Muslim Fertility Transitions: From Muslim Majority Countries to Europe & Australia

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Coming Full Circle: Padova (2010–2025)

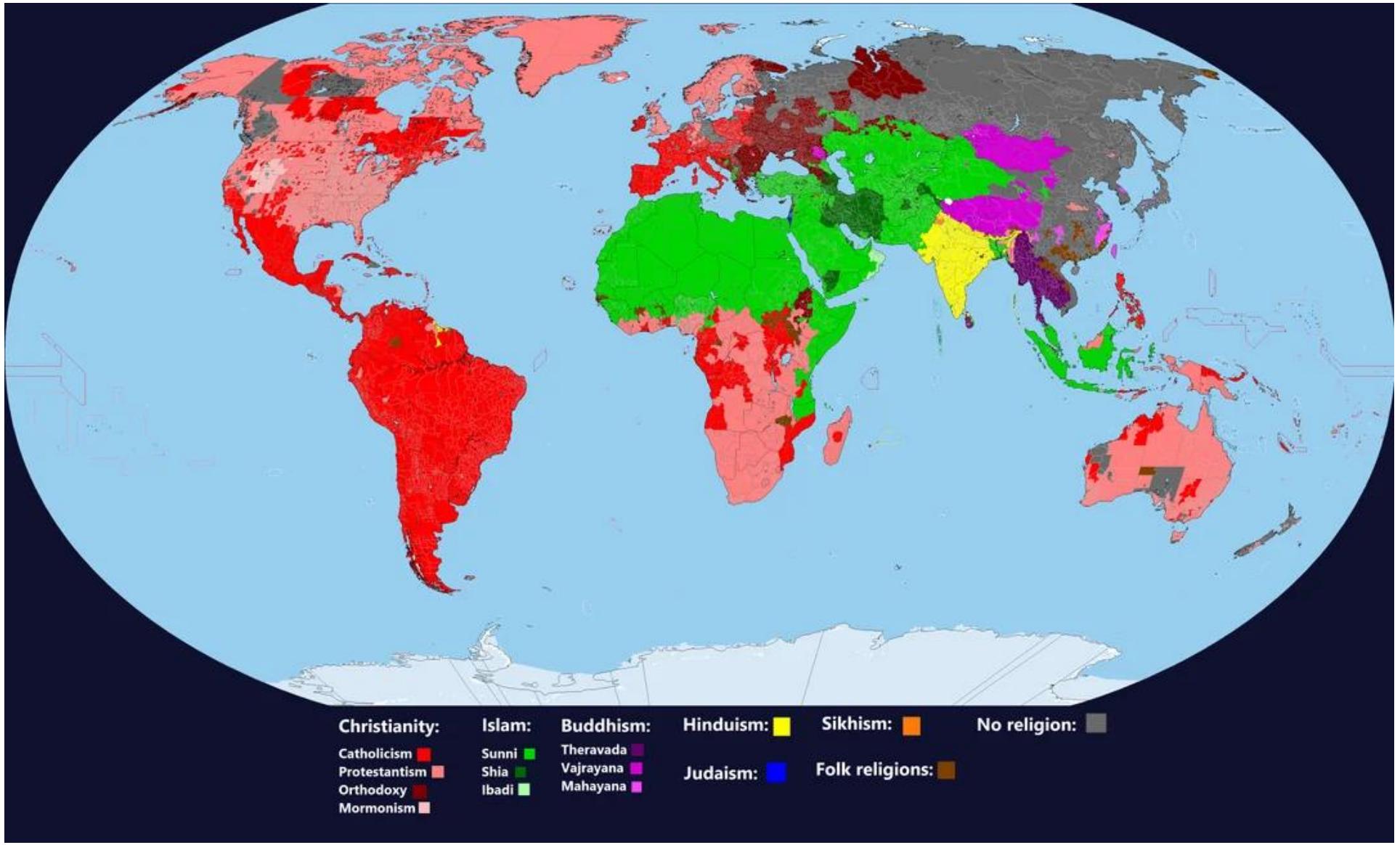
Winter School (2010)

Seminar (2025)

What do we know about …

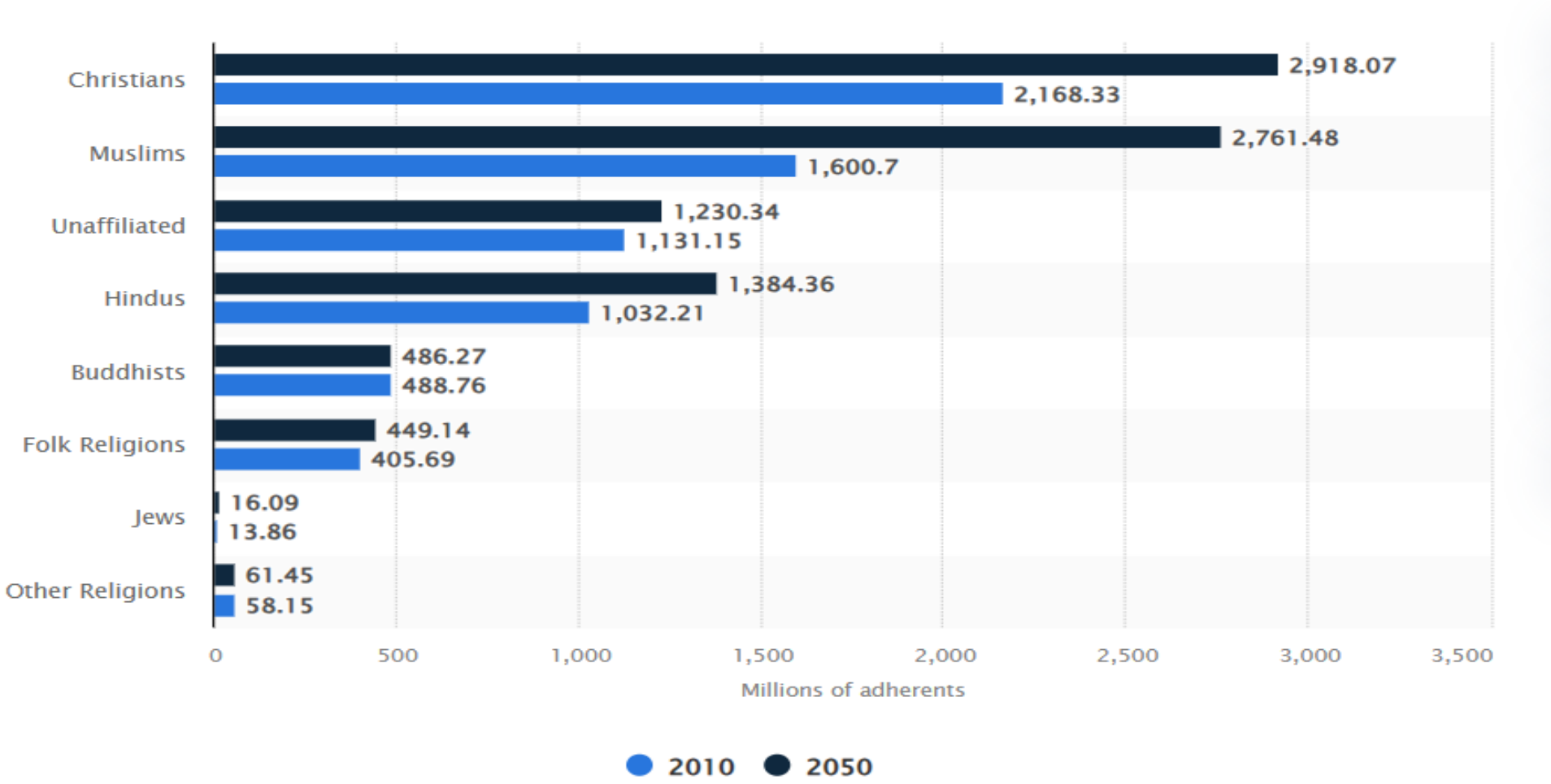
- Muslim demography: Fertility transition in Muslim majority countries
  - Iran's demographic transition
  - Implications for demographic shifts in Muslim countries
- Fertility of Muslim migrants in Europe and Australia
  - Muslim migrants in selected countries in Europe
  - Australia-born Muslims vs foreign-born Muslims in Australia
- Lessons learned and conclusions

Map of World Religions



https://www.vividmaps.com/2015/06/detailed-map-of-worlds-religions.html

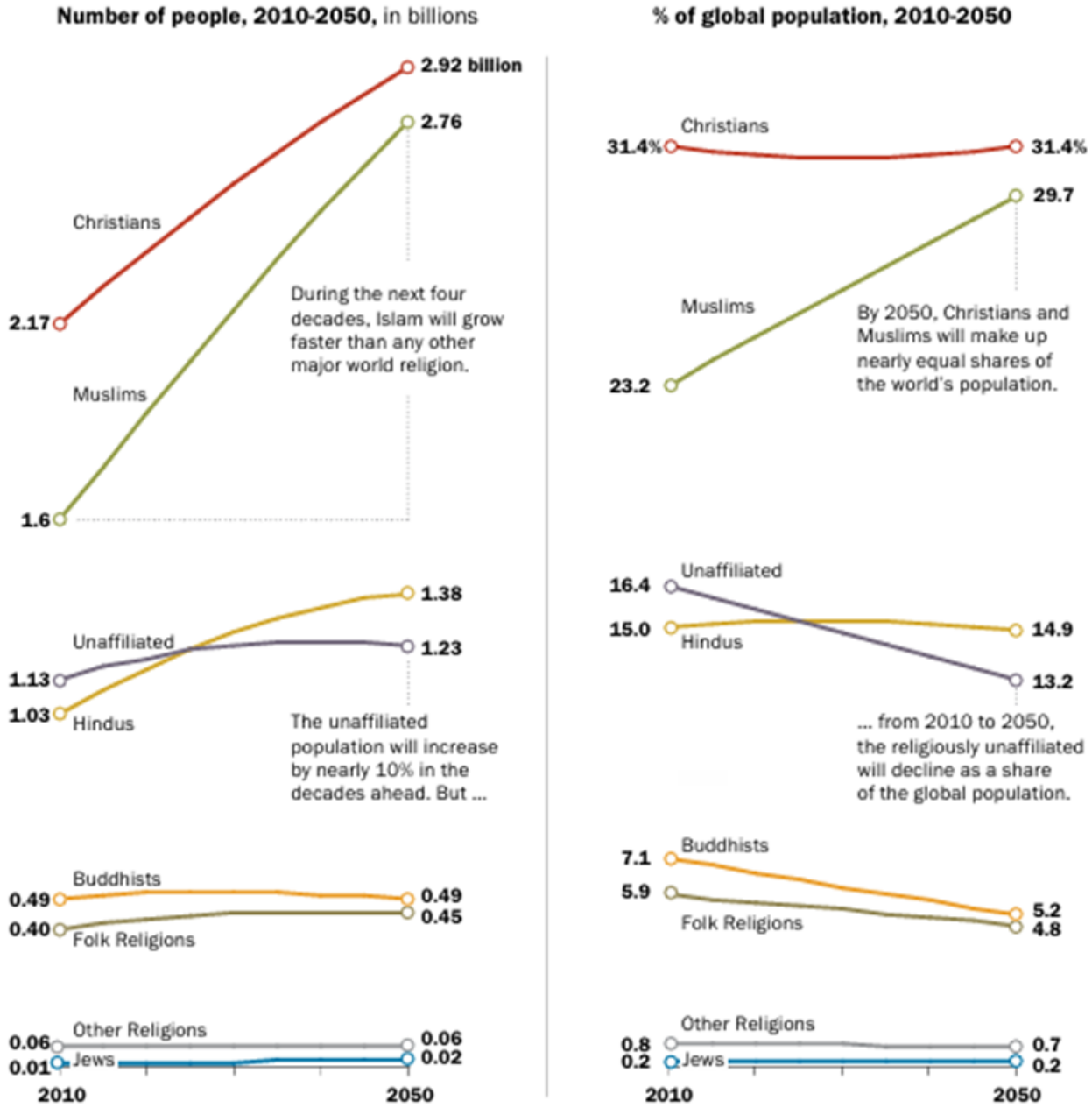
Total worldwide adherents of largest world religions and faiths in 2010 and projected adherents in 2050



https://www.statista.com/statistics/1350917/world-religions-adherents-2010-2050/

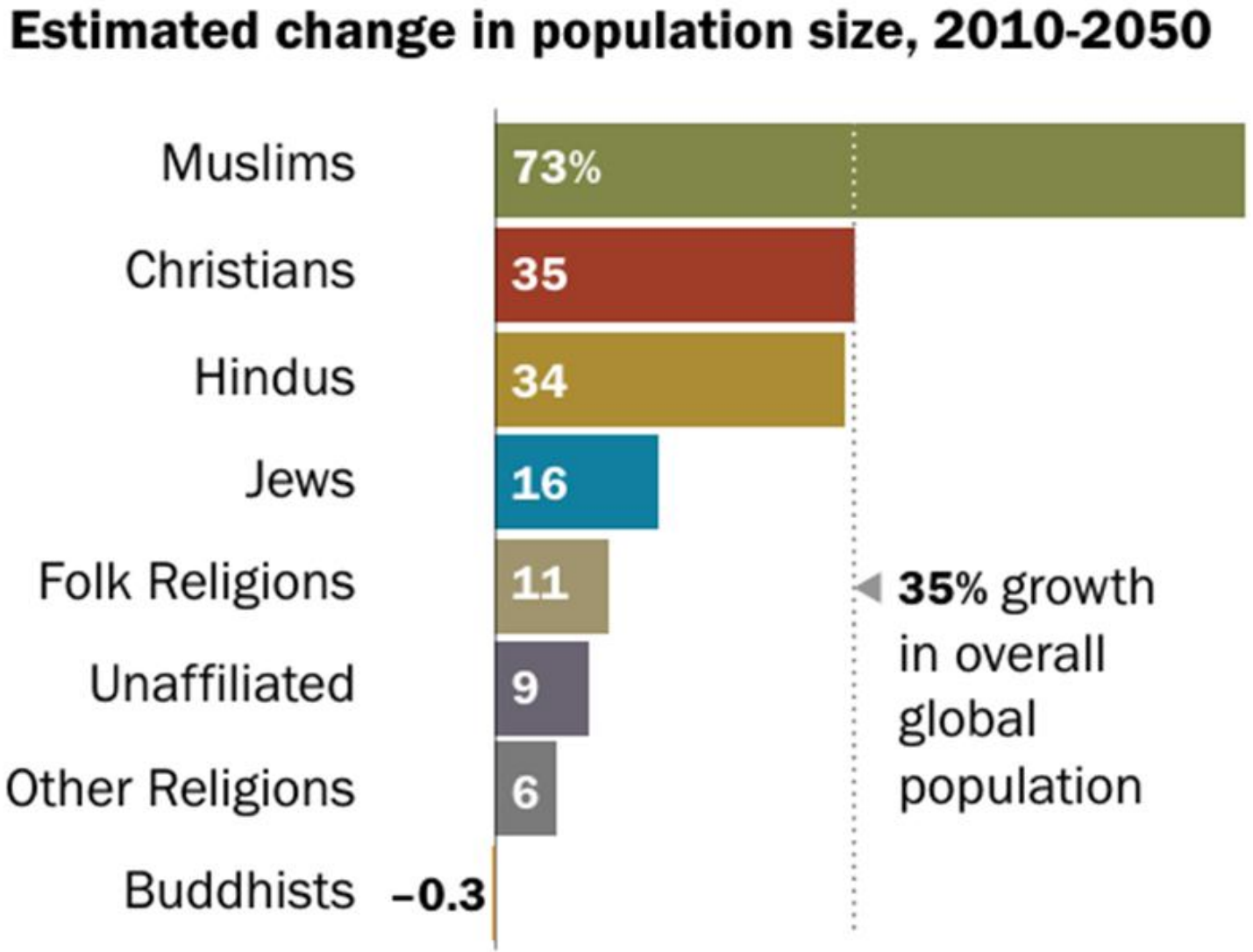
The Future of World Religions: Population Growth Projections, 2010-2050

- **Ref: Pew Research Center, 2015. Available at: www.pewresearch.org.**



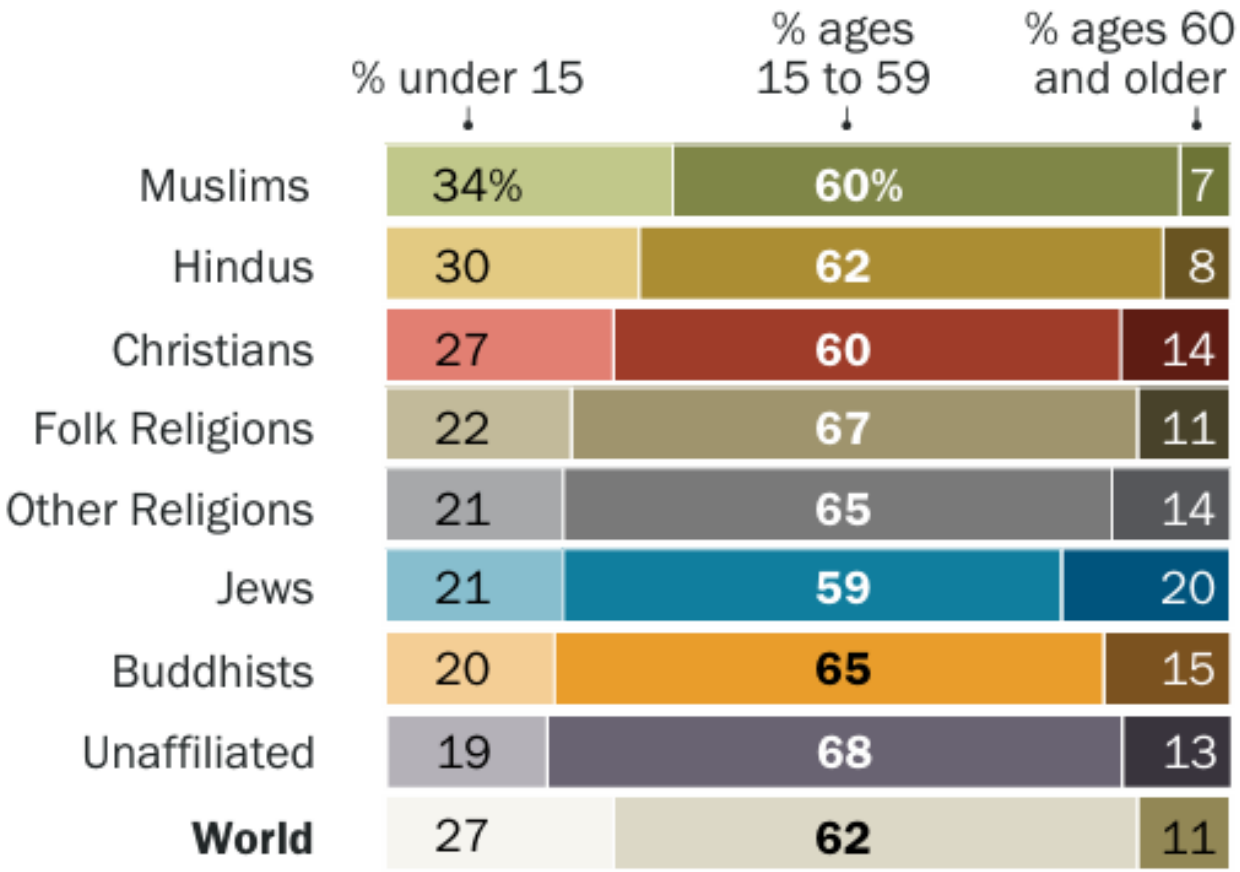
Source: The Future of World Religions: Population Growth Projections, 2010-2050

PEW RESEARCH CENTER



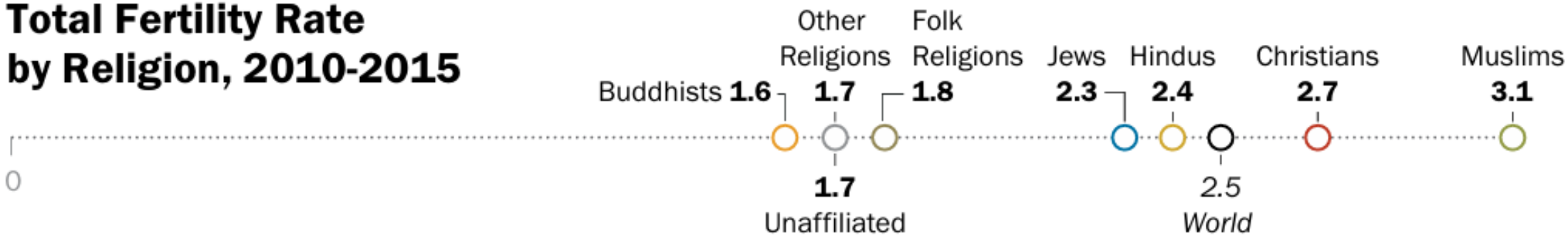
Ref: Pew Research Center, 2015. Available at: www.pewresearch.org.

Age Distribution of Religious Groups, 2010



Ref: Pew Research Center, 2015. Available at: www.pewresearch.org.

Total Fertility Rate by Religion, 2010-2015

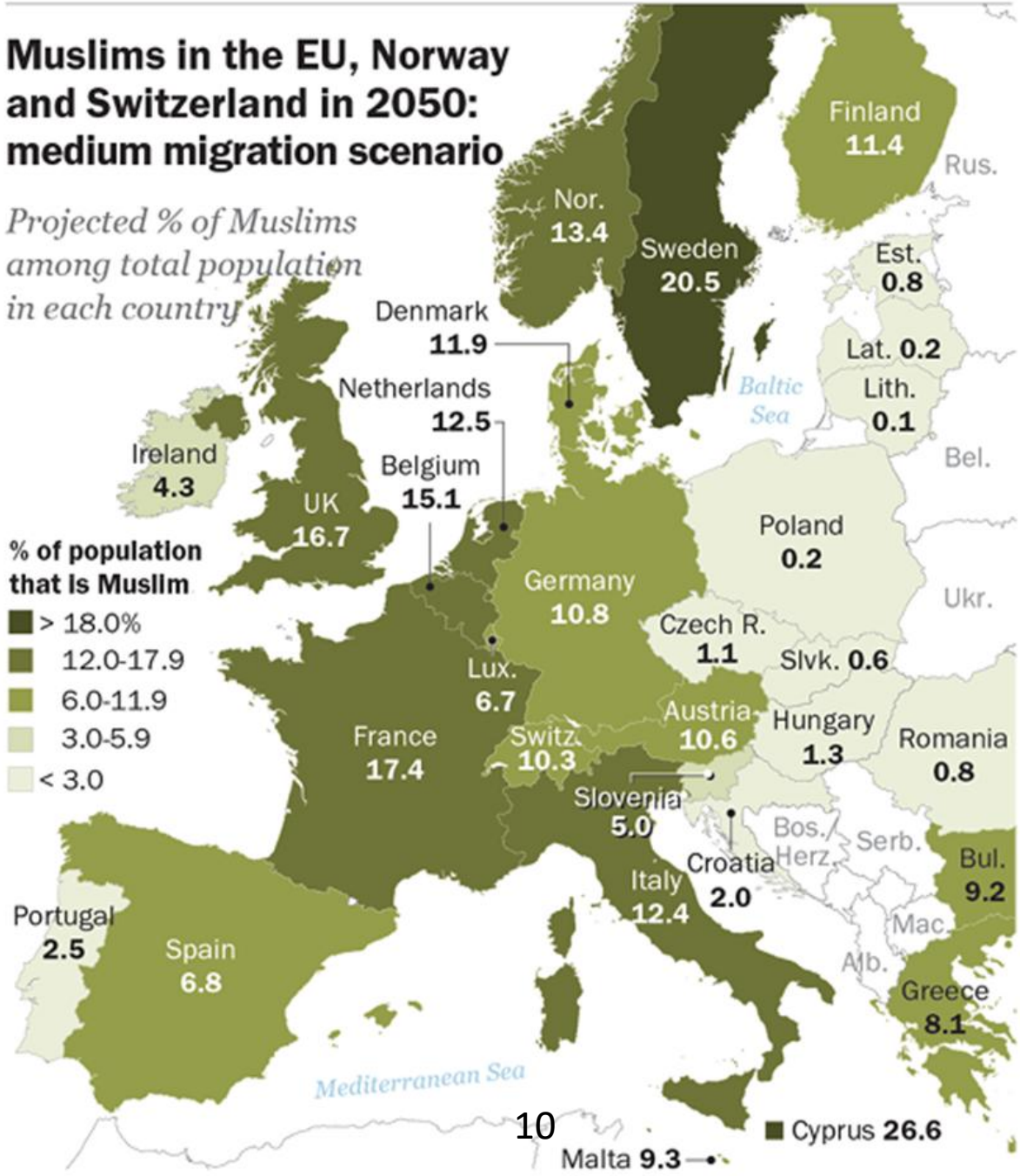


Source: The Future of World Religions: Population Growth Projections, 2010-2050

PEW RESEARCH CENTER

Europe's Growing Muslim Population, 2050

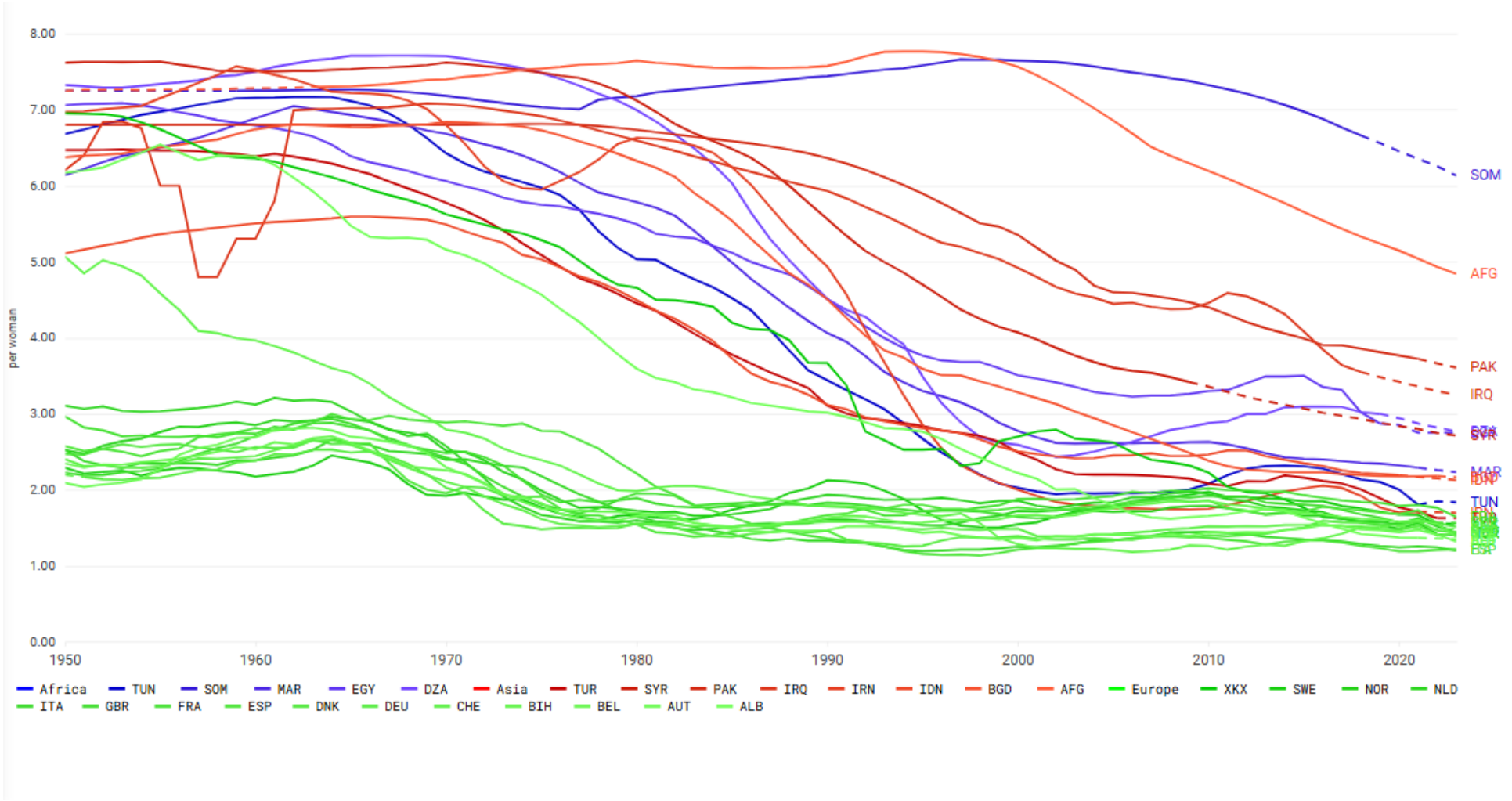
- Ref: Pew Research Center, 2017



Xenophobia and Demographic Misconceptions

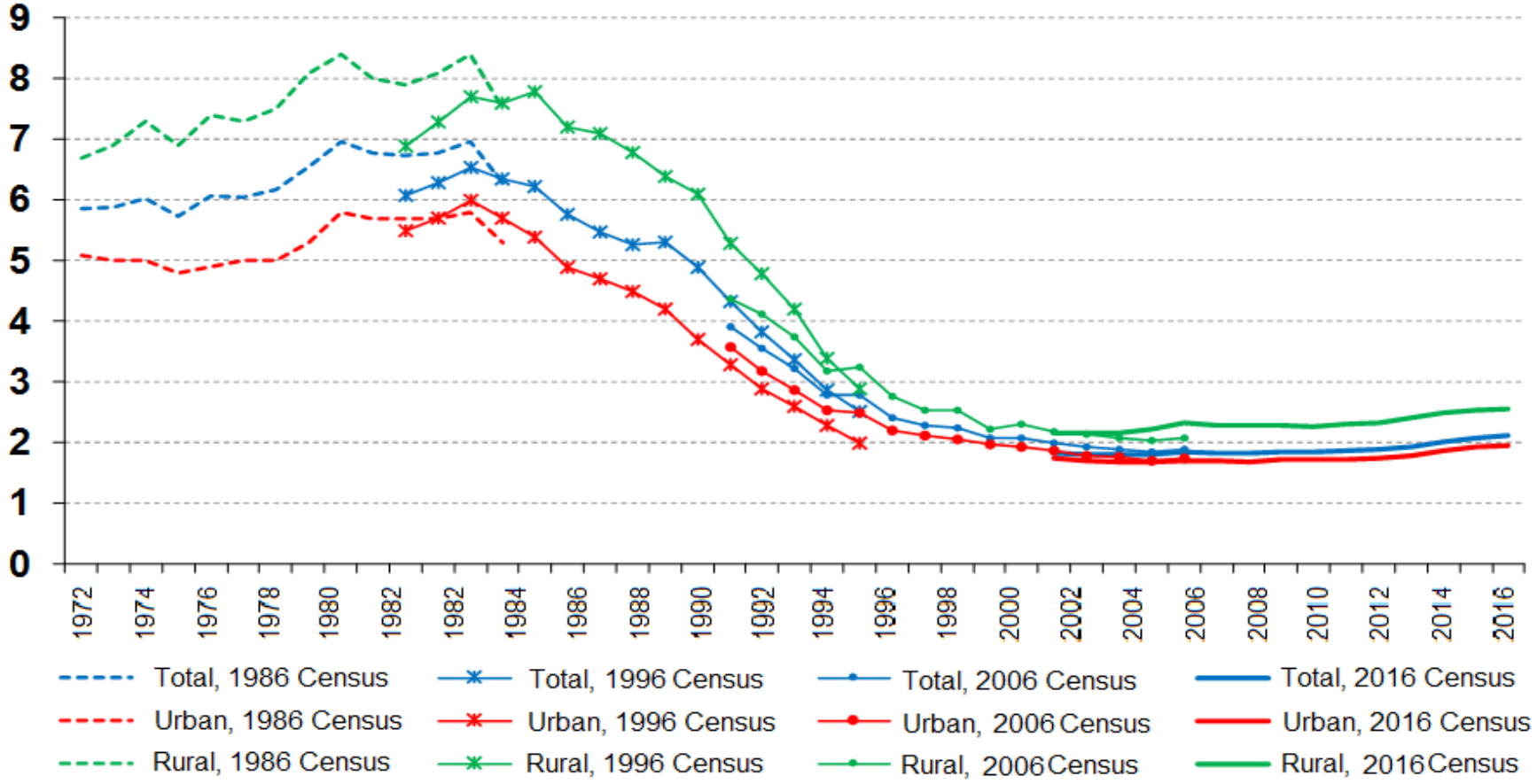
- Public concerns about a perceived "Muslim demographic takeover" often rely on simplistic assumptions (Preljević et al., 2021).
- Anti-Muslim sentiments, sometimes labeled as "Urobia" in public discourse, associate high fertility with cultural and religious determinism.
- Empirical research shows fertility decline among Muslim migrants over time as they integrate socio-economically (Westoff and Frejka, 2007; Tønnessen & Wilson, 2020).
- Need for evidence-based discussion to counter misinformation.

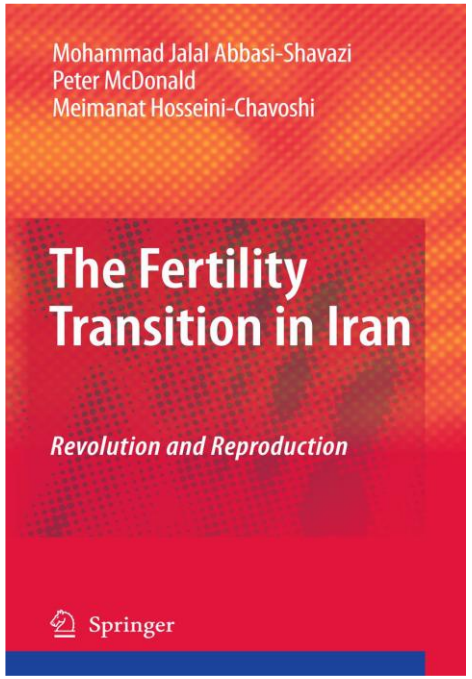
TFR for selected Muslim-majority and European countries, 1950-2023



Data source: United Nations, Population Division (2024). *World Population Prospects: The 2024 Revision.*

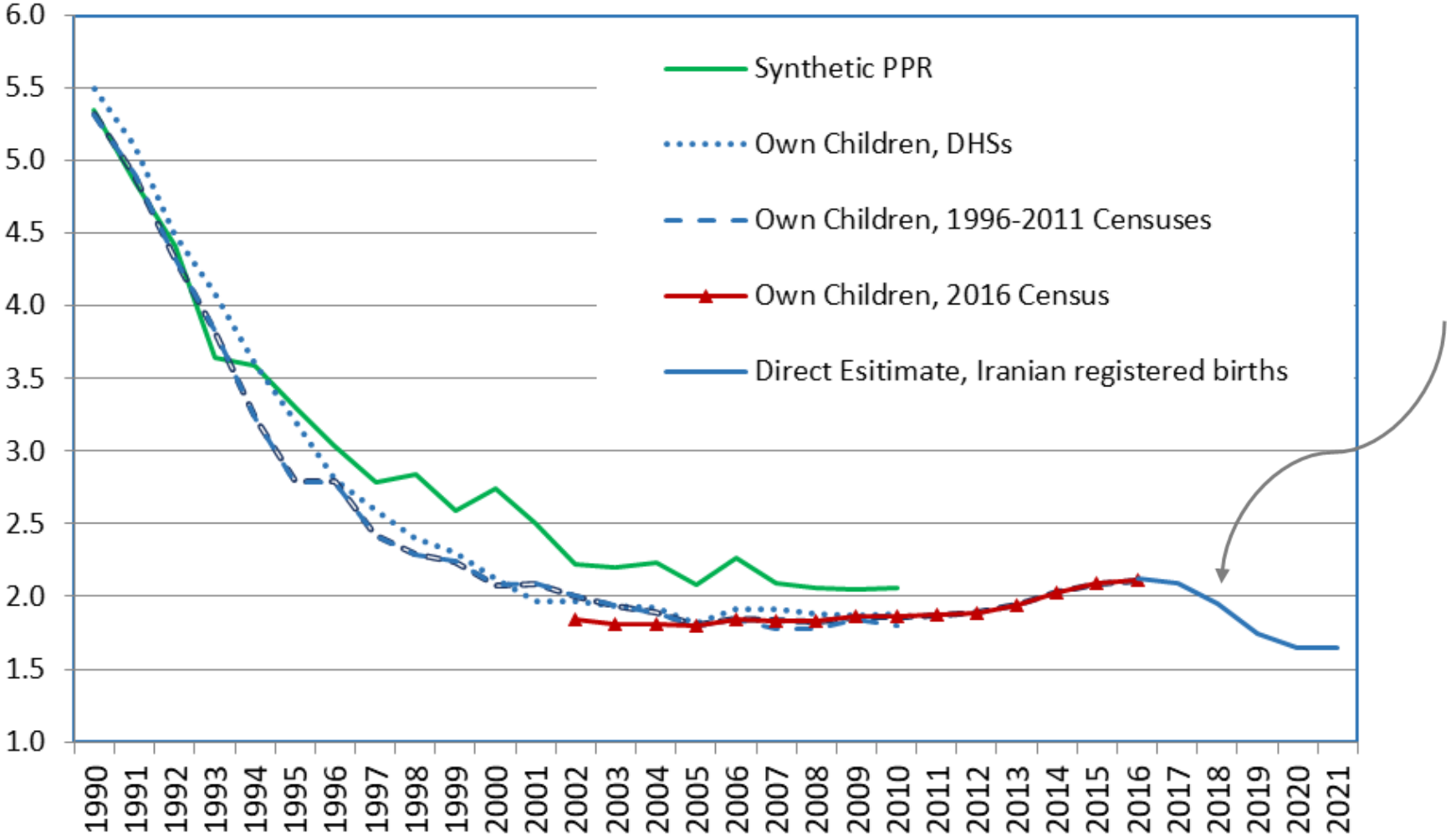
Total Fertility Trends by rural and urban areas in Iran, 1972-2016





Source: Abbasi-Shavazi M. J., M. Hosseini-Chavoshi, 2017, Recent Fertility Trends in Iran: Application of the Own-children Method of Fertility Estimation to the 2016 census, Unpublished Research Report, Statistics Centre of Iran, Tehran.

Estimates of the Total Fertility Rate based on various sources, Iran, 1990-2020

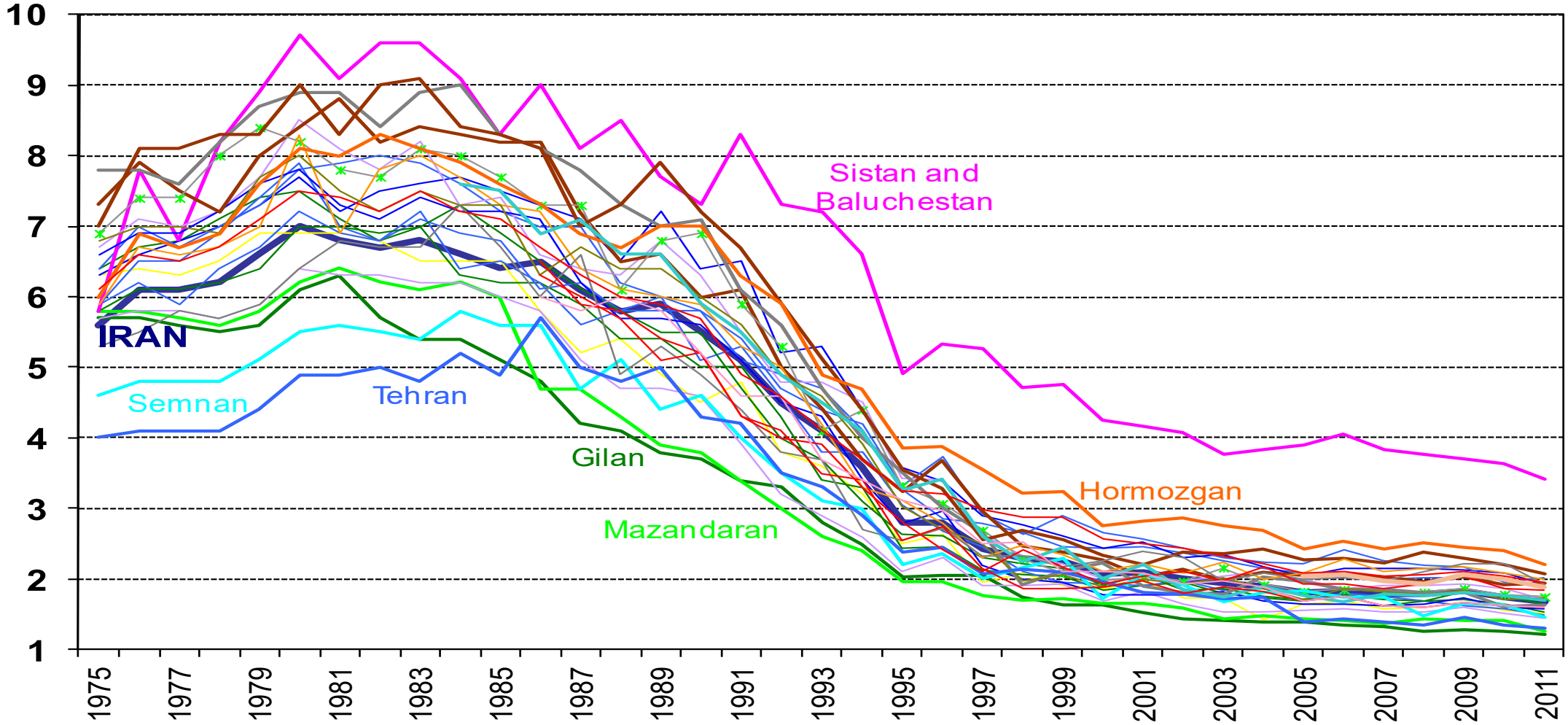


The influence of negative, cross-sectional forces: *severe downturn in the Iranian economy in 2019 following the re-imposition of economic sanctions.*

Ref: Hosseini-Chavoshi, McDonald and Abbasi-Shavazi, 2024

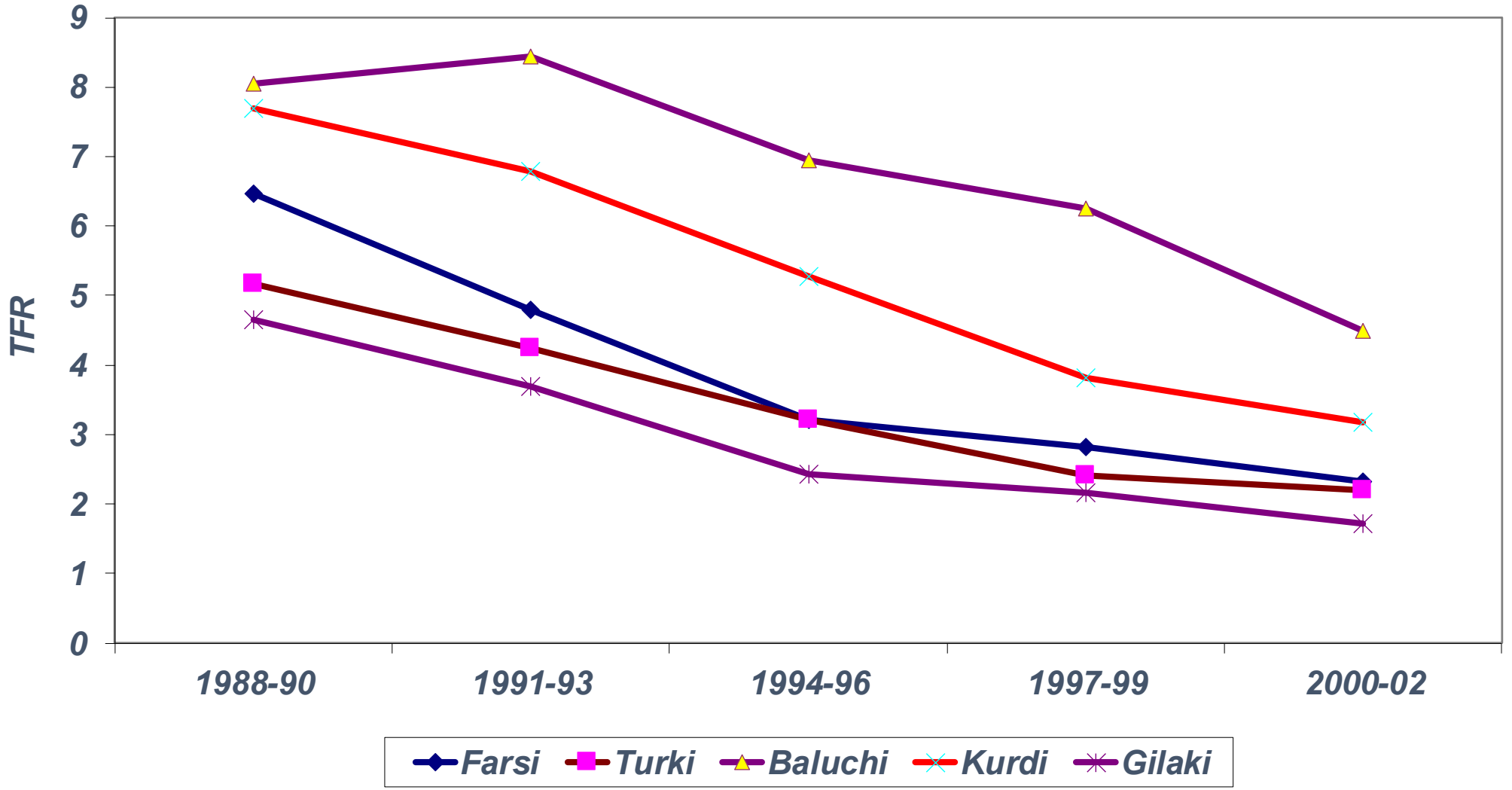
Iran is a multi-ethnic country

Total Fertility Trends by province in Iran, 1972-2011



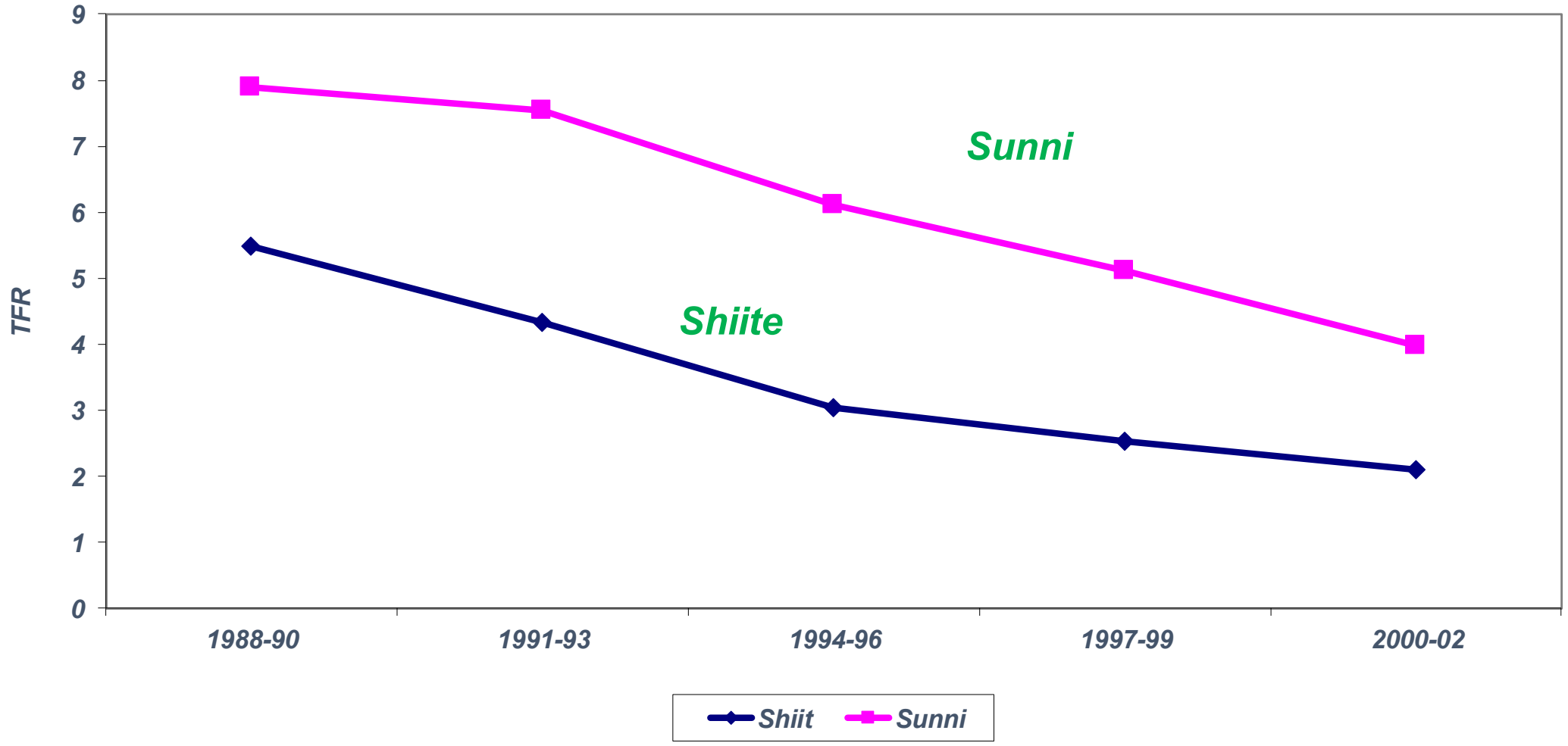
Ref: Abbasi-Shavazi and Hosseini-Chavoshi, 2014

Trend of TFR by language during 1988-90 and 2000-2002, IFTS



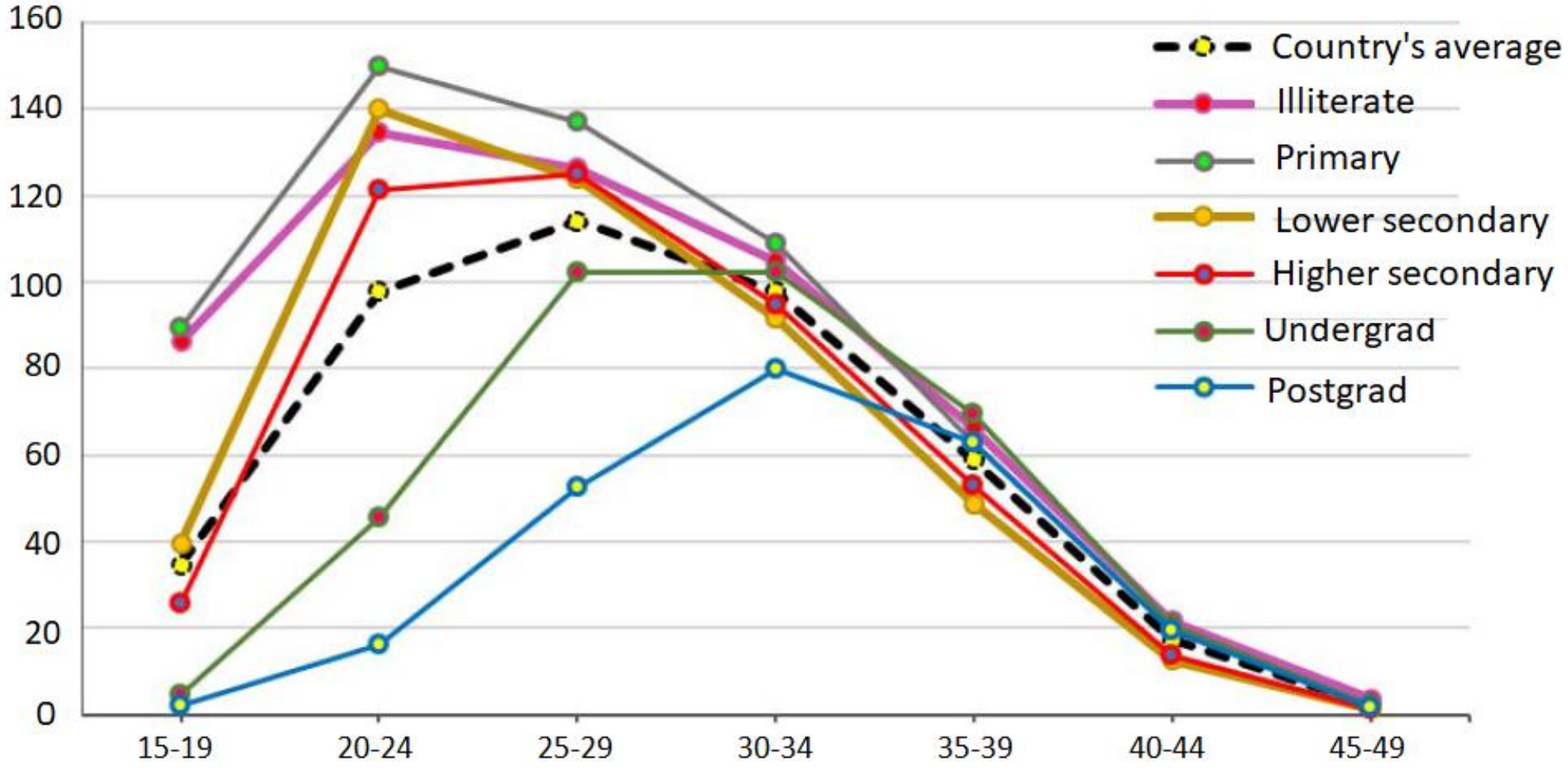
Ref: Abbasi-Shavazi and Hosseini-Chavoshi, 2004

Trend of TFR by sects of religion, IFTS 2002



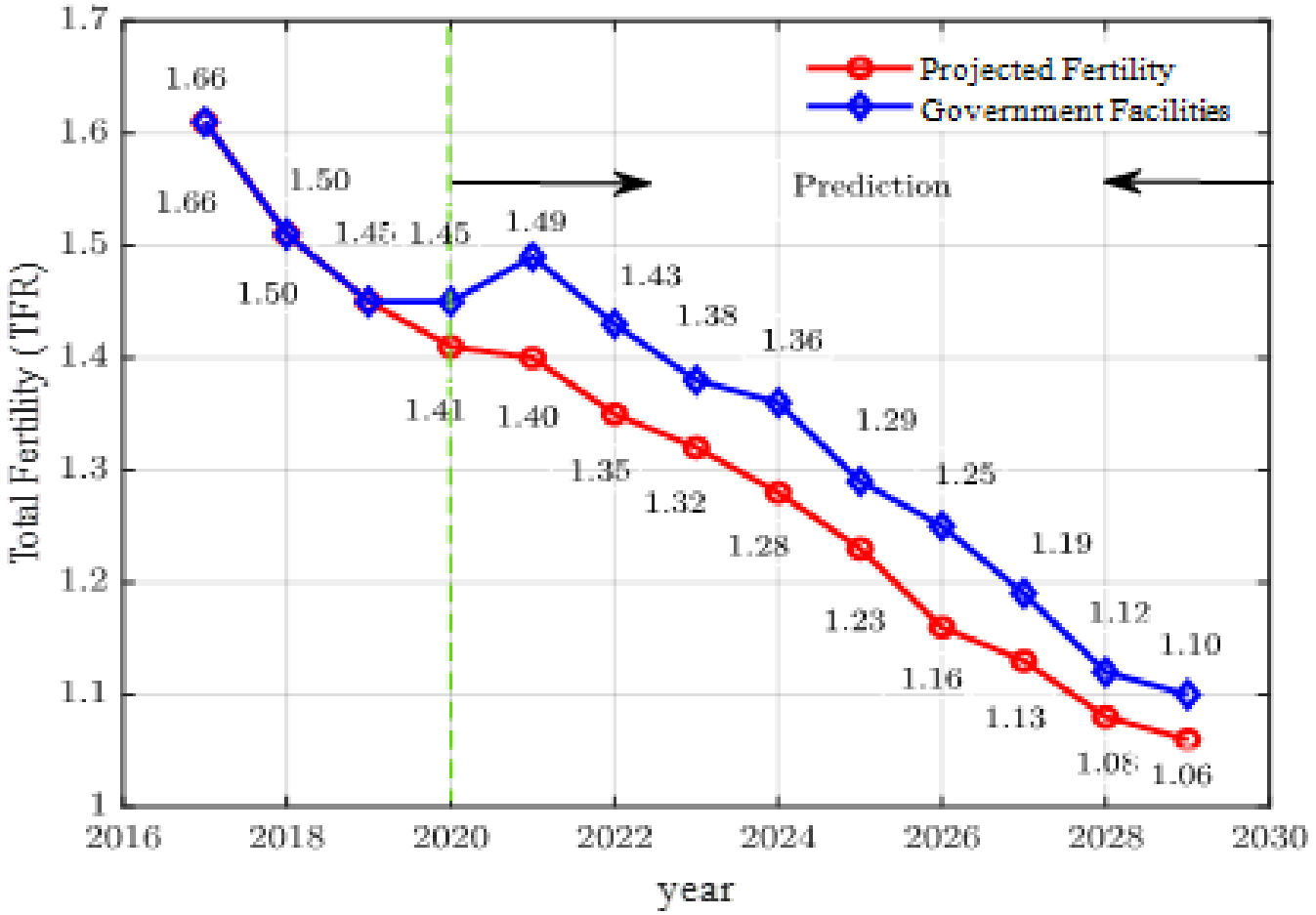
Ref: Abbasi-Shavazi and Hosseini-Chavoshi, 2004

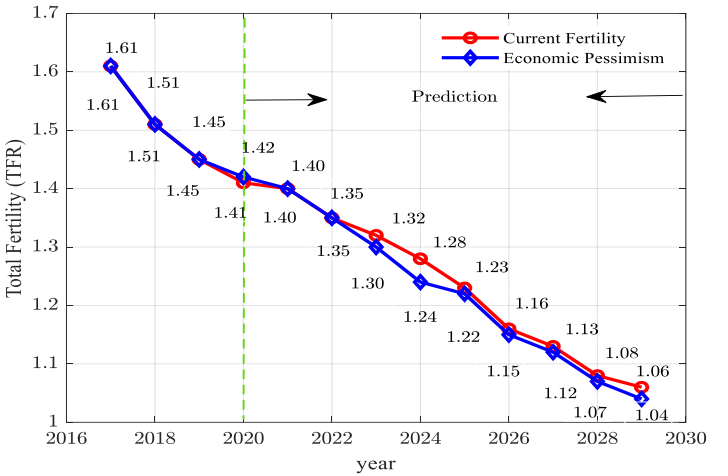
Own children estimate of ASFRs by education level, Iran, 2016

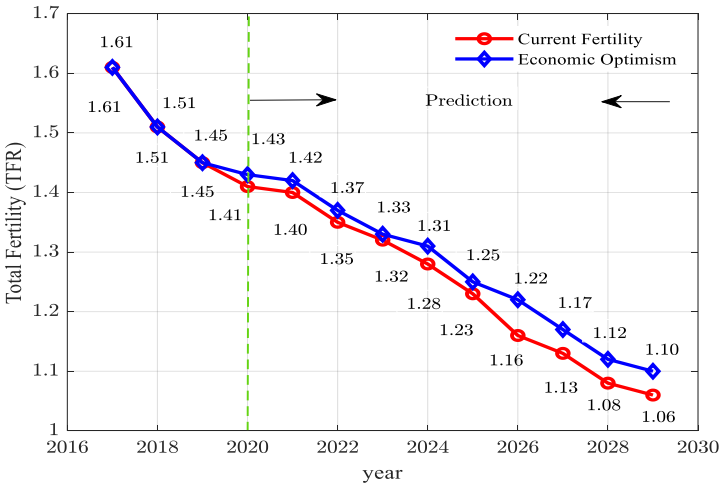


Ref: Hosseini-Chavoshi et al. Forthcoming

Prediction of TFR in Tehran Province, Iran, impacts of government incentives, economic pessimistic and optimistic scenarios, using Multi Agent-Based Modeling

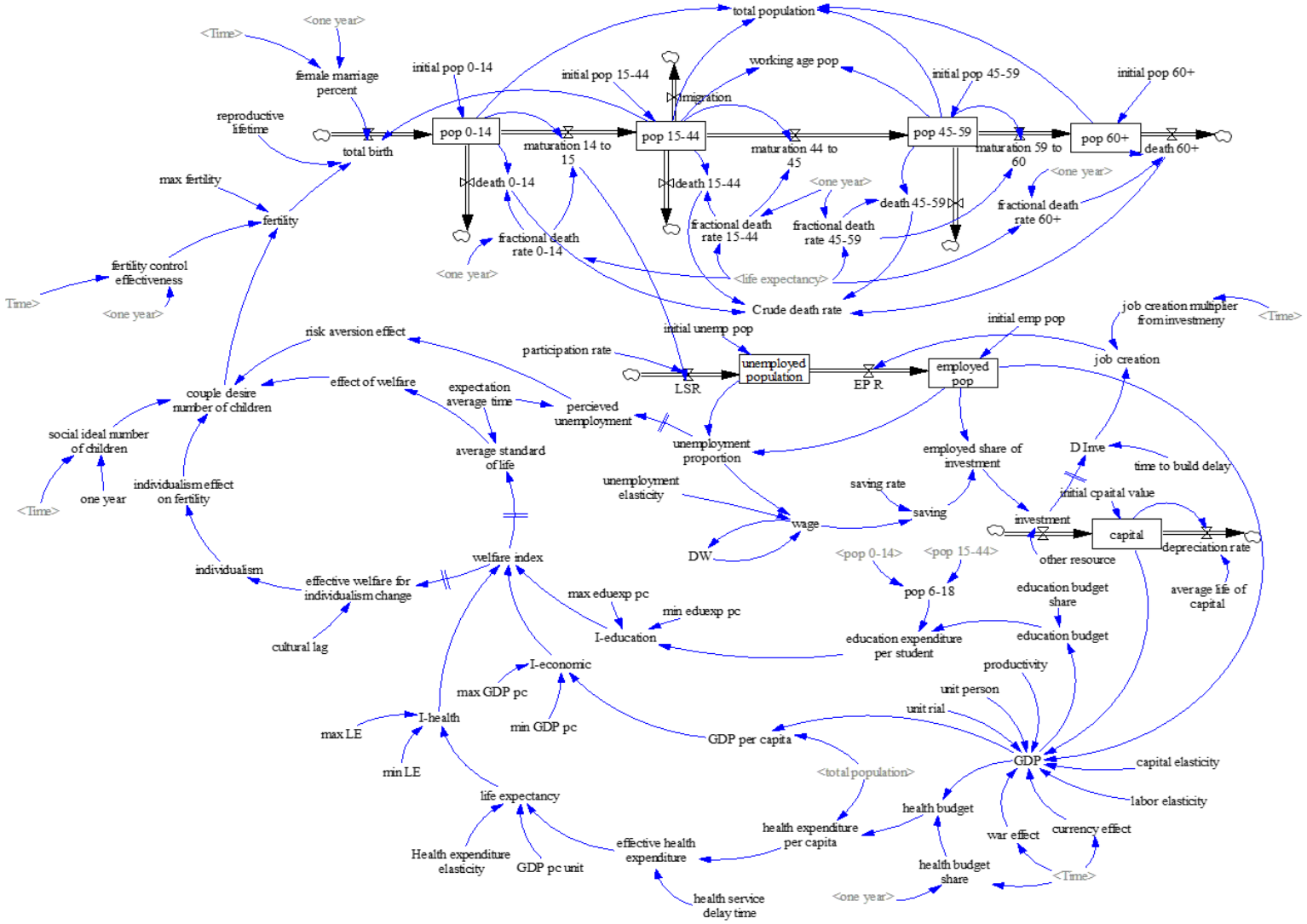






Source: Esmaeili, N., and Abbasi-Shavazi, MJ., 2024, Impact of family policies and economic situation on low fertility in Tehran, Iran: A multi-agent-based modelling, *Demographic Research, 51 (5):* 107–154

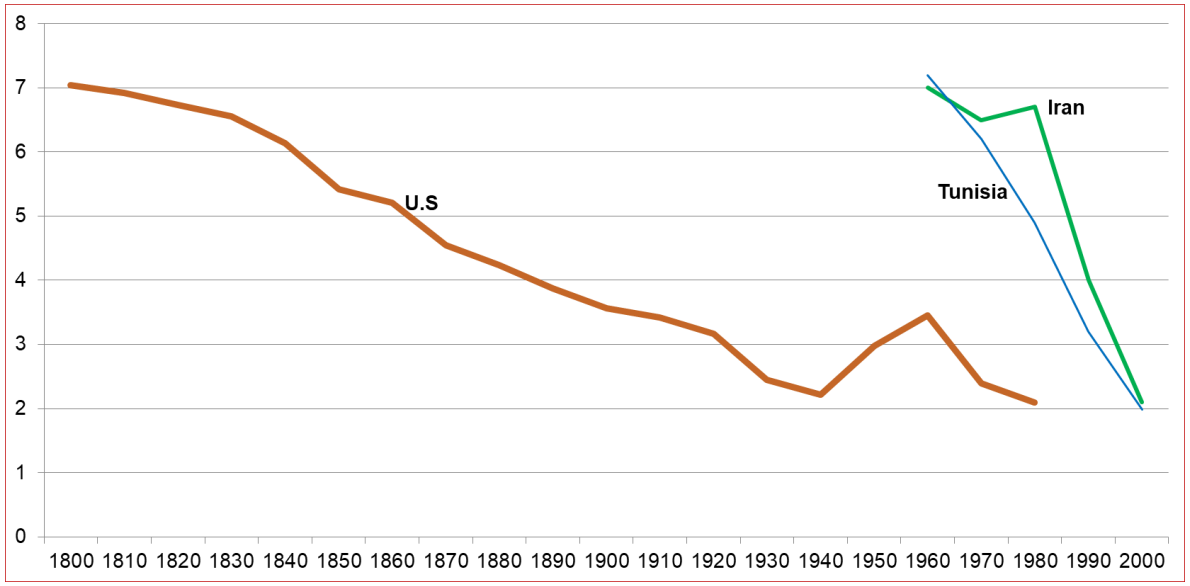
Stock Flow Diagram of the System Dynamic Model for predicting Iran's fertility based on various scenarios



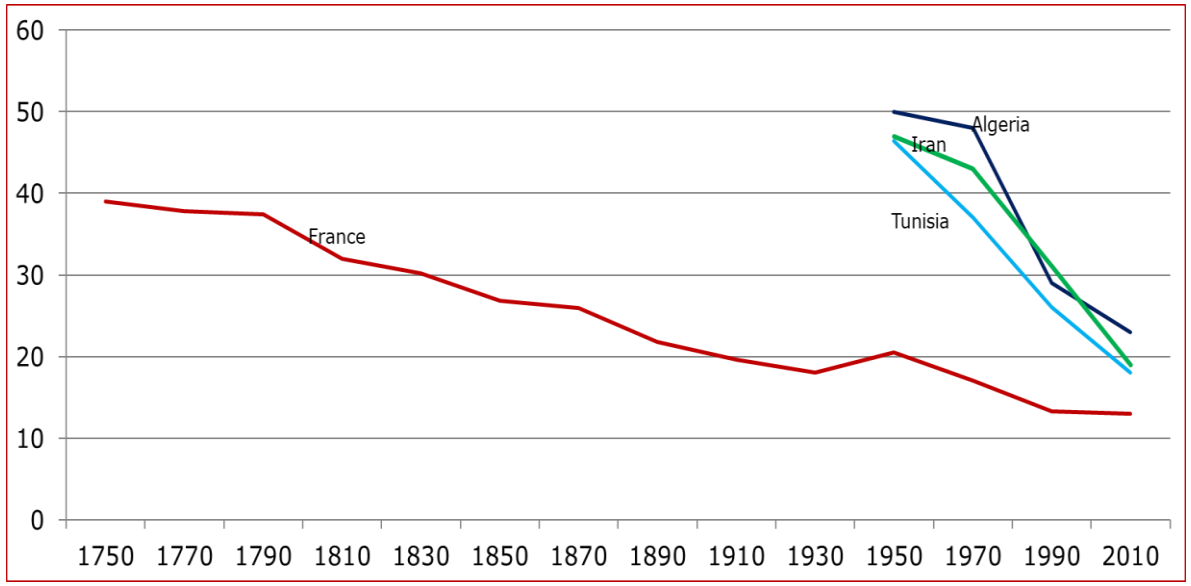
Ref: Kalantari, Azar, Abbasi-Shavazi, Gottschamer, Forum for Social Economics (2025)

Slow vs rapid fertility transitions: France and US vs Iran, Algeria and Tunisia

TFR

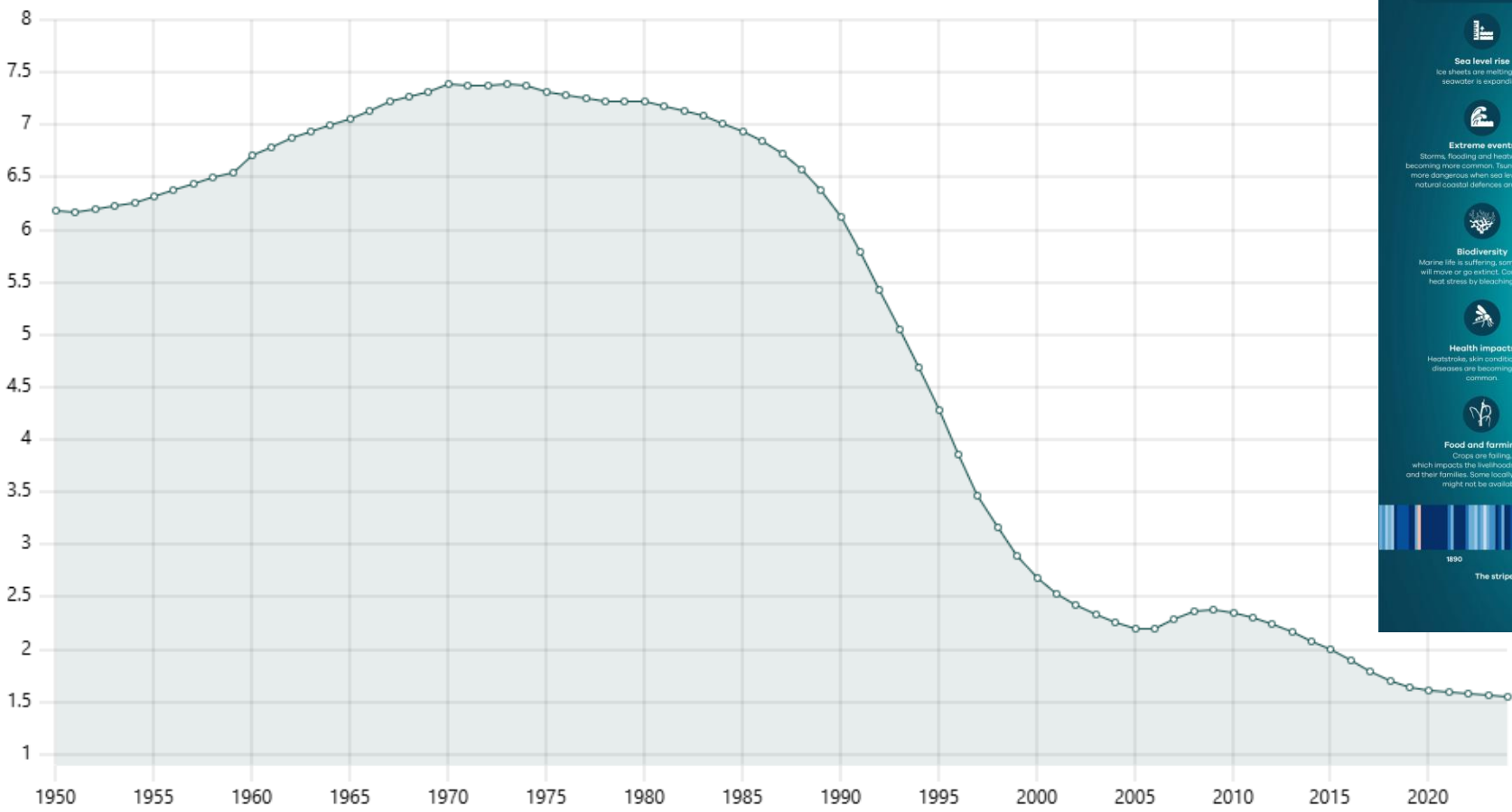


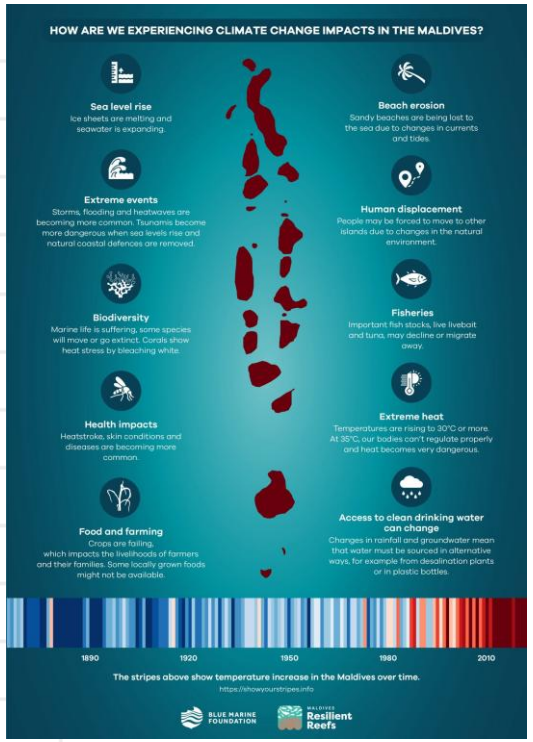
CBR



Source: Based on Donald Rowland, PRB 2010 and World Population Prospects: The 2008 Revision

Trend of Total Fertility Rate of Maldives, 1950-2024



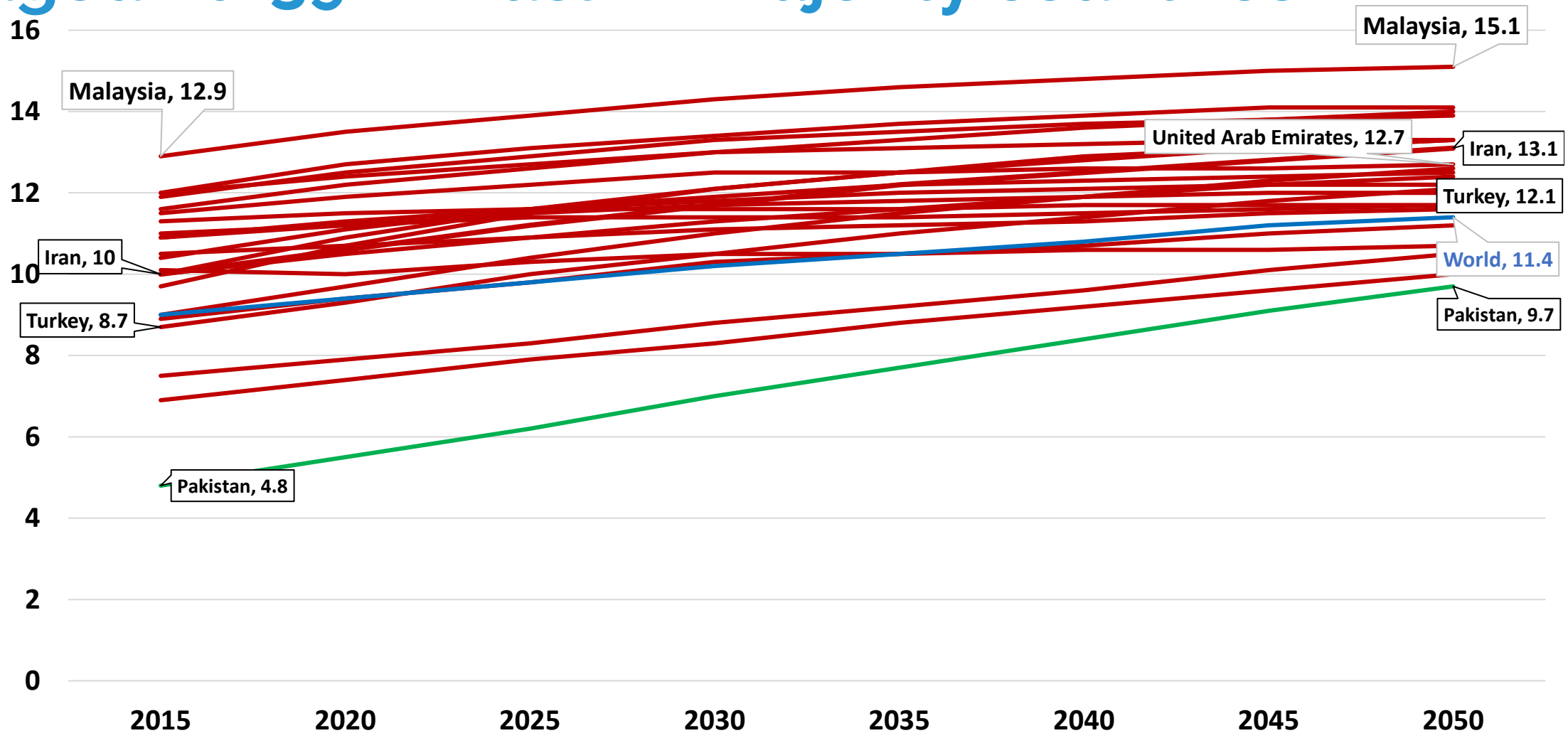


Source: The United Nations - Department of Economic and Social Affairs (Population Division)
UN Revision of World Population Prospects 2024 **&** https://database.earth/population/maldives

Pace of demographic, social changes and reactions in Europe and Muslim countries

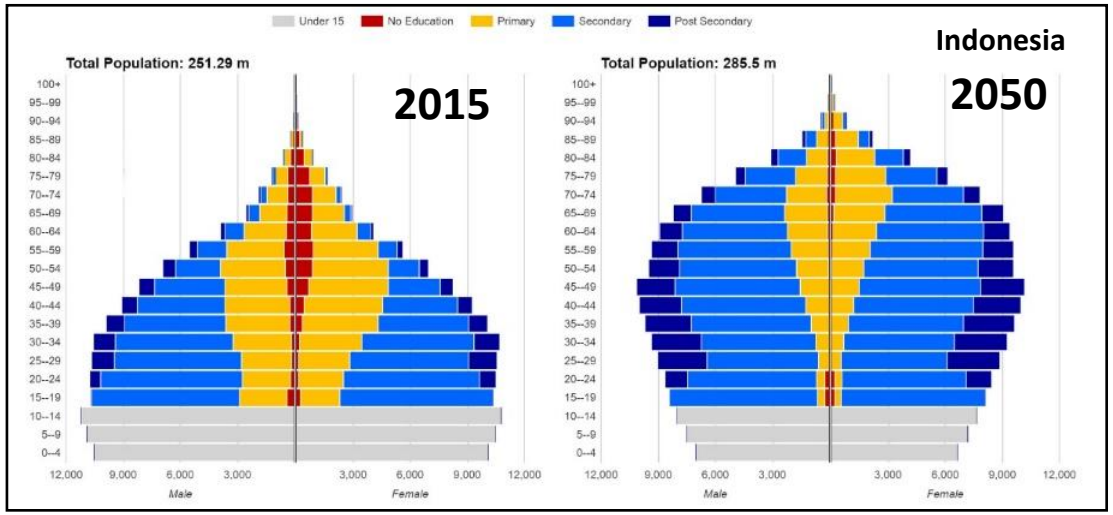
Countries	Demographic transition	Social change	Reaction
Developed countries and Europe	Slow	Slow	Gradual adaptation
Developing and Muslim countries	Fast	Fast	Anxiety and conflict

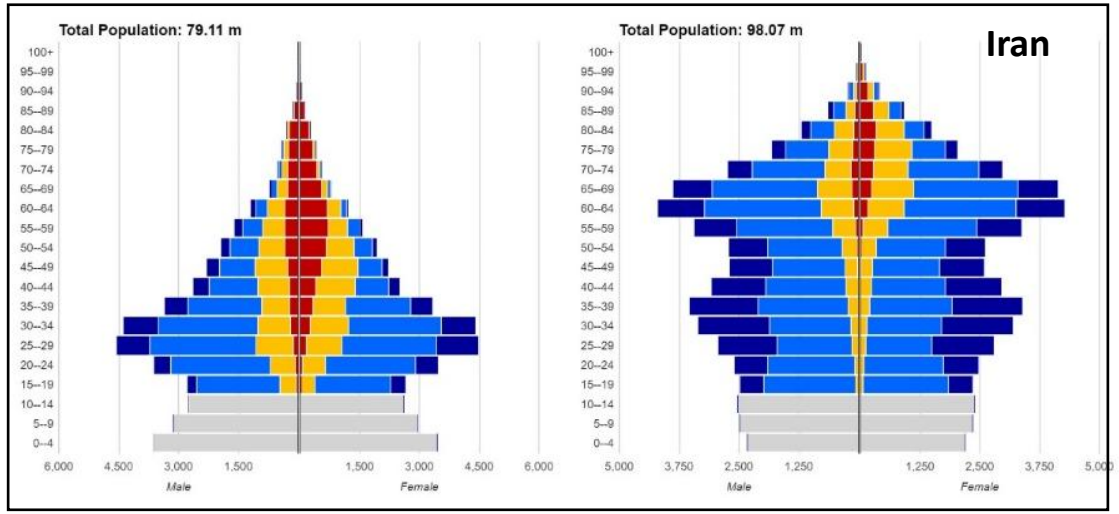
Trends of mean years of schooling for females aged 20-39 in Muslim-majority countries

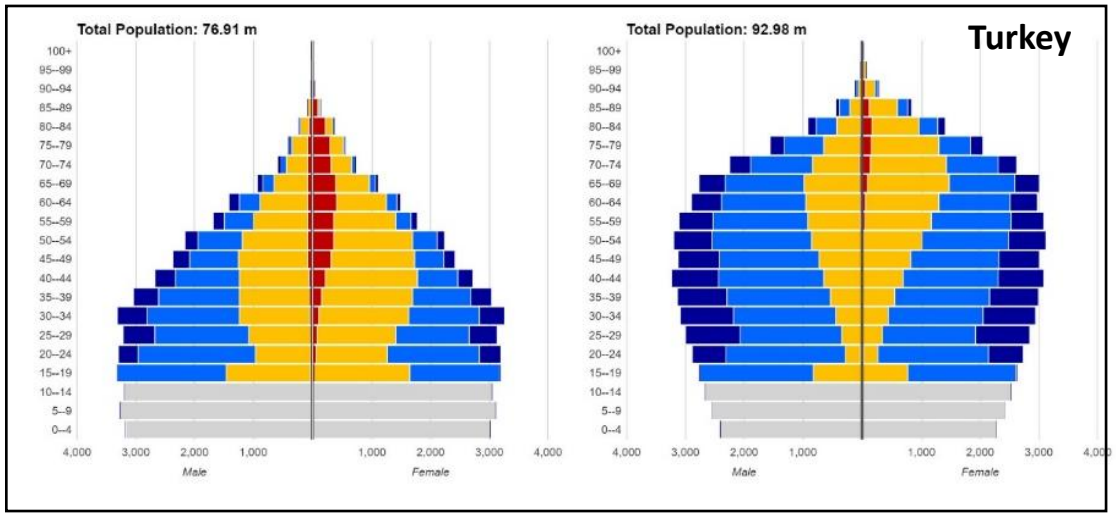


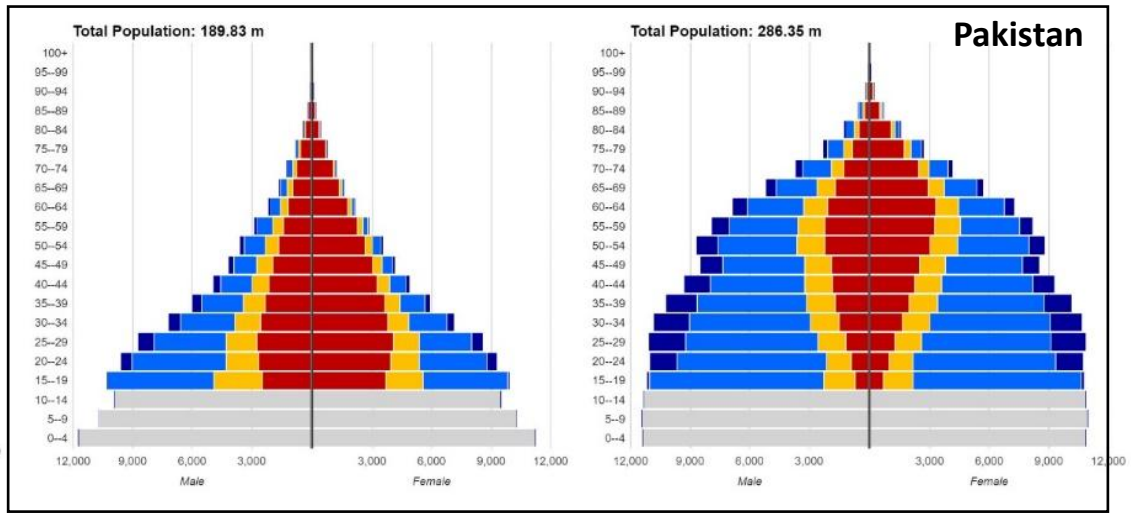
Source: Wittgenstein Center, http://www.oeaw.ac.at/

Age and education pyramids of selected Muslim countries in 2015 and projected to 2050









Source: Wittgenstein Centre: http://www.wittgensteincentre.org/dataexplorer

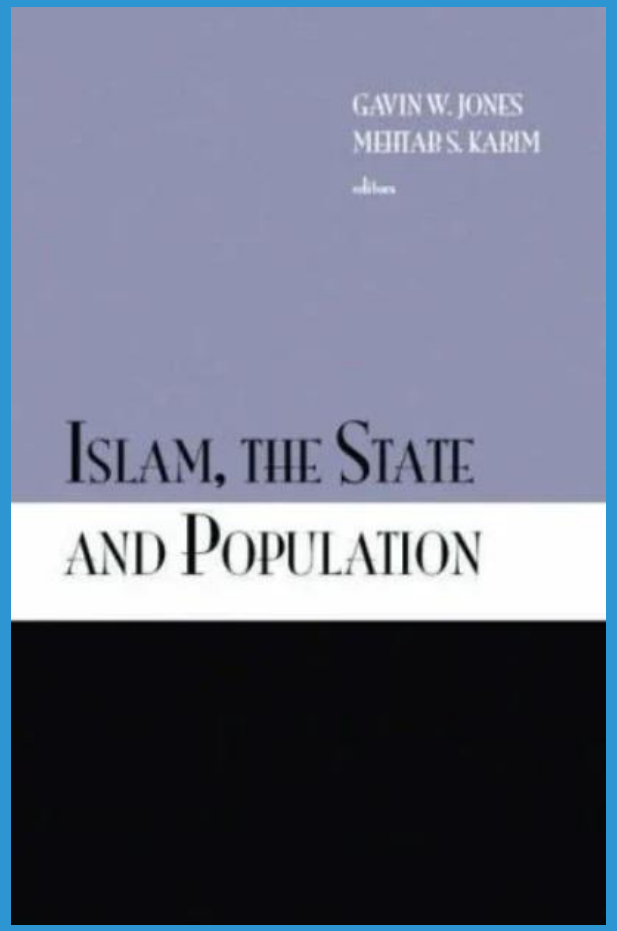
Conclusion: change and diversity in Muslim countries

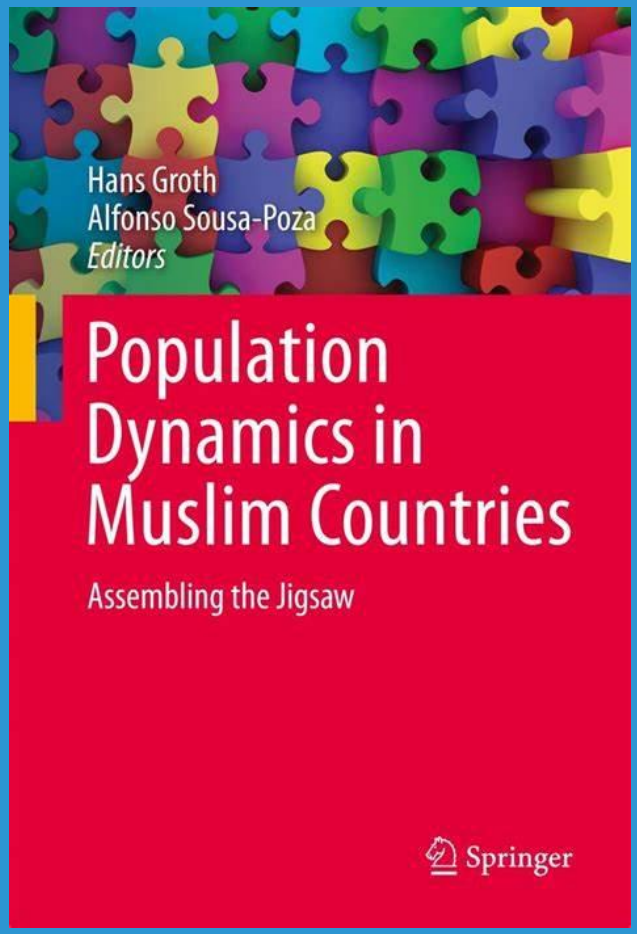
- Very impressive changes in the demographic and human development situation in many of the Muslim countries.
- While this provides grounds for considerable optimism about continuing improvements, the demographic and human development situation in some Muslim countries remains very challenging, particularly in countries with war and civil conflict, and those with very high fertility.
- Youth unemployment rate particularly for women is high in Muslim countries
- Gaps in education, skills and job opportunities must be addressed immediately, especially for young people and women.
- Nevertheless, viewing Muslim countries as a whole, the emergence of a young and educated population promises a brighter and better future.

Muslim Demography Background

- 2005: Islam, the state and Population
- 2012: Population Dynamics in Muslim Countries

- 2018: Population Dynamics and Human capital in Muslim countries, Vienna Yearbook of Population Research





Muslim Migrant Fertility in Europe & Australia

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1. Vienna Institute of Demography
2. ANU School of Demography

Presented at the IUSSP International Population Conference,
July, 13 -18, 2025, Brisbane, Australia

Why Study Muslim Fertility in Europe?

- Muslim populations in Europe have historically had higher fertility rates than native populations (Burner 2012; Pew Research Centre 2015 & 2017; Goujon and Bauer, 2015; Goujon and Bauer, 2015; Goujon et al., 2018; Stonawski et al. 2016; Blekasaune 2020).
- Younger age structures contribute to higher birth rates, fueling demographic concerns and policy debates (Pew Research Centre 2017; Goujon et al., 2018; Rostan & Rostan, 2019).
- Fertility differences are often misunderstood or exaggerated in public discourse, influencing societal attitudes and policies (Islam, 2012; Pew Research Center, 2017; Bell et al., 2021)

Motivation

Past research reveals persistent differences in fertility rates among women with different religious affiliations (and different degrees of religiosity)

WHY? Possible role of culture, distinct values and preferences, countries and regions of origin, minority status, differences in socio-economic status

What insights could be gained from studying fertility in multicultural societies with diverse native-born populations and migrants from different countries, with cultural backgrounds and religious affiliations?

Research Questions

1. **LEVELS AND TRENDS:** What are the trends of fertility among Muslim women in European countries? Is their fertility distinct from the majority population? Does it decline over time, in sync with broader fertility trends in their countries of residence?
2. **DIVERSITY:** How is the fertility of Muslim women differentiated by their socio-economic status, migration status, country of origin, and religiosity?
3. **FACTORS:** What are the key factors affecting fertility levels, trends, and differences among Muslim populations?
4. **FUTURE:** How will Muslim fertility evolve in the future?

Determinants of Muslim Fertility in Europe

- **Religiosity:** Religious beliefs influence reproductive behavior, though variations exist within Muslim communities (Kirk, 1966; McQuillan, 2004; Westoff and Frejka, 2007; Frejka and Westoff, 2008; Buber-Ennser and Berghammer, 2021).
- **Socio-Economic Status:** Education, employment, and income levels significantly shape fertility patterns (Mahmoudian & Carmichael, 1998; Stonawski et al., 2016; Hayford & Morgan, 2008; Philipov & Berghammer, 2007; Blekesaune, 2020; Carlsson, 2024).
- **Cultural Norms:** Family expectations and societal norms impact fertility decisions (Philipov & Berghammer, 2007)..
- **Geography:** Country of Origin and Destination (Sobotka & Adigüzel, 2003; Stonawski et al. 2016; Buber-Ennser & Berghammer, 2021).
- **Migration and Adaptation:** Fertility levels often decline over generations due to host-country adaptation effects (Abbasi-Shavazi & McDonald, 2000; Stonawski et al., 2016; Goujon et al., 2018).

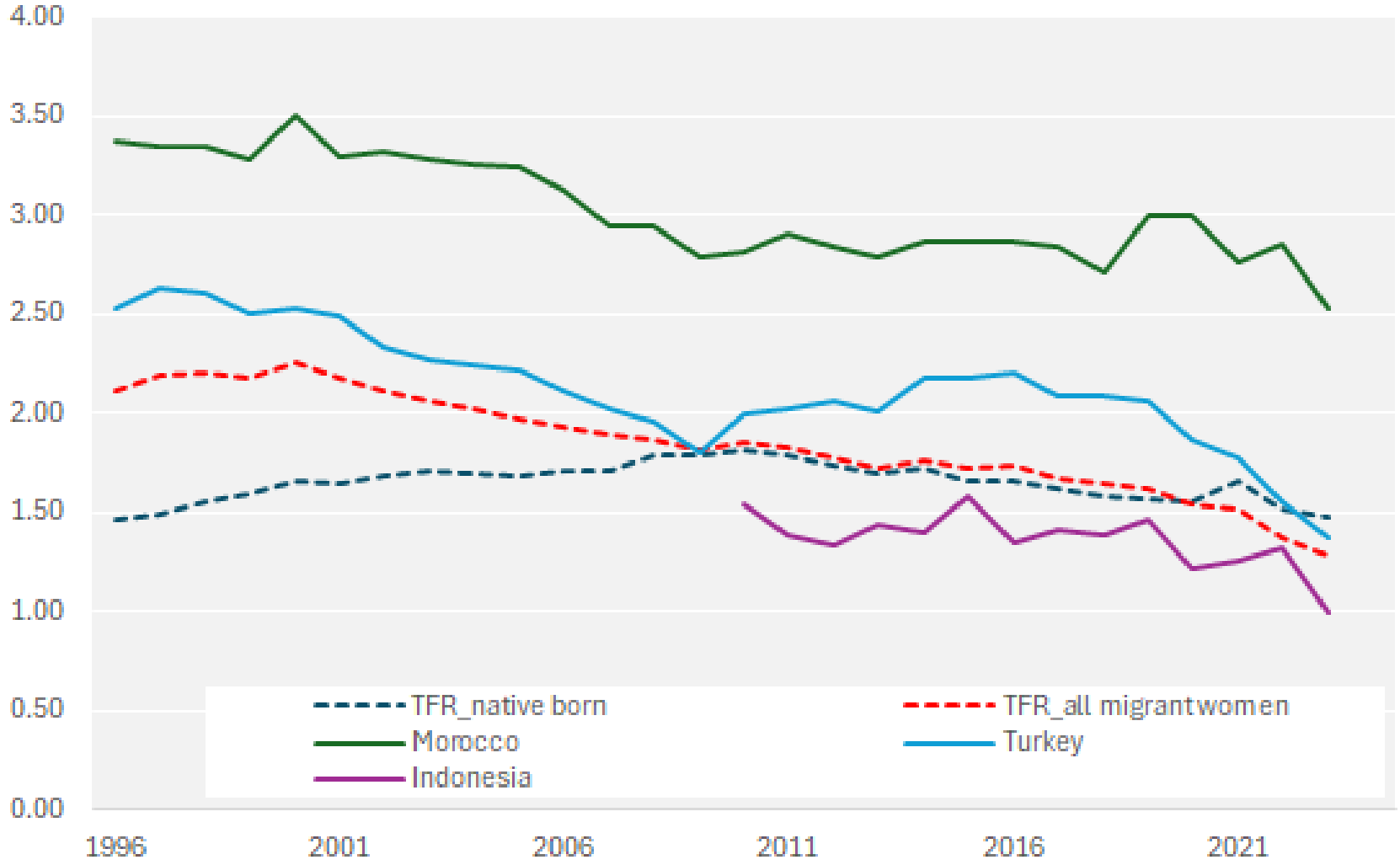
Evidence for selected European countries

- Period TFRs for the 1990s to early 2020s for foreign-born women from selected Muslim-majority countries (1st generation, excluding descendants)
- Data from vital statistics and population registers (Austria, the Netherlands, Norway), population censuses (England and Wales) and surveys (France)

Potential biases, data issues

- Data not distinguishing religious affiliation: all migrant women from a given country, including non-Muslim populations
- No possibility to control for education attainment and other characteristics affecting fertility
- TFR affected by tempo effect, age at migration and time since immigration: often a spike in fertility among recently arriving migrant women (Toulemon & Mazuy 2003; Reynould 2023, Andersson 2023)

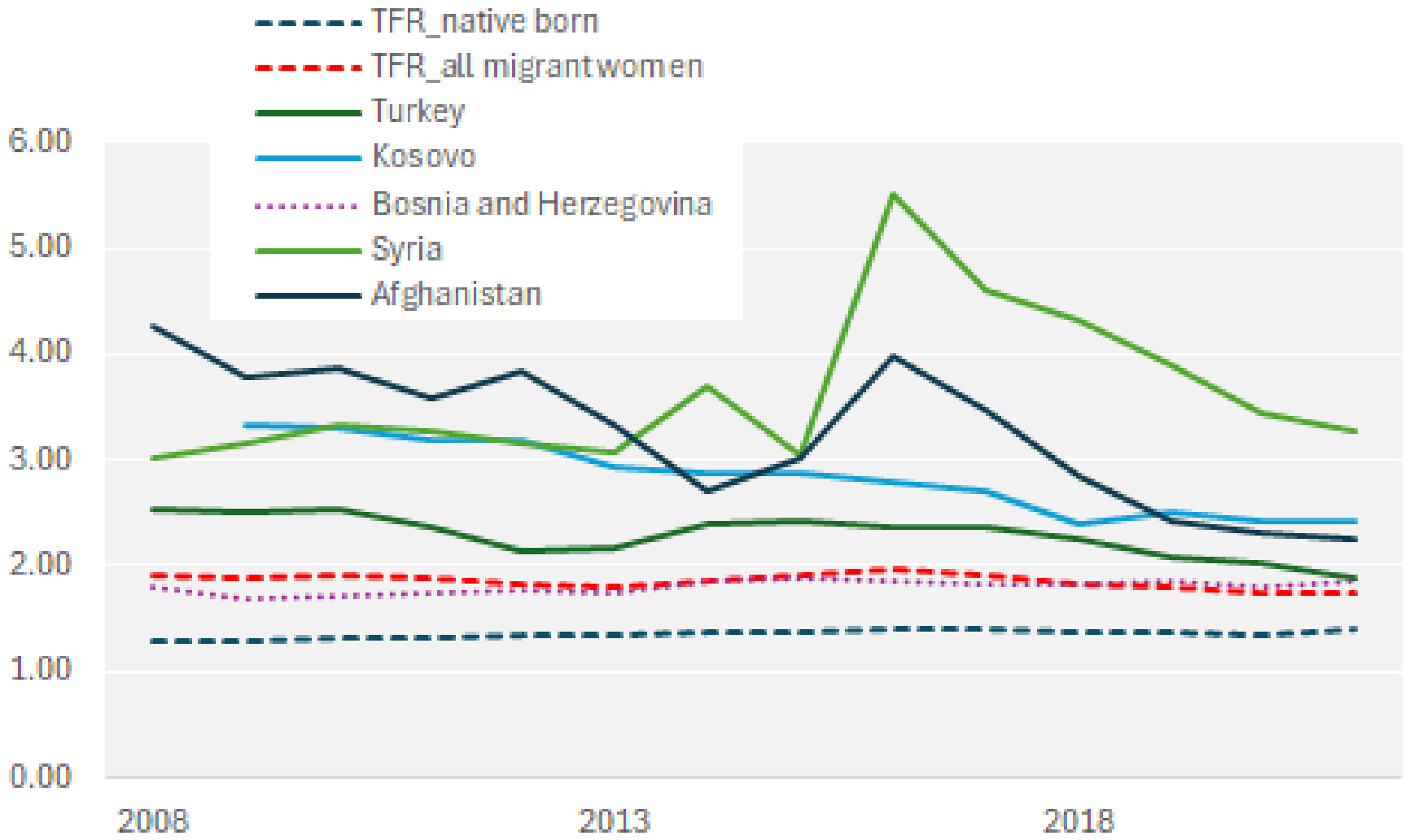
Total fertility rate by country of birth, the Netherlands, 1996-2023



Source:
Statistics Netherlands / CBS Statline database, data downloaded in 2010-2025

Total fertility rate by country of birth, Austria, 2008-2021

- The spike in fertility of Afghan and Syrian women occurred during the migration / refugee wave around 2015-16 and is linked to the elevated fertility of the recently arrived migrants

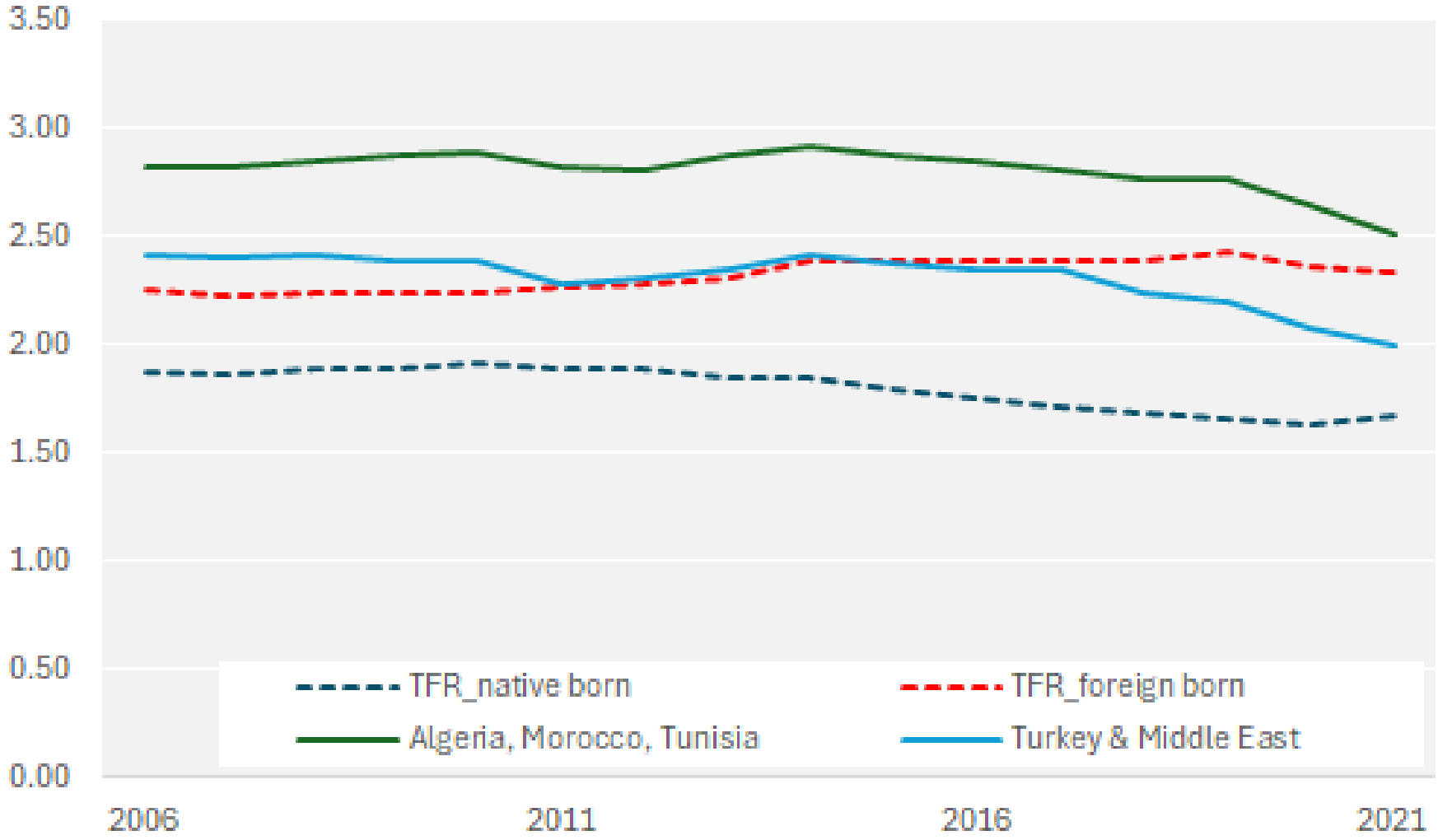


Source:

Zeman, K., T. Sobotka, R. Gisser, and M. Winkler-Dworak. 2019. Birth Barometer: Monitoring Fertility in Austria. Vienna Institute of Demography. Available at www.birthbarometer.at. Data computed from individual birth records by Statistics Austria and updated for 2019-2021 by Krystof Zeman.

Total fertility rate by country of birth, France, 2006-2021

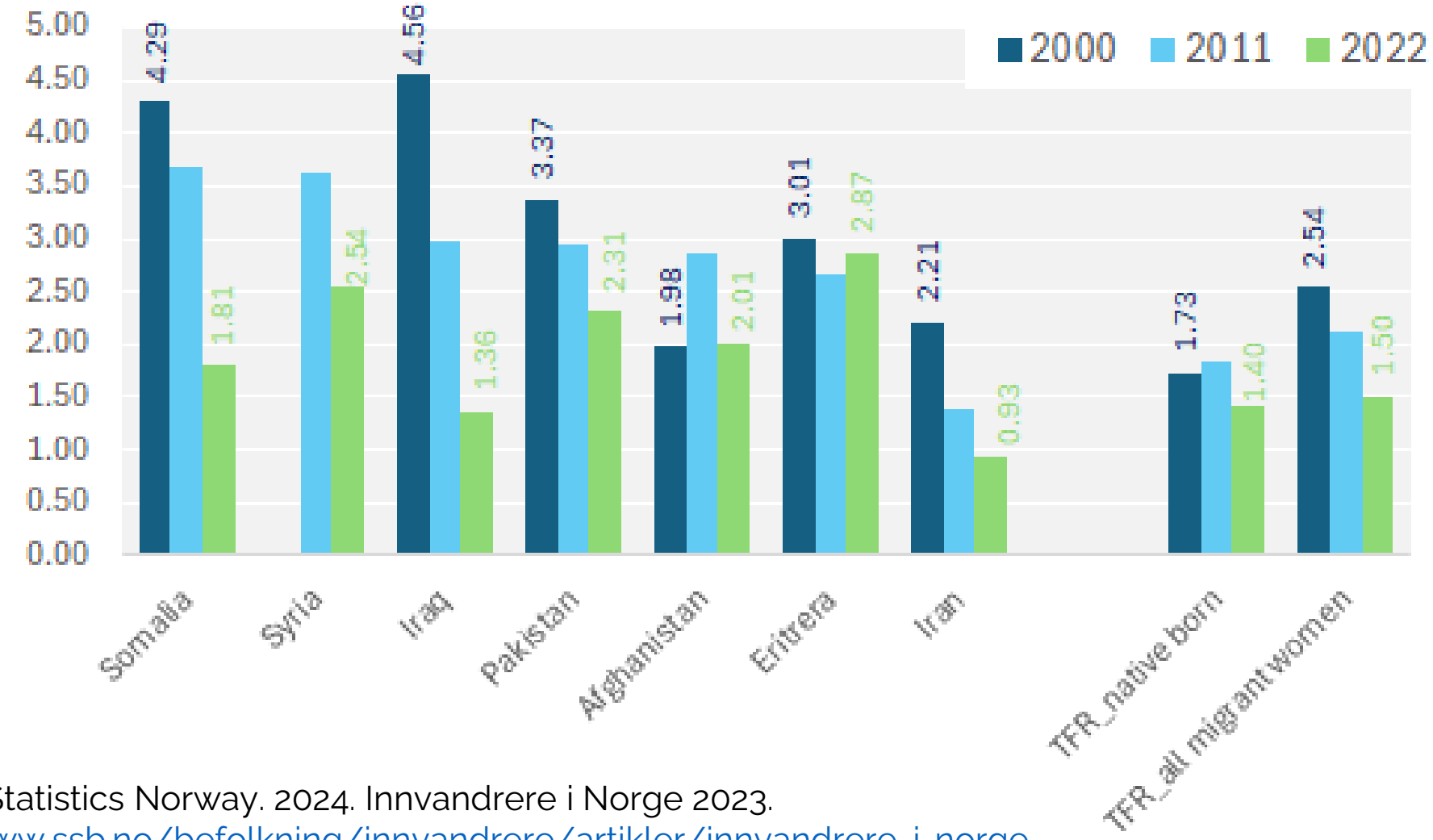
- TFR estimates were adjusted for age at immigration and duration of stay in France



Source:

Didier Reynould (2023). Combien les femmes immigrées ont-elles d'enfants? *INSEE Premiere* No. 1939, 21/02/2023, accessed at https://www.insee.fr/fr/statistiques/6801884

Total fertility rate by country of birth, Norway, 2000-2022



Sources: Statistics Norway. 2024. Innvandrere i Norge 2023. https://www.ssb.no/befolkning/innvandrere/artikler/innvandrere-i-norge
Statstics Norway. 2018. Samlet fruktbarhetstall, etter mors landbakgrunn. 2000, 2015 og 2016. https://www.ssb.no/befolkning/artikler-og-publikasjoner/stadig-flere-som-fodes-i-norge-har-innvandrerbakgrunn?tabell=325349

Summary on European evidence

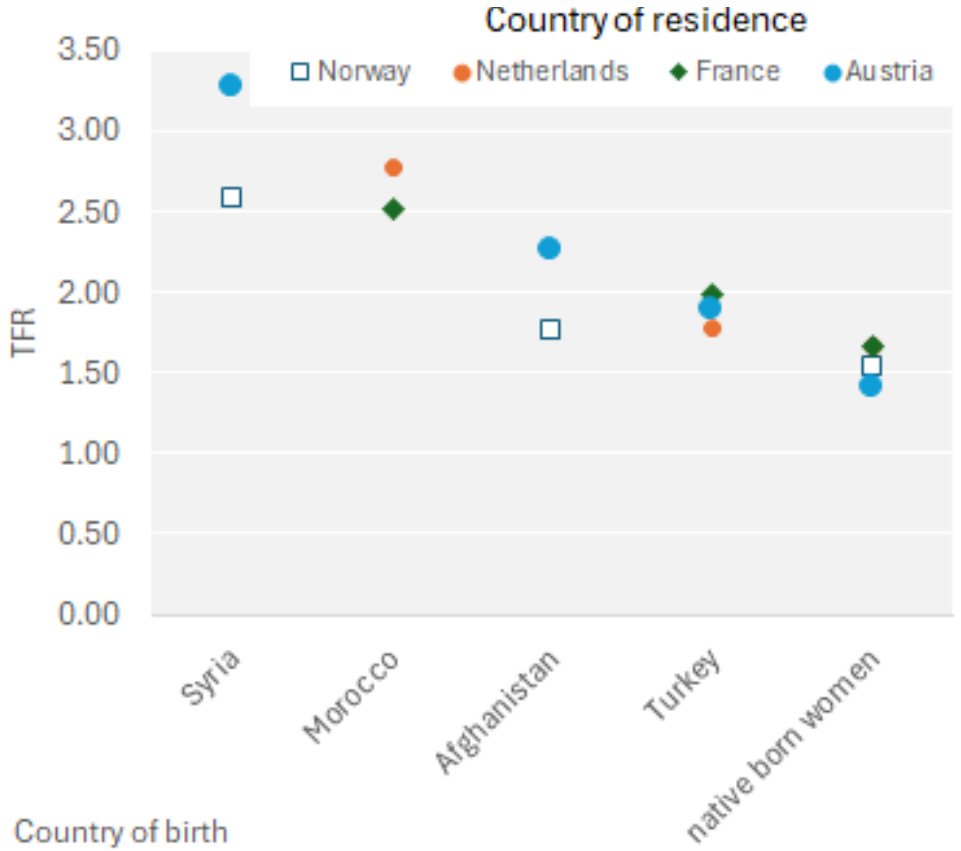
- Fertility decline among women from Muslim-majority countries
- Convergence towards low fertility in some immigrant groups
- Examples: women born in Turkey, Bosnia & Herzegovina, Somalian and Iraqi women

Persistent differences by country of birth

- Very low fertility of women from Iran (in Norway) and Indonesia (in the NL)
- Elevated fertility & slow fertility declines among women from Morocco and Syria

- Multiple drivers of fertility change: fertility trends in country of origin, selectivity of migrants (education, religion, values, family status), policies in the country of destination

TFR by country of birth & country of residence, 2021



➢ *we need different data to better distinguish between the impact of the country of origin, education status and religion*

Data limitations for studying Muslim migrants?

- **Lack of religious identification**: Many datasets do not record religion, making direct analysis difficult.
- **Heterogeneity within Muslim populations:** Differences by country of origin, integration level, and socioeconomic status complicate generalizations.
- **Survey non-response & underreporting:** Migrant populations may be underrepresented in official statistics.
- **Comparability issues:** Variations in data collection methods across countries limit cross-national analyses.
- **Time lag in data availability:** Delays in data release can hinder real-time demographic analysis.

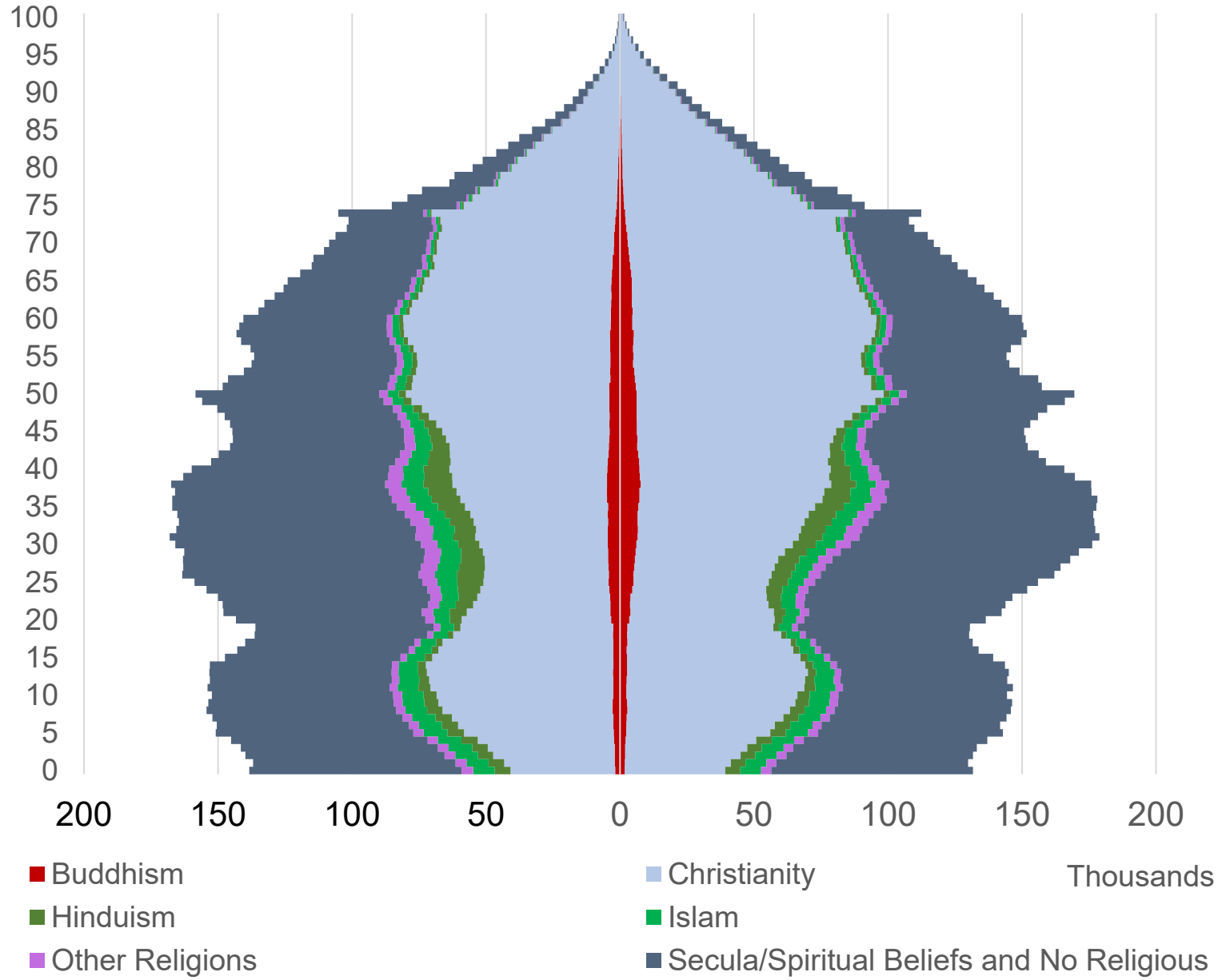
Australia is an ideal country to study Muslim migrant fertility

Data: the 2021 Australian Census

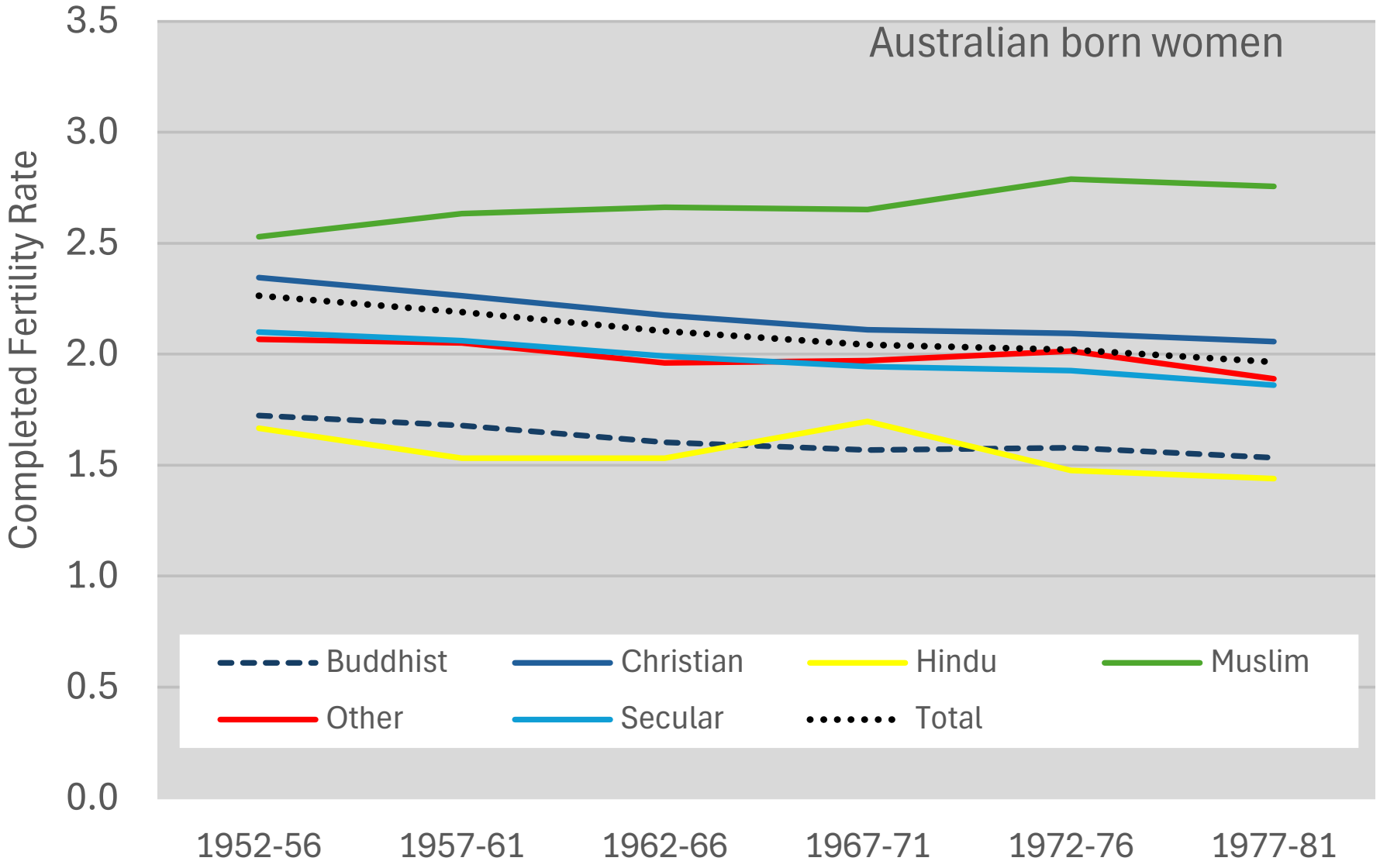
- **Age:** Single age, 5-year and 10-year age groups converted to birth cohorts
- **Number of children ever born**
- **Country of birth**
- **Religion affiliation:** Christianity, Buddhism, Hinduism, Islam, Other religions No religion (Secular or Spiritual Beliefs or No religion)
- **Highest educational attainment level**

→ Measuring Fertility including CFR and PPRs over time for Muslim women as compared to other women with different demographic background and country of birth

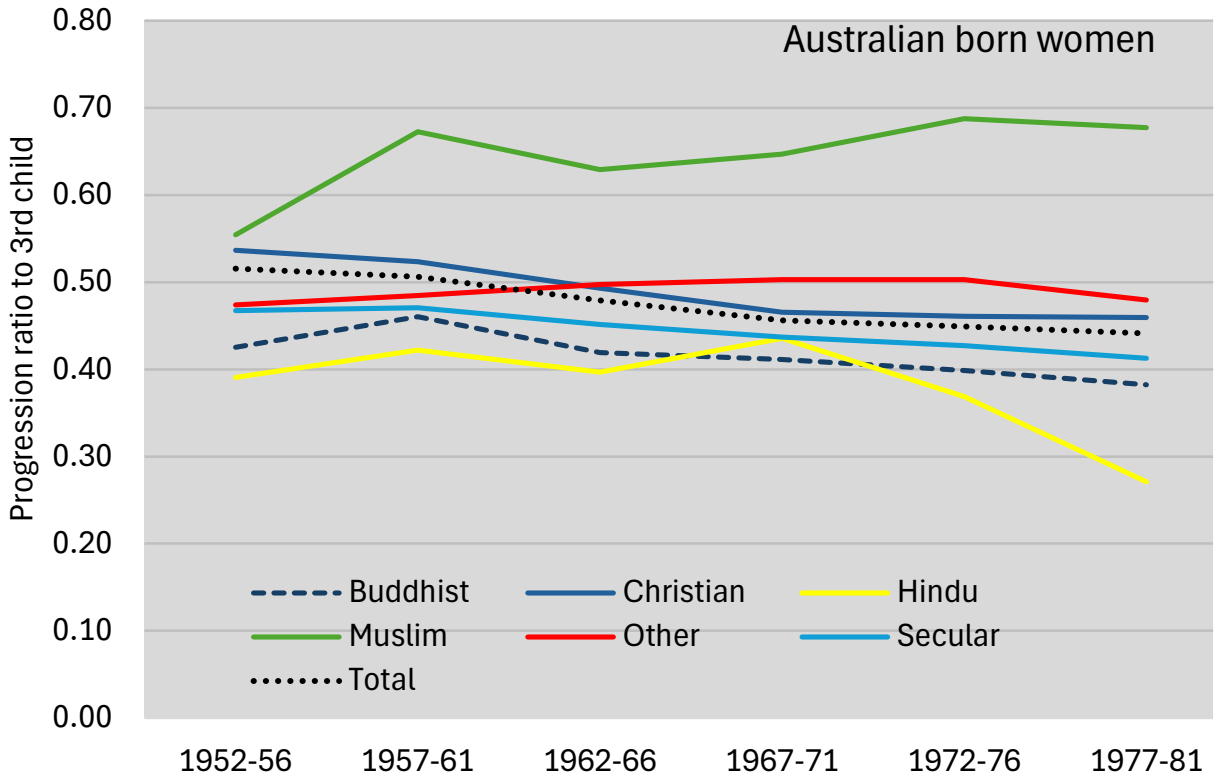
Australia Population Pyramid by religion affiliation

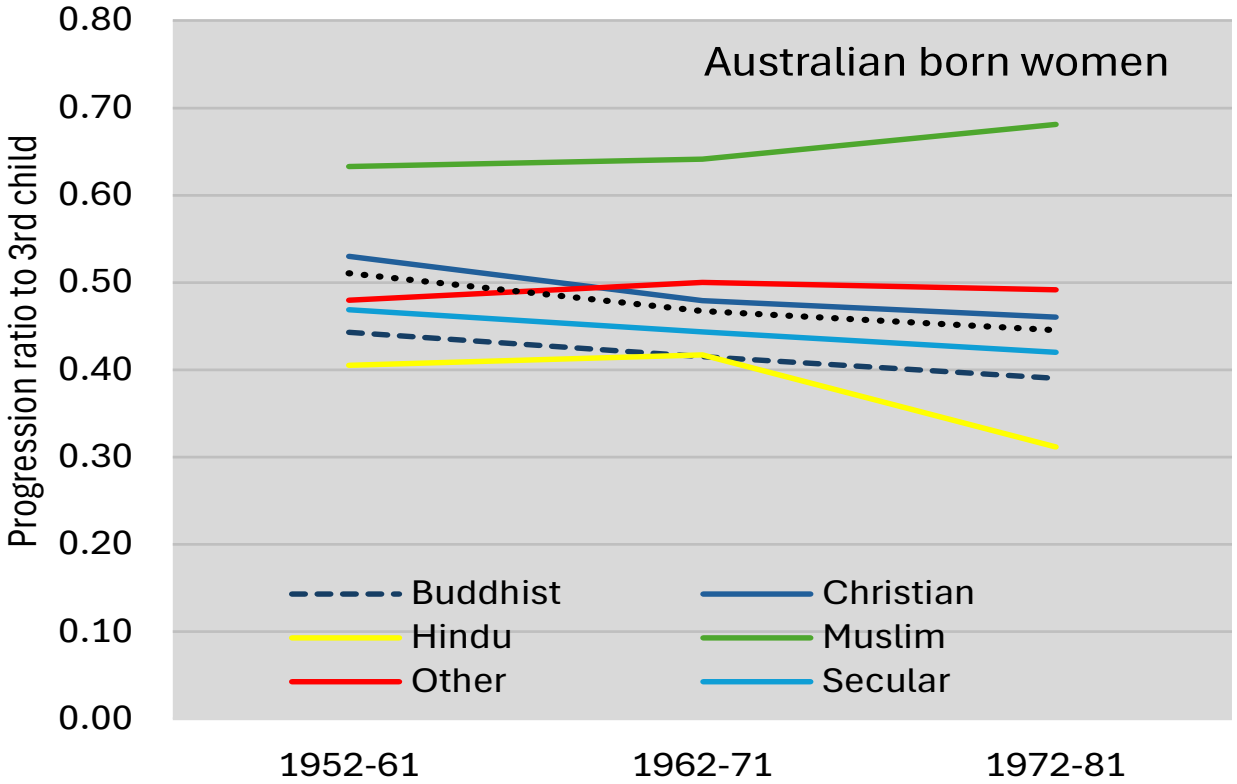


CFR by birth cohort and religion affiliation

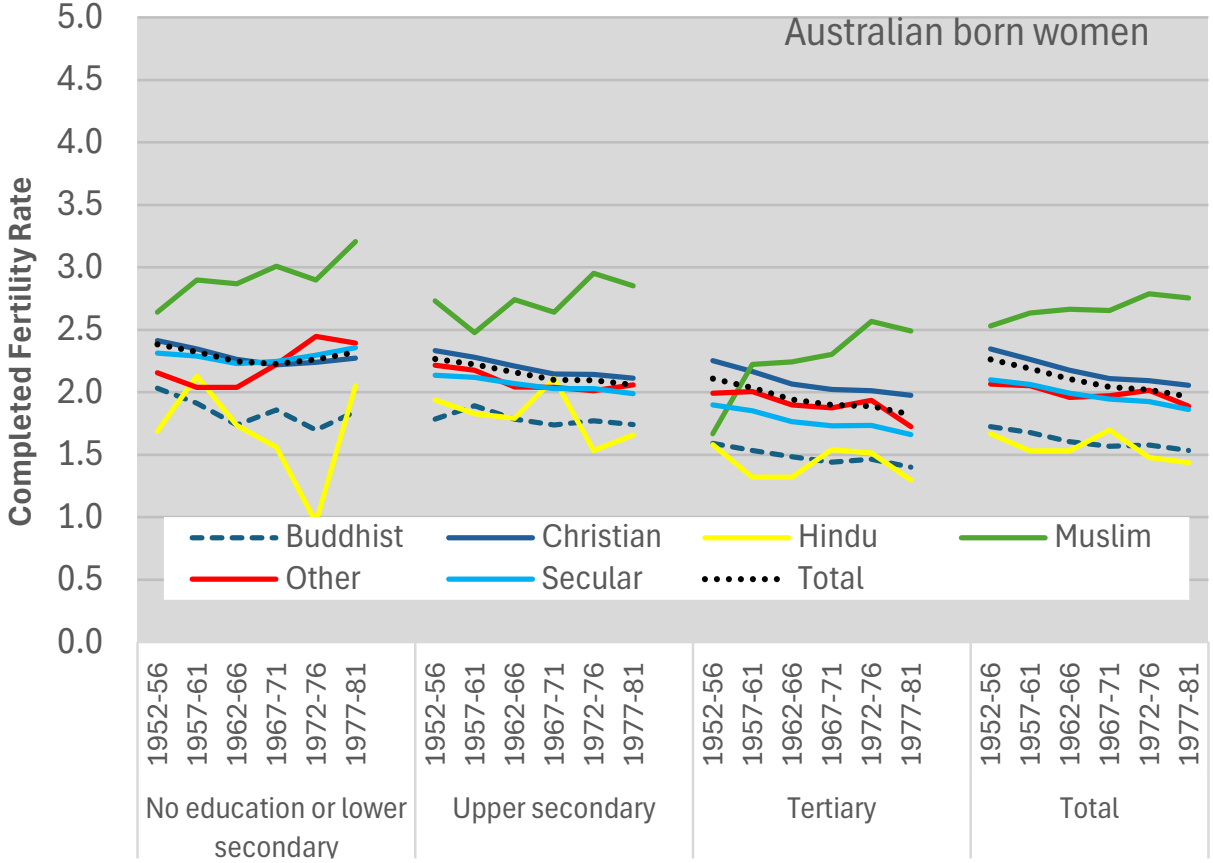


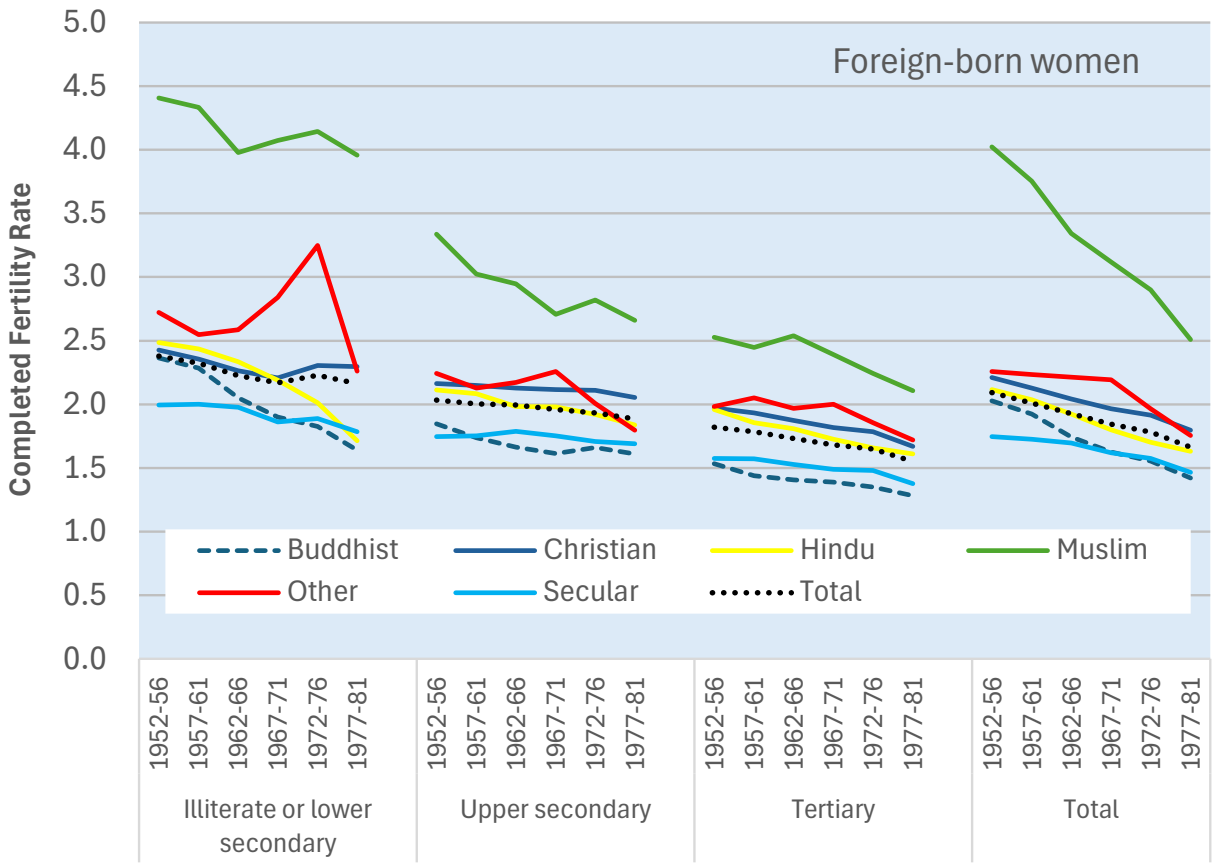
Progression to the 3rd birth by birth cohort and religion affiliation among Muslim women



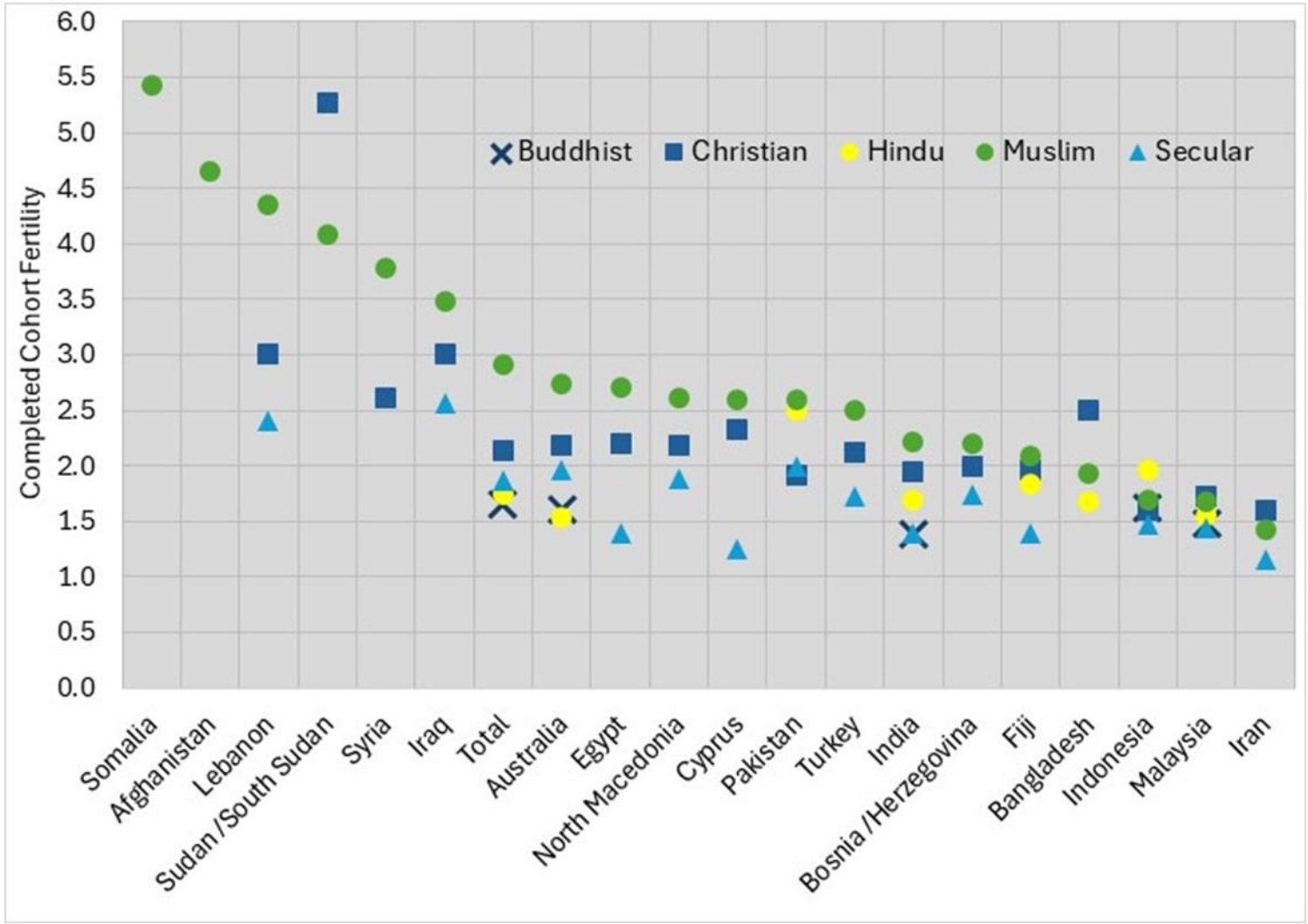


Education effects: Comparing CFR of Muslim Australia-born and Muslim Migrant women by Religion



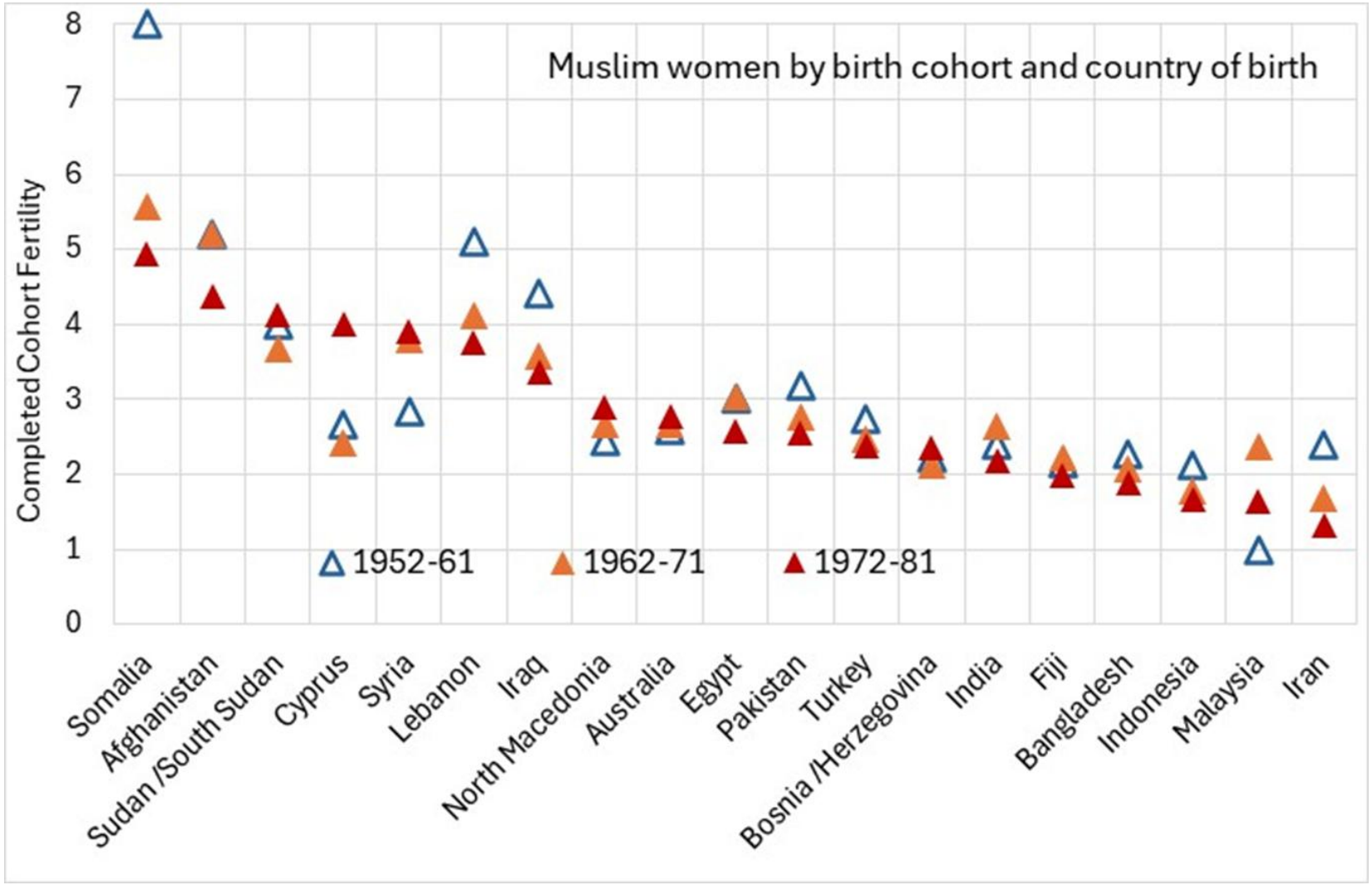


Fertility of Muslim and non-Muslim migrants in Australia by country of birth, women born 1952-1981



Ref: Hosseini-Chavoshi, Abbasi-Shavazi and Sobotka, 2025, Muslim migrant fertility in Australia, Wittgenstein Conference, 19-21 Nov, Vienna

Diversity of Muslim fertility by birth cohort and country of birth



Ref: Hosseini-Chavoshi, Abbasi-Shavazi and Sobotka, 2025, Muslim migrant fertility in Australia, Wittgenstein Conference, 19-21 Nov, Vienna

Summary on Australian evidence

Muslim Australian-born women

- Have higher fertility than women with other religious affiliation: this holds across cohorts and for different education groups. Hindu and Buddhist women have lowest fertility across all education groups
- Muslim women born in the late 1970s: completed fertility of 2.8 vs. 2.0 among all women and 1.5-1.6 among Buddhist and Hindu women
- Above-replacement fertility among Muslims, even for the highly educated

Muslim foreign-born women

- The role of cultural background: fertility ranging from very low (women from Iran, Malaysia) to very high (women from Somalia, Afghanistan, Sudan)
- Strong negative education gradient (more prominent than among native-born)
- Rapid fertility decline across cohorts, also linked with rising education attainment
- Elevated fertility of Muslim migrant women: Muslim women born in the late 1970s: completed fertility of 2.5 vs. 1.7 among all and 1.5 among Buddhist & secular women

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Discussion

- Is Islam inherently a high-fertility religion in contexts like Australia, or are observed patterns primarily driven by selection effects and unobserved factors we could not properly control for?
- Our results indicate that higher fertility of Muslims in Australia cannot be explained by their educational composition or migration status alone.

➢ These questions warrant deeper investigation in further analyses.

Thank you

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