



Reconstructing¹ and Vizualising² the population of Vienna by religion, 1971-2011

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A COLLABORATION OF IIASA, VID/ÖAW, WU

Outline

- Background
- Methodology
- Results
- Visualization



Aim & Objective

- Reconstruct the population since 1971 until 2011 by age, sex, and according to 7 religious categories:
 - Catholics 
 - Protestants 
 - Jews 
 - Muslims 
 - Orthodox 
 - Others 
 - No religion 
- What happened since 2001?
- Learn about the past to inform the future

Main available inputs for Vienna

- Census population by religion (5 out of 7 religious categories in 1971, 6 in 1981 and 1991, 7 in 2001), by age (5 year age groups) and by sex.
- Register based census data (2011) by age and sex
- Total births by religion of the mother by year
- Total deaths by sex
- Net-migration to Vienna by age and sex
- Religious mobility by age (until 1983) and sex (only for exits)

Overall methodology

- Until 2001:
 - Step 1: Estimate the missing religious categories in the 4 censuses;

Missing religious categories in census

- 1971: Catholics, Protestants, Muslims, Other, no religion, unknown
 - Missing: Jews (MA23) and Orthodox (old Catholics, nationality of the other religion population – all European are assumed to be Orthodox: 93 M—99 F).
- 1981 and 1991: Catholics, Protestants, Jews, Muslims, Other, no religion, unknown.
 - Missing: Orthodox (92 M – 95 F)
- 2001: Catholics, Protestants, Jews, Muslims, Other, no religion, unknown.
 - No missing categories

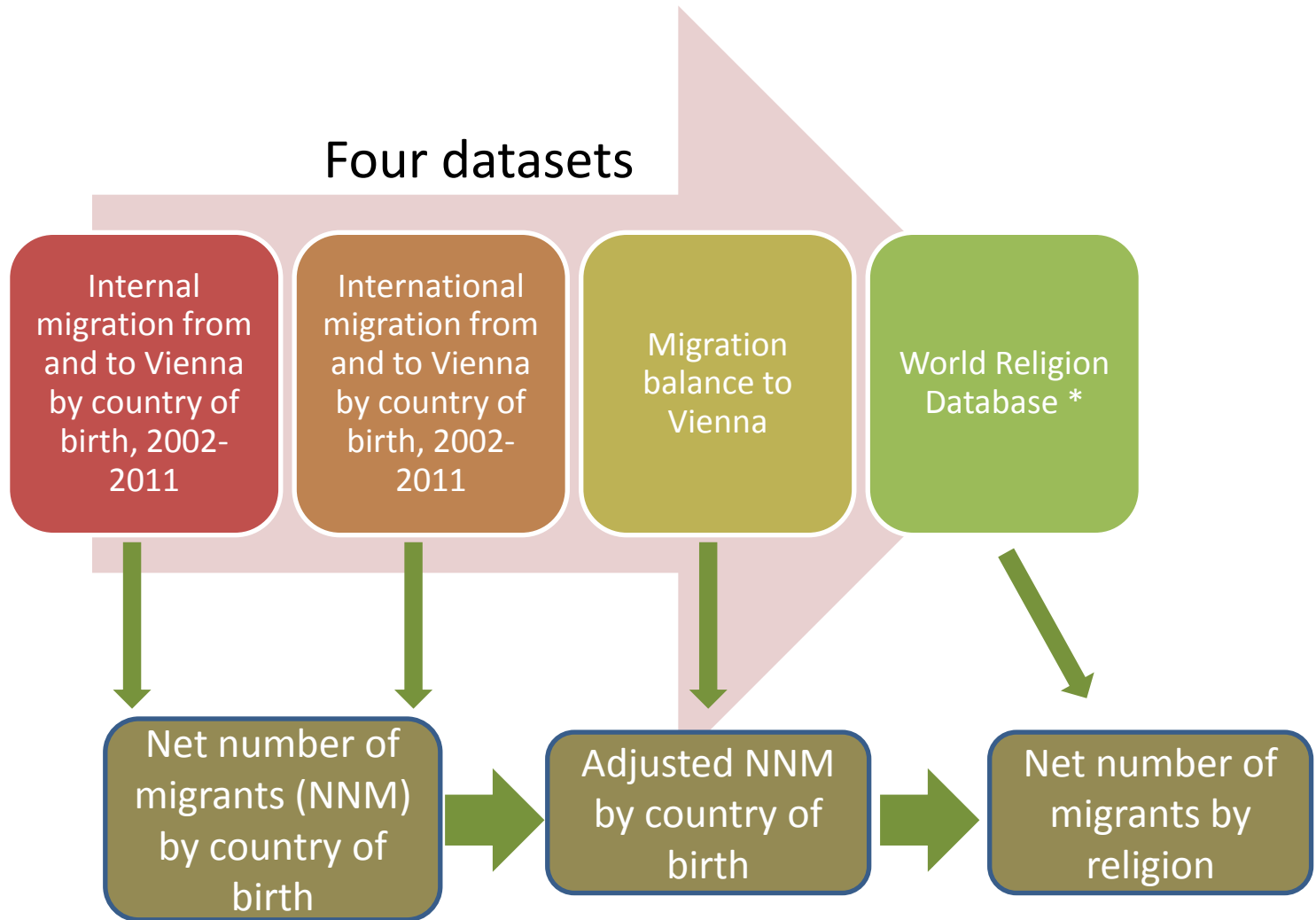
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- Until 2001:
 - Step 1: Estimate the missing religious categories in the 4 censuses;
 - Step 2: Estimate the population by age/sex/religion in the missing years (1972, 73, ..., 79, 80, ...82...) using linear or exponential interpolation by age (not by cohort).

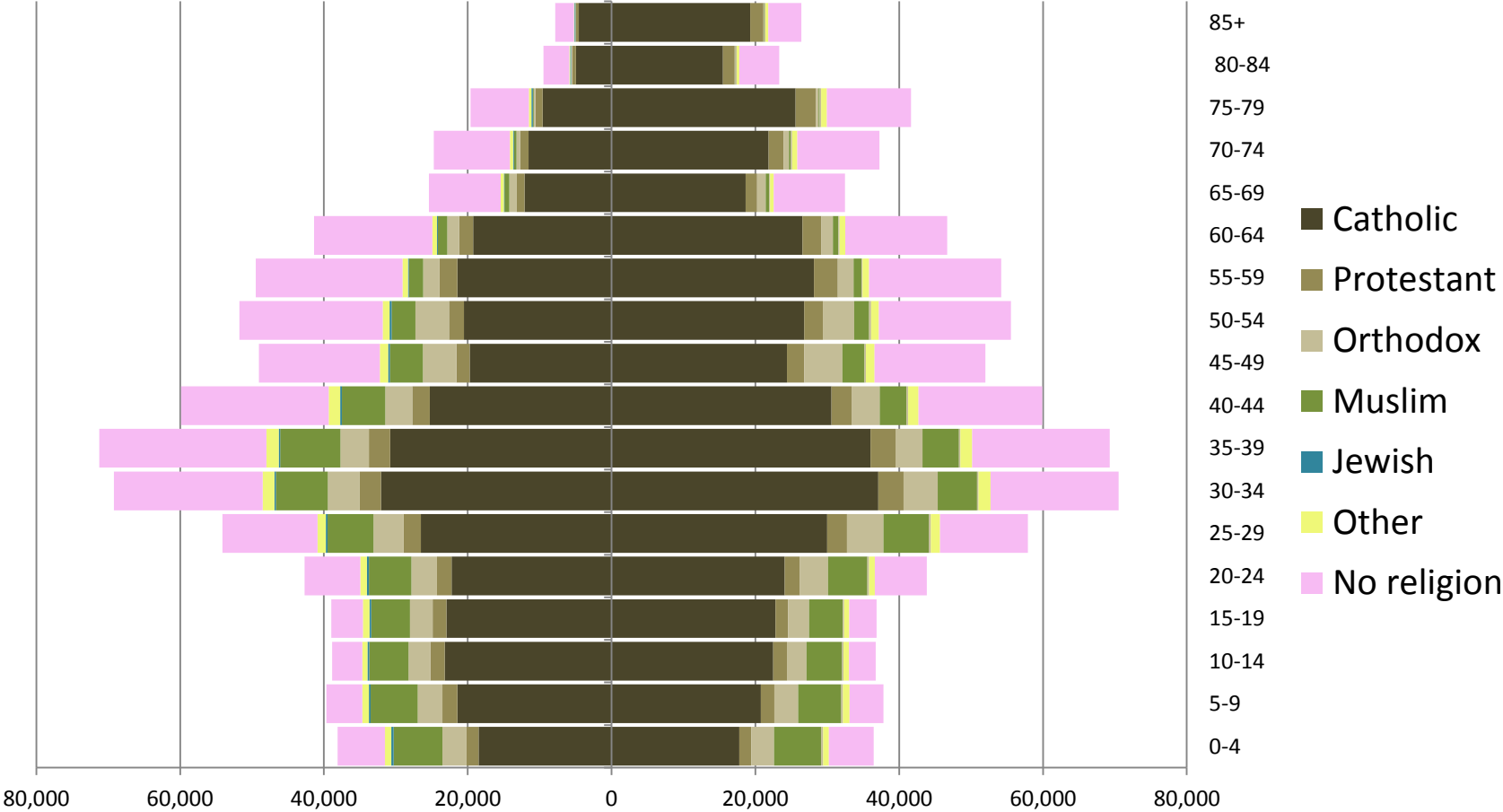
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 - Step 3: Use splines to transform 5-year age groups/sex/religion to single years of age/sex/religion.
- Between 2001 and 2011:
 - Step 4: Project the population by age (5-year age groups), sex, and religion using available statistics on births by religion, deaths (randomly distributed), secularization, and estimated migrant statistics.

Estimated migrant statistics by country of birth and random religious distribution

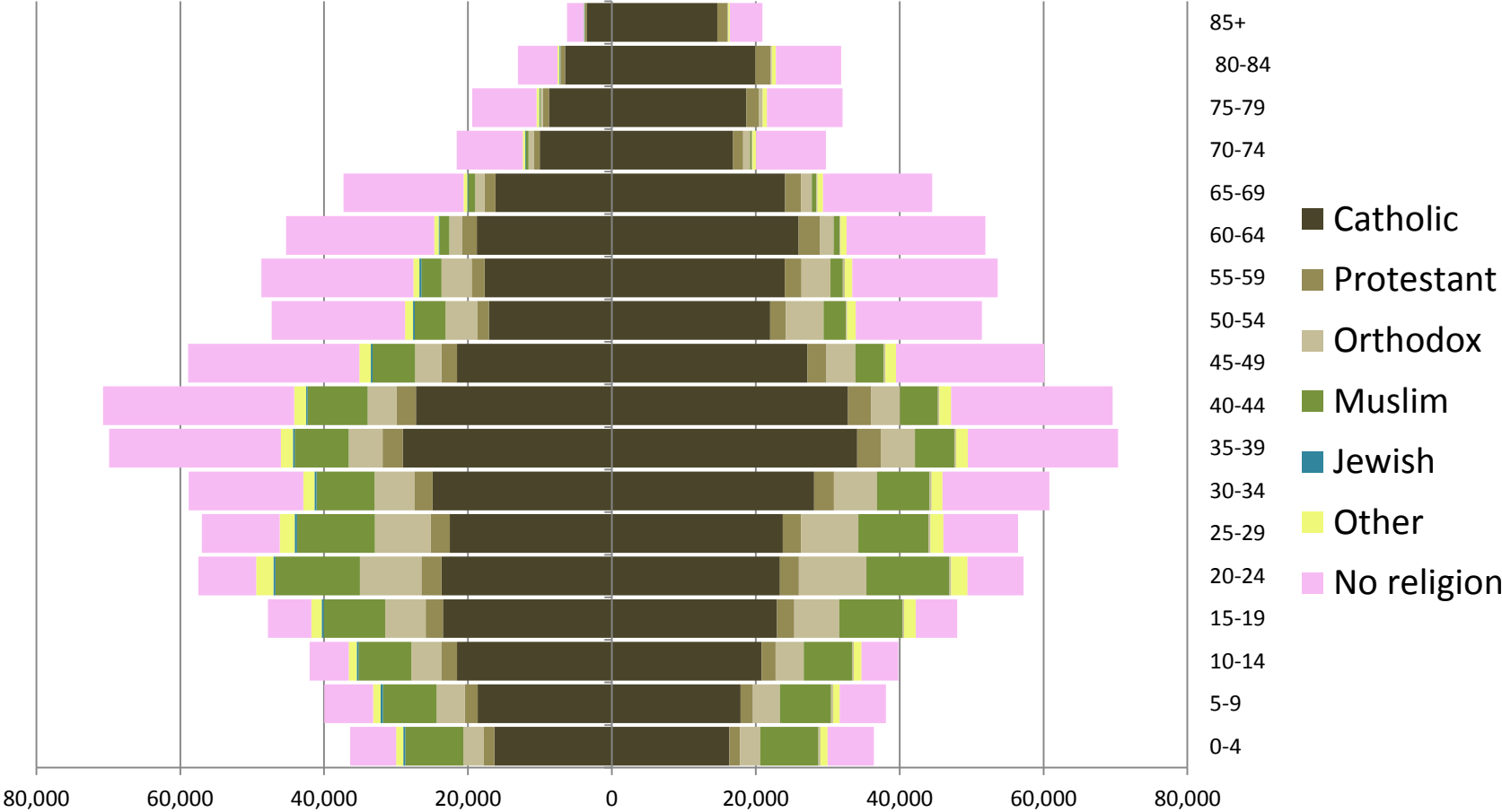


Population and religion pyramid in 2001



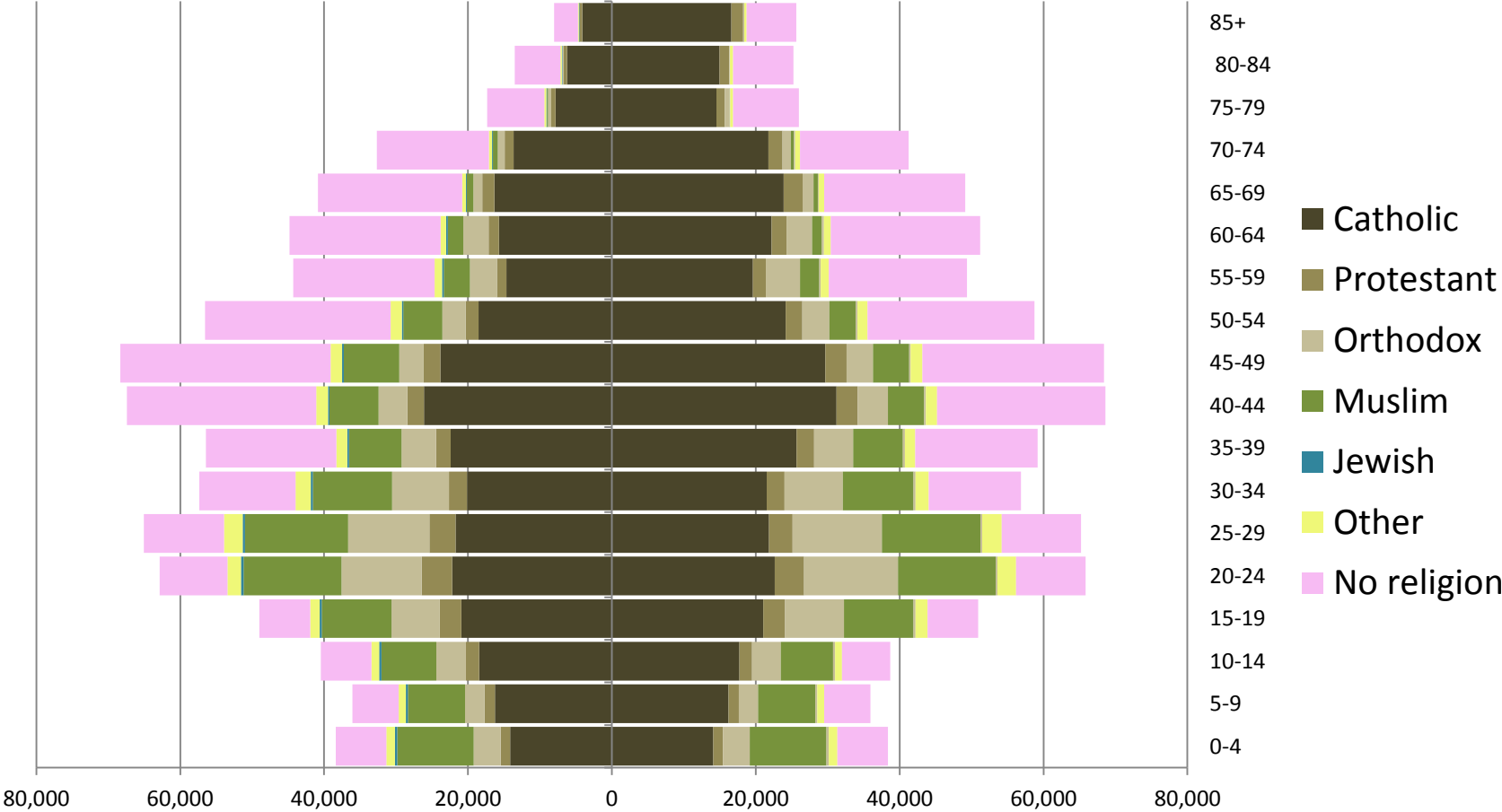
Source: Author's calculations based on several sources

Population and religion pyramid in 2006



Source: Author's calculations based on several sources

Population and religion pyramid in 2011



Source: Author's calculations based on several sources

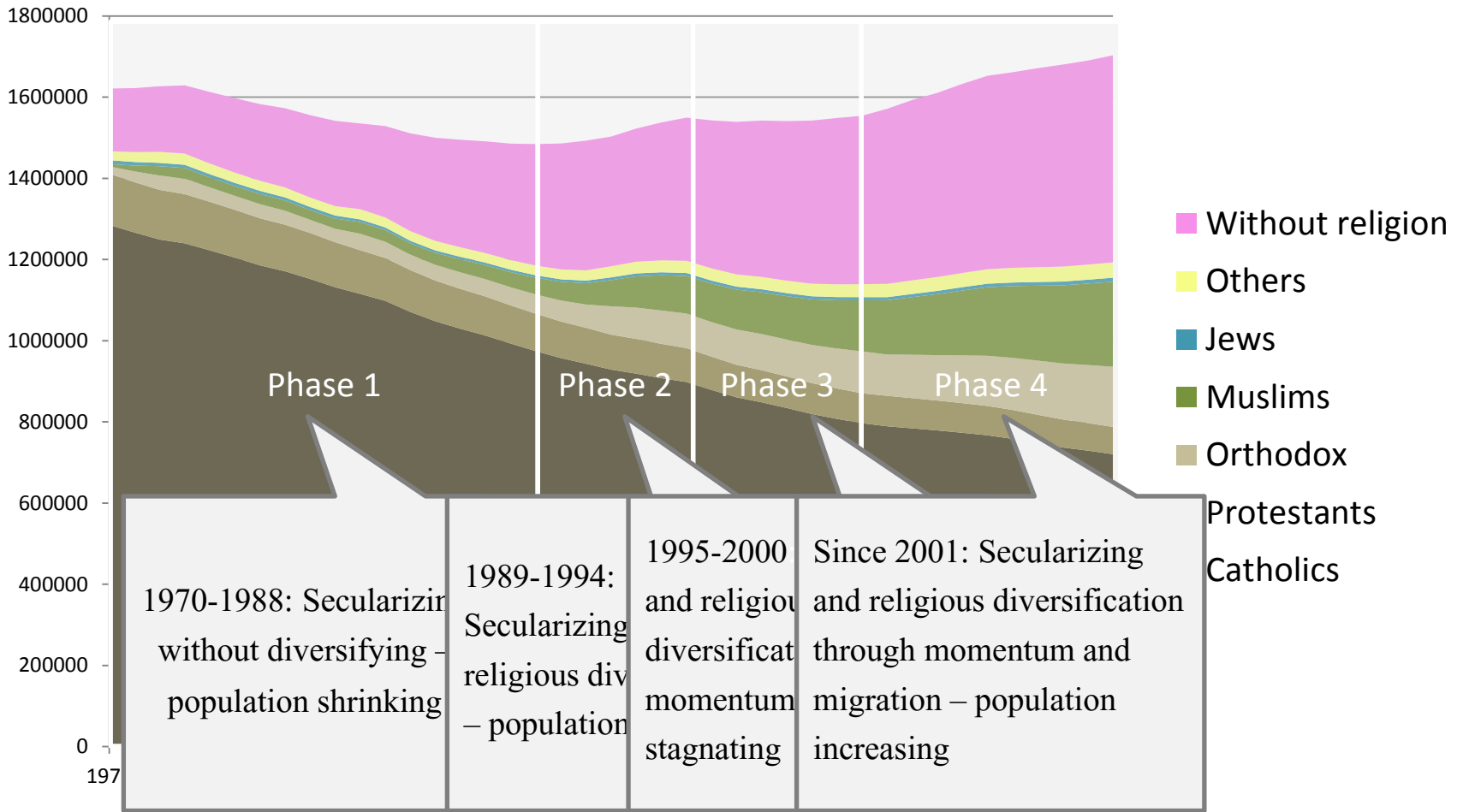
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- Between 2001 and 2011:
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 - Steps 5 & 6: Same as steps 2 & 3.

Three phases of change in Vienna

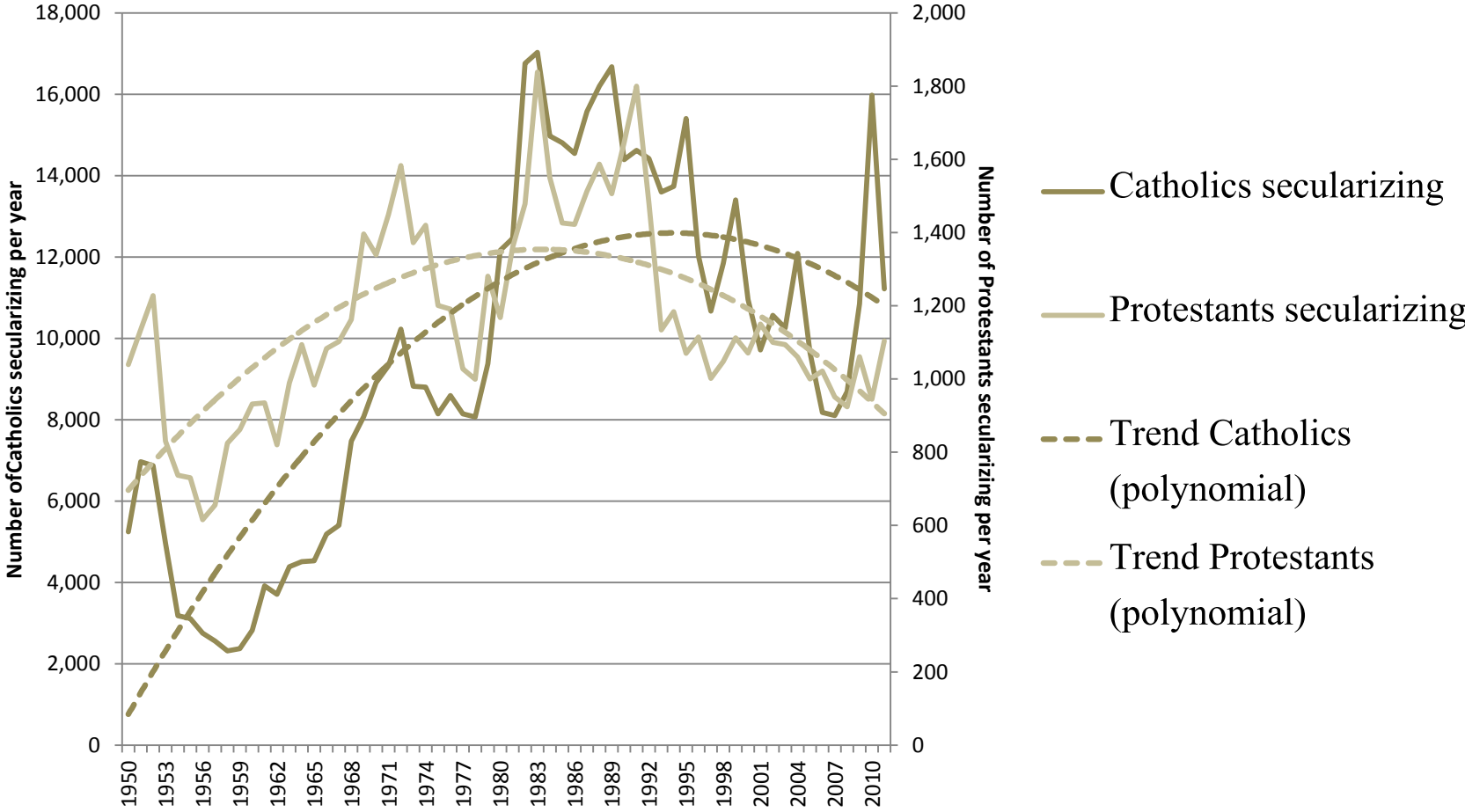
- Phase 1: 1970-1988: Secularizing without diversifying – population shrinking
- Phase 2: 1989-1994: Secularizing and religious diversification – population increasing
- Phase 3: 1995-2000: Secularizing and religious diversification through momentum – population stagnating
- Since 2001: Secularizing and religious diversification through momentum and migration – population increasing

Total population by religion, 1971-2011



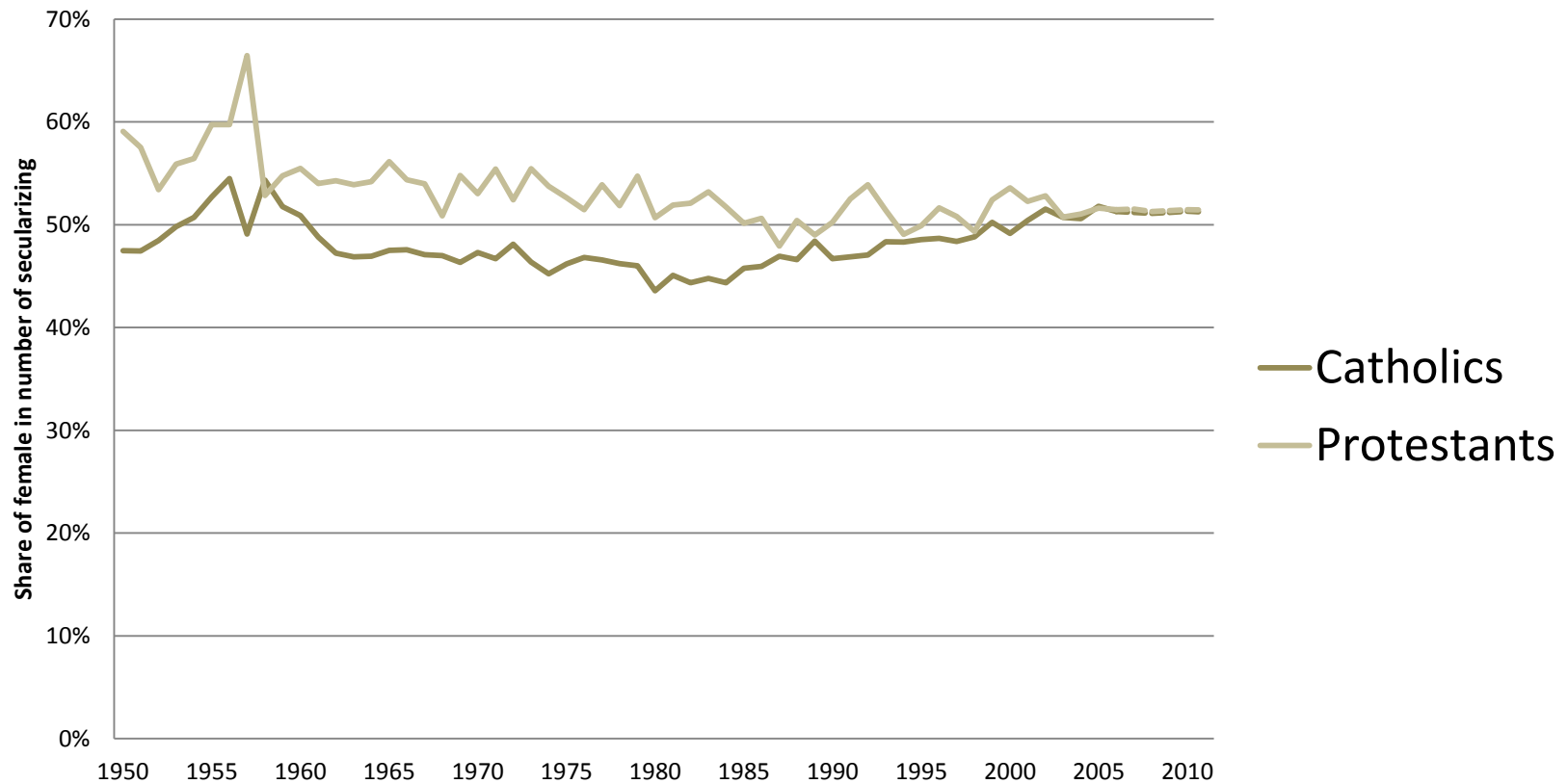
Source: Author's calculations based on several sources

Religious mobility of Protestants and Catholics



Source: Author's calculation based on Statistics Austria (several years)

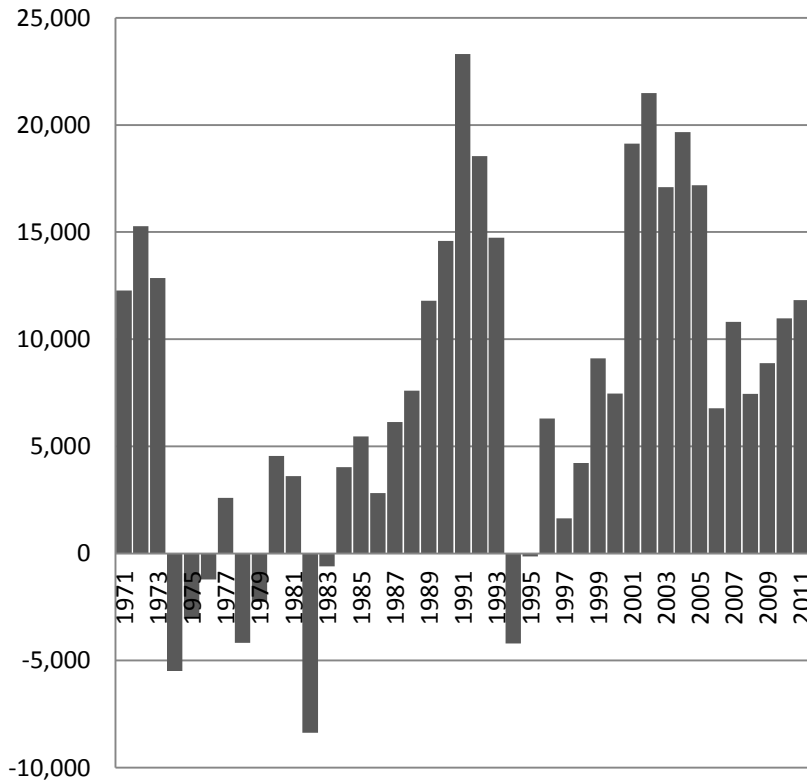
Men and Women used to secularize differently – not anymore



Source: Author's calculation based on Statistics Austria (several years)

A short history of migration to Vienna

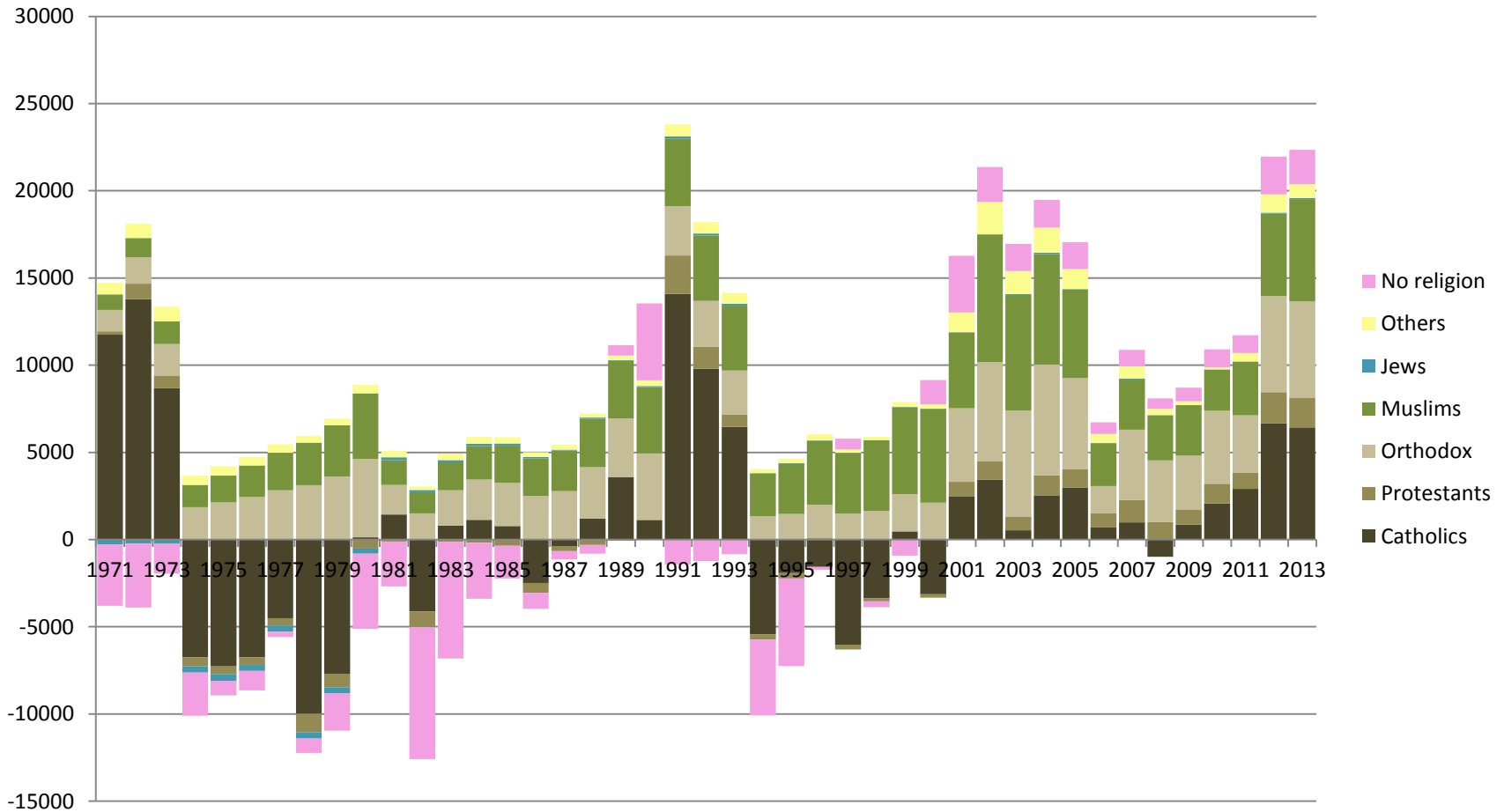
Net migration to Vienna, 1971-2011



Source: Statistics Austria

- -1974: Guest workers mainly from Yugoslavia and Turkey
- 1975-1986: Low to negative net migration
- 1986-1993: Increased net-migration to Vienna escalating with the fall of the Berlin Wall & the war in Yugoslavia (69% from Former Yugoslavia in 1992)
- 1994-1999: Reduced net-migration
- 2000-2005: Increased immigration (63% from Former Yugoslavia and Turkey in 2000)
- 2006-2009: decline in immigration (changes in legislation) and increase in EU migration (3/4 EU & 66% = Germany, Poland, Romania, Bulgaria, Slovakia, Hungary)
- 2009-2013: Revival of migration

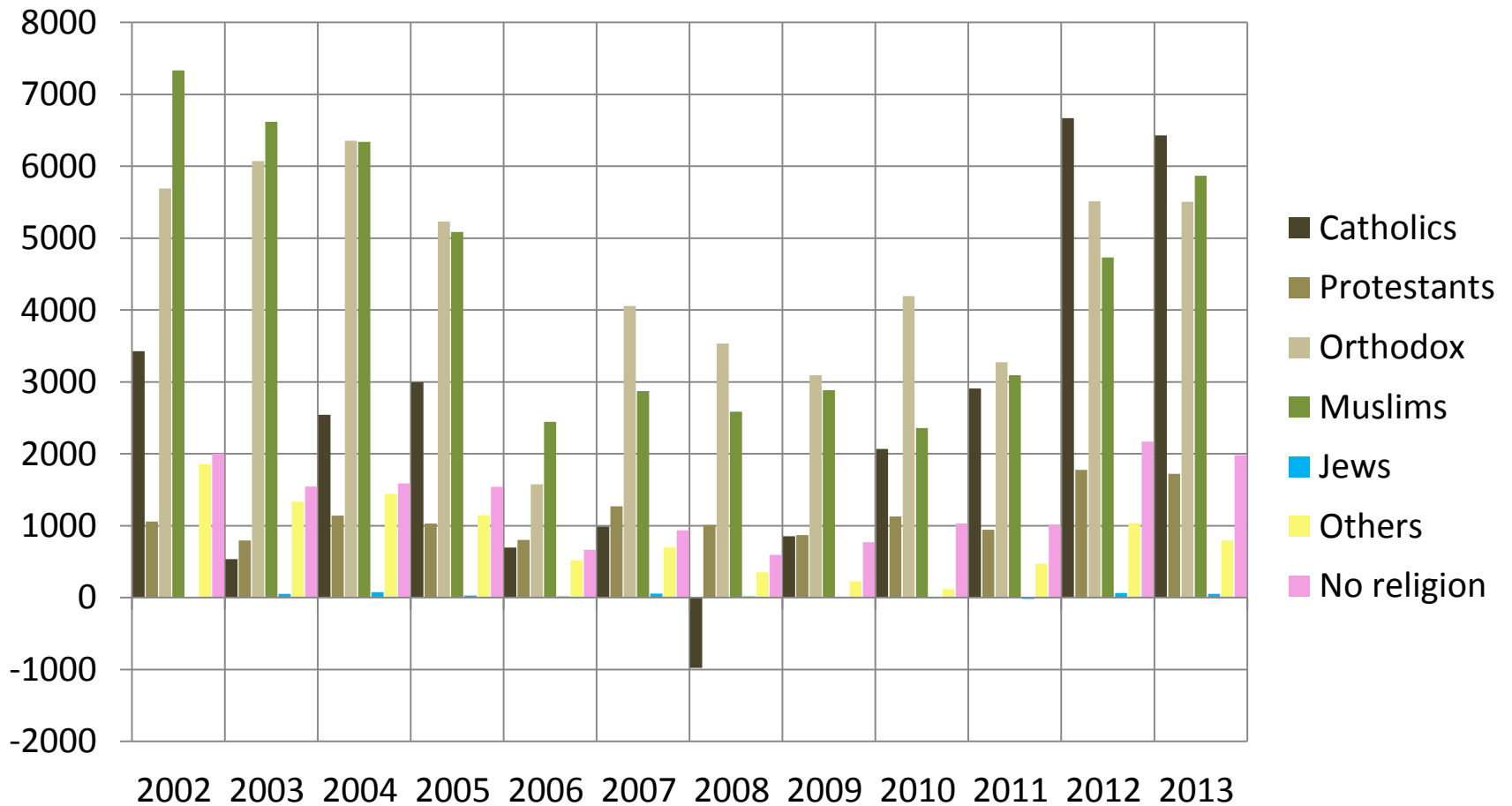
Total net number of migrants* to Vienna by religion



Note: Including internal and international migrants

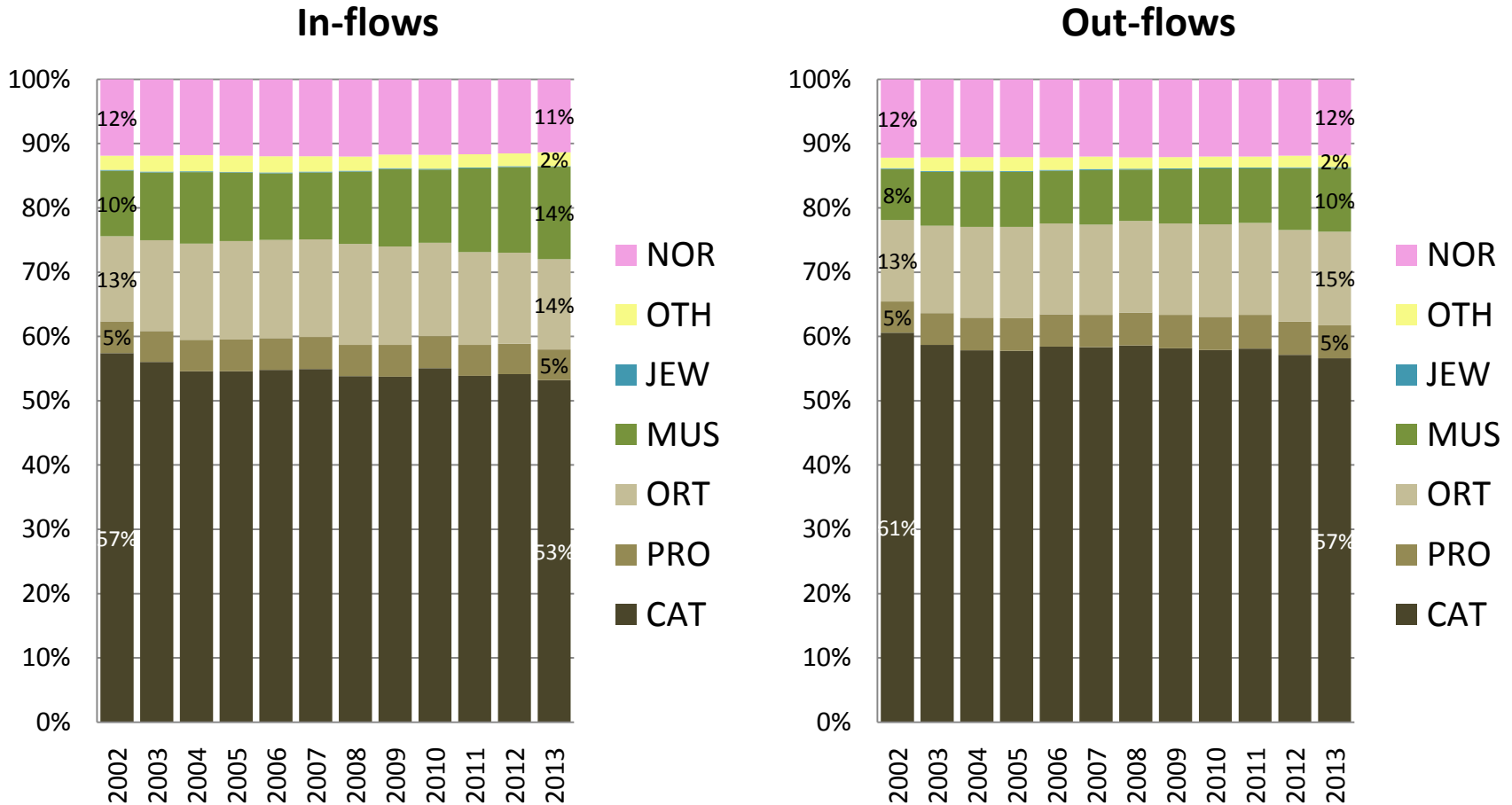
Source: Author's calculation

Net migration by religion, 2002-2013



Source: Author's calculation based on Statistics Austria and World Religion Database

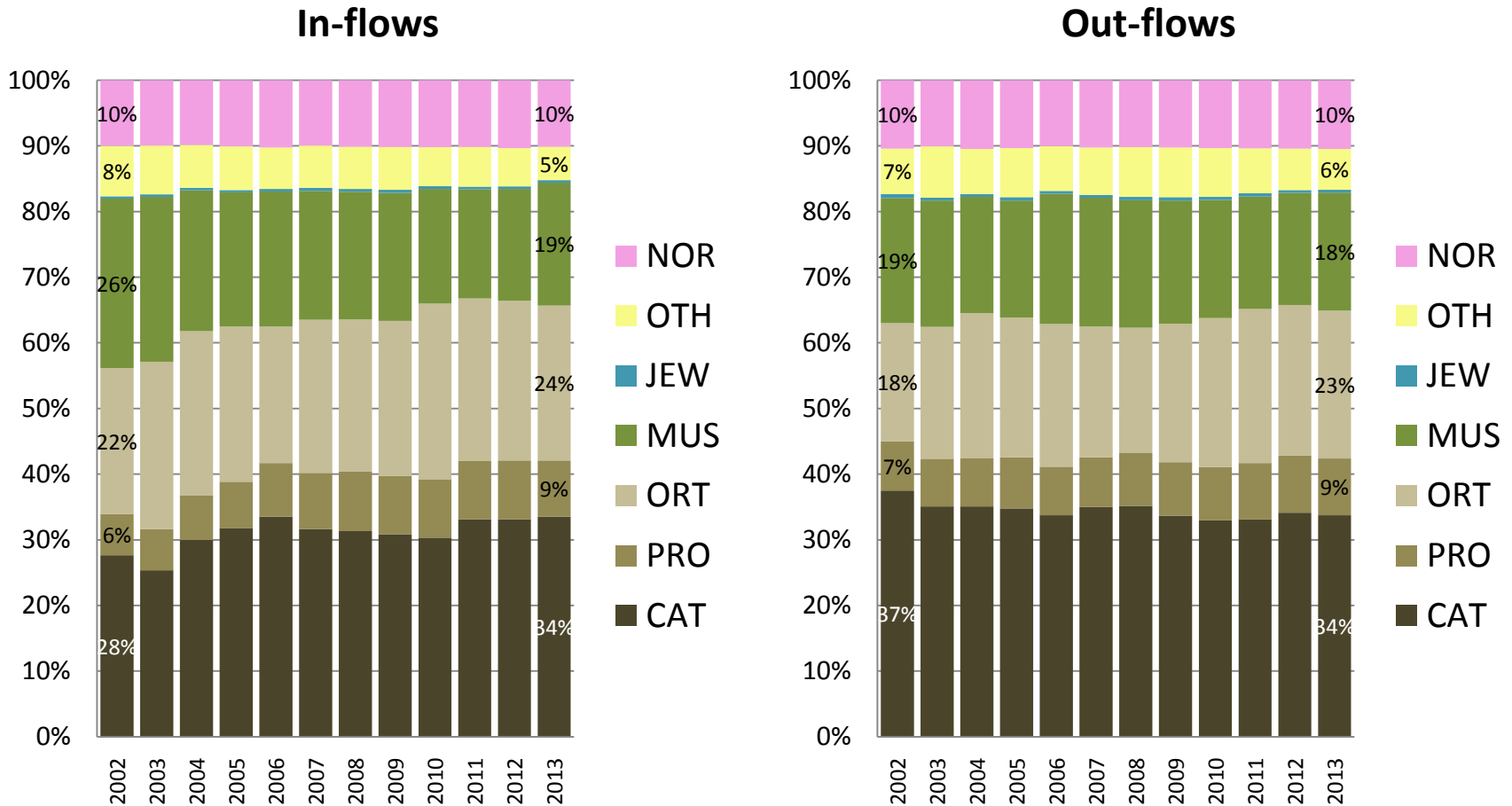
Internal flows to Vienna by religion



Source: Author's calculation based on Statistics Austria and World Religion Database

Note: CAT = Catholics, PRO = Protestants, ORT = Orthodox, MUS = Muslims, JEW = Jews, OTH = Others, NOR = No religion

International flows to Vienna by religion



Source: Author's calculation based on Statistics Austria and World Religion Database

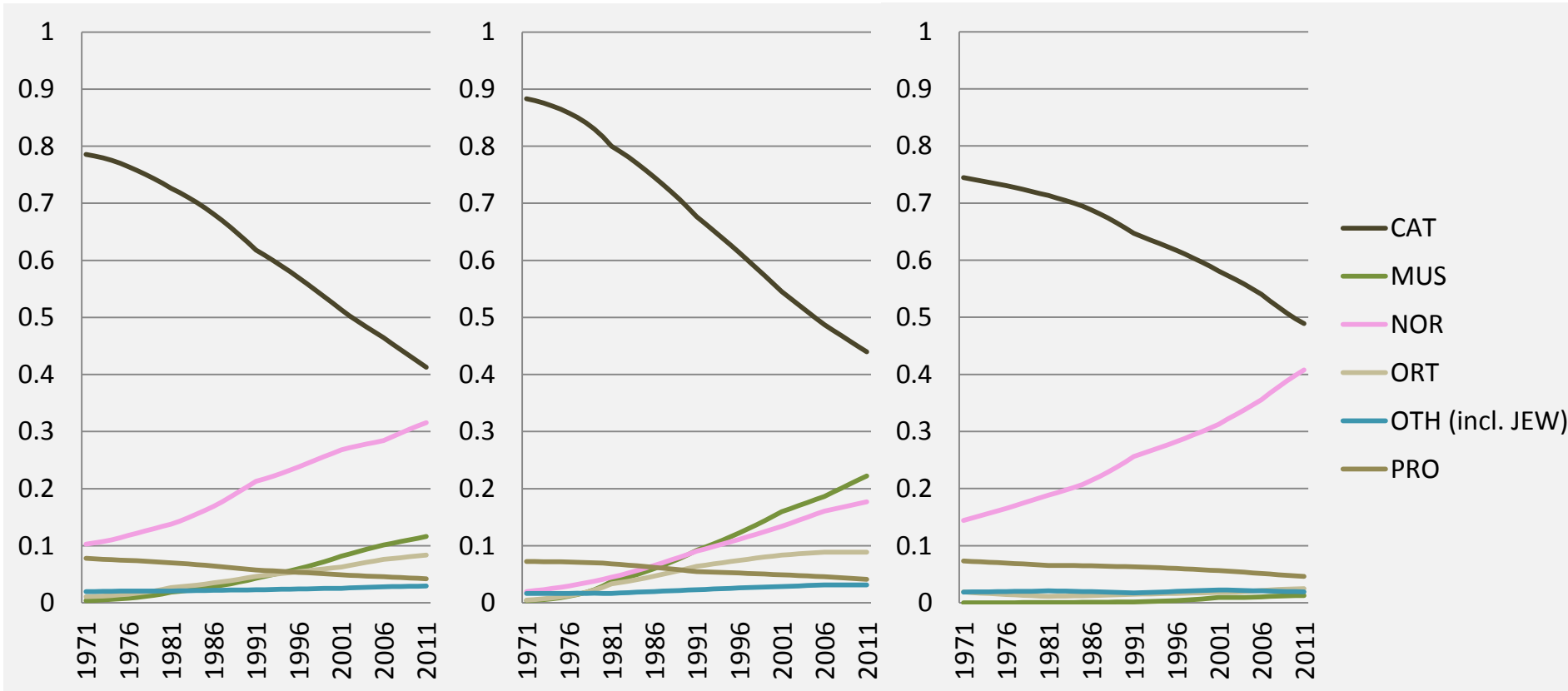
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Share (in %) of the population by religion and age groups (Total, 0-14, 65+)

Total population

Population 0-14

Population 65+



Source: Author's calculation

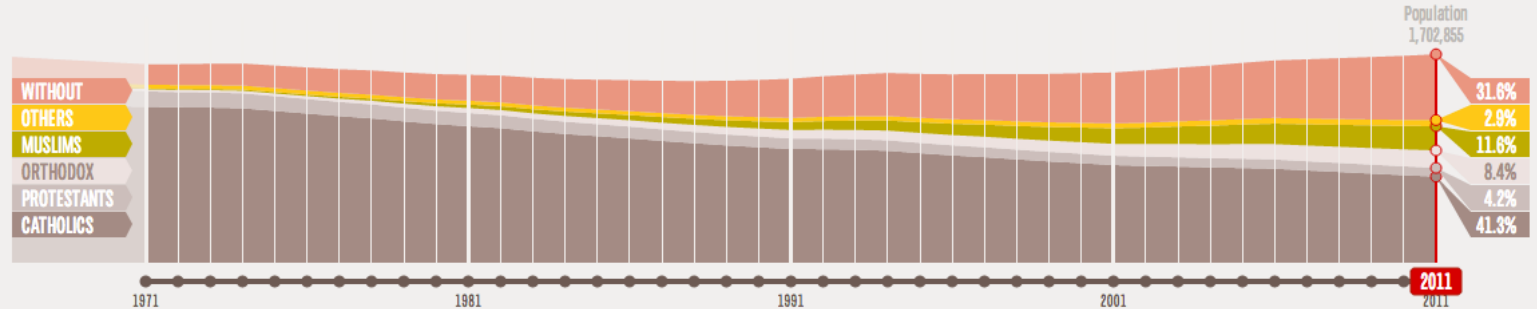
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Conclusion and Outlook

- The soft revolution: Main driving forces of religious change in the past have been secularization (1) and migration (2)
- Present trend: EU composition of migration and saturation of secularization
- Uncertainty about the future – momentum but mostly unpredictable change.
- Other forces at stake: Fertility, religious exogamy, transmission to children.

WIREL online data visualization

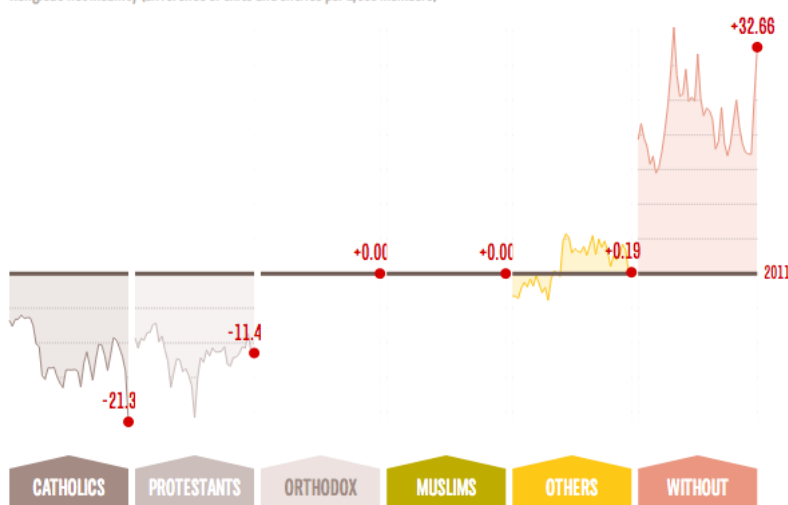
Increasing religious diversity in Vienna, 1971-2011



Forces shaping the religious composition

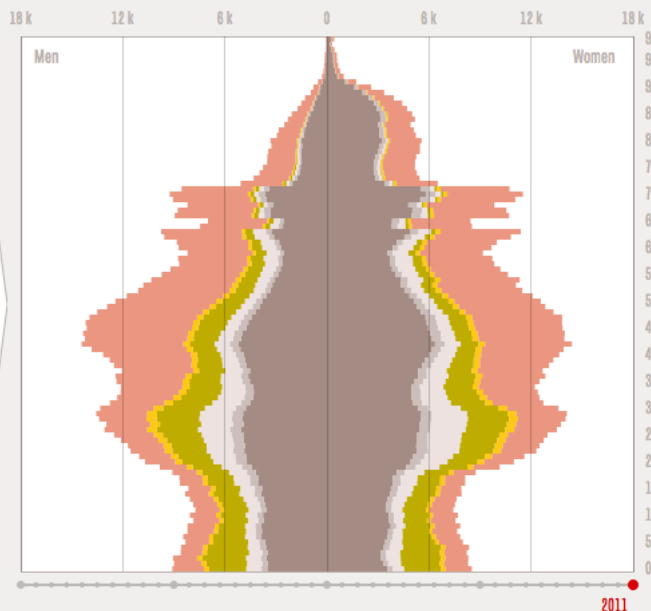
SECULARISATION MIGRATION FERTILITY MARRIAGE

WIREL online data visualization



Religious net mobility

Population by age, sex and religion



Source: www.wirel-project.at/dataviz