




Fertility Differentials by Religious Denomination in Vienna

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future religious prospects in Vienna 1950-2050"
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Wittgenstein Centre
FOR DEMOGRAPHY AND
GLOBAL HUMAN CAPITAL

Introduction

ISSUES, TOPICS

- Time trends in differential births & fertility behaviour by religious denomination
- The intersection of influences of migration, religion and education
- The influence of changing religious composition of women on fertility dynamics in Vienna
- Projecting future trends
- Going beyond fertility: Using birth data to reconstruct population by religion & country of birth?

Dimensions of analysis

Demographic & socio-economic

Age, sex (*women*), religious denomination, achieved education, country of origin, marital status, period, cohort

Spatial

Vienna, Austria, (*district level within Vienna???*)

Births & fertility indicators

Simple & basic: % births by denomination, % non-marital births, birth order distribution, mean birth order

Conventional: Period TFR, mean age at childbearing, age-specific fertility rates, cumulated cohort fertility by age, completed fertility

Sophisticated: Parity progression ratios, PAP, birth rates by parity & duration from previous birth (*depending on feasibility & data availability*)

DATA

Data on births & fertility

- Vital statistics data on births (Statistics Austria, individual data)
- Census data: children ever born
- Surveys: *Microcensus 1986-2006???*

Data on exposure (population)

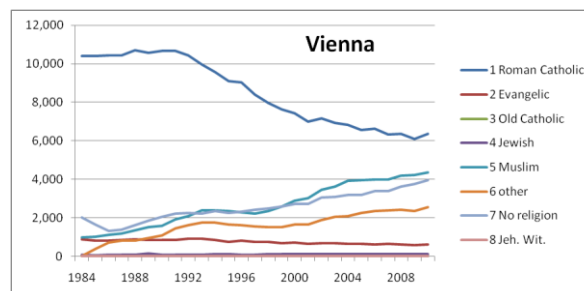
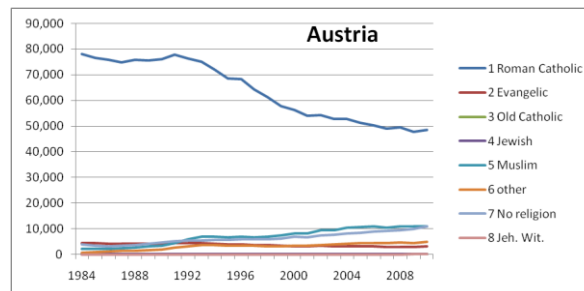
- Statistics Austria: Population by age, sex, country of birth
- Census: Population by age, sex, religious denomination, level of education and country of birth (*IPUMS, cross-tabulations from Statistics Austria*)
- *?? Church data on population by age and religious denomination?*
- Other sources & estimates done within WIREL (*inter-censal estimates and the like*)

Vital statistics data on births in Austria:

- Year of birth (1984-2010)
- Bundesland (9 = Wien)
- Demographic variables (vitality, age of mother, birth order, birth interval...)
- Education of mother
- Country of birth of mother (1984-2007 = Austria/other; 2008+ = ISO-3 country code)
- Religion of mother:
 - 1 = Roman Catholic
 - 2 = Evangelic
 - 3 = Old Catholic
 - 4 = Jewish
 - 5 = Muslim
 - 6 = other ("sonstige gesetzlich anerkannte ...")
 - 7 = No religion („keine Eintragung, unbekannt, ohne Bekenntnis“)
 - 8 = Jehovah's Witnesses (from 2009)



Births in Austria and in Vienna by religion of mother, 1984-2010



Births in Vienna by religion and country of birth of mother, 2010

| 1 | Roman Catholic | 2 | Evangelic | 4 | Jewish | 5 | Muslim | 6 | other | 7 | No religion |
|-------|----------------|-----|-------------|-----|------------|-------|-------------|-------|-----------|-------|-------------|
| 6,350 | Total | 608 | Total | 113 | Total | 4,346 | Total | 2,569 | Total | 3,963 | Total |
| 4,812 | Austria | 366 | Austria | 42 | Austria | 1,660 | Turkey | 971 | Serbia | 2,049 | Austria |
| 381 | Poland | 119 | Germany | 27 | Israel | 606 | Austria | 587 | Austria | 185 | Germany |
| 209 | Bosnia | 29 | Romania | 10 | Uzbekistan | 278 | Russia | 224 | Romania | 171 | Romania |
| 135 | Germany | 12 | Hungary | 7 | Ukraine | 274 | Bosnia | 120 | Bosnia | 169 | Poland |
| 113 | Philippines | 10 | Slovakia | 4 | Russia | 238 | Kosovo | 110 | Bulgaria | 133 | China |
| 111 | Slovakia | 7 | Switzerland | 4 | Tajikistan | 221 | Macedonia | 86 | Russia | 127 | Slovakia |
| 66 | Croatia | 5 | Sweden | 4 | USA | 165 | Egypt | 68 | Ukraine | 122 | India |
| 61 | Hungary | 4 | China | 3 | Belgium | 127 | Afghanistan | 45 | Croatia | 97 | Nigeria |
| 39 | Italy | 4 | Nigeria | 2 | France | 89 | Serbia | 31 | Macedonia | 74 | Hungary |
| 39 | Romania | 3 | Brazil | 2 | Germany | 78 | Tunisia | 30 | Thailand | 63 | Czech Rep. |
| 36 | Kosovo | 3 | Finland | 2 | Hungary | 62 | Pakistan | 28 | Egypt | 60 | Serbia |
| 31 | Czech Rep. | 3 | Ghana | 1 | Australia | 59 | Bangladesh | 28 | Germany | 53 | Bosnia |
| 28 | India | 3 | Iran | 1 | Canada | 59 | Iran | 27 | China | 45 | Philippines |
| 23 | France | 3 | Kazakhstan | 1 | Romania | 56 | Iraq | 19 | Georgia | 32 | UK |

- “Other” & “no religion / unknown” problematic categories mixing different groups
- Important categories missing in cross-classification (esp. Christian Orthodox)

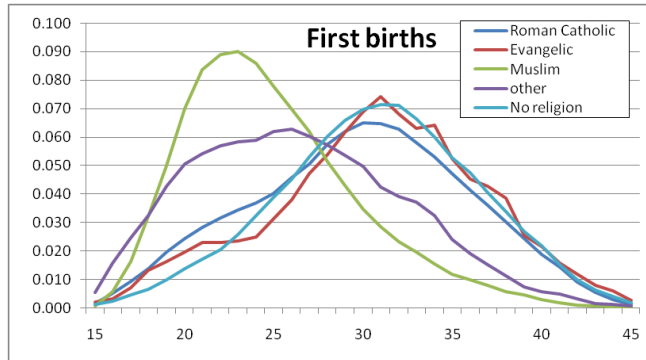


Selected results from vital statistics data on births, Vienna, 2010

| | Roman Catholic | Evangelic | Old Catholic | Jewish | Muslim | other | No religion | Jeh. Wit. | Total |
|----------------------|----------------|-----------|--------------|--------|--------|-------|-------------|-----------|-------|
| Number of births | 6350 | 608 | 18 | 113 | 4346 | 2569 | 3963 | 22 | 17989 |
| % mother born in AUT | 76% | 60% | 94% | 37% | 14% | 23% | 52% | 45% | 47% |
| % non-marital | 42% | 42% | 56% | 9% | 10% | 30% | 42% | 0% | 32% |
| % lowest education | 11% | 10% | 13% | 7% | 57% | 38% | 13% | 14% | 26% |
| mean birth order | 1.7 | 1.7 | 1.6 | 2.5 | 2.2 | 1.8 | 1.6 | 1.7 | 1.8 |
| % first births | 54% | 50% | 56% | 32% | 36% | 47% | 58% | 41% | 49% |
| % birth order3+ | 13% | 13% | 11% | 43% | 31% | 17% | 11% | 9% | 18% |



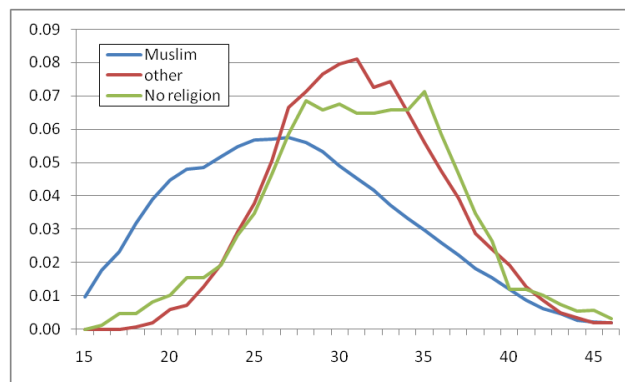
Selected results from vital statistics data on births – timing of births, Vienna, 2010
 (based on absolute numbers of births by age)



| | Roman Catholic | Evangelic | Old Catholic | Jewish | Muslim | other | No religion | Jeh. Wit. | Total |
|---------------------|----------------|-----------|--------------|--------|--------|-------|-------------|-----------|-------|
| Mean age of mother | 31.2 | 32.1 | 31.5 | 29.5 | 28.0 | 28.1 | 31.7 | 30.3 | 30.1 |
| 1st b. % at age <20 | 5% | 4% | 0% | 6% | 8% | 12% | 2% | 0% | 6% |
| ALL b. % at age 35+ | 30% | 37% | 22% | 22% | 14% | 15% | 32% | 23% | 25% |

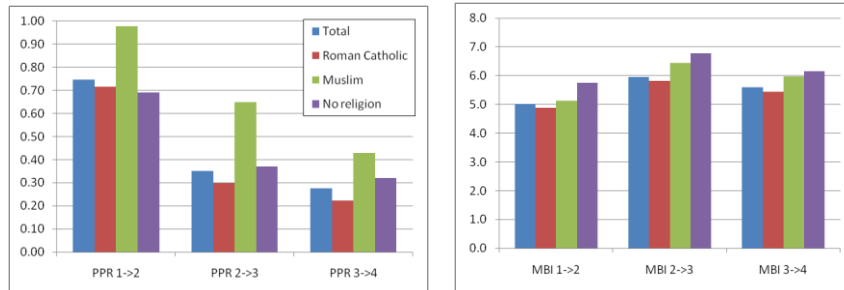


Special case – timing of births of Russian immigrants by religion, Austria, 2008-10



Estimated Parity Progression Ratios and Mean Birth Intervals, Austria, 2010

- PPR: births of second birth order related to the births of first birth order and so on



Migration complicates computing fertility by parity & duration since previous birth: Not all F having a second birth lived in Austria when giving birth to the first child

Also religious denomination & education (& family status) can change between births

Data problems & analytical challenges

Estimating population by religion (& country of birth & education)

- Intercensal estimates
- Post-2001 reconstruction using records on deaths and migration by age & country of origin?

Parity progression ratios & other indicators

- *Partial solution*: Can we link all the birth records in the birth database since 1984 pertaining to individual mothers?

Additional possibilities & options

Can we estimate any fertility indicators for generations 1.5 and 2?

How to compute data for smaller regional units?

Can we link birth database with other databases to obtain additional socio-economic dimensions? (e.g., *the Social security database...*)

How far can we go back in time? (*Births by religion collected from the late 18th century....*)

Can we use birth records to make estimates about female population of reproductive ages?