



The Impact of Policy Interventions on a Pre-Industrial Population System in the Austrian Alps

Ortrun Veichtlbauer Elke Hanser Achim Zeileis
Friedrich Leisch Harald Wilfing

The project



Historical Sustainability Research: Institutional Logics and Natural Dynamics in Co-evolutionary Development

coordination: Harald Wilfing, Christoph Sonnlechner

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Overview



❄ Demographic time series from Grossarl

❖ Illegitimate births

❖ Marriages

❄ Research questions

❄ Methods

❄ Results

Demographic time series



Annual time series (1700–1900) for Grossarl (Alpine Village Austria):

❄ fraction of illegitimate births,

❄ number of marriages.

Source: Parish Registers

Research questions



Goals: Analyse, model and assess political interventions into the social organisation of reproduction.

- ❄ Which factors influence demographic behaviour?
- ❄ How can breaks in demographic time series be explained?
- ❄ Is there empirical evidence in the data for effectiveness of historical population policy interventions?
- ❄ Is the concept of “Social disciplining” useful in an anthropological approach?

Methods



Methodological challenges:

- ❄ Resolve tension between
 - ❖ evaluation of complexity, model realism,
 - ❖ need for model simplification.

- ❄ Compress qualitative historical information for model building.

Methods



Derive intervention variables from qualitative historical information concerning *politics*, *morals* and *nuptiality*.

Political interventions:

- ❄ archbishopric (until 1803),
- ❄ multiple changes (1803–1816),
- ❄ administrated by Upper Austria (1816–1850),
- ❄ crownland within Habsburg Austria (since 1850).

Methods



Moral regulations (“Sittenverordnungen”):
1736, 1753, 1771, 1803.

Marriage restrictions (“politischer Ehekonsens”):
1803, 1810, 1816, 1883.

Methods



Statistical regression model:

- ❄ changing mean is described by piecewise constant function (fitted by OLS),
- ❄ intervention analysis,
- ❄ use moving sums of the residuals as a diagnostic test to check for further breaks.

Results



Two models are compared: the mean of the time series explained by

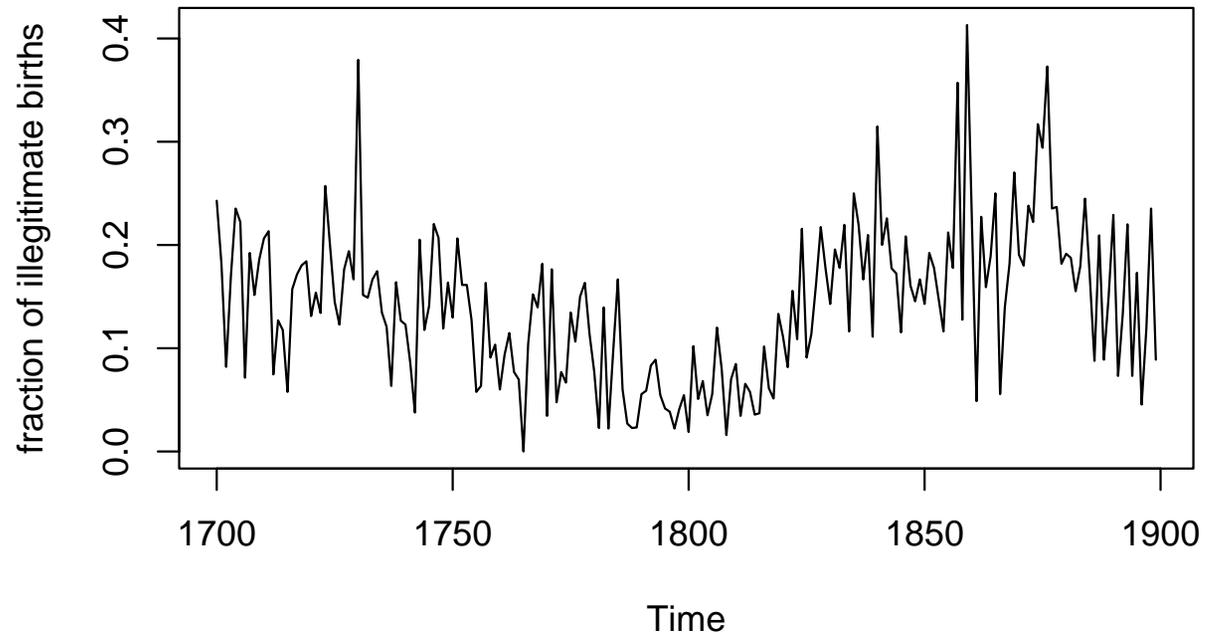
- ❄ political interventions only

- ❄ additionally by moral regulations and marriage restrictions

Results



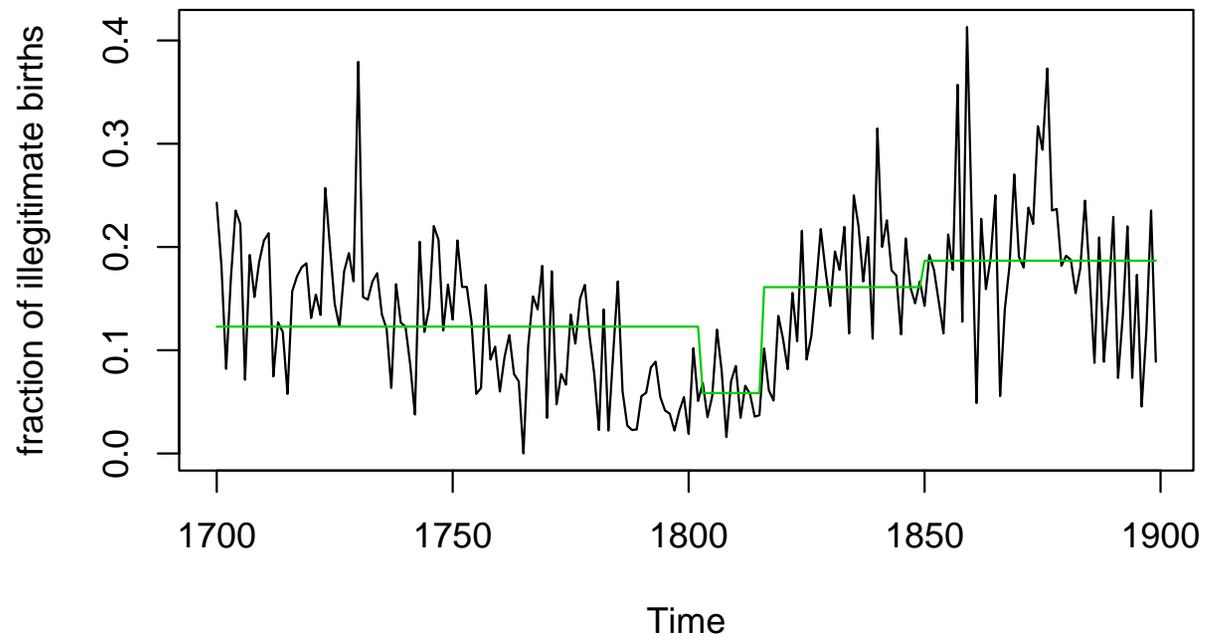
Illegitimate Births in Grossarl



Results



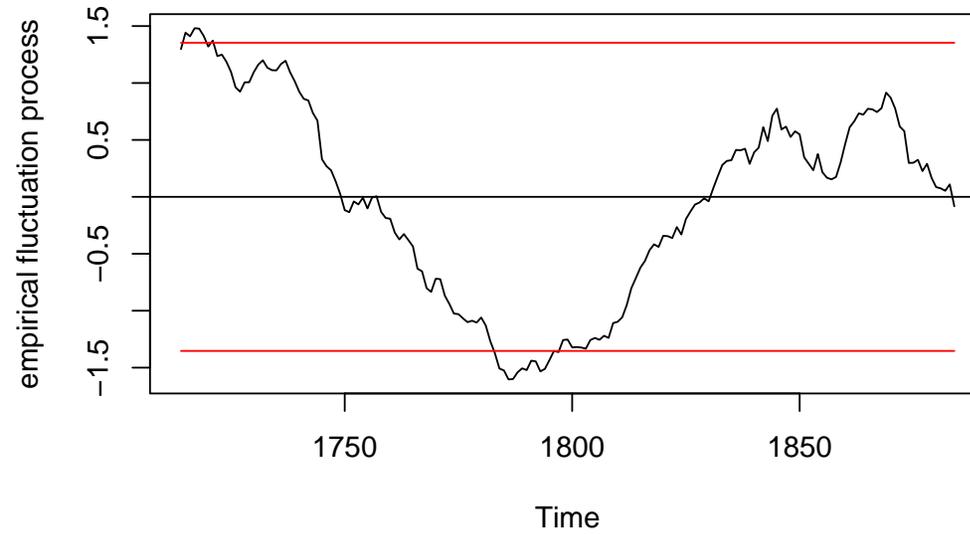
Illegitimate Births in Grossarl



Results



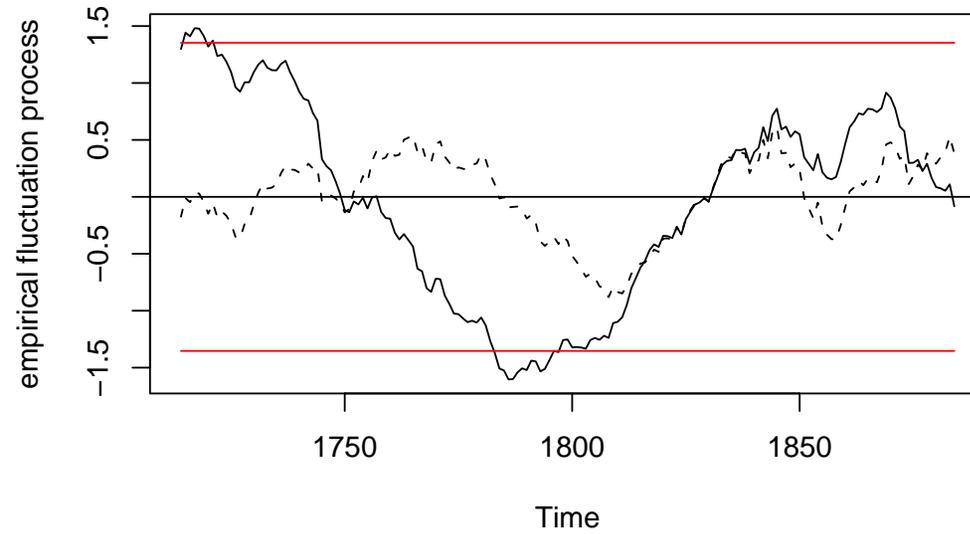
OLS-based MOSUM test



Results



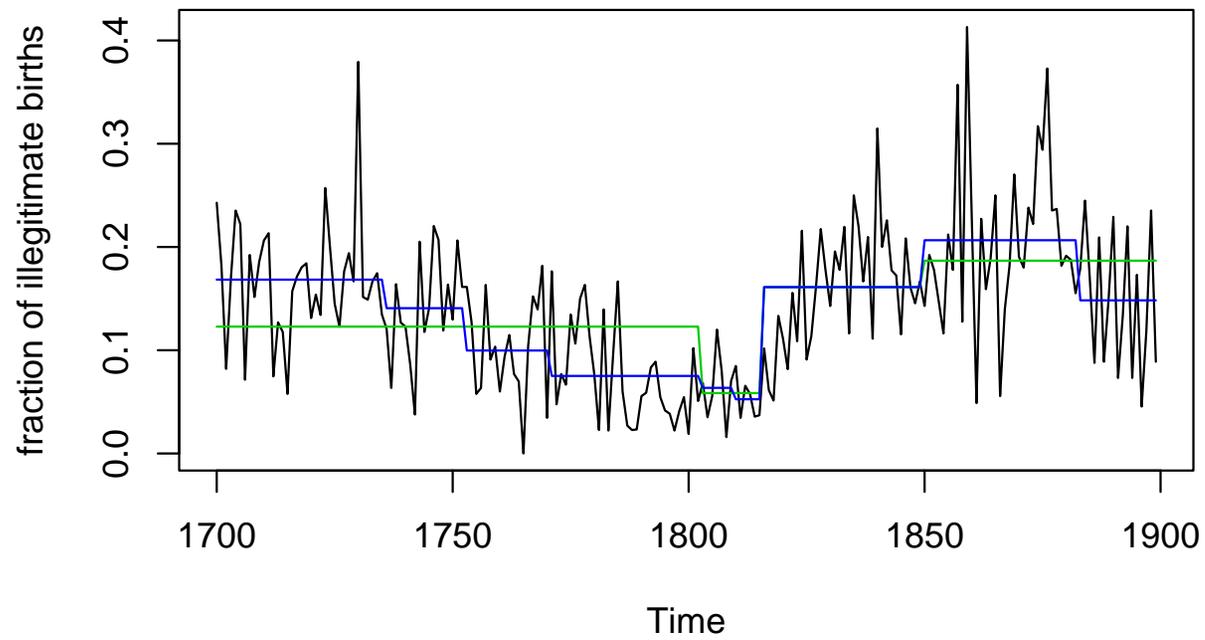
OLS-based MOSUM test



Results



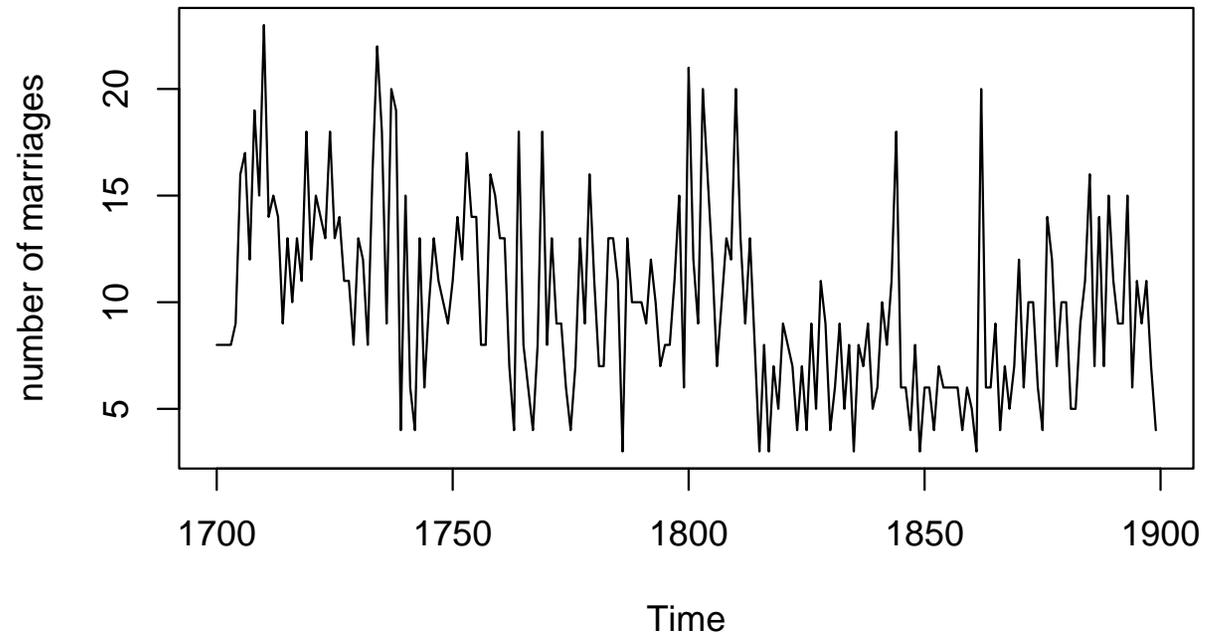
Illegitimate Births in Grossarl



Results



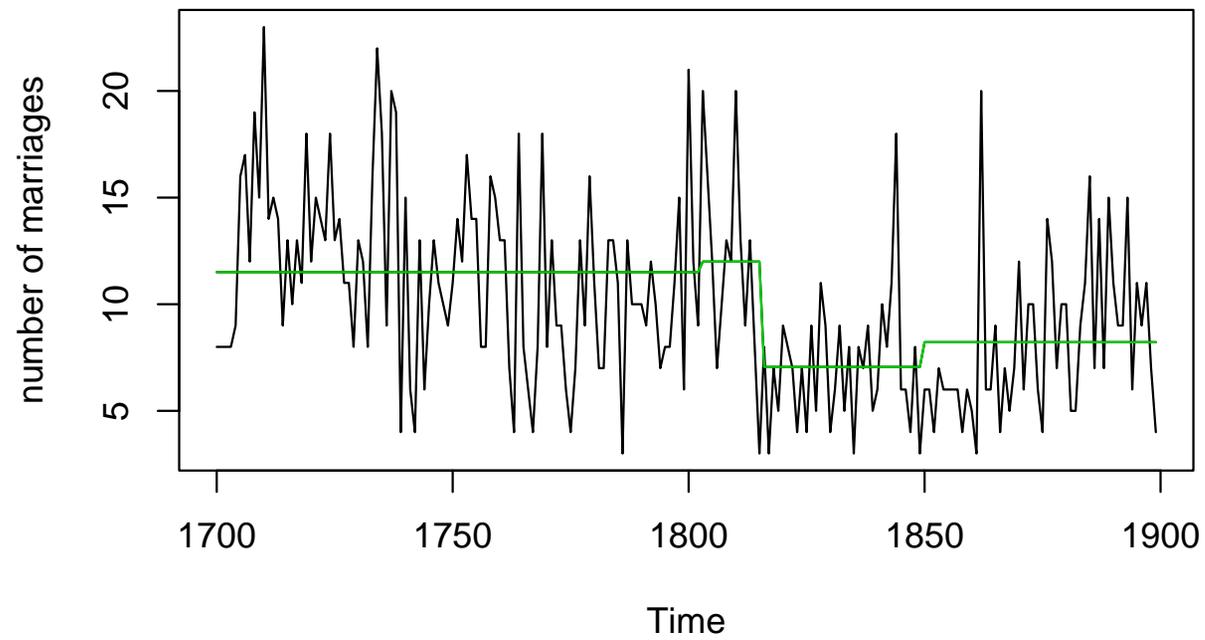
Marriages in Grossarl



Results



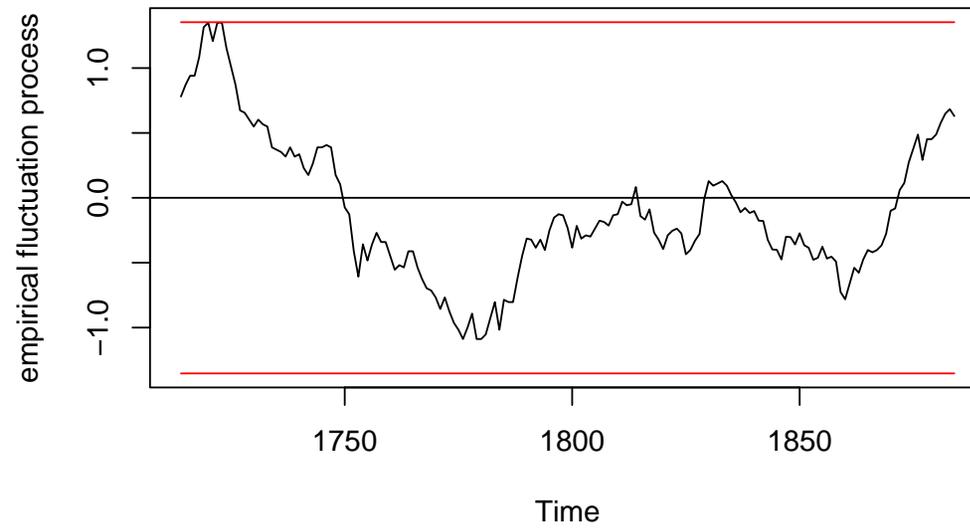
Marriages in Grossarl



Results



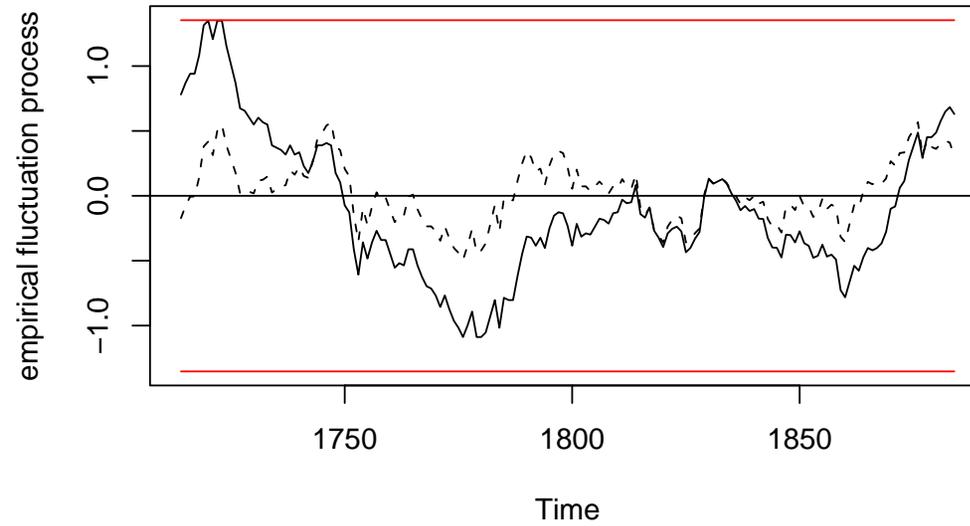
OLS-based MOSUM test



Results



OLS-based MOSUM test



Results



Marriages in Grossarl

