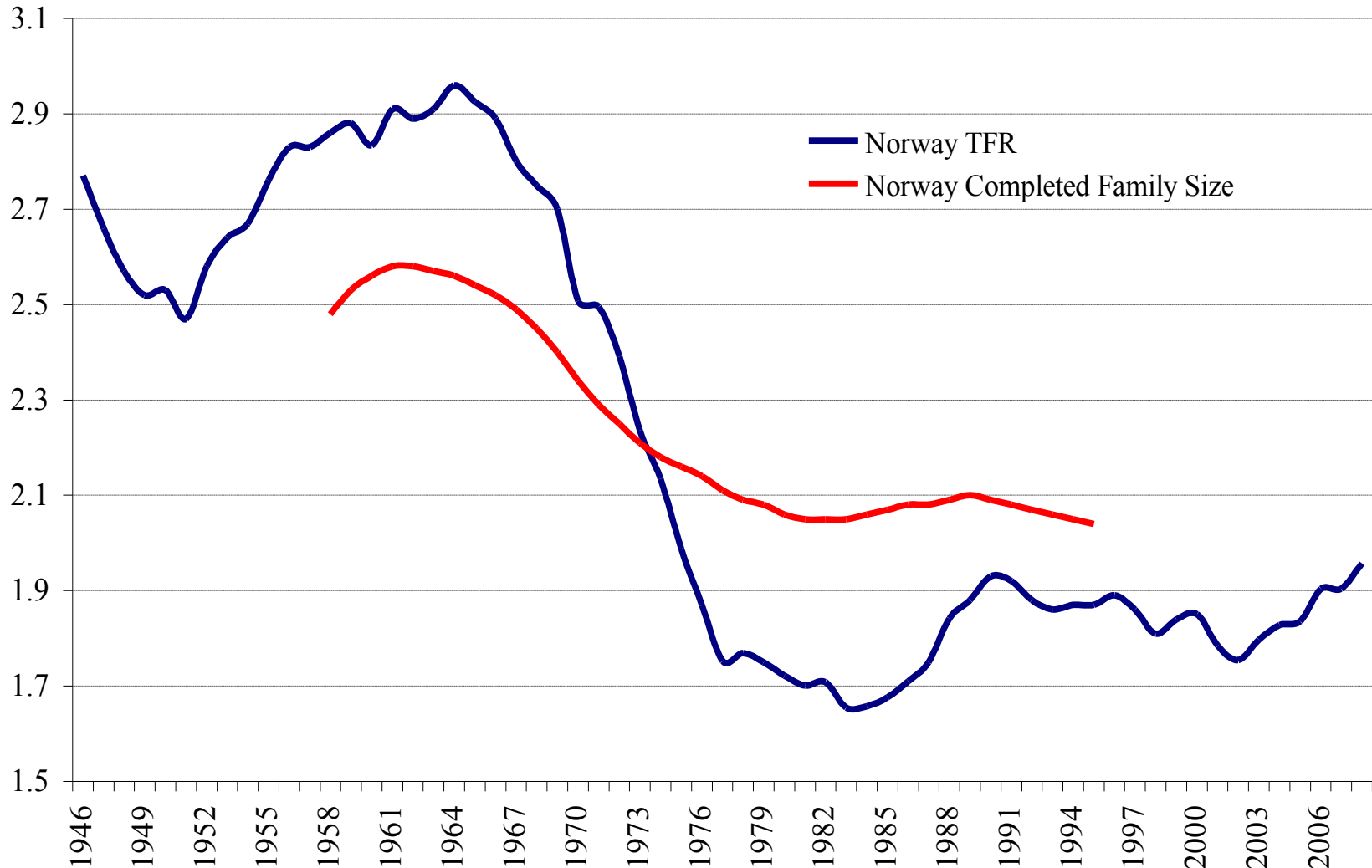
Total Fertility trends, industrial higher-fertility countries 1945-2010

Source: Council of Europe, Eurostat and national statistical yearbooks

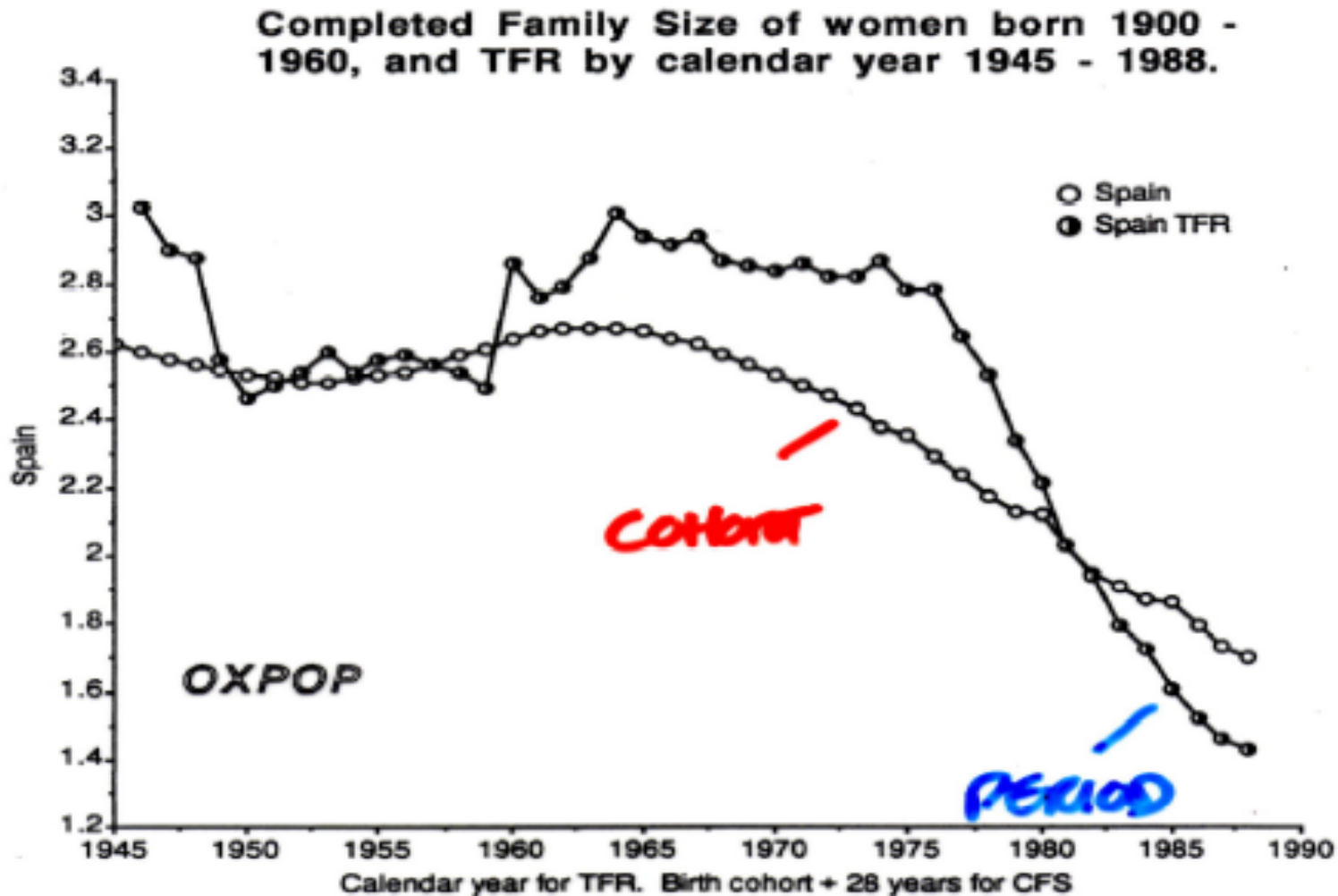


Contrast of period and cohort measures

Norway - comparison of period and cohort measures of fertility
Cohort data shown at mothers' age 28. Birth cohorts of mother 1930 - 1967.



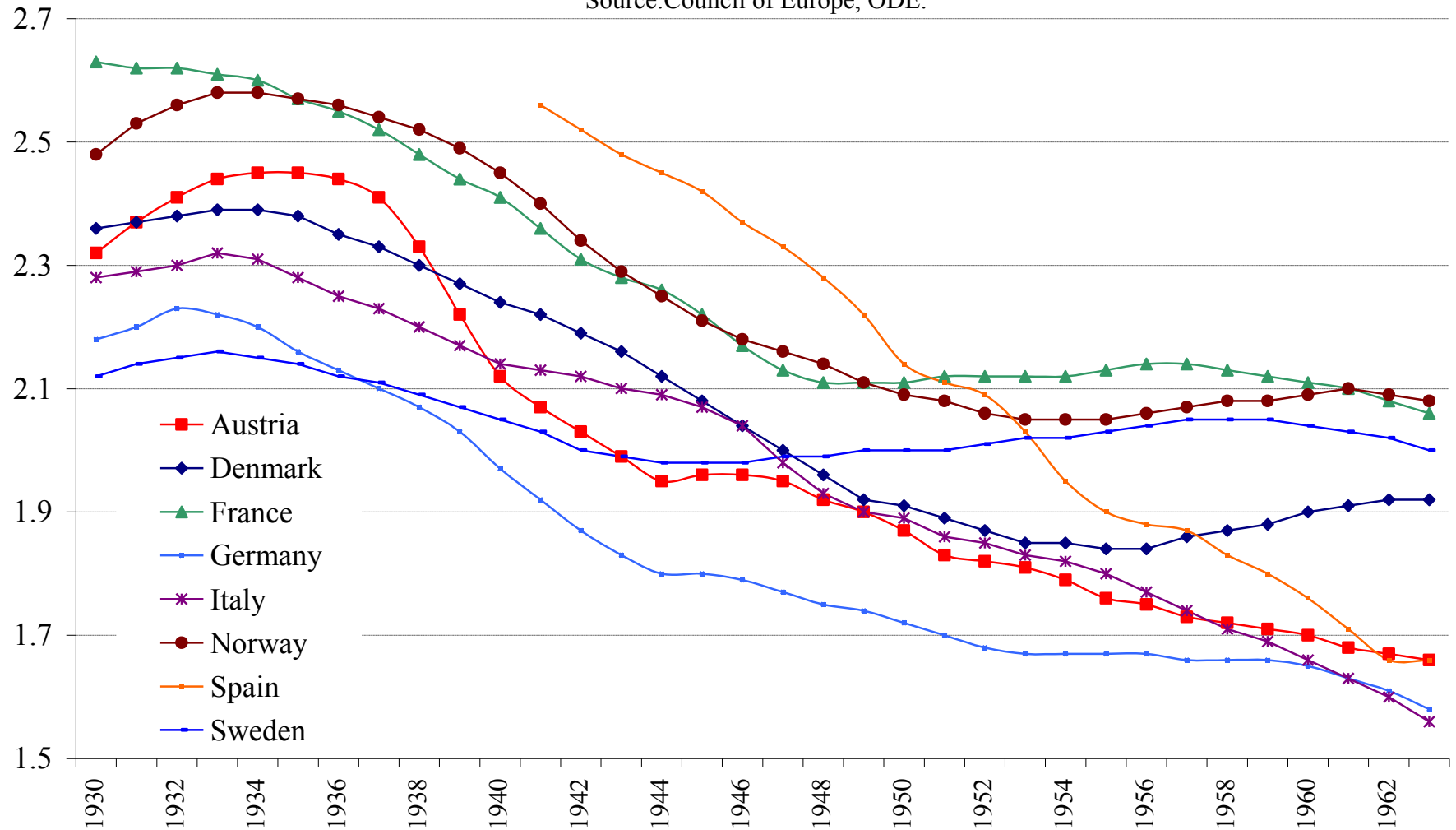
Contrast of period and cohort measures of fertility - Spain



Divergence in Completed Family Size, selected European countries, women born 1930 – 1963.

Average Completed Family Size in 2005, women born 1930 - 1963.

Source: Council of Europe, ODE.



Childlessness and family size distribution, women born 1960

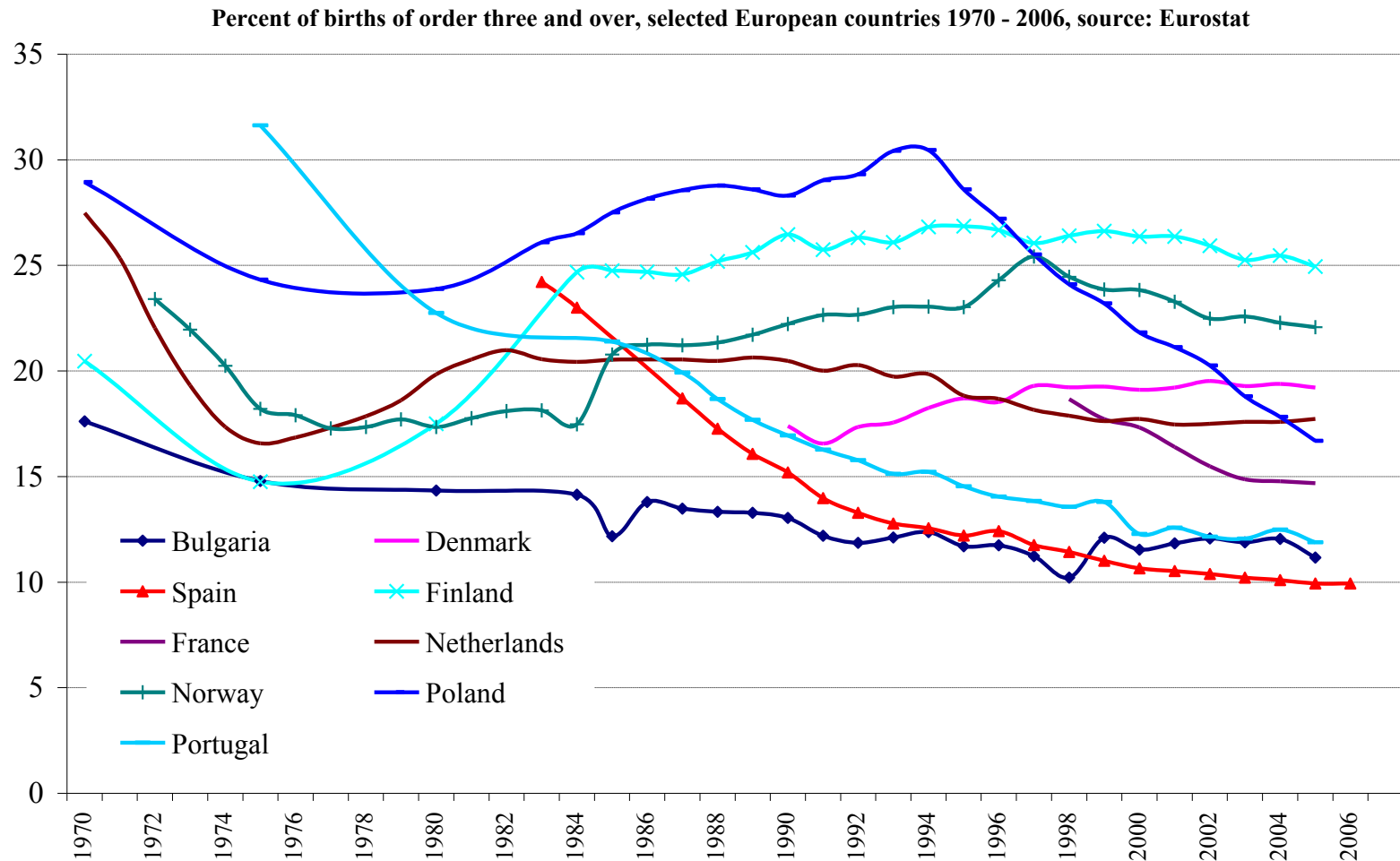
Distribution of women born around 1960 by children ever-born
(percent)

	Children ever-born					Equivalent family size (calculated)
	0	1	2	3 +	total	
Russian Federation	8	30	44	18	100	1.81
Sweden	14	16	40	30	100	2.01
Italy	15	25	42	18	100	1.72
Germany	26	25	30	19	100	1.52
France	14	20	32	34	100	2.03
United States	15	19	32	34	100	2.02
Japan	3	44	40	13	100	1.70

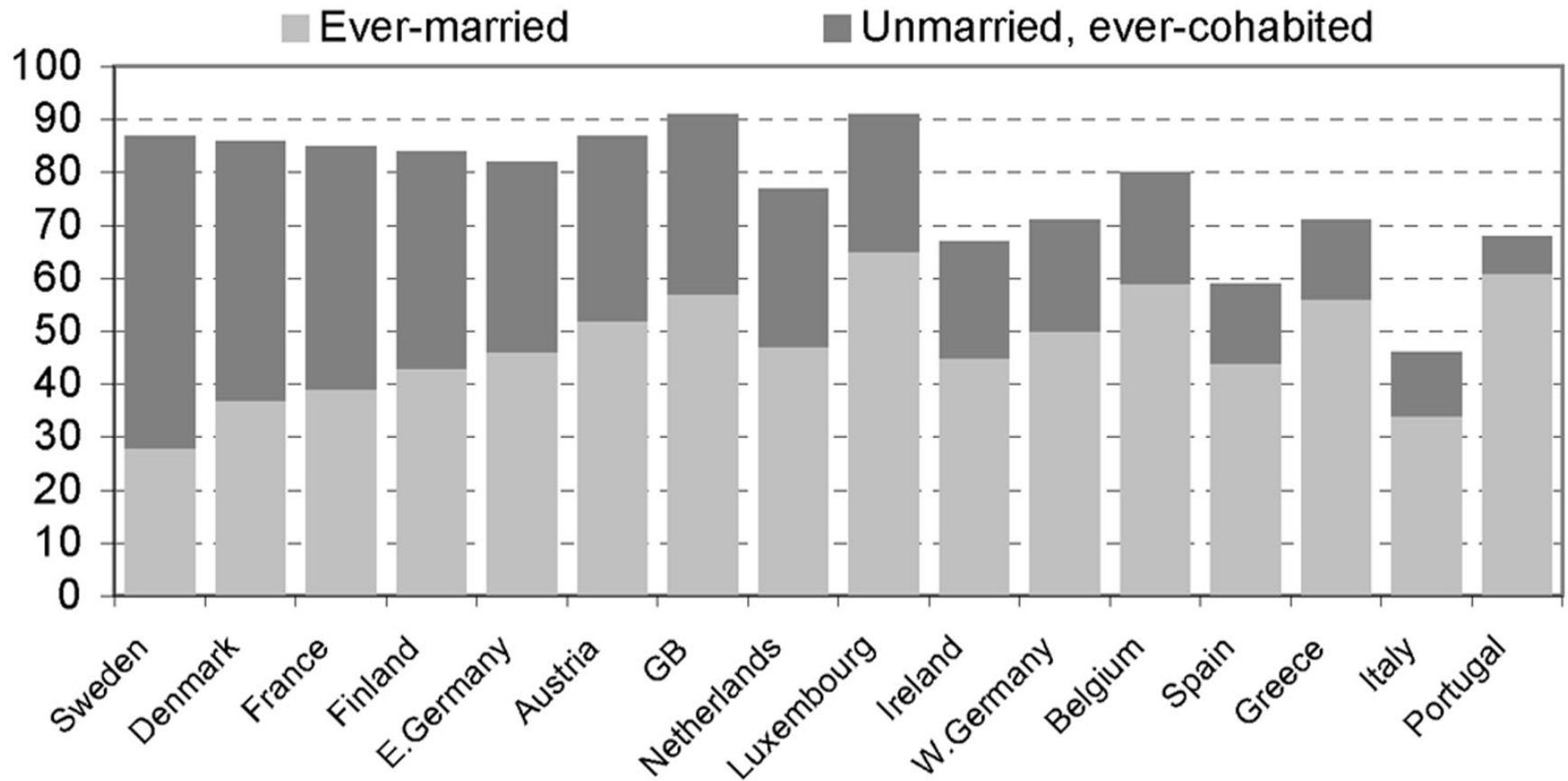
Source UNPD 2003 table 28 p 83 (mostly from Eurostat)

Trends in larger families. Births of order 3 and over, 1970 – 2006.

Source: Eurostat.

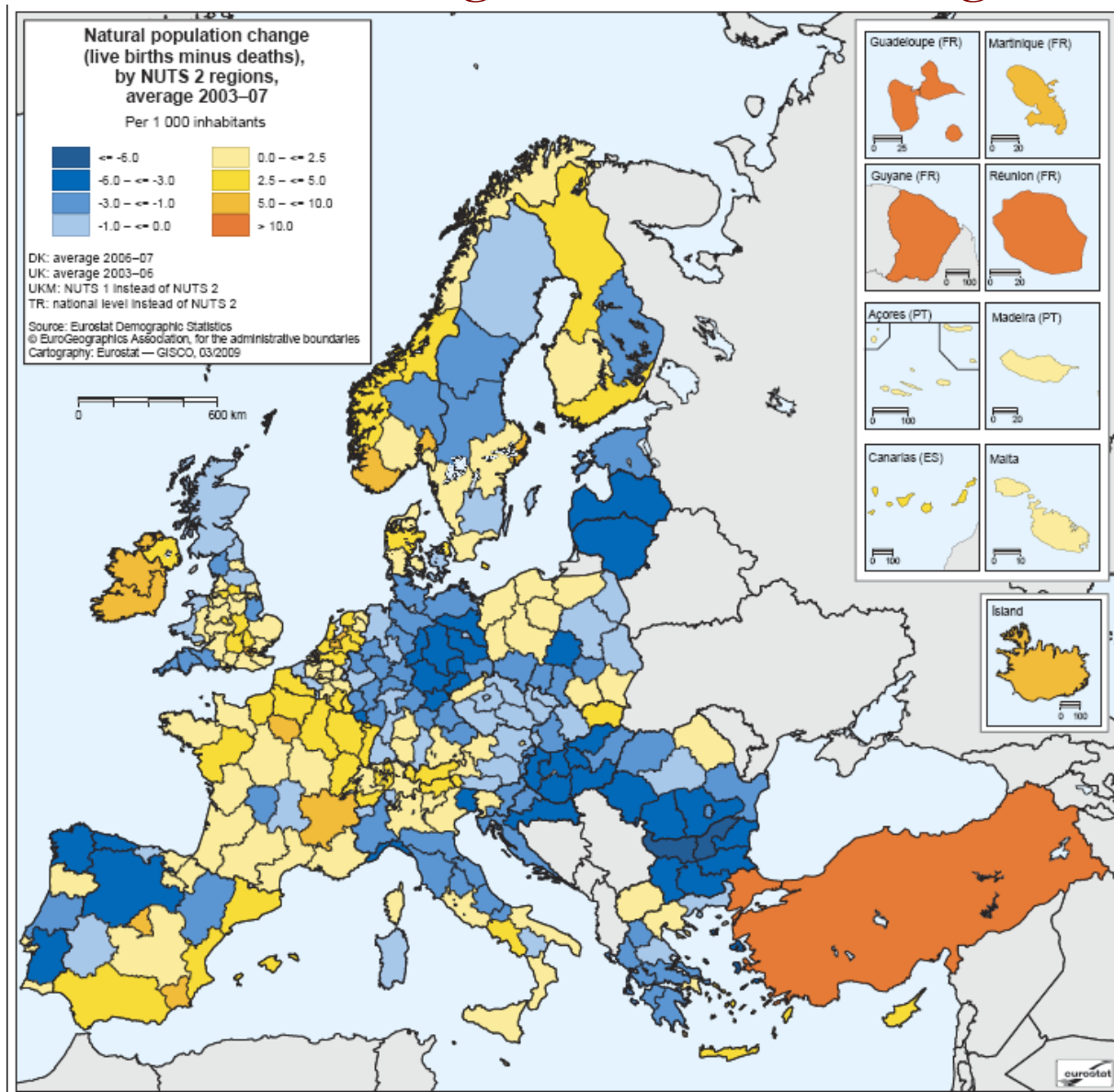


Patterns of cohabitation, selected European countries around 2001. Source: Kiernan



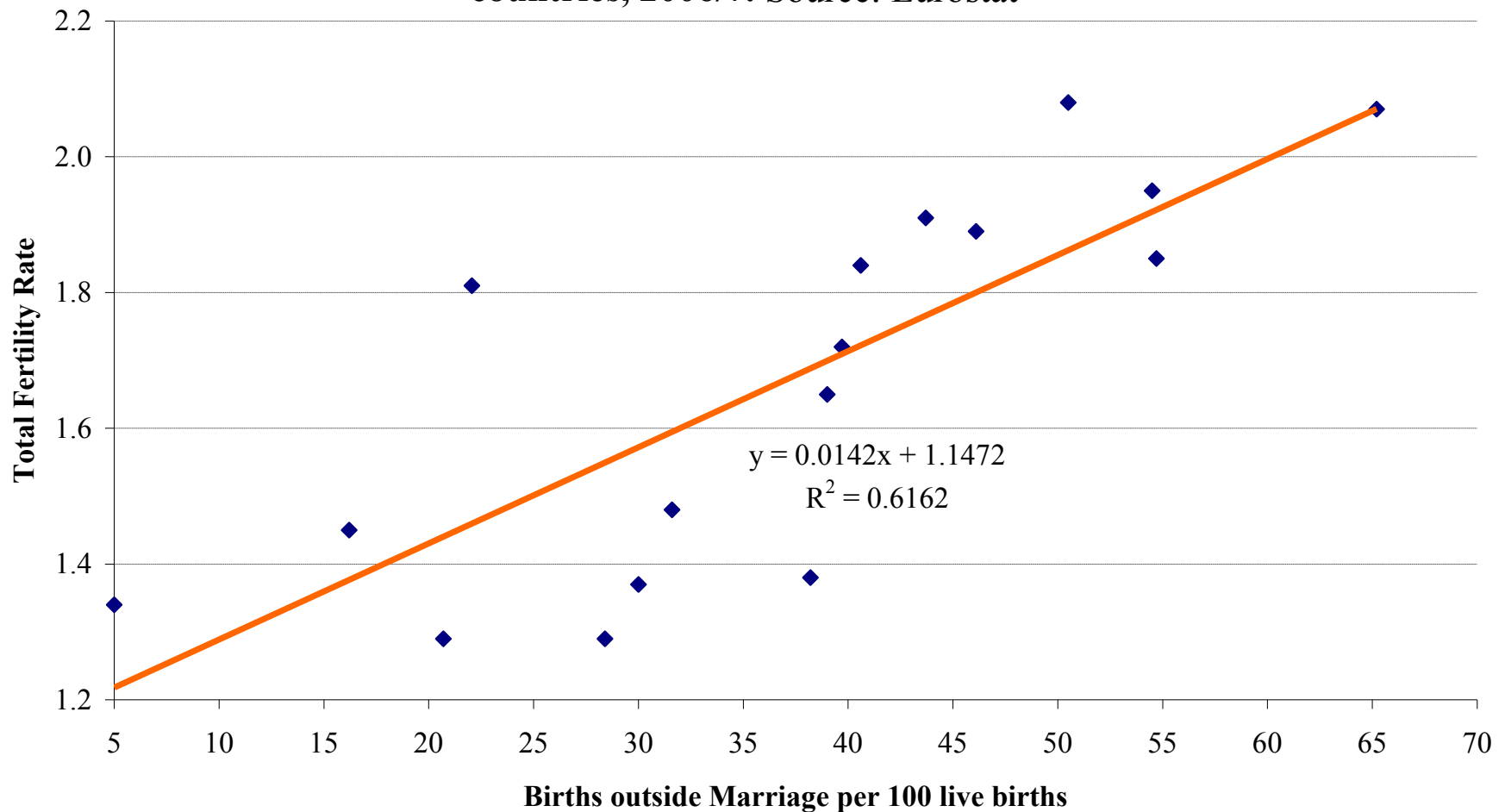
Natural population change (births minus deaths) EU

NUTS 2 regions 2003-7 average.



TFR and extra-marital births, 2006-7

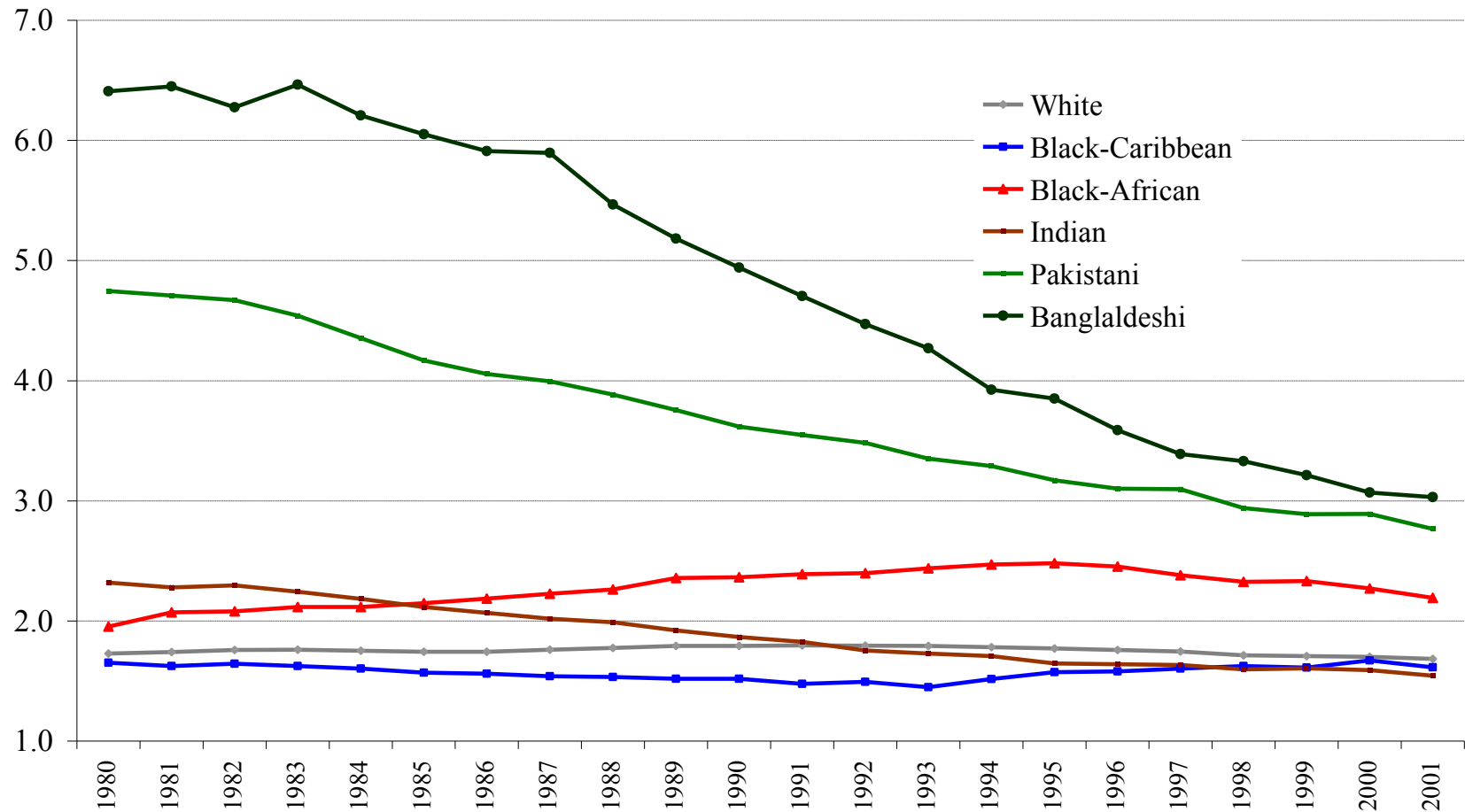
Total Fertility Rate and births outside marriage, Western European countries, 2006/7. Source: Eurostat



TFR trends of ethnic minority populations, UK 1980 - 2001

TFR tends ethnic minority populations 1980 - 2001.

7-year moving averages. Source: LFS own-child estimates 1974-2001



Family size preferences - not declining

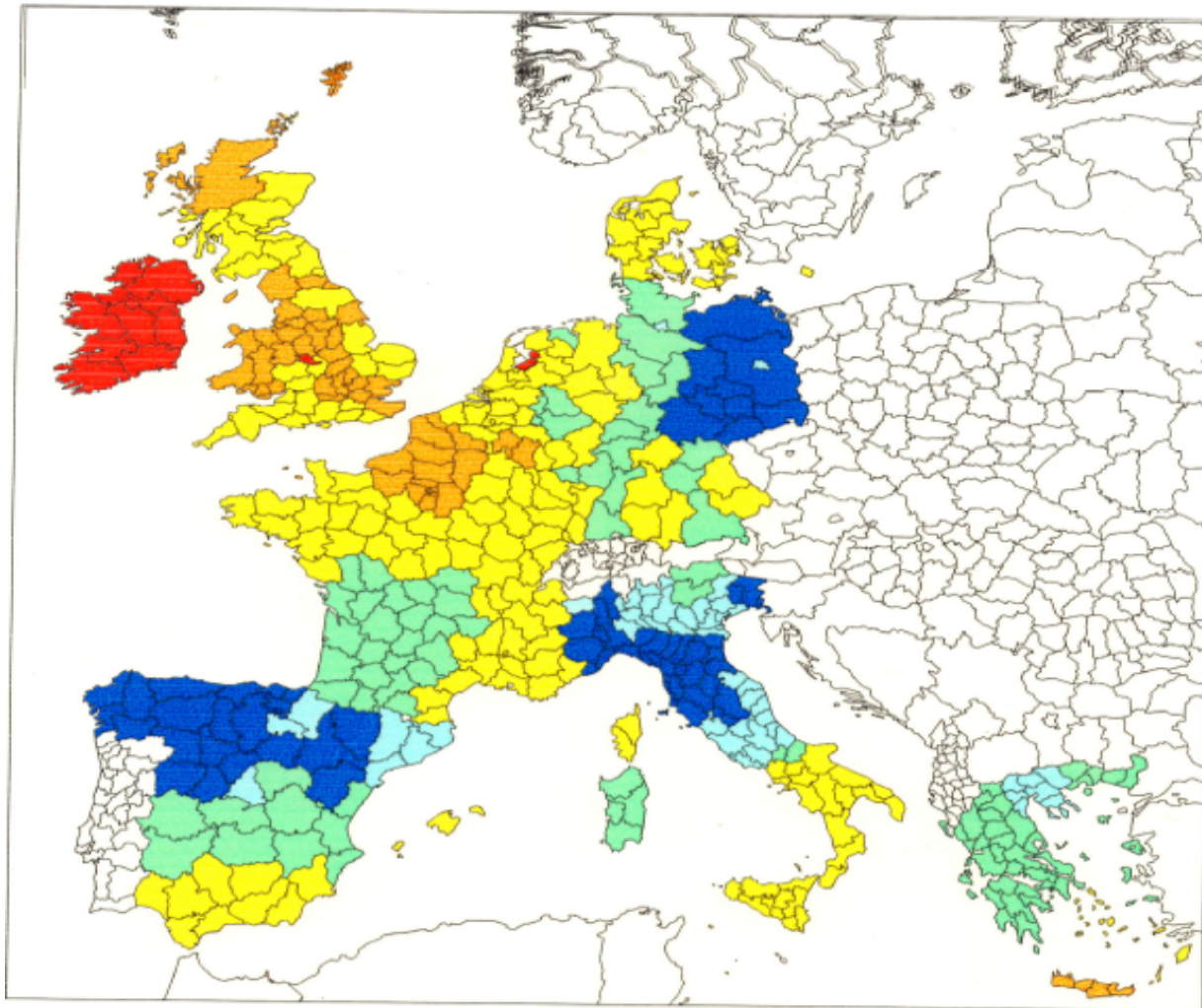
Mean personal ideal family size by country and sex.

Eurobarometer rounds 2001, 2006. Selected countries only.

	Males			Females		
	2001	2006	change	2001	2006	Change
Austria	1.89	1.66	-0.23	2.03	1.82	-0.21
Denmark	2.33	2.46	0.13	2.46	2.64	0.18
France	2.31	2.45	0.14	2.52	2.59	0.07
Germany	1.66	2.17	0.51	1.96	2.24	0.28
Italy	2.23	2.05	-0.18	2.36	2.13	-0.23
Netherlands	2.20	2.18	-0.02	2.31	2.49	0.18
Spain	2.23	2.23	0.00	2.35	2.34	-0.01
Sweden	2.39	2.39	0.00	2.49	2.64	0.15
UK	2.39	2.34	-0.05	2.53	2.52	-0.01
EU15	2.14	2.25	0.11	2.32	2.38	0.06

Source: Testa 2006, Table 6, Special Eurobarometer 253)

Diverse provincial fertility patterns, Europe 1990 (I_g)

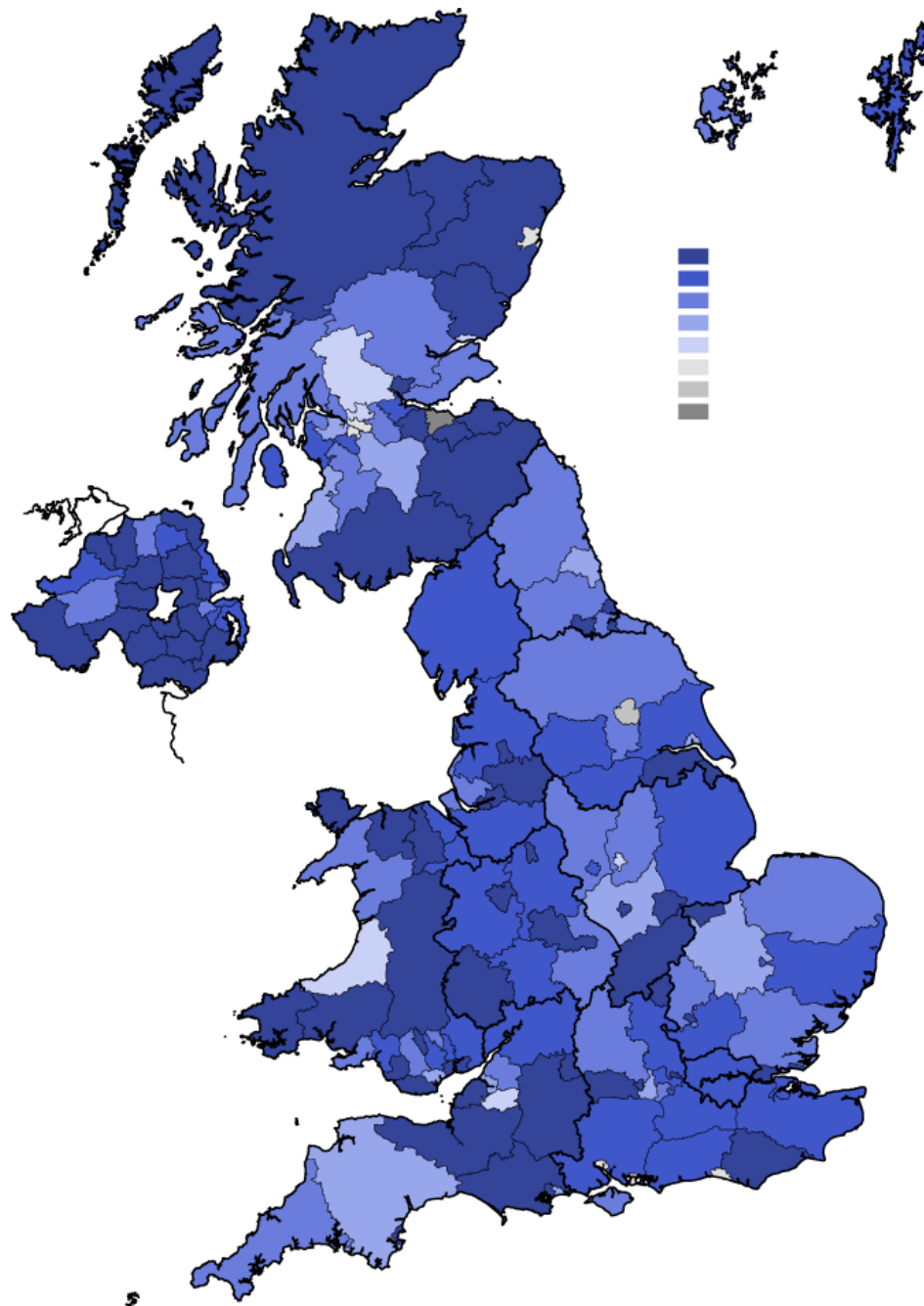


OVERALL FERTILITY; MUTECITES = 0.7

Princeton Coale Index 1f 1990

ORPOP

■	0.075 to 0.093	(70)
■	0.093 to 0.111	(51)
■	0.111 to 0.129	(129)
■	0.129 to 0.147	(249)
■	0.147 to 0.165	(85)
■	0.165 to 0.183	(22)

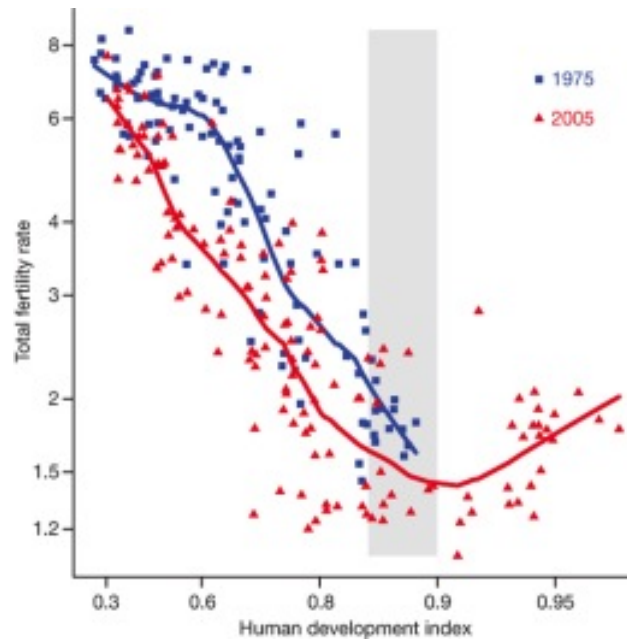


Total fertility, Counties and unitary authorities of the United Kingdom 2007.

Legend: darkest: TF 2.0 or higher, lightest: TF below 1.4, in steps of 0.1

Source: ONS 2009 Map 3.

Cross-sectional relationship between TFR and HDI in 1975 and 2005.

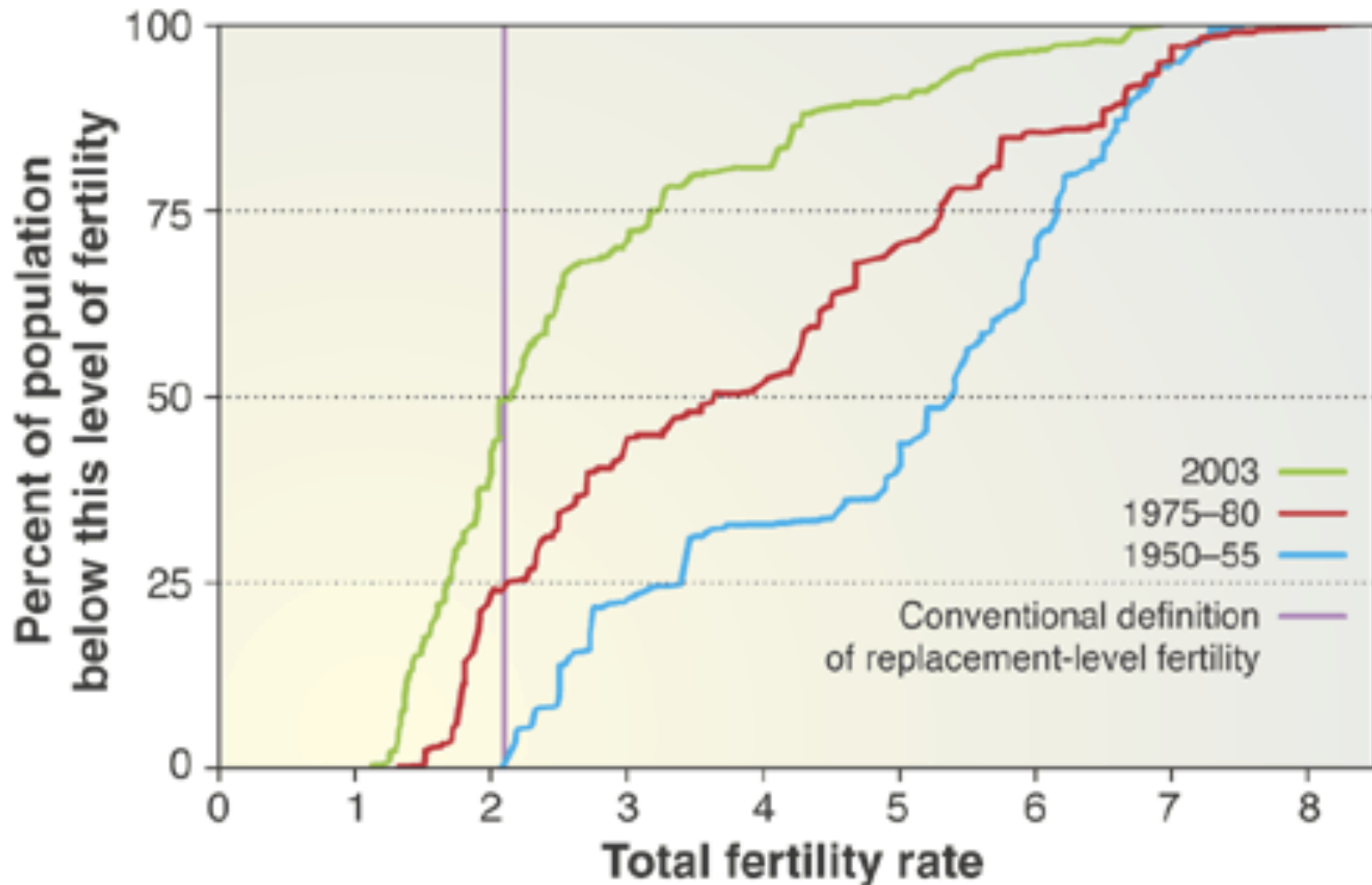


M Myrskylä *et al.* *Nature* **460**, 741-743 (2009) doi:10.1038/nature08230

nature

Will low fertility become universal? Cumulative global population by level of fertility, 1950 - 2003.

Source: Wilson 2004 *Science* 9 April 2004: Vol. 304 no. 5668 pp. 207-209



Summary

Low fertility achieved seventy years ago.

Controlled fertility became volatile in turbulent 20th century.

TFR everywhere below 2.2 in the developed world.

Great geographical variation: diversity in fertility now stable?

Is Southern, Eastern Europe and East Asia in a 'low fertility trap' ?

Novelty of distinct immigrant fertility rates.

Birth rates now increasing in many developed countries.

Falling in less developed countries – down to 1.7

Explanations? And what happens next?

