Anderson (2018, AER)

Student Presentation in Master's Thesis Workshop 1

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May 28th, 2025

https://yasu0704xx.github.io

American Economic Review 2018, 108(6): 1407–1439
https://doi.org/10.1257/aer.20151047

Legal Origins and Female HIV†

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More than one-half of all people living with HIV are women and 80 percent of all HIV-positive women in the world live in sub-Saharan Africa. This paper demonstrates that the legal origins of these formerly colonized countries significantly determine current-day female HIV rates. In particular, female HIV rates are significantly higher in common law sub-Saharan African countries compared to civil law ones. This paper explains this relationship by focusing on differences in female property rights under the two codes of law. In sub-Saharan Africa, common law is associated with weaker female marital property laws. As a result, women in these common law countries have lower bargaining power within the household and are less able to negotiate safe sex practices and are thus more vulnerable to HIV, compared to their civil law counterparts. Exploiting the fact that some ethnic groups in sub-Saharan Africa cross country borders with different legal systems, we are able to include ethnicity fixed effects into a regression discontinuity approach. This allows us to control for a large set of cultural, geographical, and environmental factors that could be confounding the estimates. The results of this paper are consistent with gender inequality (the "feminization" of AIDS), explaining much of its prevalence in sub-Saharan Africa. (*JEL* I12, J15, J16, K11, K15, O15, O17)

Anderson (2018, AER)

- Anderson (2018) examines causal relationship between legal systems and female HIV infection rates in sub-Saharan Africa.
- Endogeneity: ethnicity fixed effects
  - As-if random borders in sub-Saharan Africa
    $\Rightarrow$ Regression discontinuity approach
- Result 1 (HIV positive rates)
  - Female: common law countries $>$ civil law countries
  - Male: no significant difference
- Result 2 (Contraception use)
  - Female: common law countries $<$ civil law countries
  - Male: common law countries $<$ civil law countries
- Common Law $\Rightarrow$ Female bargaining power $\downarrow$
  $\Rightarrow$ Negotiation for safe sex practices $\times$ $\Rightarrow$ HIV prevalence $\uparrow$

Contents

Background

"Feminization" of HIV/AIDS in sub-Saharan Africa

- Approximately 80% of all HIV-positive women in the world live in sub-Saharan Africa.
- Uniquely, it is the only place in the world where more women than men live with HIV.
  - Adult (aged 15-49): on average 3 times more likely
  - Young (aged 15-24): as much as 8 times more likely
- Typical route of HIV infection: Sexual transmission from their spouses.

Gender Inequality

- Liberal attitudes toward the sexual activity of men
  - Multiple sexual partners
  - Premartial & extramartial sexual activity
- WHO, UN, World Bank have conjectured that ‘feminization” is caused mainly from gender inequality.

Legal Origins

Civil Law

- Judgment based on the applicable article
- Equal protection to women in case of divorce, an even split of property between spouses, and legally protects widows

Common Law

- Judgment based on similar past precedents
- Weaker female bargaining power

Whether?

- Depending on colonial master

Data

Individual-, Ethnicity-, Country-Level data

- HIV infection rates
  - The Demographic Health Surveys (DHS)
  - Conducted in sub-Saharan African countries since the 1990s
  - HH surveys: between 10000 to 20000 women (aged 15-49) and men (aged 15-59) - Verbal interview & Blood tests
- Spatial distribution of ethnic groups (roughly 800) at the time of colonization
  - George Peter Murdock's Ethnographic Map of Africa
  - Assume that the spatial distribution has not changed.
- Legel systems: La Porta, Lopez-de-Silanes and Shleifer (2008)
- Controls: GDP/capita, geographic and environmental measures

Empirical Strategy

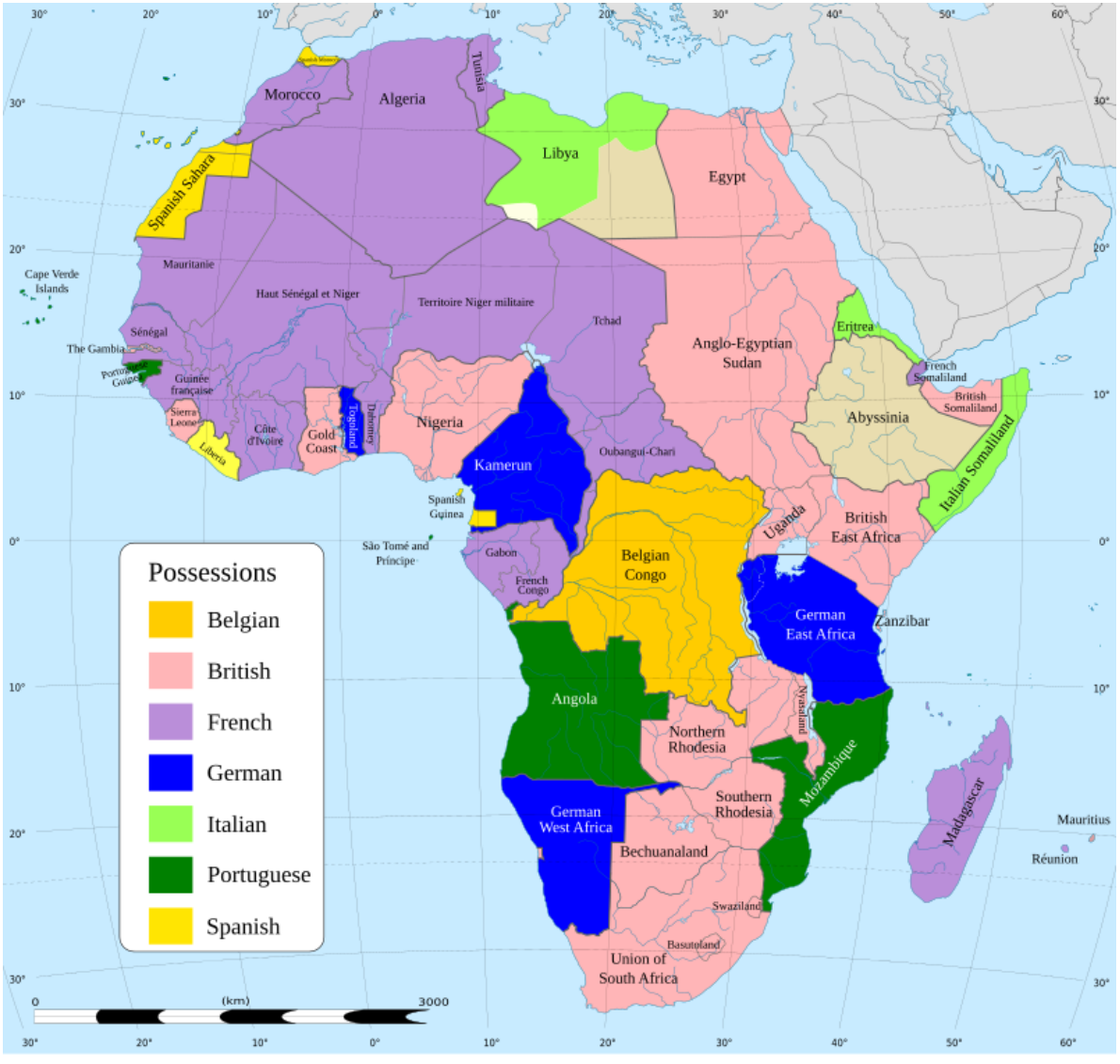
Parameter of Interest

- Average effect of common law on outcomes
- Outcomes:
  - HIV prevalence
  - Contraception use
  - Female property ownership
  - Female bargaining power

Identification

- Concern: Endogeneity emerged from ethnicity fixed effects
  $\Longrightarrow$ Use demarcation in 1884 and implement covariate adjusted RD estimation
- No manipulation?
  $\Longrightarrow$ Plausible, because national borders in sub-Saharan Africa can be regarded as "as-if random."
- Then, we can identify average effect of common law on outcomes close to national borders with different legal system.

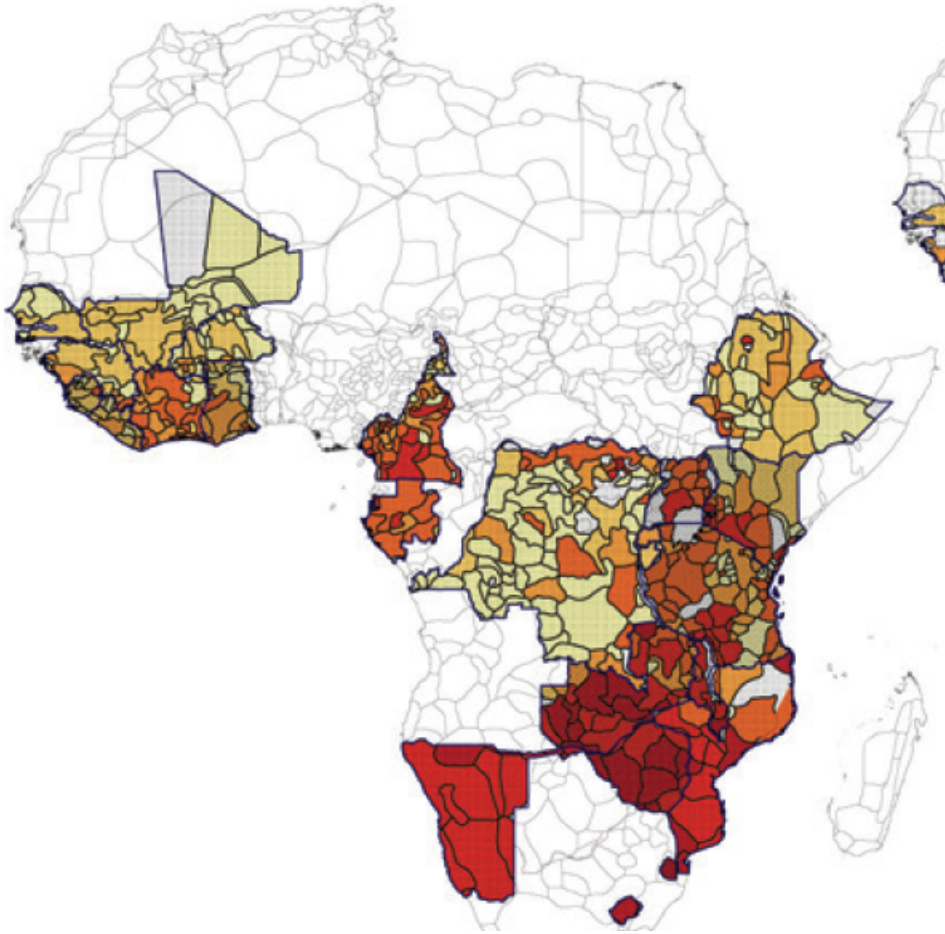
Scramble for Africa (The Berlin Conference, 1884)



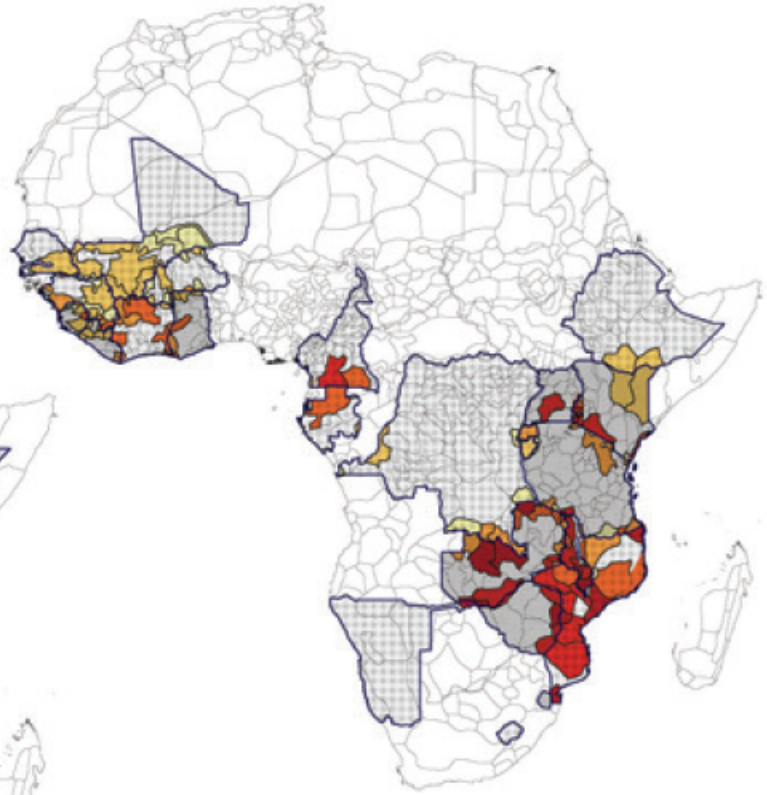
Source: Wikipedia

Ethnic-Groups

Panel A. HIV (women): ethnic-country units



Panel B. HIV (women): split ethnic groups



Split Ethnic Groups with Different Legal Origins

Panel C. HIV (women): split ethnic groups with different legal origins

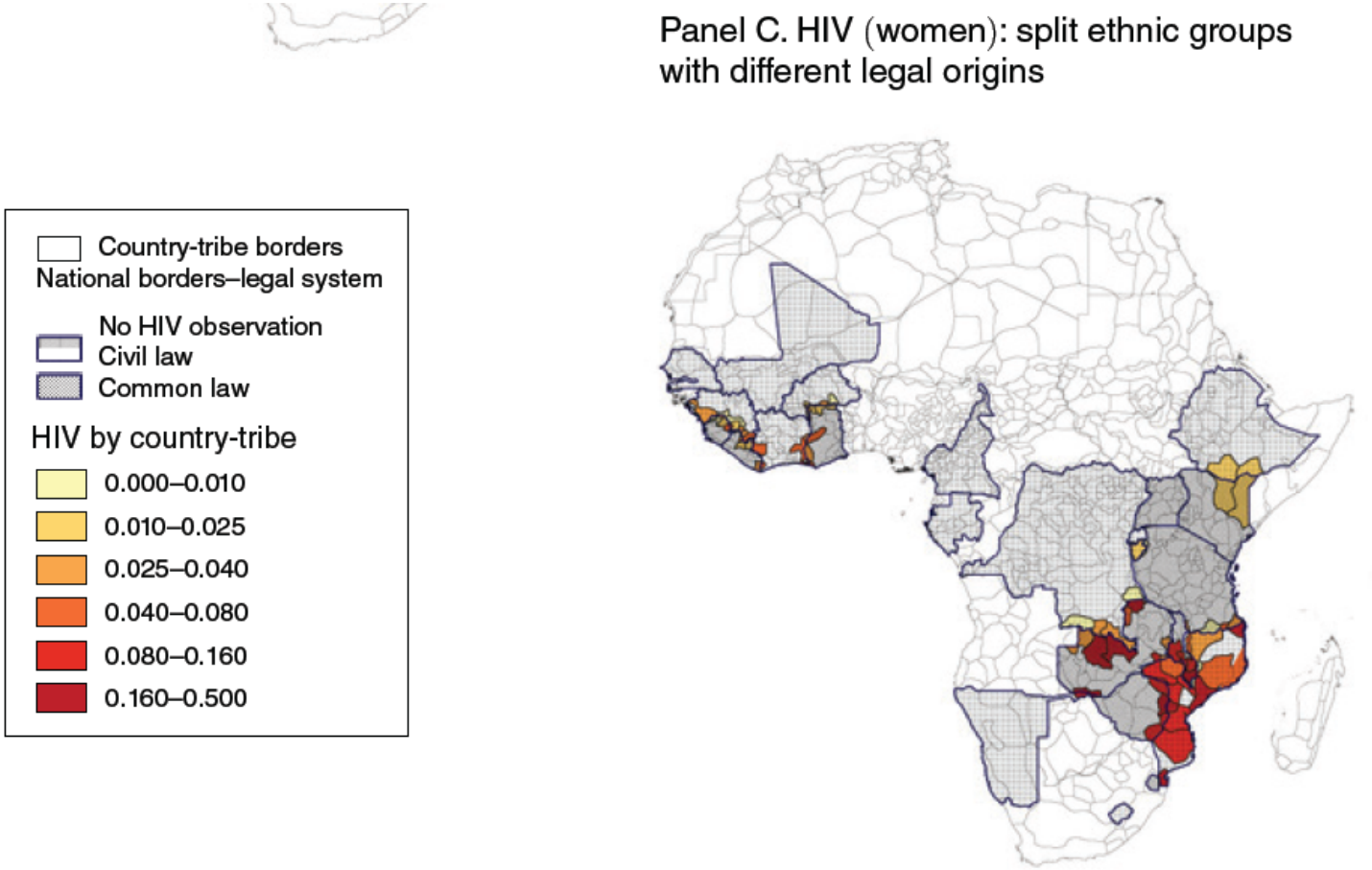


FIGURE 1. FEMALE HIV BY ETHNIC GROUP

Specification

- Model:

$$Y_{rcepi} = \alpha_0 + \alpha_1 L_{rc} + \alpha_2 X_{rc} + \alpha_3 X_{rcep} + \alpha_4 X_{rcepi} + f(BD_{rcep}) + \delta_e + \gamma_r + \lambda_t + \epsilon_{rcepi} \quad (1)$$

- Subscripts: region, country, ethnic homeland, pixel
- Y_{rcepi} : an outcome of interest
- L_{rc} : common law legal system indicator
- $X_{rc}, X_{rcep}, X_{rcepi}$: vectors of controls
- $f(BD_{rcep})$: a second-order RD polynomial of the distance from the centroid of pixel to the nearest national border with different legal origins
- δ_e, γ_r : fixed effects w.r.t. ethnicity and region, respectively
- ϵ_{rcepi} : clustered at the ethnicity and country level
- λ_t : years of survey

Main Results

HIV Prevalence Rates

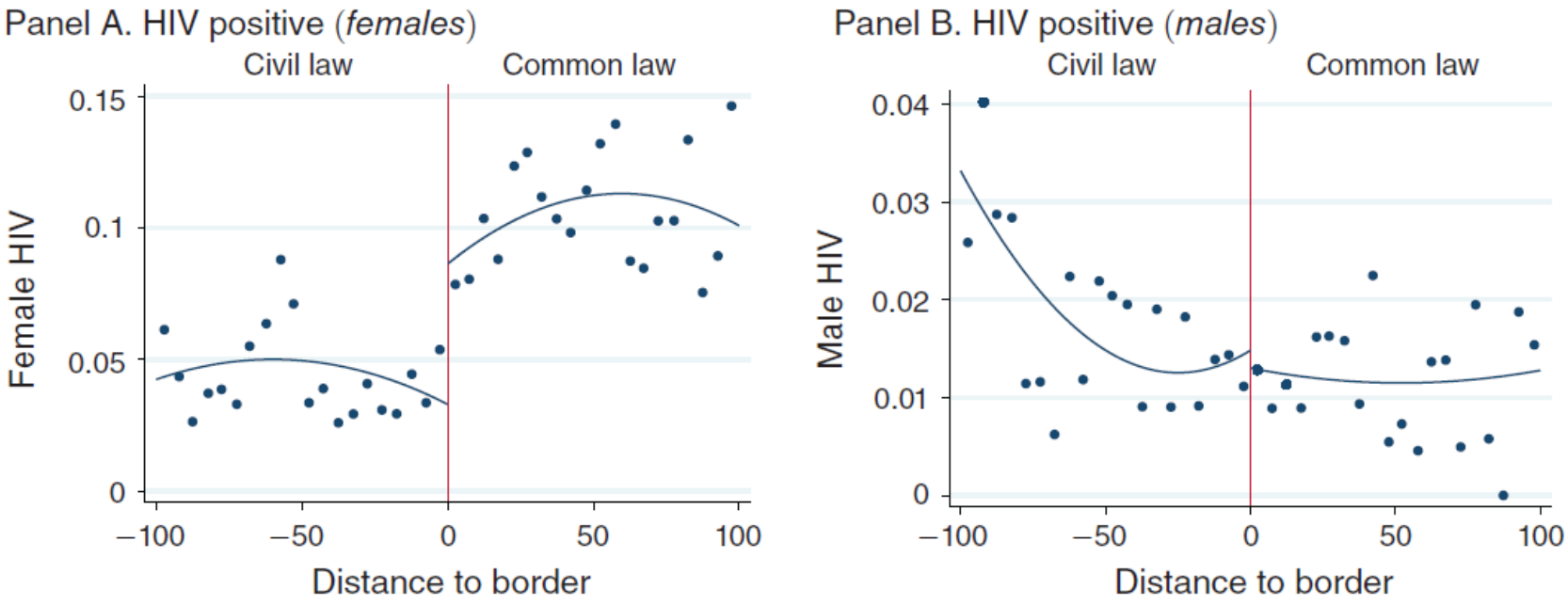


FIGURE 2. HIV POSITIVE

HIV Prevalence Rates

TABLE 1—HIV POSITIVE: FEMALES AGED 15–49

	Whole sample			Non-Muslim Non-Polygynous	Muslim Polygynous
Variable	≤ 200 km	≤ 150 km	≤ 100 km	≤ 100 km	≤ 100 km
Common law	0.016	0.018	0.019	0.016	0.007
	(0.006)	(0.006)	(0.007)	(0.006)	(0.013)
Observations	118,903	99,511	77,336	55,507	21,829

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include: country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

TABLE 2—HIV POSITIVE: MALES AGED 15–49

	Whole sample			Non-Muslim Non-Polygynous	Muslim Polygynous
Variable	≤ 200 km	≤ 150 km	≤ 100 km	≤ 100 km	≤ 100 km
Common law	0.001	0.001	−0.001	−0.003	0.002
	(0.006)	(0.005)	(0.005)	(0.005)	(0.01)
Observations	50,754	40,780	31,189	24,261	6,928

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

Protective Contraception

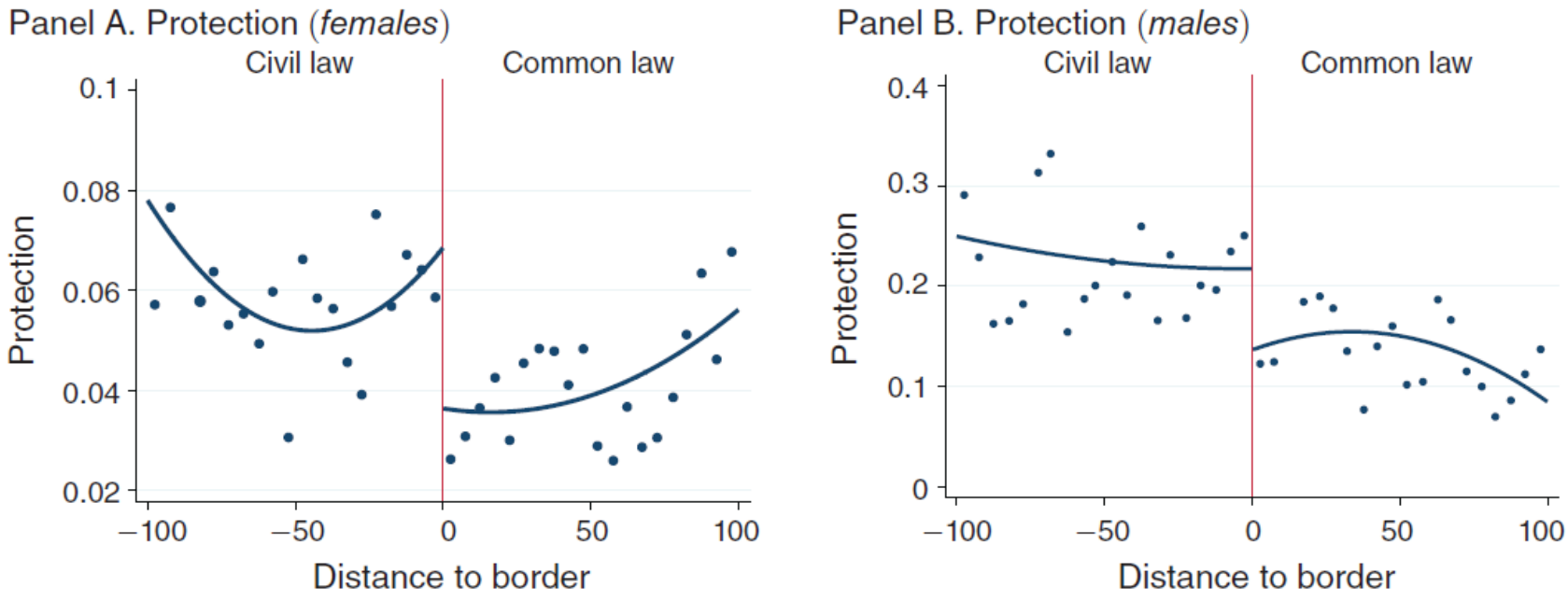


FIGURE 3. PROTECTION

Protective Contraception

TABLE 3—PROTECTIVE CONTRACEPTION: FEMALES AGED 15–49

	Whole sample			Non-Muslim Non-Polygynous	Muslim Polygynous
Variable	≤ 200 km	≤ 150 km	≤ 100 km	≤ 100 km	≤ 100 km
Common law	−0.018	−0.019	−0.019	−0.024	−0.008
	(0.006)	(0.006)	(0.007)	(0.01)	(0.007)
Observations	117,263	97,285	76,698	55,261	21,437

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

TABLE 4—PROTECTIVE CONTRACEPTION: MALES AGED 15–49

	Whole sample			Non-Muslim Non-Polygynous	Muslim Polygynous
Variable	≤ 200 km	≤ 150 km	≤ 100 km	≤ 100 km	≤ 100 km
Common law	−0.07	−0.07	−0.07	−0.08	−0.003
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Observations	81,873	67,887	52,902	46,016	6,886

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

Female Bargaining Power

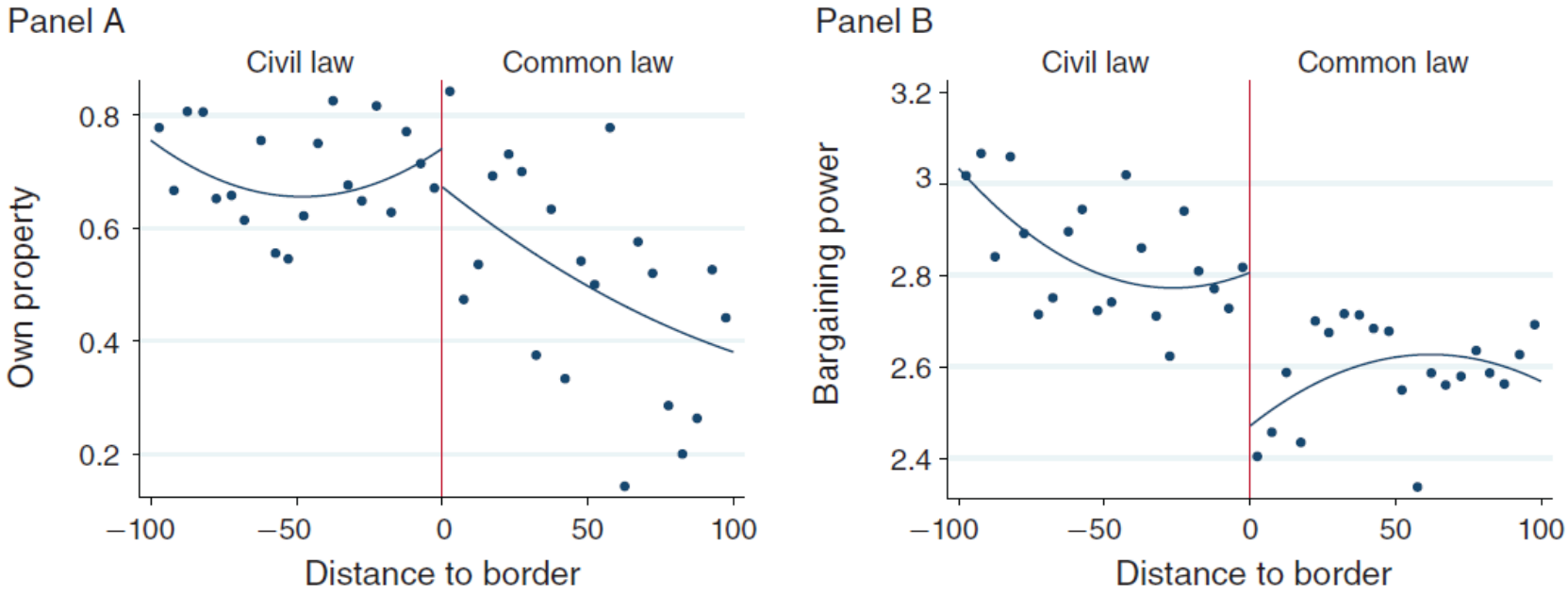


FIGURE 4

Female Bargaining Power

TABLE 5—PROPERTY OWNERSHIP: PREVIOUSLY MARRIED FEMALES AGED 15–49

	Whole sample			Non-Muslim	Muslim
Variable	≤ 300 km	≤ 250 km	≤ 200 km	≤ 200 km	≤ 200 km
Common law	−0.18	−0.19	−0.18	−0.24	−0.08
	(0.07)	(0.08)	(0.09)	(0.11)	(0.13)
Observations	2,627	2,450	2,325	1,875	450

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

TABLE 6—FEMALE BARGAINING POWER: FEMALES AGED 15–49

	Whole sample			Non-Muslim Non-Polygynous	Muslim Polygynous
Variable	≤ 200 km	≤ 150 km	≤ 100 km	≤ 100 km	≤ 100 km
Common law	−0.59	−0.58	−0.57	−0.60	−0.16
	(0.12)	(0.13)	(0.12)	(0.17)	(0.30)
Observations	51,163	44,041	34,716	22,067	13,643

Notes: Standard errors are clustered at the ethnic and country level using the approach of Cameron, Gelbach, and Miller (2011). All estimations include country, individual, and pixel controls; region fixed effects; ethnic fixed effects; second-order RD polynomial of distance to national border; and the year of the survey. Refer to the online Appendix for details on the data.

Mechanism Expected from the Results

- Civil law provides stronger female martial property:
  1. explicit recognition of unpaid contributions to the HH,
  2. joint ownership of all property within marriage,
  3. explicit protection to wives upon martial dissolution.

  $\Rightarrow$ Greater bargaining power
- Negotiation for safer sex practices
- Less vulnerable in the face of a massive health shock

Conclusion

Conclusion

- HIV infection rates of female in sub-Saharan Africa
  - Common law countries $>>>$ Civil law countries
- Female's social status is low in common law countries
  - Weak bargaining power towards property ownership
  - Less likely to demand safe sex practices from male

Limitations

- Limited number of ethnic groups
  - Data limitations
  - Historical coincidence: It is a limited number of ethnic groups that not only cross borders but also have different legal origins.
- Cannot explain the HIV rates variation in North & Central Africa
  - There is no variation in legal origins.
  - The overwhelming majority of the population in North & Central Africa are Muslim. [1]

[1] In Section V we have skipped, no significance is found in the sample of Muslim.