Childlessness in Europe: Reconstructing long-term trends among women born in 1900-1972

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FERTILITY AND REPRODUCTION IN 21ST CENTURY EUROPE

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Motivation

Long-term trends in childlessness in Europe remain little studied

- *Common expectation that current childlessness must be at the highest level in modern history*
- *Also theoretical arguments: acceptance of voluntary childlessness, fertility postponement, women's emancipation form family roles, non-family life styles and unstable living arrangements*

Current state of research

- Growing stock of country-specific studies, also on edu differentials
- More recent comparative studies: Miettinen et al. 2015 (FaS project, WP 33-2015), Beaujouan, Brzozowska & Zeman (2016 Population), Wood, Neels & Kil (2014 Dem. Res.), Andersson et al. 2009 (Nordic countries), Rowland (2007), Dorbritz & Ruckdeschel (2007)
- Different sources, definitions & datasets, often yielding different and/or unstable results

Aims

- Reconstructing data on lifetime childlessness in Europe among women born since 1900
- Considering different datasets
- Providing the most detailed evidence to date
- Discussing the pros and cons of different data sources

Qs:

Are the theoretical expectations about rising childlessness in Europe actually supported by empirical trends?

Is childlessness reaching unprecedented levels?

Regional and cross-country differences:

Are the trends in childlessness similar in across Europe?

Is Central and Eastern Europe gradually becoming less distinct?

Data

Focus: Women of post-reproductive or late reproductive (40+) ages born 1900-1972

Population-wide datasets or large-scale surveys:

- Population census data (women aged 40-80)
- Large-scale survey data (women aged 40-80)
- Population register data (women aged 40-80)
- Vital-statistics data (cumulating cohort fertility rates at ages 12 to 50)

<u>Two key sources:</u>

CFE (Cohort Fertility and Education) database,

Human Fertility Database

Both cumulated vital statistics data and census data + register data located in the "input" datasets on cohort parity distribution

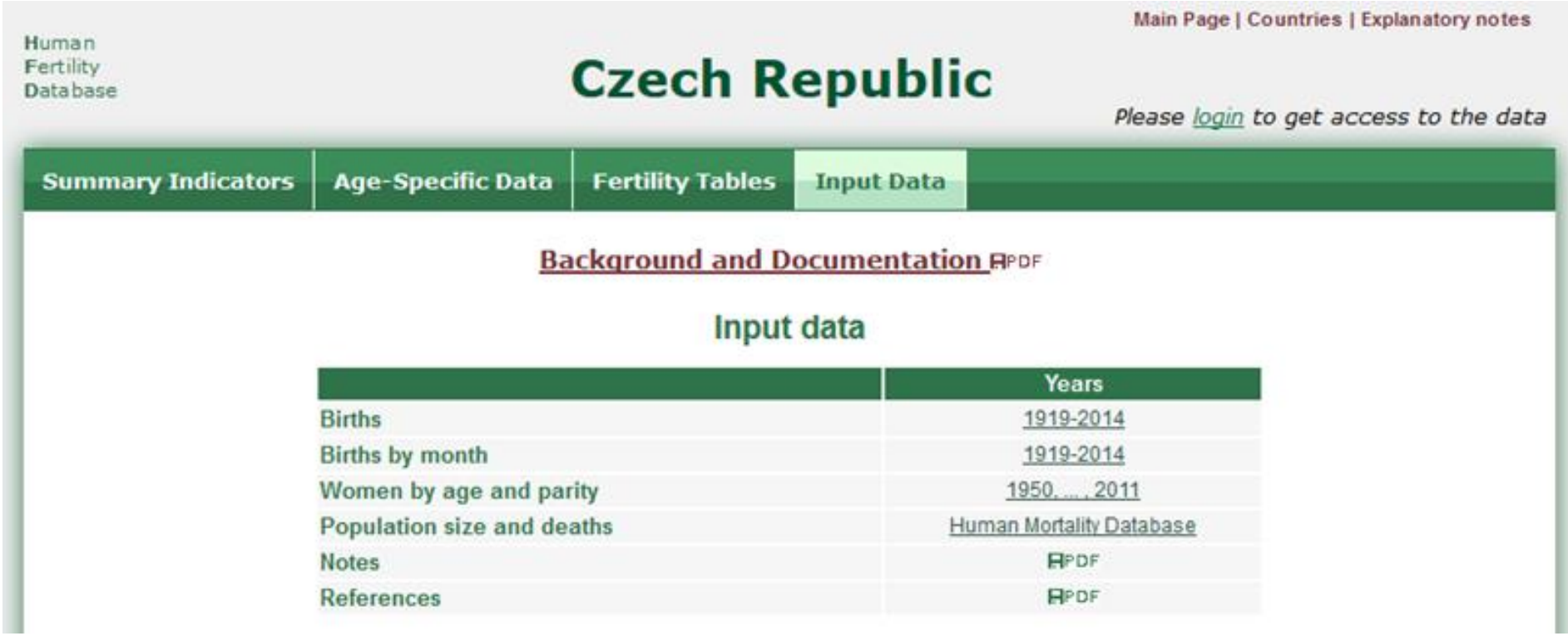
CFE database

COHORT FERTILITY AND EDUCATION

www.cfe-database.org

- Created & maintained by VID (ERC project EURREP)
- Data on completed cohort fertility and parity distribution by level of education (3 or 4 levels)
- Censuses and large sample surveys between 1960s and 2012
- Cohorts: late 19th century to 1970
- 22 countries (most in Europe) with generally high levels of education and relatively low fertility

Human Fertility Database
www.humanfertility.org



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Agenda

1. *Available data sources, their drawbacks and advantages, and the related conceptualisations of (lifetime) childlessness*

2. *Analysing & presenting trends in childlessness in 29 countries (including eastern vs. western Germany)*

Uncertain data:

Data sources, definitions & wide variation in childlessness estimates

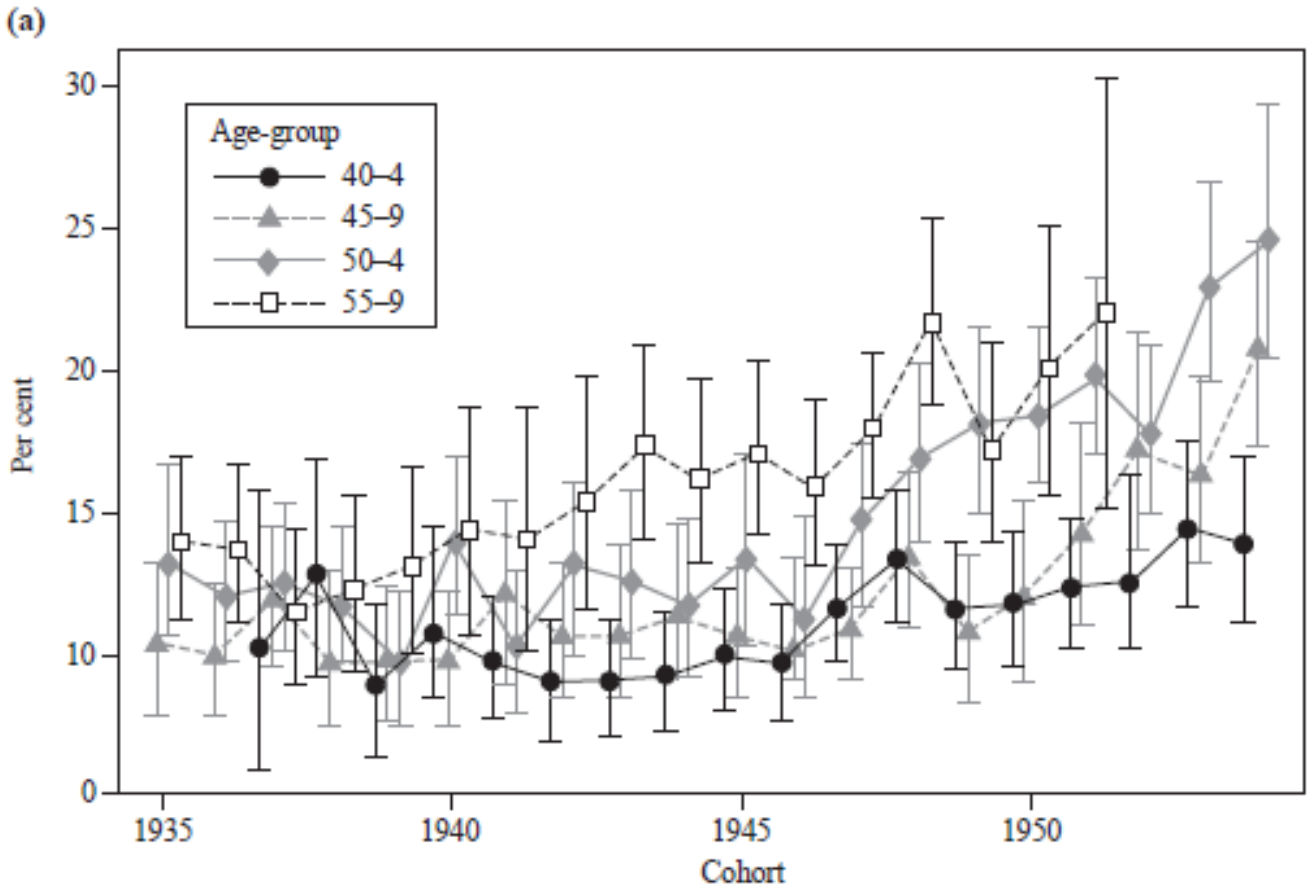
Key considerations

Permanent childlessness more difficult to estimate than the non-zero family sizes

- Definition issues (biological vs. social childlessness), selectivity (also regarding immigration and emigration, non-response), stigmatisation in some settings (underreporting, survey non-response), question wording in censuses and surveys

- Research in the UK: rising childlessness with age among women of post-reproductive ages reported in a large-scale GHS data: Murphy 2009; Ní Bhrolcháin, Beaujouan & Murphy 2011

Childlessness in Britain, GHS data



Murphy, M., 2009. Where have all the children gone? *Population Studies*, 63(2), pp.115-133.

Different sources, different underlying assumptions

Population census data (women aged 40-80)

- Total female population living in the country; childlessness at one time point
- Affected by selective migration & mortality, also nonresponse and misreporting

Large-scale survey data (women aged 40-80)

- Sensitive to the survey design, often not representative w.r.t. fam. size
- More instability and, often, stronger selectivity and non-response

Population register data (women aged 40-80)

- In theory most reliable
- But problems with registering family size of migrants

Vital-statistics data (cumulating cohort fertility rates over long periods)

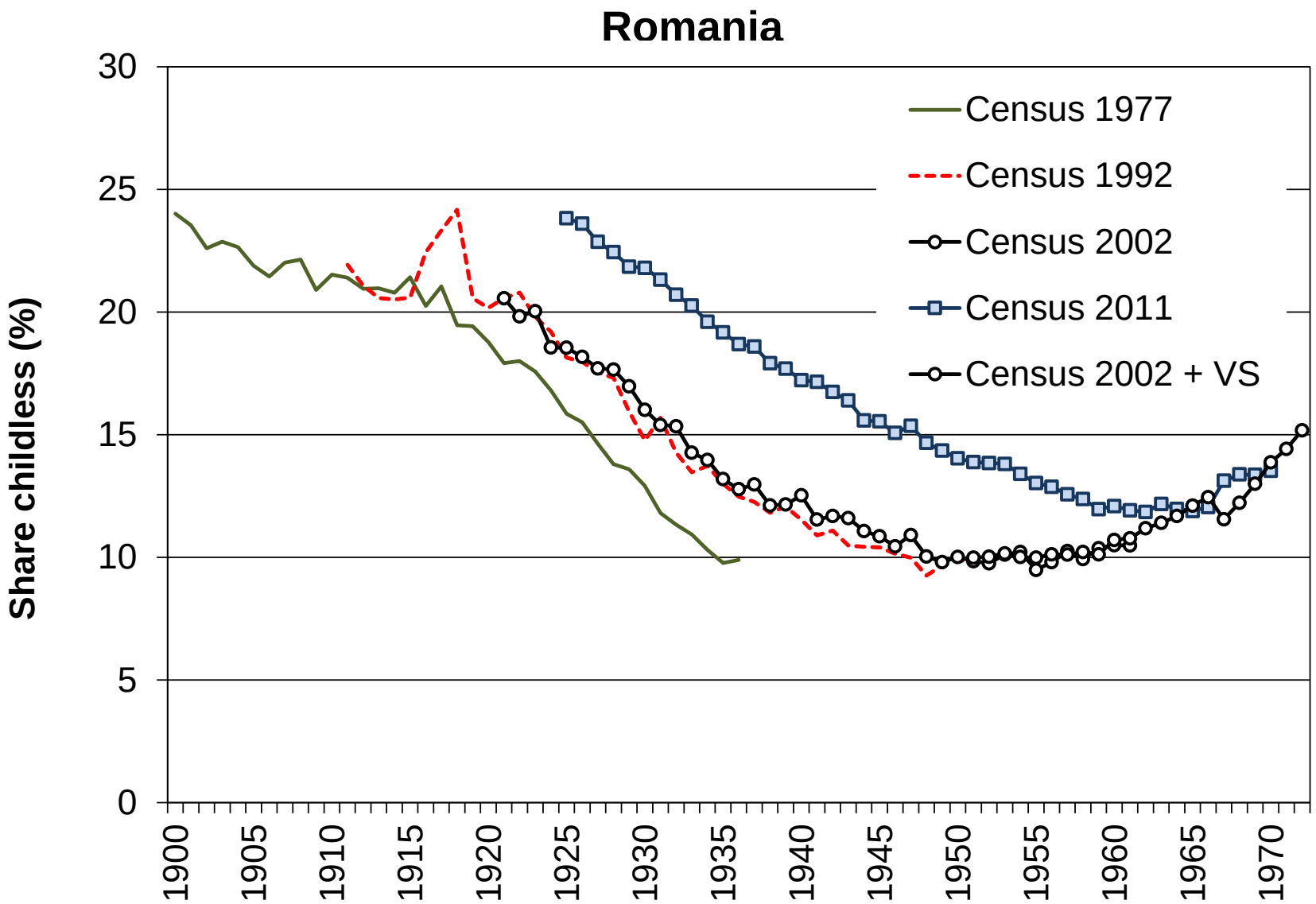
- Data issues: birth order definitions and reporting, data for broader age groups
- “Synthetic measures:” only fertility & childlessness of those staying in the country at any age
- Sensitivity to properly estimating population structure by age

Key reasons for the differences in childlessness estimates

Census & survey data (see also Murphy 2009, Ní Bhrolcháin et al. 2011)

- *Selective mortality*
- *Non-reporting of deceased children*
- *Selectivity of immigrants and emigrants*
- *Non-response & misreporting of childlessness*
- *Problematic wording of questions or predefined response categories (CZ census)*
- *Redistributing the respondents who did not report their number of children ever born: proportionality vs. other assumptions*
- *Surveys: non-representative samples; institutionalized populations*
- *Household Surveys: reporting of adopted kids & kids who left the household. Respondent fatigue.*

How wide can the differences be?



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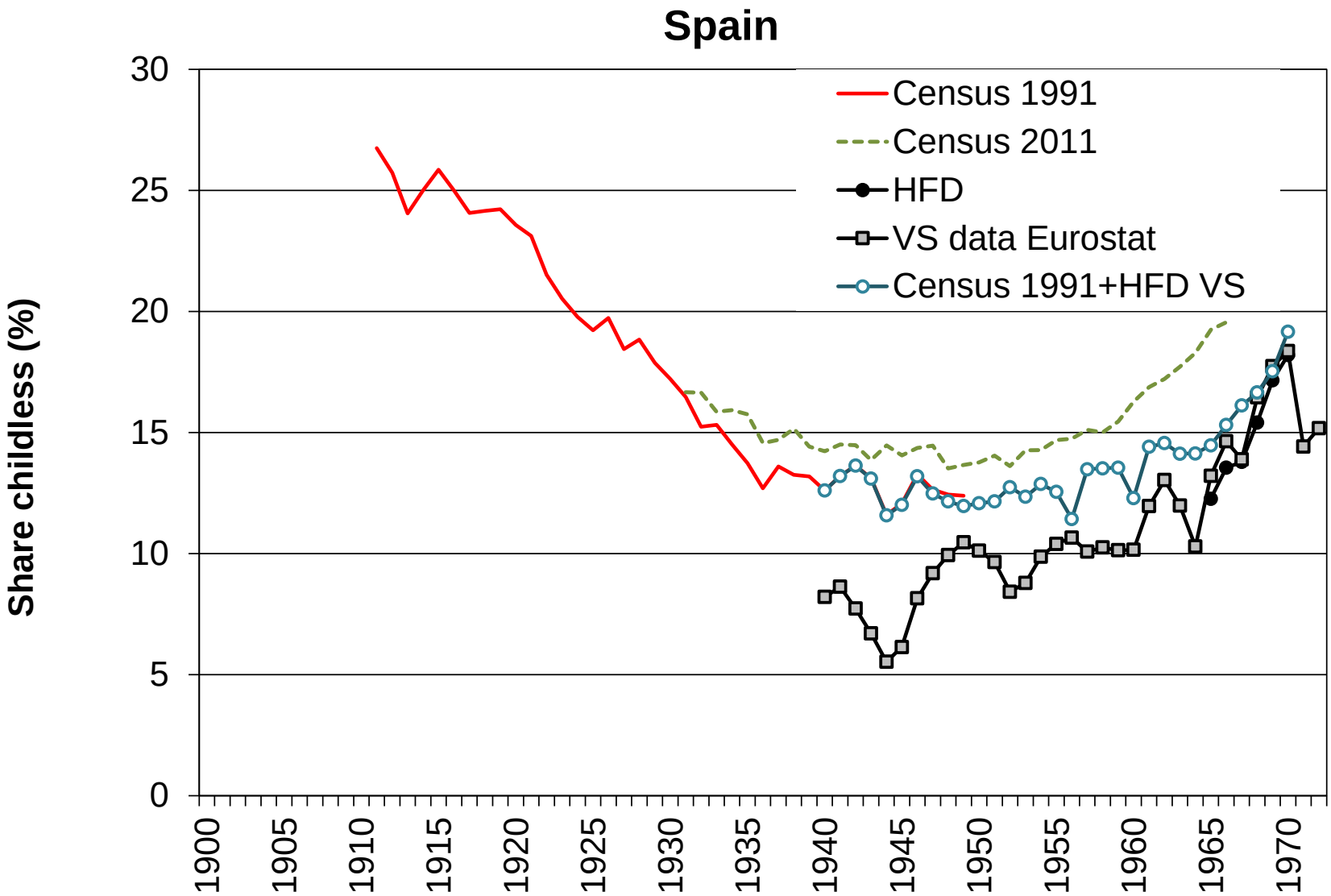


Childlessness trends in Europe: Analysis of 29 countries

Selecting „the best“ (=the most plausible) data

A set of simple rules that can be flexibly applied to different datasets

- Preferring more extended data series that span many cohorts
- Preferring data sources that closely overlap with other available data (e.g., ROM Census 1992+2002)
- Preferring more stable datasets that show “plausible” ranges of childlessness
  - Preference for Census datasets and register-based data
  - Large-scale survey data used only when other datasets unavailable (FR, DE, PL)
- For the most recent cohorts, combining the latest census data (usually, 2001) with the subsequent series of vital statistics data
- Cohorts 1966-72: First birth rates at ages >40 in the period for which the data has not been available yet (usually 2013 or 2014+) projected for some countries

Data sources: an example

Country	Cohorts	Data	Reference period	Source	Note
Austria	1900-40	C 1991	15 May 1991	CFE (2015)	
	1941-64	C2001	15 May 2001	CFE (2015)	
	1965-72	& VS 2001-13	up to 31 Dec. 2013	see note	Parity on 1 Jan. 2014 computed by Kryštof Zeman for Geburtenbarometer (2014); First births realised after 2013 projected (trend projection)
Belarus	1929-57	C 1999	16 Feb. 1999	HFD (2015b)	
	1959-63, 1964-68	C 2009	October 2009	HFD (2015b)	Data available for 5-year cohorts only
Belgium	1910-50	C 2001	31 Dec. 2000	see note	Computations by Karel Neels from individual data obtained by Statistics Belgium
	1951-68	C 2001	31 Dec. 2000	see note	Computations by Karel Neels from individual data obtained by Statistics Belgium
		& VS 2001-10	up to 31 Dec. 2010	Eurostat (2015)	Own computations; First births realised after 2013 projected (trend projection)
Bulgaria	1920-1972	C 2001	1 Mar. 2001	HFD (2015b)	no unknown birth order reported
		& VS for 2001-13	up to 31 Dec. 2013	Eurostat (2015)	
Croatia	1922-45	C 2001	31 Mar. 2001	CFE (2015)	Unknown birth order proportionally redistributed
	1946-70	C 2011	22 Mar. 2011	CFE (2015)	Unknown birth order proportionally redistributed
Czech Republic	1900-19	C 1961	1 Mar. 1961	HFD (2015b)	
	1920-60	C 2001	3 Mar. 1991	HFD (2015b)	
	1961-72	VS up to 2013	up to 31 Dec. 2013	HFD (2015b) & Eurostat (2015) for 2012, 2013	Own computations based on HFD + Eurostat data; First births realised after 2013 projected (trend projection)
Denmark	1945-49	R 2013		Statistics Denmark (2014)	
	1950-72	VS 1968-2013	up to 31 Dec. 2012	Eurostat (2015) and older Eurostat data	Own computations

Countries & regions covered

- Countries with population > 1 mill.
- No data for Albania, Latvia, Macedonia, Kosovo, Bosnia & Herzegovina
- Cohorts 1966+ for Poland & Portugal excluded

Western Europe: Belgium, France, Ireland, Netherlands, England & Wales

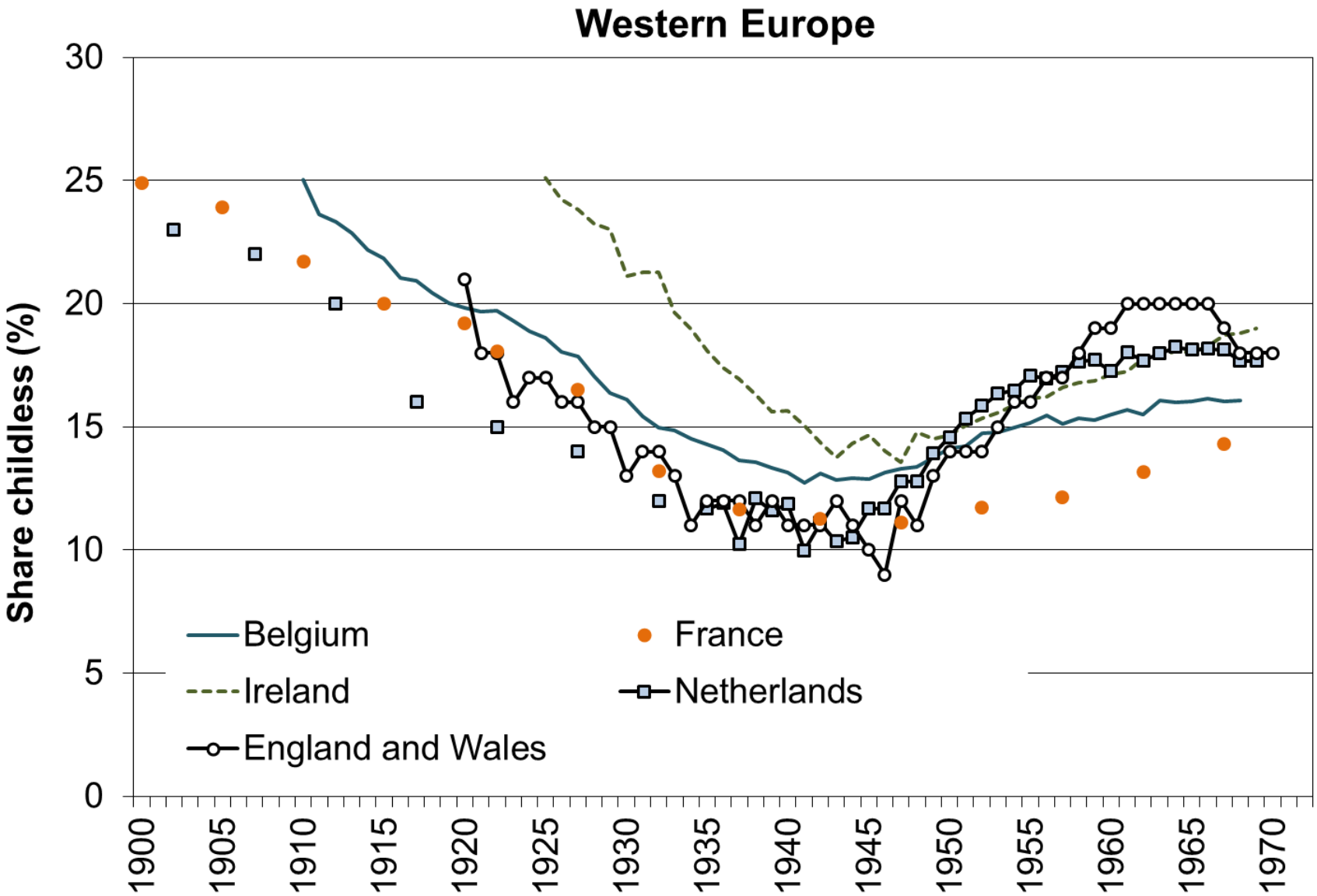
Nordic countries: Denmark, Finland, Norway, Sweden

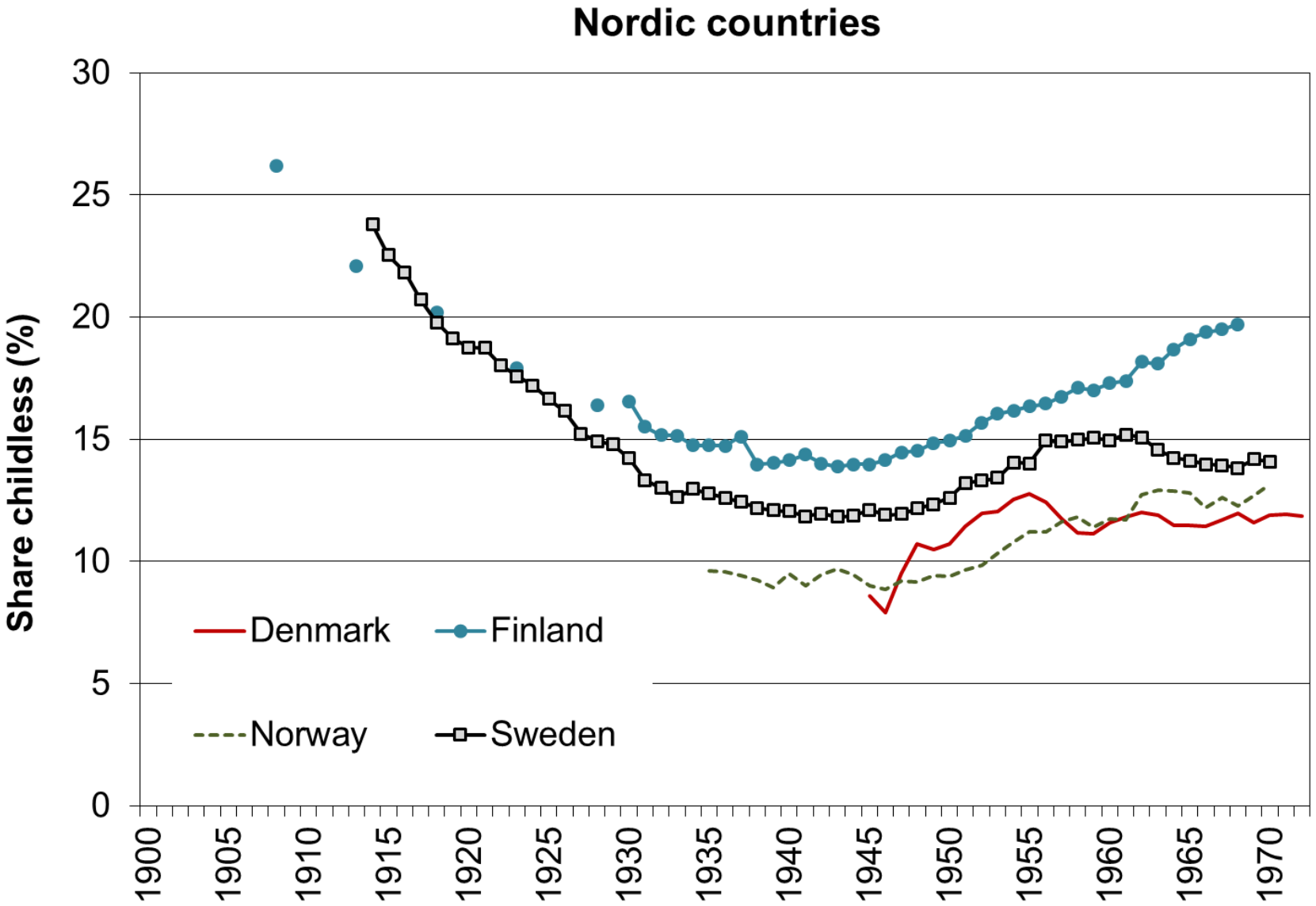
"German-speaking countries": Austria, Germany (East), Germany (West), Switzerland

Southern Europe: Greece, Italy, Portugal, Spain

Central Europe: Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovakia, Slovenia

Eastern & Southeastern Europe: Belarus, Bulgaria, Moldova, Romania, Russia, Ukraine


Western Europe
Share childless (%)
30
25
20
15
10
5
0
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
Belgium
France
Ireland
Netherlands
England and Wales


Nordic countries
Share childless (%)
30
25
20
15
10
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1900
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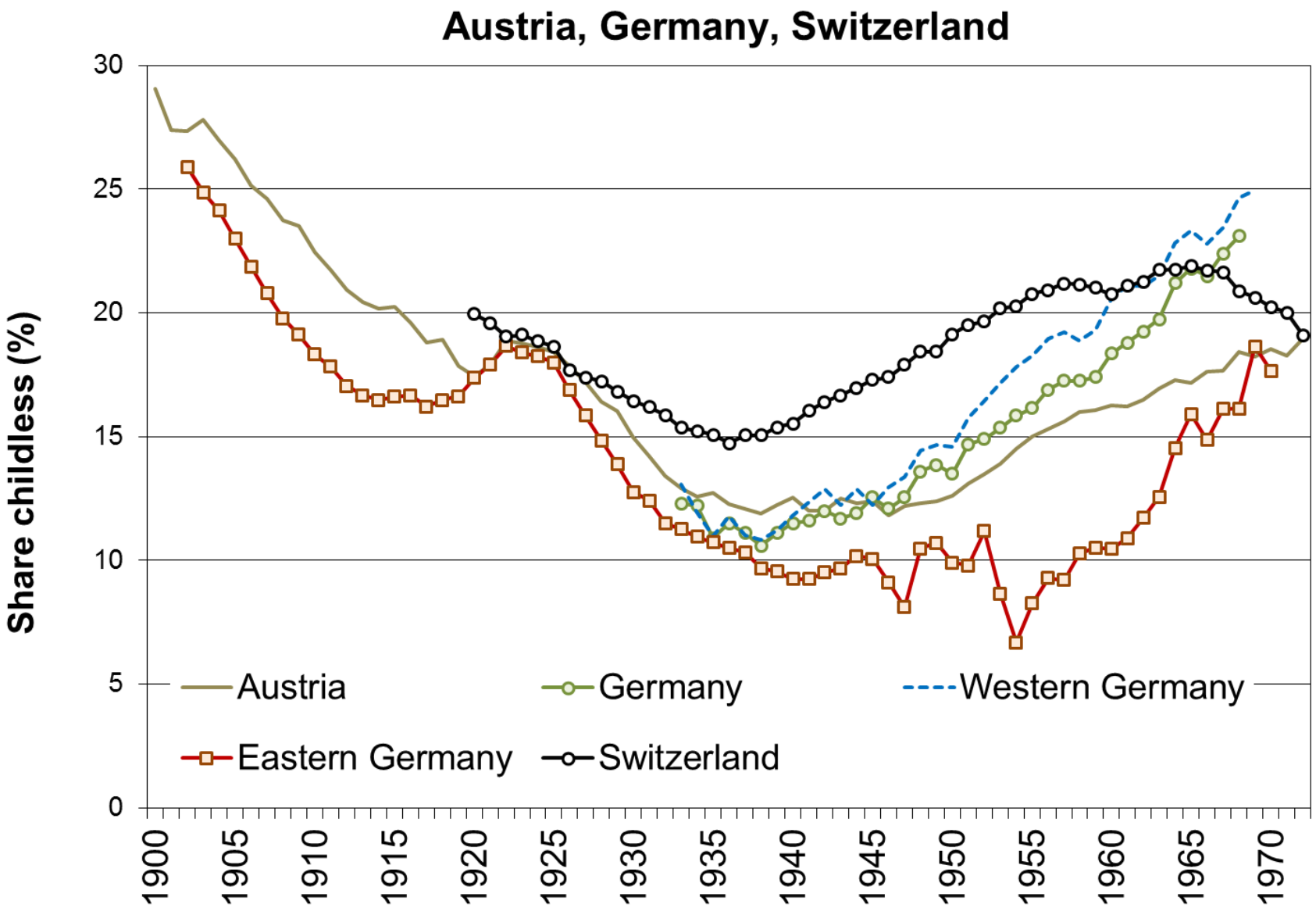
1970
Denmark
Finland
Norway
Sweden


Austria, Germany, Switzerland
Share childless (%)
30
25
20
15
10
5
0
1900
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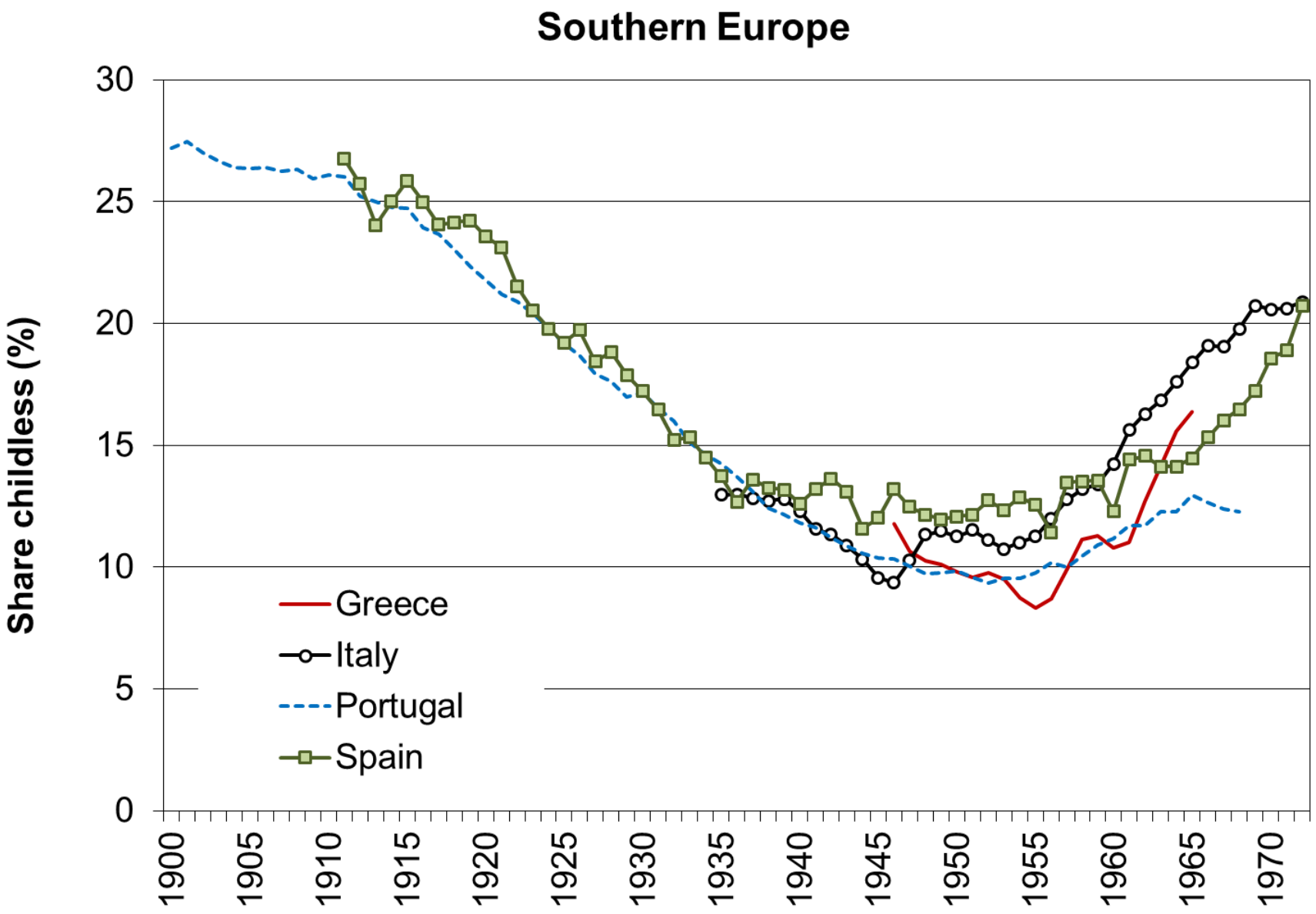
Austria
Germany
Western Germany
Eastern Germany
Switzerland


Southern Europe
Share childless (%)
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0
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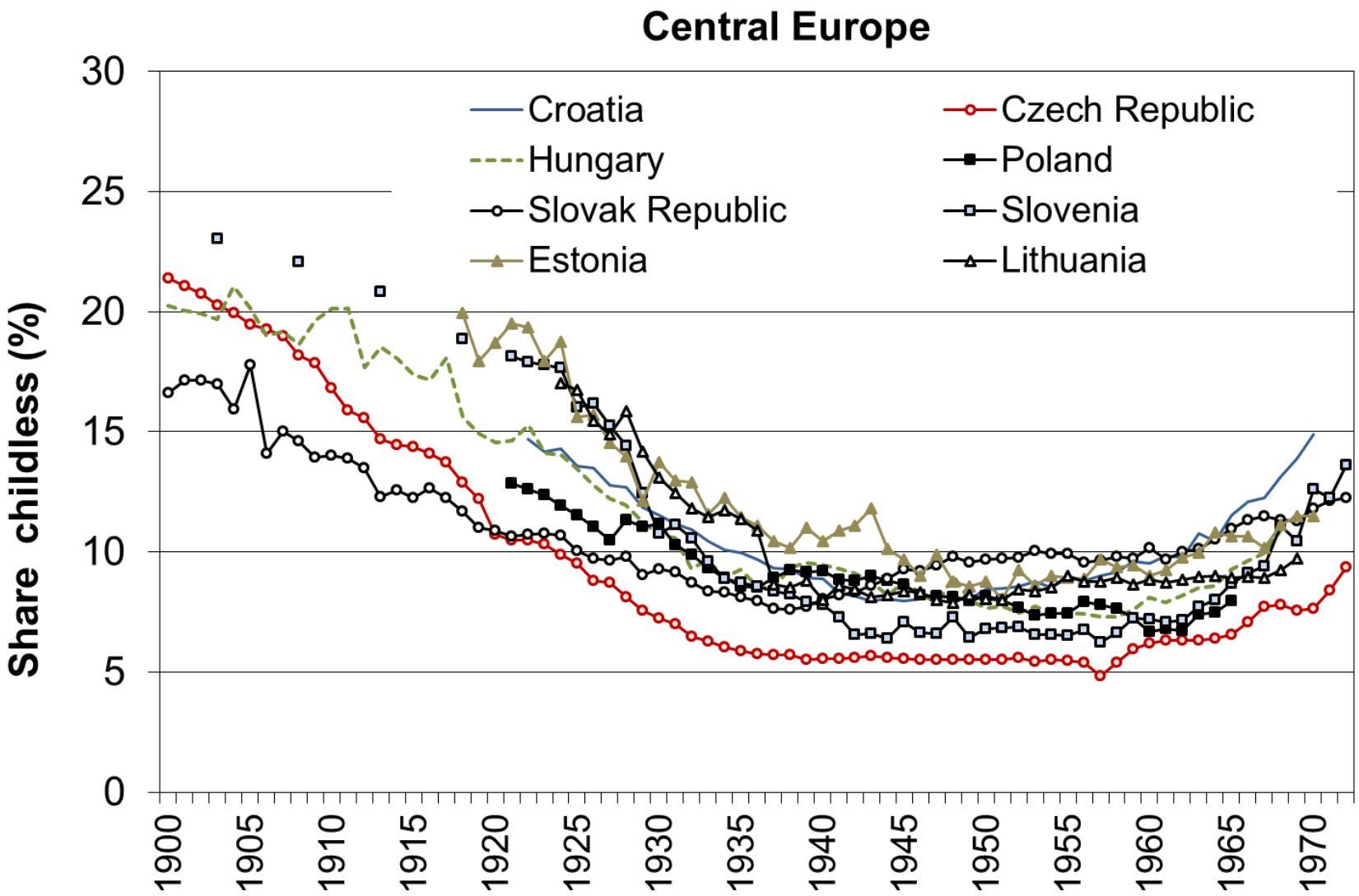
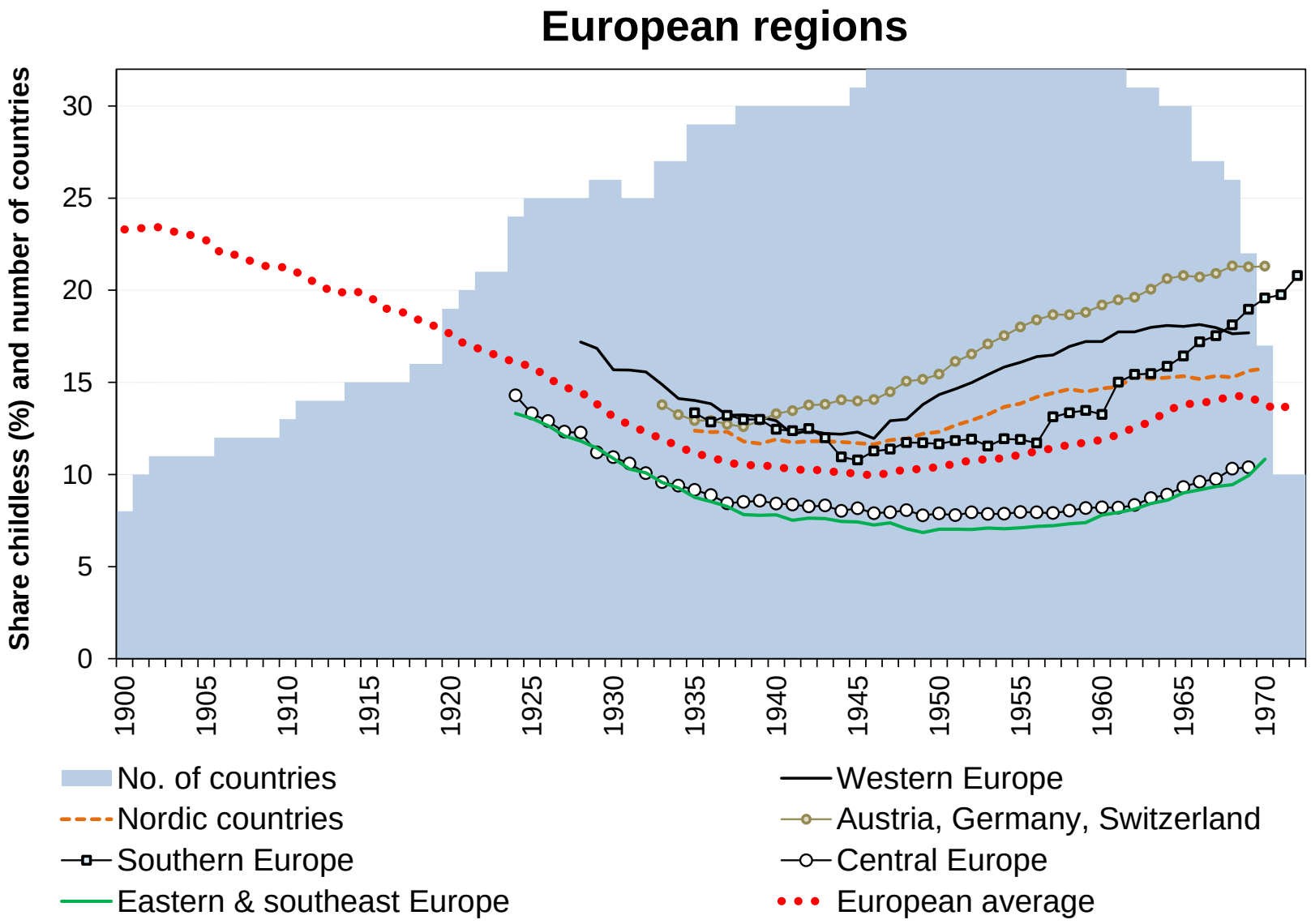
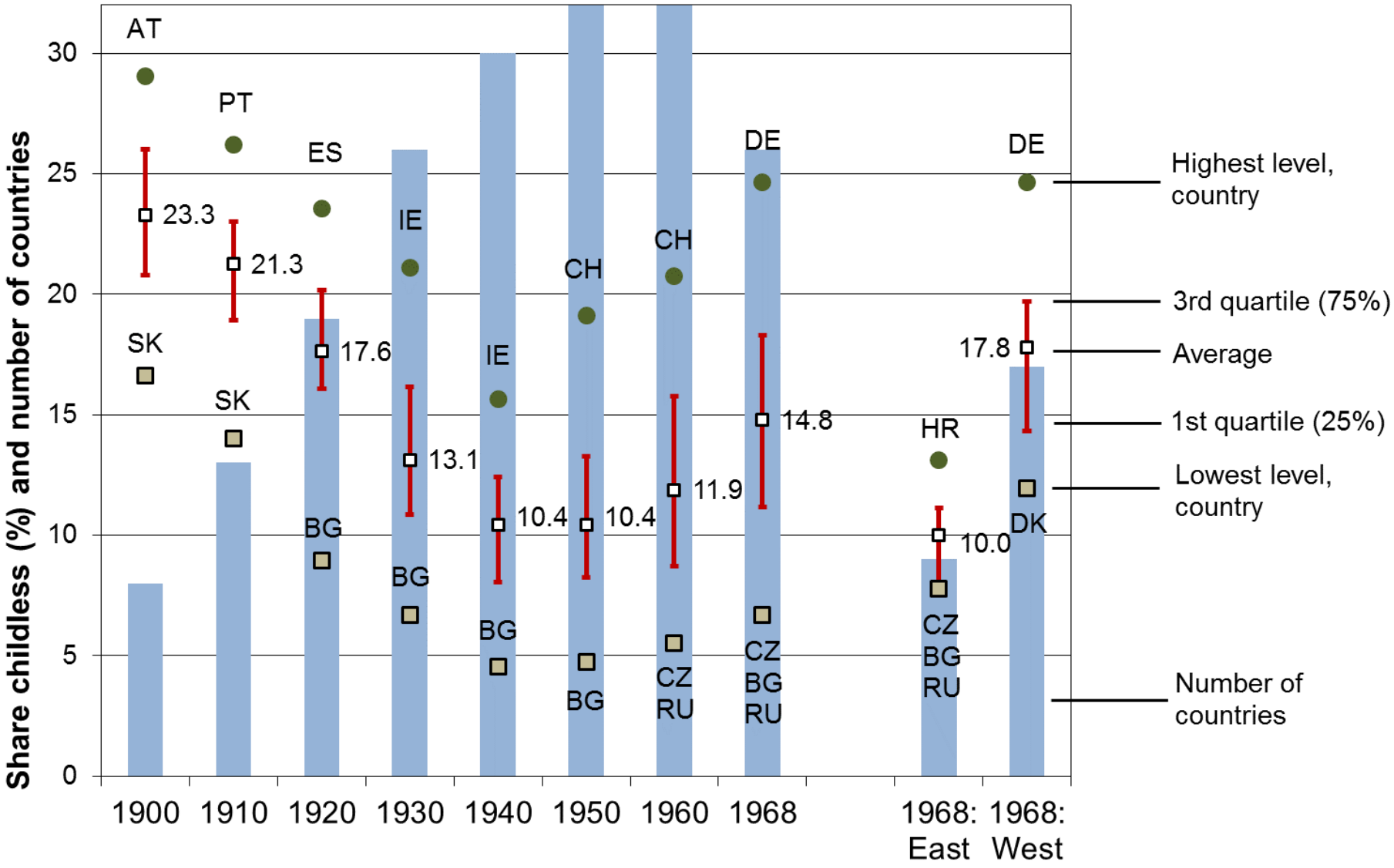
1960
1965
1970
Greece
Italy
Portugal
Spain


Central Europe
Share childless (%)
30
25
20
15
10
5
0
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
Croatia
Czech Republic
Hungary
Poland
Slovak Republic
Slovenia
Estonia
Lithuania

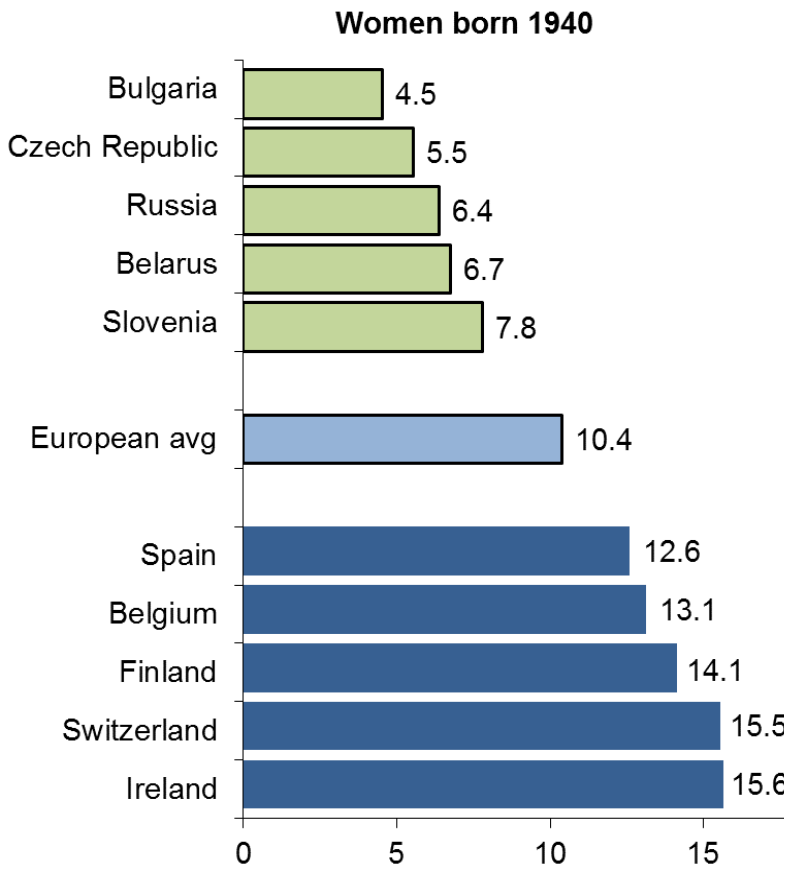
Results: Summary for European regions

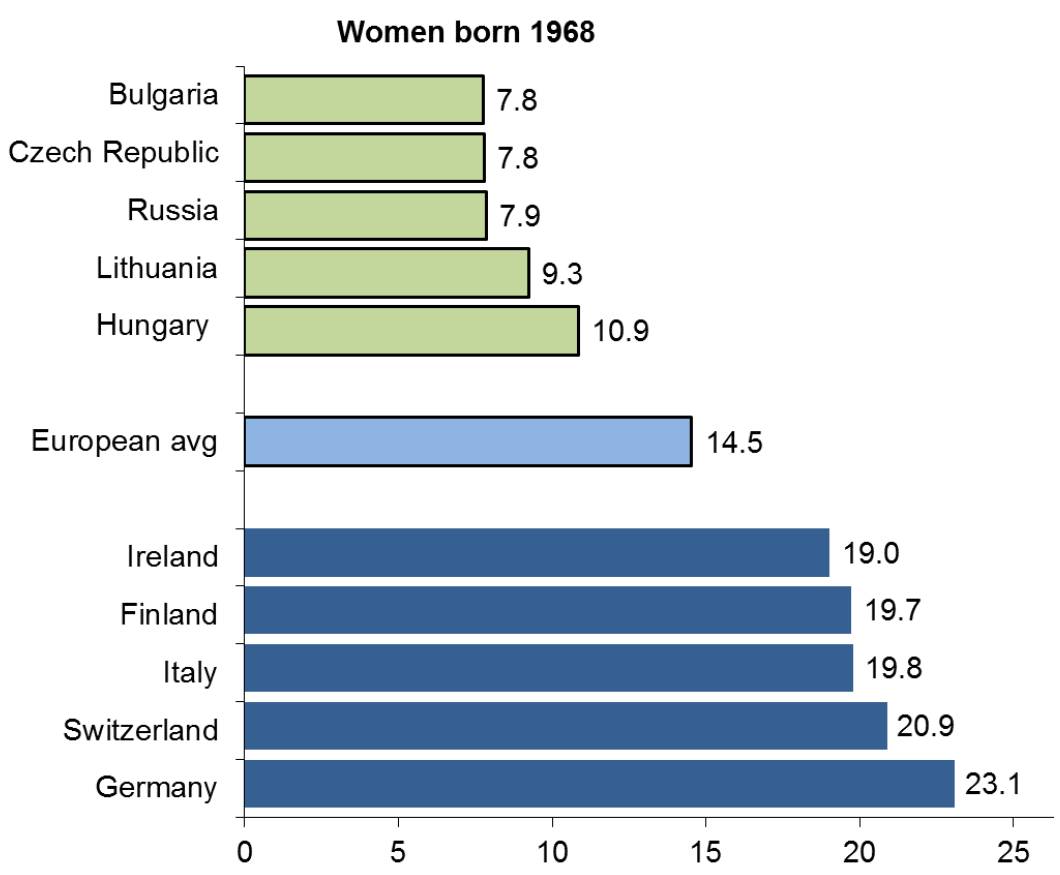


Results: Cross-country differences in Europe

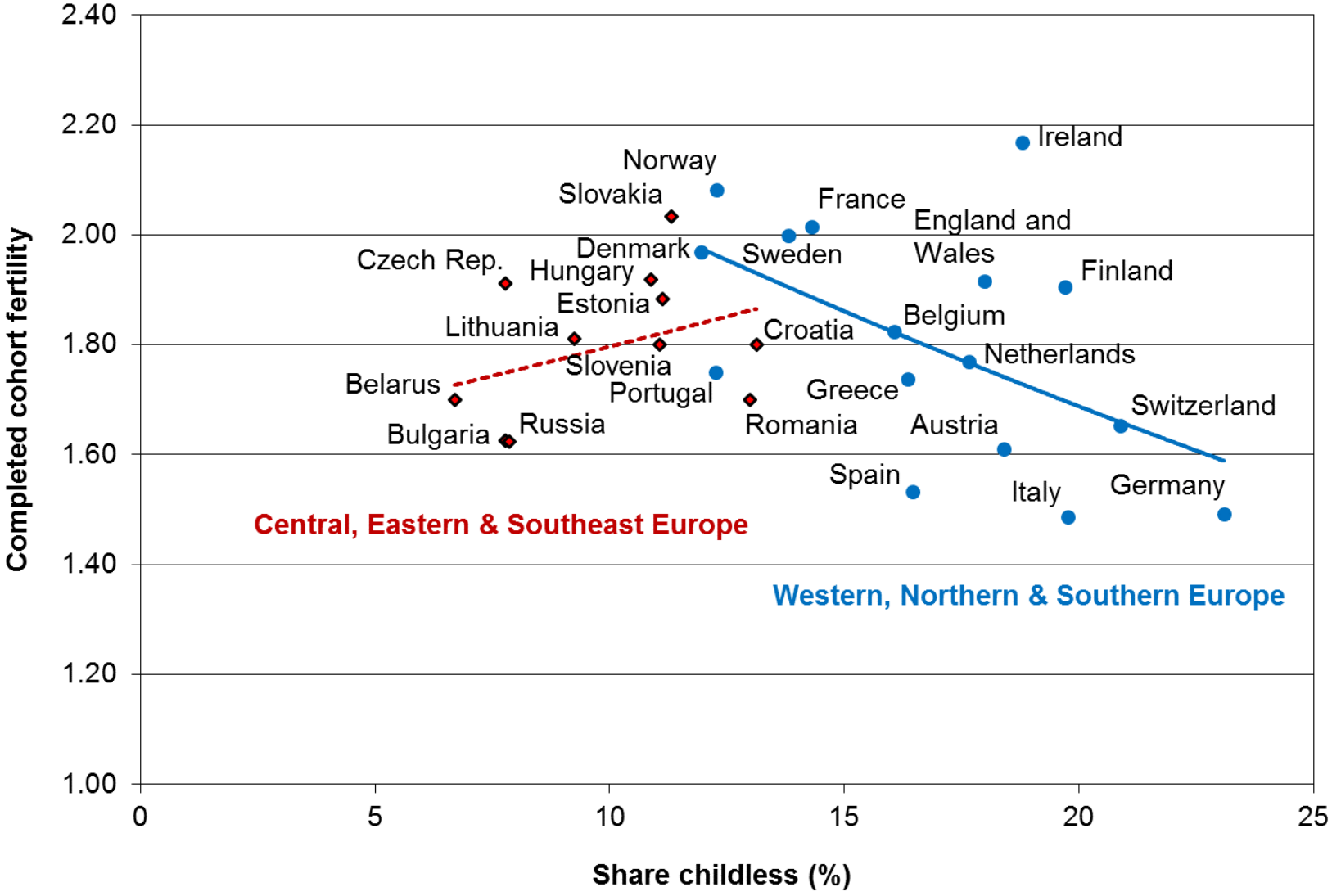


Childlessness rankings: Top 5 and bottom 5 countries





Permanent childlessness vs. Completed fertility



Discussion

Data

No perfect data: Often, data on childlessness remain fuzzy and uncertain

- Much higher uncertainty than about completed fertility & family size distribution among women with kids

Alternative sources & estimates; problems with estimating childlessness for immigrants

- One “solution”: focus on childlessness among the women born in the country

Findings:

Very high childlessness in the early 20th C. cohorts, not matched (yet) in most countries

(Still) persistent East x West differences in Europe

Research agenda

More research into data, data sources, methods and sources of bias needed

Untapped potential of Census data: some are “hidden” in the input data files of the *Human Fertility Database*

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www.eurrep.org

www.cfe-database.org

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