How Contraception Changes Women’s Choices and Raises Women’s Status

...and may be the most important technology for global development

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My story

Women's liberation march from Farrugut Square to Layfette Park, 1970 (Wikimedia Commons).
Power of the Pill: the US story

Fraction of women using the pill, by birth year and age

Source: Goldin and Katz, 2002

Fraction of students, female, by degree program

Source: Goldin and Katz, 2002
Our research question

Our research:

Is that story generalizable to other developing countries, including poorer ones – and if not why not?

Has the diffusion of the technology allowing women to plan the timing of births made a difference in some (crude) measures of women’s empowerment?

How important is context (women’s education, income in absolute terms/relative to men)

How important are “culture”, social norms, and “exogenous” policies that affect women’s ability to have sex independent of choosing pregnancy?
Developing countries: social norms matter for women’s agency
Our model -- including the “reproductive ecosystem”
The research question again: Has the diffusion of the technology allowing women to plan the timing of births made a difference in some (crude) measures of women’s empowerment?

**Two Step Approach:**
1. Develop a $R_{c,t}$ index (PCA?)
2. Incorporate $R_{c,t}$ concept into a dynamic panel model

**Using data from:**
- Demographic and Health Surveys (DHS): 207 surveys conducted between 1990 and 2016 across 40 countries (minimum three waves per country)
- World Values Surveys: 240 surveys conducted between 1981 and 2014 across 100 countries
- Family Planning Effort Index: seven waves across 81-90 countries from 1982-2014
  - Quinquennial survey of experts on perceptions of national family planning programs
- World Development Indicators
Step 1. Develop an $\text{RE}_{c,t}$ Index

**Attitudes/social norms/policy environment relevant to reproduction, e.g.:**

- Opposition to use of contraception (DHS)
- When jobs are scarce, men have more of a right to jobs than women (WVS)
- University education is more important for boys than girls (WVS)
- Leaders make statements in favor of contraception 1-2 times per year (FPE)
- Many women are at work outside the home

**And real data reflecting use of contraception to time any pregnancies e.g.:**

- Percent women using contraception *before any birth* (DHS)
- Number of children *before first use* of contraception (DHS)
- Age at first birth (DHS)
- Age at first marriage (DHS)
DHS: Not using FP because opposition
WVS: Jobs more important for wo/men?

Norway*
Ethiopia*
Brazil
Colombia
Peru
USA*
Ghana
Tanzania*
Uganda*
Indonesia*
Turkey*
Egypt
Bangladesh*
India

*last observation was not in the final cross-section
FPE: Statements by leaders

Ethiopia
Indonesia
Bangladesh
Tanzania
Brazil*
Ghana
Uganda
India
Kenya
Egypt
Peru
Turkey

*last observation was not in the final cross-section
FPE: Total Index Score

Bangladesh
Ethiopia
India
Indonesia
Ghana
Uganda
Egypt
Kenya
Tanzania
Peru
Brazil*
Turkey

*last observation was not in the final cross-section
DHS: Women at work outside the home
DHS: Age at first birth

*last observation was not in the final cross-section
DHS: Using FP before having kids

Percentage who report using contraceptives before having children, urban women, wave mean (DHS)

Colombia
Peru
Brazil*
Ghana*
Uganda*
Turkey*
Kenya*
Ethiopia*
Bangladesh*
India*
Tanzania*
Indonesia
Egypt*

*last observation was not in the final cross-section
2. Use $RE_{c,t}$ variables (maybe) in a dynamic panel model

For urban women in country $c$ and time $t$,

For example:

(1) Timing variable $= f( RE_{c,t} \text{ variables} )$

(2) Women's empowerment variable $t = 2, 3, 4...n = f( \hat{RE}_{c,t} )^*$

* $\hat{RE}_{c,t}$ represents an instrument; $t = 2, 3, 4...n$ indicates lags of e.g. girl's education, women's formal labor force participation
Country Reproductive Ecosystem (CRE)

- New technologies
- Health policy
- Family Planning Programs
- Girl’s & Women’s Empowerment
- Global development

CRE
“WOMEN’S EMPOWERMENT AND WOMEN’S CONTRIBUTION TO THE ECONOMY IS MACRO-CRITICAL.”

CHRISTINE LAGARDE
The 10-year-old girl
Much to do! Empirical work a challenge

Look forward to your comments – less on circularity/endogeneity – we will worry over that – more on the RE concept and how to capture it....

Thanks again to my colleagues