Economics of Conflict, War, and Peace

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Session 2.3
Transboundary effects

Admin matters

- Collect group project statement

Transboundary effects

- We already dealt with spillover or externality effects in the previous lectures
  - From region 1 to region 2, etc.
  - From generation 1 to generation 2, etc.
  - (And we'll get back to this in another lecture)
- In this session, we look at empirical findings of the effect of civil war and refugees on neighboring countries
  - Murdoch/Sandler study
  - Salehyan/Gleditsch study

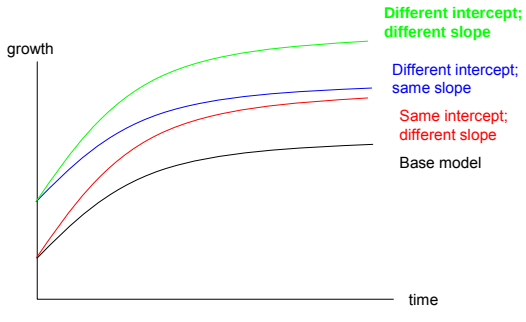
Murdoch/Sandler

- Purpose: effect of civil war on per capita income growth in
  - home country and
  - neighboring countries
- Set-up of the argument:
  - Beyond "greed and/or grievance" as causes of civil war this paper looks at …
  - … consequences
    - E.g., FDI diversion, trade disruption, destruction of social capital, loss of human capital, displacement and diversion of resources, etc.

Murdoch/Sandler

- Model
  - Based on Solow's augmented growth model
    - $Y(t) = K(t)^{\alpha} H(t)^{\beta} [A(t) L(t)]^{1-\alpha-\beta}$
    - Y = output/income | K = physical capital | H = human capital (education) | A = technological change | L = labor | α and β are elasticities of output w.r.t. physical and human capital, respectively
  - After some manipulation, this comes down to
    - $gr = a + b_1 \ln (s_k) + b_2 \ln (s_h) - b_3 \ln (n+g+\delta) - b_4 \ln (y_0)$
  - In words,
    - The rate of per capita income growth (gr) is a function of savings shares (s) devoted to physical and human capital development, minus growth-dampening labor force and technology growth effects and depreciation (n+g+δ), minus the initial income level (y_0) at which a country starts the process (convergence; diminishing returns)

Murdoch/Sandler



Murdoch/Sandler

- Channels
  - Human capital, migration, investment, shift factors (such as interrupted supply lines)
  - Differences across regions: culture, terrain, regional transport network configurations may spread civil war effects differently, shapes/sizes of countries may affect dispersion of civil war effects
- Cautions
  - Note that Murdoch/Sandler express reservations about the underlying theoretical model (p. 455)
  - They acknowledge that they simply go along with the existing literature because their objective is not the model, but the empirical results it may yield (p. 456)

Murdoch/Sandler

- Data
  - Correlates of War data (1960-1992) and updates through 1995 [for occurrence and for duration]
  - Neighbors
    - Nc – contiguity [0, 1]
    - Nd – distance [in 50 km increments]

Murdoch/Sandler

- Results

TABLE II Best Fitting Models in Terms of Spatial Reach.

	Long-run Regression		*Short-run Regression*	
Sample	*civ*	*tmonths*	*civ*	*tmonths*
Africa	500 km	contiguity	100 km[a]	100 km[a]
Latin America	700 km	contiguity	300 km[a]	contiguity[a]
Asia	contiguity	800 km	600 km	500 km
Pooled Latin America and Asia	contiguity[a]	contiguity	700 km	700 km

[a]Also some evidence of "second-order" effect at greater reach.

  - "civ" = civil war occurrence
  - "tmonths" = duration of civil war
- First, more spillover in long-run than short-run
- Second, smaller reach (less dispersion) in Africa
- 16 regression runs presented in all (next 2 Tables)

Murdoch/Sandler

TABLE III Estimated Coefficients of Long-run Growth Regressions by Region. *t*-ratios (in Parentheses) are Computed with White's Robust Standard Errors.

	Africa		*Latin America*		*Asia*		*Pooled*[b] *Latin America and Asia*	
Variable	*500 km*	*contiguity*	*700 km*	*contiguity*	*contiguity*	*800 km*	*contiguity*	*contiguity*
$\ln(y_{70})$	−0.581	−0.502	0.078	0.157	−0.047	−0.056	−0.106	−0.037
	(−4.21)	(−3.54)	(0.24)	(0.49)	(−0.42)	(−0.38)	(−0.83)	(−0.25)
$\ln(invest)$	0.546	0.436	0.332	0.371	0.600	0.588	0.753	0.688
	(5.33)	(3.81)	(0.80)	(0.92)	(2.13)	(3.37)	(3.56)	(3.92)
$\ln(n+g+\delta)$	−1.199	−0.646	0.300	0.618	−0.780	−1.375	−0.680	−0.677
	(−1.16)	(−0.42)	(0.19)	(0.42)	(−0.87)	(−2.07)	(−1.14)	(−1.18)
$\ln(school)$	0.270	0.293	−0.051	−0.016	0.074	0.075	−0.141	−0.110
	(3.70)	(3.88)	(−0.38)	(−0.07)	(0.39)	(0.91)	(−1.15)	(−1.05)
civ	−0.102		−0.082		−0.391		−0.117	
	(−1.01)		(−0.38)		(−1.25)		(−0.86)	
w_civ	−0.525		−0.455		−0.754		−0.600	
	(−1.84)		(−0.84)		(−2.61)		(−2.53)	
tmonths[a]		−0.130		−0.059		−0.116		−0.032
		(−1.60)		(−0.49)		(−2.91)		(−0.76)
w_tmonths[a]		0.200		−0.331		−0.786		−0.366
		(1.01)		(−0.96)		(−5.03)		(−3.90)
constant	−0.265	1.118	0.035	0.033	−2.083	−3.558	−2.081	−2.557
	(−0.11)	(0.43)	(0.01)	(0.01)	(−0.80)	(−1.51)	(−1.19)	(−1.58)
R-square	0.68	0.67	0.22	0.27	0.89	0.88	0.68	0.70
Observations	31	31	20	20	14	14	34	34

[a]tmonths and w_tmonths coefficients are multiplied by 100 for presentation.
[b]Includes a binary variable for Asia.

Murdoch/Sandler

TABLE IV Estimated Coefficients of Short-run Growth Regressions by Region.[a] *t*-ratios (in Parentheses) are Computed with White's Robust Standard Errors.

	Africa		*Latin America*		*Asia*		*Pooled*[c] *Latin America and Asia*	
Variable	*100 km*	*100 km*	*300 km*	*contiguity*	*600 km*	*500 km*	*700 km*	*700 km*
$\ln(y_{70})$	−0.047	−0.048	0.014	0.008	−0.007	−0.005	−0.018	−0.015
	(−1.92)	(−1.95)	(0.40)	(0.25)	(−0.39)	(−0.28)	(−1.09)	(−0.93)
$\ln(invest)$	0.064	0.066	0.102	0.107	0.017	0.016	0.054	0.055
	(4.30)	(4.26)	(3.01)	(3.01)	(0.73)	(0.69)	(2.62)	(2.58)
$\ln(n+g+\delta)$	−0.194	−0.172	−0.143	−0.107	−0.583	−0.589	−0.384	−0.397
	(−1.49)	(−1.23)	(−0.79)	(−0.57)	(−4.11)	(−3.96)	(−3.52)	(−3.53)
$\ln(school)$	0.029	0.029	−0.058	−0.046	−0.015	−0.022	−0.035	−0.039
	(2.26)	(2.28)	(−1.95)	(−1.53)	(−0.43)	(−0.60)	(−1.25)	(−1.36)
civ	−0.084		−0.040		−0.038		−0.035	
	(−2.73)		(−1.42)		(−1.11)		(−1.46)	
w_civ	−0.109		0.045		−0.219		−0.178	
	(−2.31)		(0.68)		(−2.12)		(−2.06)	
tmonths[b]		−0.121		−0.035		−0.047		−0.043
		(−1.70)		(−0.51)		(−0.93)		(−1.07)
w_tmonths[b]		−0.151		−0.301		−0.420		−0.350
		(−1.40)		(−1.44)		(−1.23)		(−1.20)
constant	−0.358	−0.315	−0.476	−0.383	−1.31	−1.336	−0.819	−0.875
	(−0.93)	(−0.78)	(−0.99)	(−0.78)	(−3.33)	(−3.19)	(−2.84)	(−2.89)
R-squared	0.21	0.18	0.39	0.39	0.34	0.32	0.32	0.32
Observations	235	235	109	109	126	126	235	235

[a]Each model also includes fixed effects for time periods.
[b]tmonths and w_tmonths coefficients are multiplied by 100 for presentation.
[c]Includes a binary variable for Asia.

Murdoch/Sandler

- Summary of findings
  - Africa is more resilient and recovers faster from civil war
  - The negative neighborhood effects are stronger than the home-country effect (and generally stronger in Asia than in Africa)
  - The spatial reach of the adverse effects of civil war is region-specific and time-period specific

Murdoch/Sandler

- Policy recommendations
  - Postconflict assistance may need to be tailored to accommodate the spatial spillover effects per region, i.e., the effects on neighbors as much as the effects on home-countries
  - Similarly, postconflict aid may need to accommodate far-away, non-contiguous, neighbors
  - Conflict prevention, intervention, and peacekeeping may have considerable regional public goods benefits [we'll get back to the topic of intervention/peacekeeping]

Sahelyan/Gleditsch

- Murdoch/Sandler examine the effects of civil war
- Sahelyan/Gleditsch examine (one of) the mechanism/s and propose that refugees help spread civil war to neighbors
- Preview of the argument
  - Refugees are the consequence of home-country civil war and the cause of neighborhood civil war dispersion
    - Refugees can facilitate incursion by rebel groups and may help to spread weapons (PFLP/PLO, Jordan, Lebanon)
    - They alter ethnic compositions/demographics (Macedonia, Albania, Kosovo; Rwanda/eastern Congo)
    - They increase competition for resources and may spread disease
  - Policy conclusion: better control refugee flows/movements

Sahelyan/Gleditsch

- Observation: civil wars are clustered in time and space; this suggests non-independence or knock-on effects;
- Previous explanations
  - Issues and actors span boundaries
  - Transethnic ties across state borders may lead to solidarity fights
  - Demonstration effects of civil war in one country can spill over to another
  - Economic and public health spillover effects

Sahelyan/Gleditsch

- Main idea
  - While states are bound by political borders, its citizens are not; they form "dense networks of social relations that transcend national boundaries" (p. 340)
  - States are not self-contained units of analysis as much political/social science implicitly assumes
  - Refugee flows/forced migration as main explanatory variable

Sahelyan/Gleditsch

- The refugee mechanism
  - Refugees stay in touch with home-state (diaspora effect); they carry conflict-relations with them; they can expand the reach of rebel movements; they make for denser connections with neighbor/host-country ethnic kin
  - Being out of judicial reach of their home-states makes them more likely to engage in conflict behavior and that makes the host-state vulnerable to home-state retaliation

Sahelyan/Gleditsch

- Hypothesis: "presence of refugees from neighboring countries increases the probability that a country will experience civil war" (p. 348)

TABLE 1. *Countries with significant refugee populations, 2001*

Host	*Number*
Iran	2,558,000
Pakistan	2,018,000
Jordan	1,643,900
Tanzania	498,000
United States	492,500
Yugoslavia	400,000
Syria	397,600
Lebanon	389,500
India	345,800
China	345,000
Sudan	307,000
DR Congo	305,000
Thailand	277,000
Zambia	270,000
Guinea	190,000

Source: United States Committee for Refugees 2002.

Sahelyan/Gleditsch

TABLE 2. *Ratio of refugees to host-country populations, 2001*

Host country	Ratio of refugee population to total population	Number of refugees
Jordan	1:3	1,643,900
Lebanon	1:11	389,500
Iran	1:26	2,558,000
Djibouti	1:27	22,000
Yugoslavia	1:27	400,000
Congo-Brazzaville	1:30	102,000
Zambia	1:36	270,000
Guinea	1:40	190,000
Liberia	1:53	60,000
Pakistan	1:72	2,018,000
Tanzania	1:73	498,000
Sudan	1:104	307,000

Source: United States Committee for Refugees 2002.

- But refugees are usually highly clustered or concentrated, exacerbating the ratio in particular regions

Sahelyan/Gleditsch

- Data
  - UCDP/PRIO sub-war and war
  - Dependent variable: conflict onset
  - Main independent variable: number of refugees host receives from neighbor/s (2 definitions); distance
  - Control variables

Sahelyan/Gleditsch

TABLE 3. *Refugees from neighboring states and civil conflict onset*

Refugees from neighboring states	Conflict onset: No	Conflict onset: Yes	Total
No	4,826	156	4,982
	(97%)	(3%)	(100%)
Yes	1,101	127	1,228
	(90%)	(10%)	(100%)
Total	5,927	283	6,210

Note: Pearson $chi^2 = 117.7695$, $p \leq 0.001$. Percentages listed in parentheses.

Country-year observations = 6,210

- Simple cross-tabulation
- Control variables
  - Neighborhood conflict (control for presence of conflict apart from flow of refugees)
  - Presence of transborder ethnic groups
  - Economic status of countries (GPD)
  - Political system of countries (Polity)
  - Ethnic composition or dominance
  - Total population size
  - Peace years prior to conflict

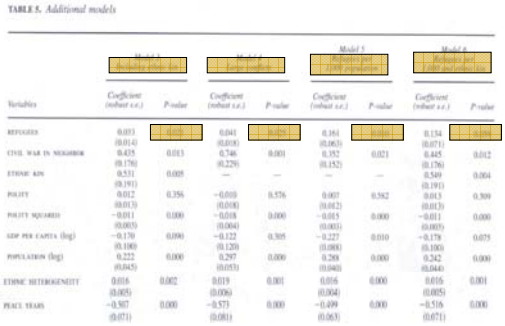
Sahelyan/Gleditsch (main result: excerpt)

TABLE 4. *Logistic regression results*

Variables	Model 1 Controls only: Coefficient (robust s.e.)	Model 1 Controls only: P-value	Model 2 Including refugees: Coefficient (robust s.e.)	Model 2 Including refugees: P-value
REFUGEES	—	—	[redacted] (0.013)	[redacted]
CIVIL WAR IN NEIGHBOR	0.421 (0.152)	0.006	0.337 (0.152)	0.027
POLITY	0.005 (0.012)	0.699	0.006 (0.012)	0.642
POLITY SQUARED	−0.015 (0.003)	0.000	−0.015 (0.003)	0.000
GDP PER CAPITA (log)	−0.254 (0.089)	0.004	−0.214 (0.089)	0.016
POPULATION (log) (0.039)	0.280	0.000 (0.040)	0.264	0.000
ETHNIC HETEROGENEITY	0.016 (0.004)	0.000	0.016 (0.004)	0.000
PEACE YEARS	−0.503 (0.063)	0.000	−0.492 (0.063)	0.000

Sahelyan/Gleditsch (add't result: excerpts)

TABLE 5. *Additional models*



Sahelyan/Gleditsch

- Policy implications
  - Don't take away exit options (bottling up conflict probably is not going to work)
  - Instead: better control refugee flows/movements
  - Donor nations might consider to assist UNHCR more substantially
  - Reconsider overseas resettlement programs, more generous asylum and refugee programs (farther away from conflict areas) [questionable]