

Estimating Afghan Refugee Demographics in Iran Modelling

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Aim and Project Phases

Aim: Demographic information for Afghan Refugees in Iran for the period 2000-2020 to be estimated.

Phase 1: Data Audit

- Assess available data sources
- Identify all exits and entries to the target population

Phase 2: Modelling

Method: Stochastic cohort component projections

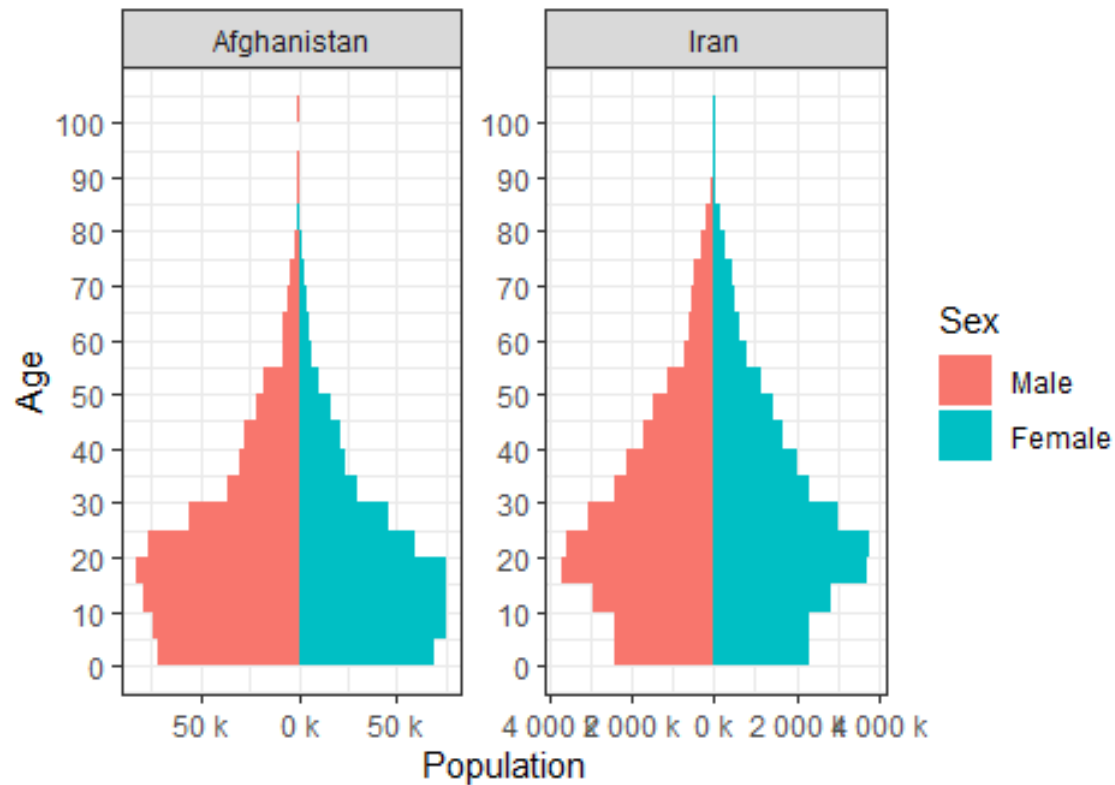
- Estimated starting population and age structure (2006)
- Assumptions and data inform priors on components of demographic change
- UNHCR reported totals act for 2015 and 2020 act as constraints
- Output: plausible path for demographic change between 2006 and 2021

Data and Assumptions

Starting Point: Reported Refugee Totals and Census Data

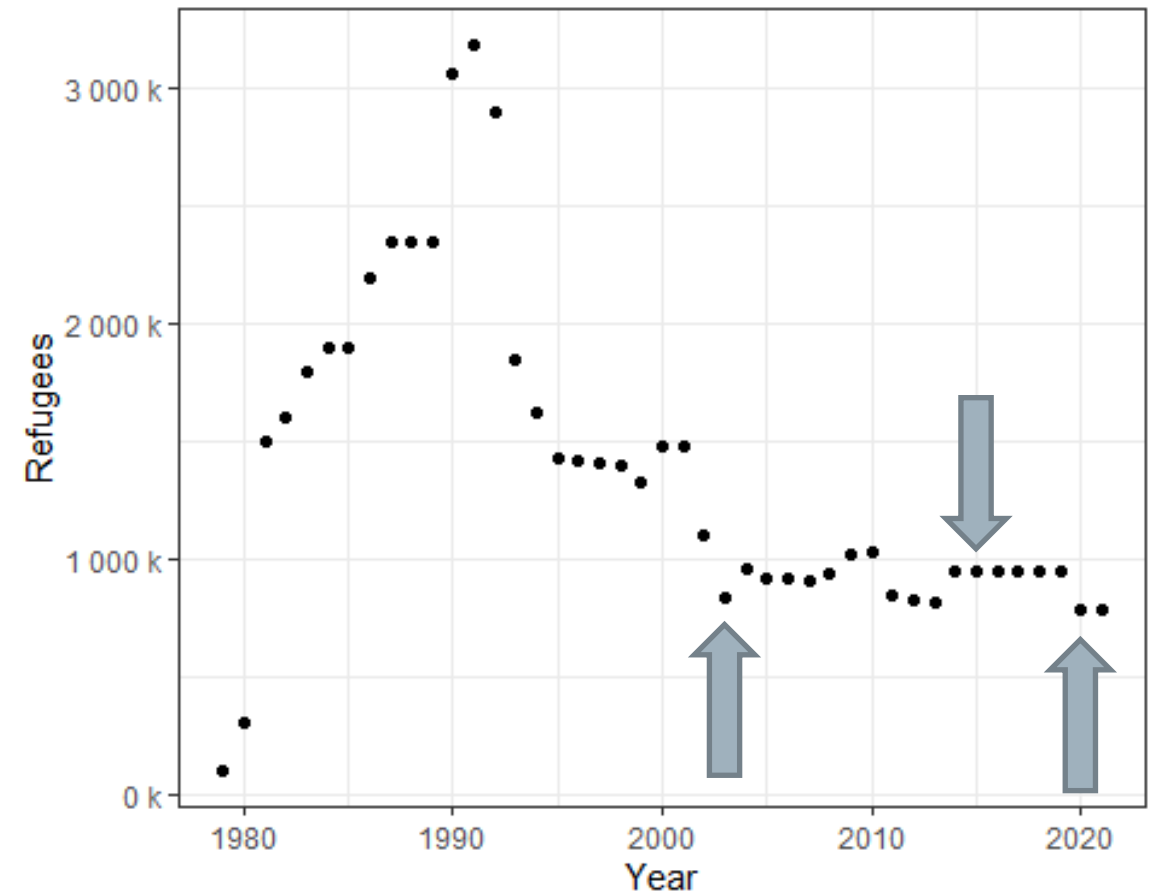
Demographics of the Afghan and Iran Population

Iran Census Data 2006



Source: IPUMS

Reported Afghan Refugees in Iran

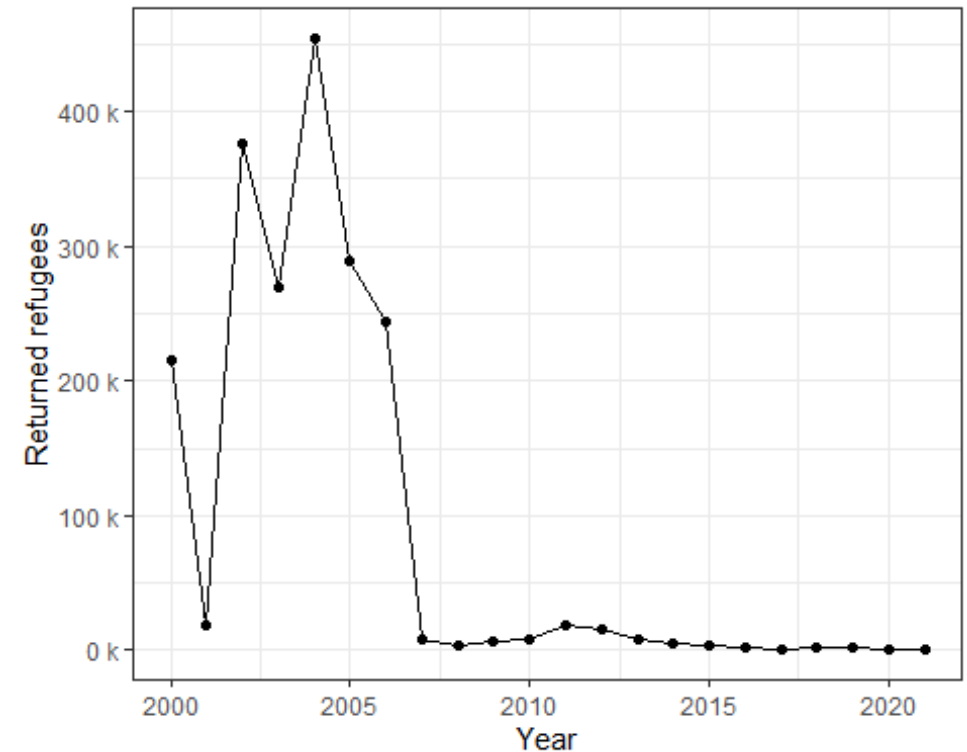


Source: UNHCR

Returnees

- Very high level of returnees post 2001 invasion
- Levels practically zero after 2006
- Questions over data:
 - The population registered end-2003 was **834,699**
 - During 2004-6, the number of returnees was **987,842**
 - The end-2006 population was **914,260**
- Explanations:
 - Circular migration; under-registration in 2003?

Afghan Returnees from Iran by Year

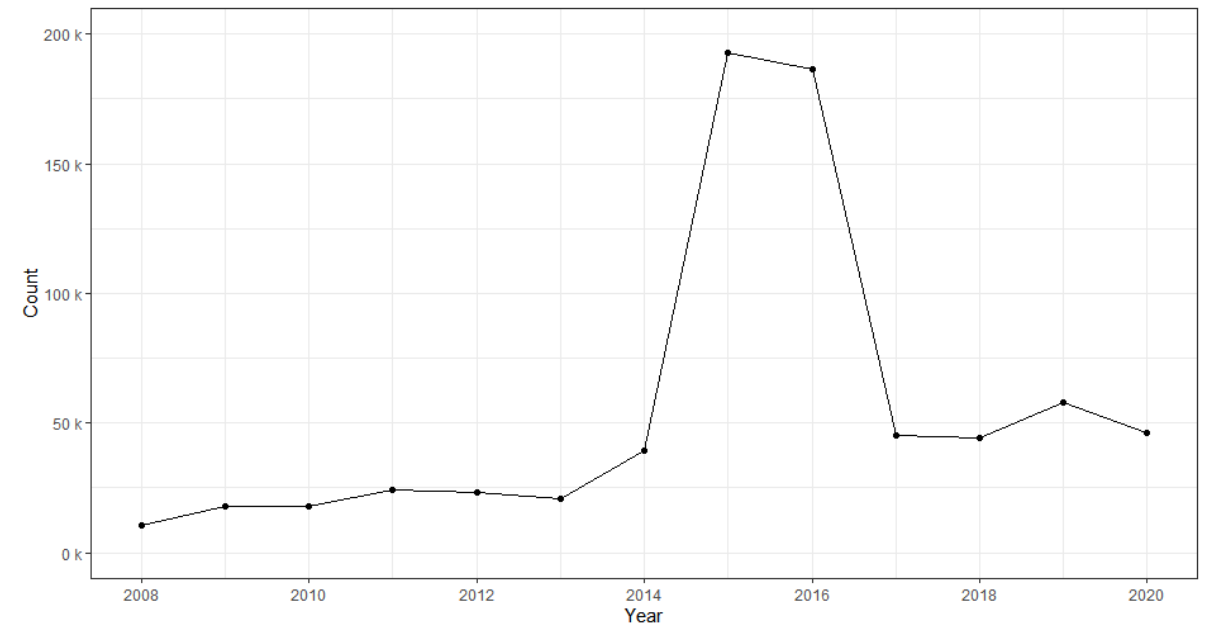


Source: UNHCR

Onward Resettlements

- Eurostat Data provides counts of asylum applications for Afghan nationals by age group, sex and year.
- Many of these arrivals could have departed from Iran.
- Provides age and time structure to inform assumptions about onward migration to Europe
- Assumptions:
 - Exits from the population follow piecewise constant function
 - Low during 2007-2014 and 2017-2020

Refugee Applications in Europe by Afghan nationals by Year



Source: Eurostat Data

Fertility and Mortality

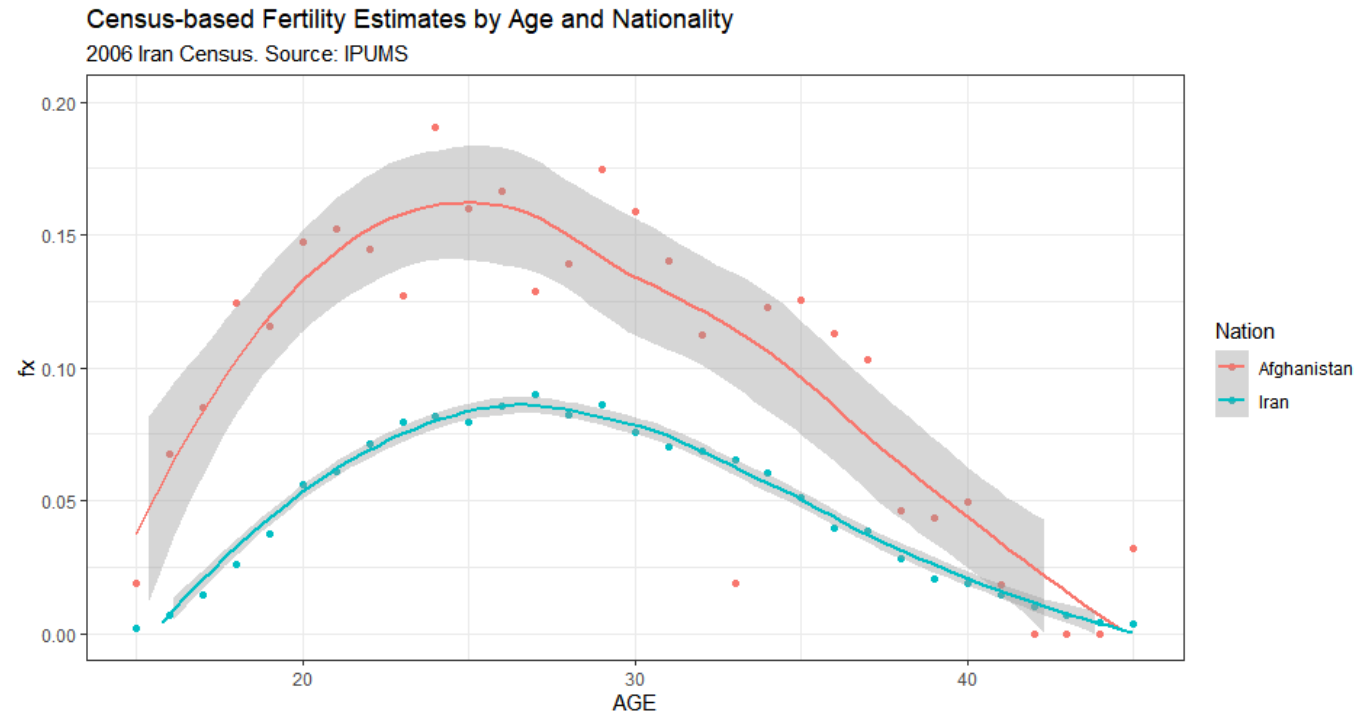
- Estimated from IPUMS census microdata for 2006

Fertility

- Following Abbasi-Shavazi (2015), census data indicates declining but above replacement fertility for 2006
- Implies a growing population absent negative net migration

Mortality

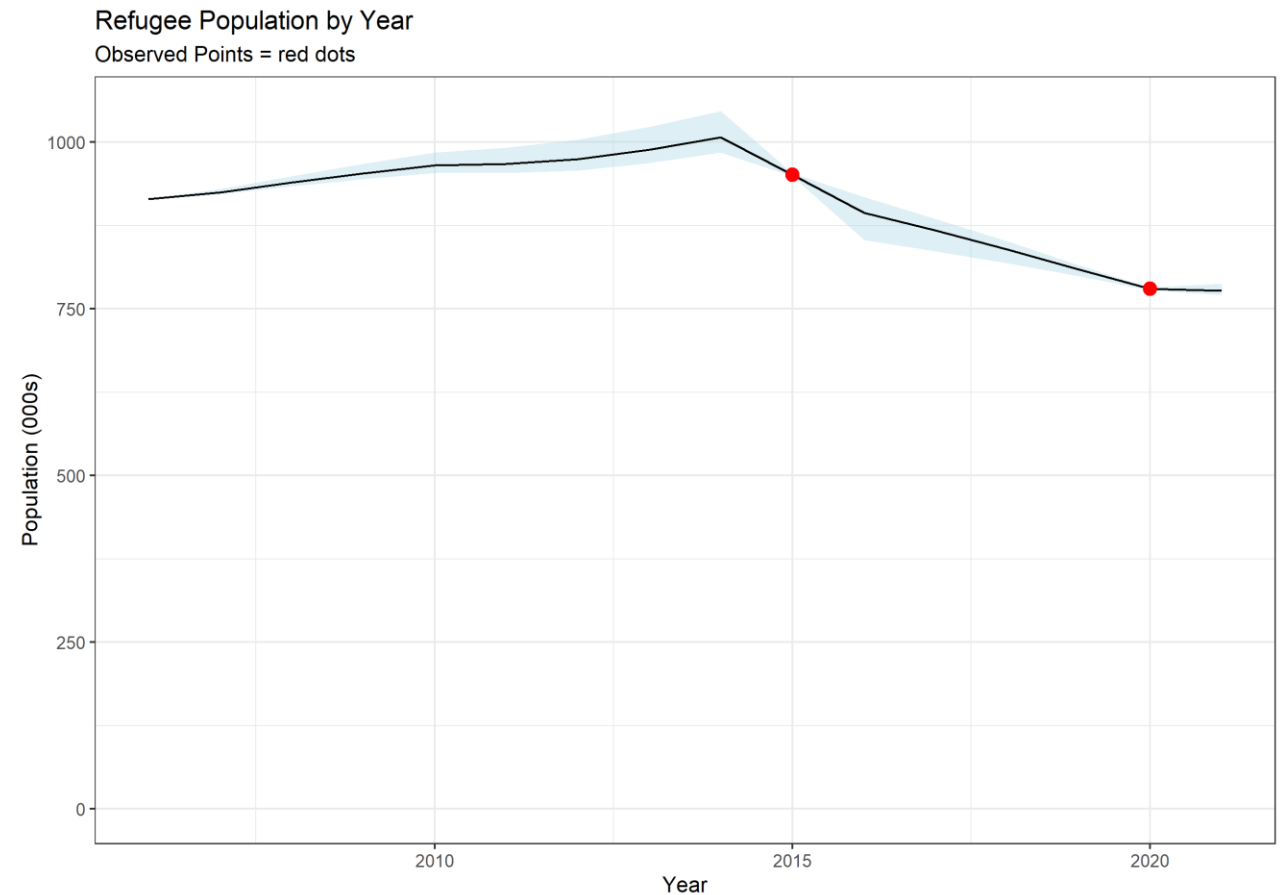
- Indirectly estimated relational model life tables are used to estimate mortality for Afghans from 2006 census
- Differential from WHO Iranian lifetables assumed constant over time



Probabilistic Modelling Results

Constrained Projections

- Total Population in the 2015 and 2020 treated as Poisson distributed observations from projected total
- Mortality and Fertility constant in mean
- Documented returnees treated as known
- Estimation conducted using Stan HMC sampling
- Targets in 2015 and 2020 are approximately met by median projection

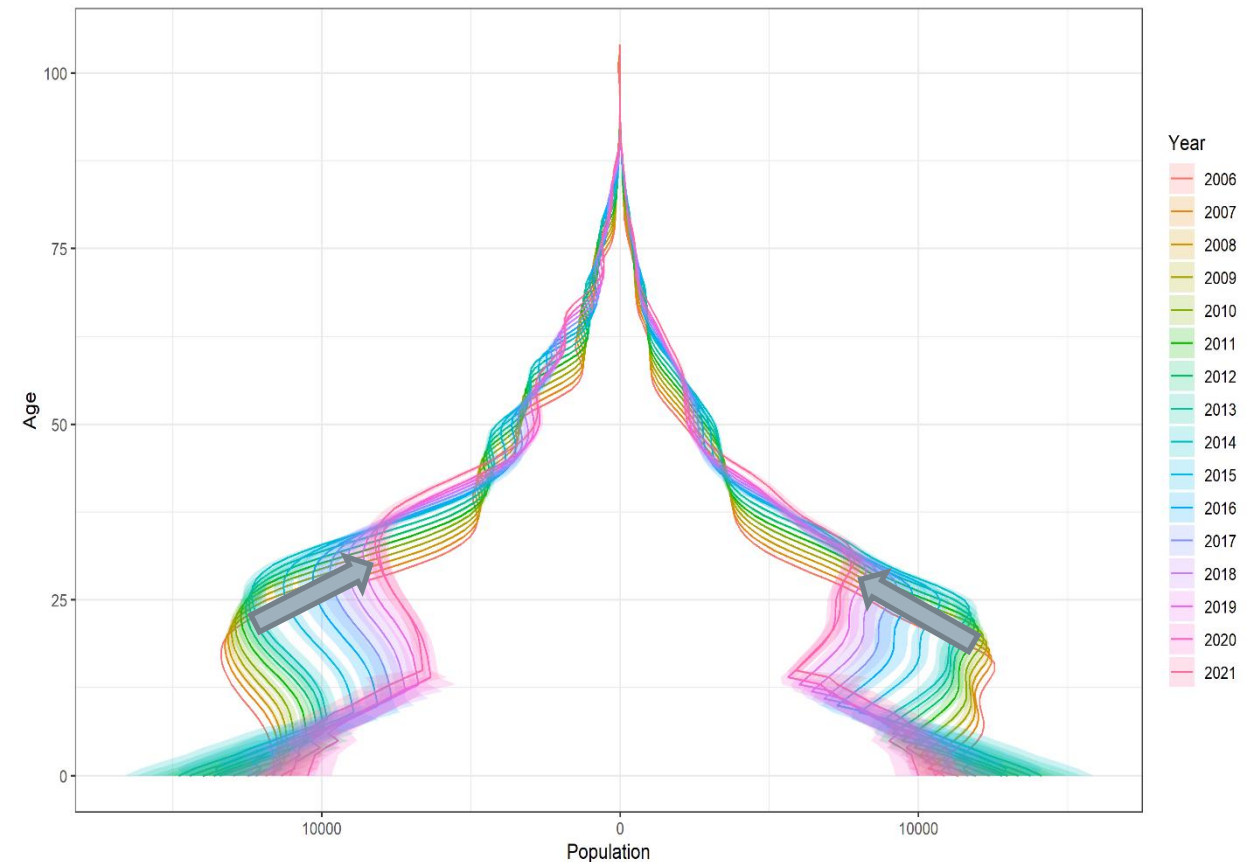


NB: Uncertainty Conditional on Assumptions

Pyramid Comparison

- Age structure changing over time
- Declines in numbers young adults
- Corresponding decline in children
- Migration accounts for the majority of the population change in this case
- Considerable out-migration amongst cohorts aged 20-30 in 2020

Estimated plausible age-sex population structure of Afghan refugee population in Iran by year



NB: Uncertainty Conditional on Assumptions

Summary

- Census data indicates wider Afghan population is growing while the official refugee population declines
- Probabilistic projection results indicate plausible age structure of the population in 2020
- Strong priors and assumptions are needed to identify model parameters
 - Known starting population (including age structure)
 - Constant (but random) levels of fertility
 - Constant mortality
 - Piecewise constant migratory exits
- Estimates of uncertainty conditional on these model assumptions (considerable understatement of overall uncertainty)
- Different assumptions would be defensible and may lead to different outcomes