Gender Gaps in Completed Fertility

Erica Field
Vera Molitor
Alice Schoonbroodt
Michèle Tertilt

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- A large literature exists analyzing fertility pattern and trends

- Based on FEMALE fertility data
  - Most surveys ask only women about their child-bearing.

- Yet, for any couple, male & female fertility need not coincide:
  - Polygyny
  - Divorce & remarriage
  - Death & remarriage

- Even in aggregate fertility may be different by gender!
  $\rightarrow$ Possible because of population growth.

- Does it matter whose fertility is considered?
- Would "fertility facts" change if one used male fertility instead?

  Project is a fact finding mission!
  $\rightarrow$ input into other studies.

1. Well-documented that men desire more children than women.
   $\rightarrow$ Does this necessarily lead to conflict?
   Or does preference gap translate into gap in realized fertility?
2. Investments in children depend heavily on resources of fathers.
   $\rightarrow$ thus it matters how children are spread across men.
3. Particularly interesting/important in polygynous countries.
   $\rightarrow$ focus on Africa.

- How to compare fertility of men and women?

- Multiple possibilities.

- We do it by birth cohort. i.e. compute completed fertility for women born in year x and for men born in the same year.

- Data issues: men complete fertility later in life than women, so take men aged 50-60. However, women are in survey only up to age 49. $\rightarrow$ solution: compare men and women from different surveys: 10 years apart. Gives us same birth cohorts.

- Recent waves of the Demographic and Health Surveys (DHS) include fertility questions for men.

- Select countries based on male sample size (and appropriately spaced female surveys).

- Benin, Burkina Faso, Ethiopia, Madagascar, Malawi, Rwanda, Zambia, Zimbabwe.

- Surveys between 1993 and 2011.

|	Cohort	DHS		Age		Sample Size	
		F	M	F	M	F	M
Benin	1947-51	1996	2006	44-49	54-59	442	211
Burkina Faso	1951-55	1998/99	2010	42-48	54-59	478	350
Ethiopia	1952-56	2000	2011	43-48	54-59	1194	541
Madagascar	1949-53	1997	2008/09	43-48	55-59	500	387
Malawi	1950-54	2000	2004/05	45-49	50-54	766	175
Rwanda	1951-55	2000	2010	44-49	54-59	727	255
Zambia	1948-52	1996	2007	43-48	54-59	505	218
Zimbabwe	1951-55	1999	2005/06	43-48	49-54	414	332

+ additional cohorts for some countries

Main Findings

1. Male average fertility $>>$ female average fertility.
2. Male fertility inequality $>>$ female inequality.
3. Fertility preference gap $\rightarrow$ realized gap.
4. Demographic transition started earlier and was steeper from male perspective.

Finding 1: Gender Gap in Fertility

Country	Cohort	Mean # Children		Gap
		Women	Men	
Benin	1947-51	7.3	11.6	4.3***
Burkina Faso	1951-55	7.5	10.2	2.8***
Ethiopia	1952-56	7.1	8.4	1.3***
Madagascar	1949-53	7.0	6.8	-0.2
Malawi	1950-54	7.0	8.7	1.7***
Rwanda	1951-55	7.3	8.6	1.3***
Zambia	1948-52	7.7	8.5	0.8**
Zimbabwe	1951-55	6.1	6.8	0.7***
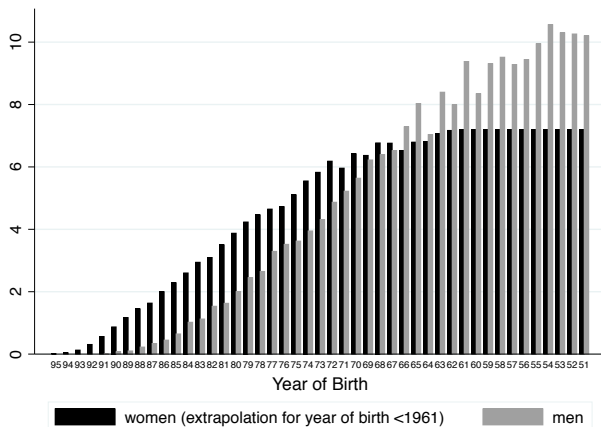
How is this possible?

- f_t^m male fertility, cohort born in t.
- M_t^k size of male cohort born in t at age k.
- Analog for women: f_t^w, W_t^k.
- Assume men have children at age k and age gap g.
- Fertility "market clearing" in year $t + k$:
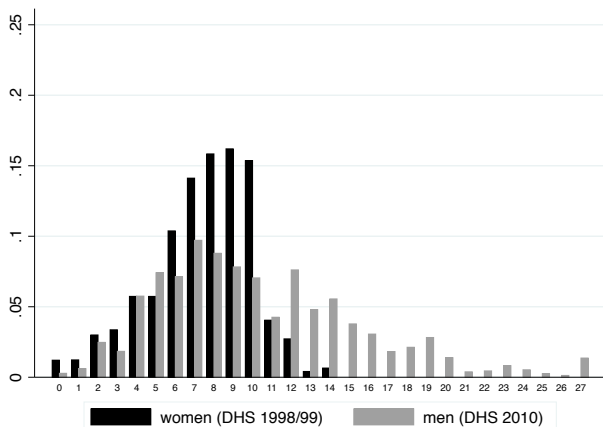
$$f_t^m M_t^k = f_{t+g}^w W_{t+g}^{k-g}$$

- Add constant pop growth (γ) and mortality (π_w, π_m).

$$\frac{f_t^m}{f_{t+g}^w} = \frac{W_{t+g}^{k-g}}{M_t^k} = \left(\frac{1 - \pi_w}{1 - \pi_m} \right)^k \left(\frac{1 + \gamma}{1 - \pi_w} \right)^g \left(\frac{W_t^0}{M_t^0} \right).$$
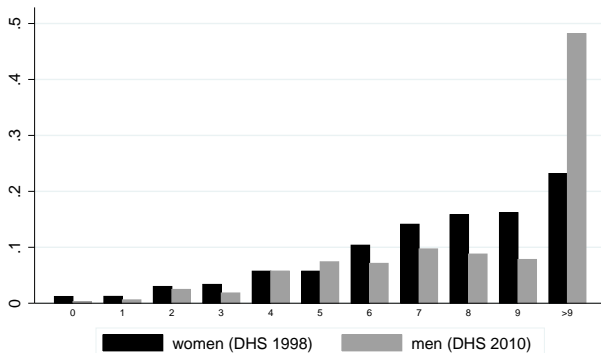
Finding 2: Fertility Inequality Higher for Men

Country	Cohort	SD Women	Men
Benin	1947-51	2.776	6.021
Burkina Faso	1951-55	2.632	5.251
Ethiopia	1952-56	2.812	3.503
Madagascar	1949-53	3.768	3.823
Malawi	1950-54	3.167	3.660
Rwanda	1951-55	2.503	3.254
Zambia	1948-52	3.004	4.643
Zimbabwe	1951-55	2.875	3.768

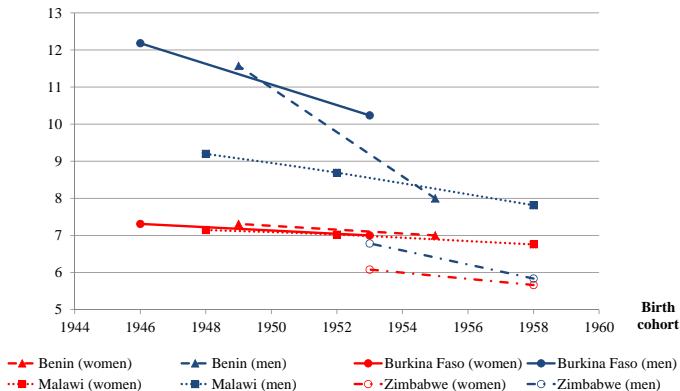Male and Female Fertility,
Burkina Faso: cohort 1951–55
–children born–

Average Fertility

Chart showing average fertility by birth cohort (1944–1960) for Benin, Burkina Faso, Malawi, and Zimbabwe (women and men).

Legend:
- Benin (women)
- Benin (men)
- Burkina Faso (women)
- Burkina Faso (men)
- Malawi (women)
- Malawi (men)
- Zimbabwe (women)
- Zimbabwe (men)

Birth cohort
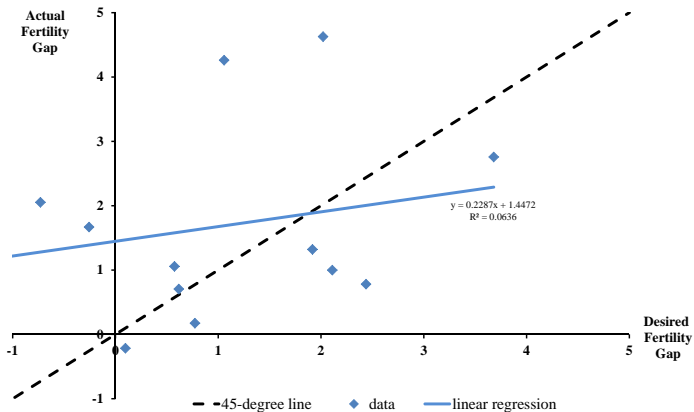
Summary

- Used unique data on male completed fertility.
- Main findings:
  - Completed fertility of men is higher than of women. (and yes, this is possible in the aggregate!)
  - Fertility inequality much higher for men than women. (but differences vary across countries)
  - A novel explanation for the gender gap in desired fertility. (and some measurement of how important this is)
  - Size/speed of demographic transition depends on gender considered.
- Lessons for theory: more 2-parent models needed!