

Does FDI cause growth in post-conflict settings? Subnational evidence from Liberia

Jonas Bunte¹ Harsh Desai² Kanio Gbala³
Brad Parks² Daniel Miller Runfola²

¹The University of Texas at Dallas

²University of California, Davis

³TrustAfrica

November 9, 2016

Liberia

- FDI driven development strategy
 - Liberia granted 35% of its land to foreign investors between 2006–2015.
 - 95% of all concessions are in natural resource sector.
 - Responses
 - Survey: Will local community benefit from concessions granted to investors?
Strongly disagree (46%) vs. agree (8%)
 - NGOs: extremely critical
 - AfDB: “Tensions will mount unless means are found to generate win-win economic benefits between concessionaires and local communities”
- Need for study examining the effect of concessions on local growth.

Research Approach

- Much existing literature
 - Sophisticated analyses of time-series properties
 - Increasing use of firm-level data
 - All struggle with endogeneity
- Ideal approach: Experiments
 - Random assignment of concessions to some subnational localities (treatment) but not to others (control)
 - However, impossible to randomly assign projects across space, sectors, and investors.
- Our approach: Quasi-experimental
 - Matching approach to create sub-sample of treatment and control units.
 - Compare growth in locations with and without FDI.

Data

» DV: Economic growth?

- Satellite data on Night-time light
- Specifically: Difference in levels of night-time lights between 2006 and 2013

» IV: Foreign investment?

- 166 concessions granted to investors between 2007–2012
- Geo-referenced
- Coded by concession characteristics:
 - Sector: agriculture, forestry, mining
 - Investor nationality: U.S. vs. China
 - CSR activities: yes vs. no

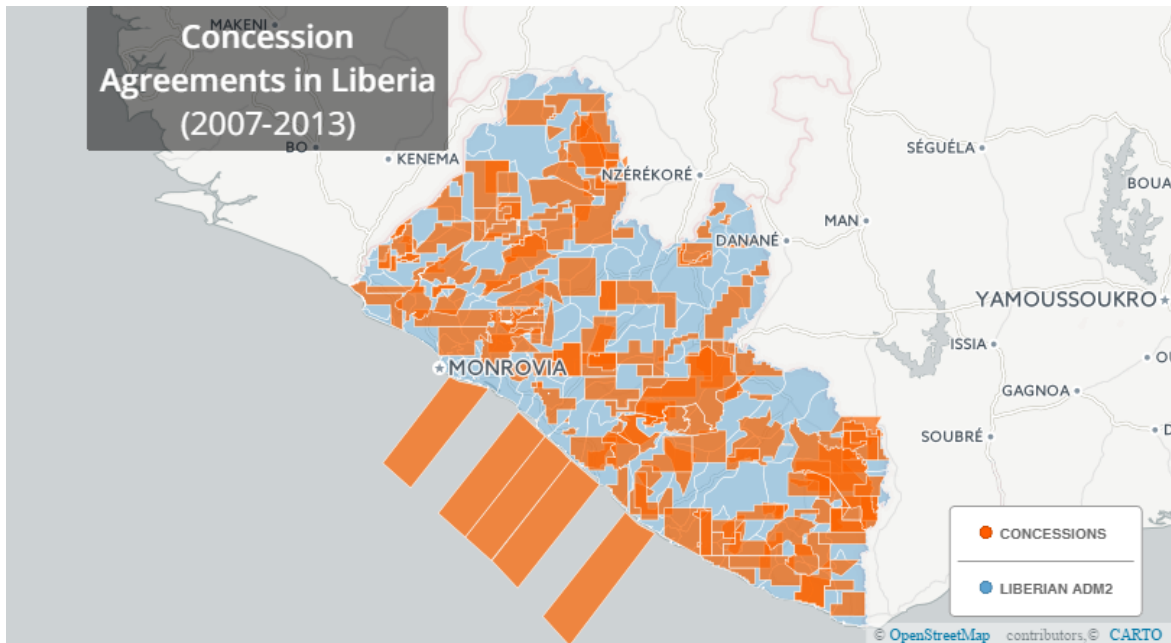
» Matching and Controls?

- Satellite data on geographic characteristics (distance to roads, etc.)
- DHS surveys for population characteristics (education, age, etc.)

» Result: data at the 1km x 1km grid cell level

Data

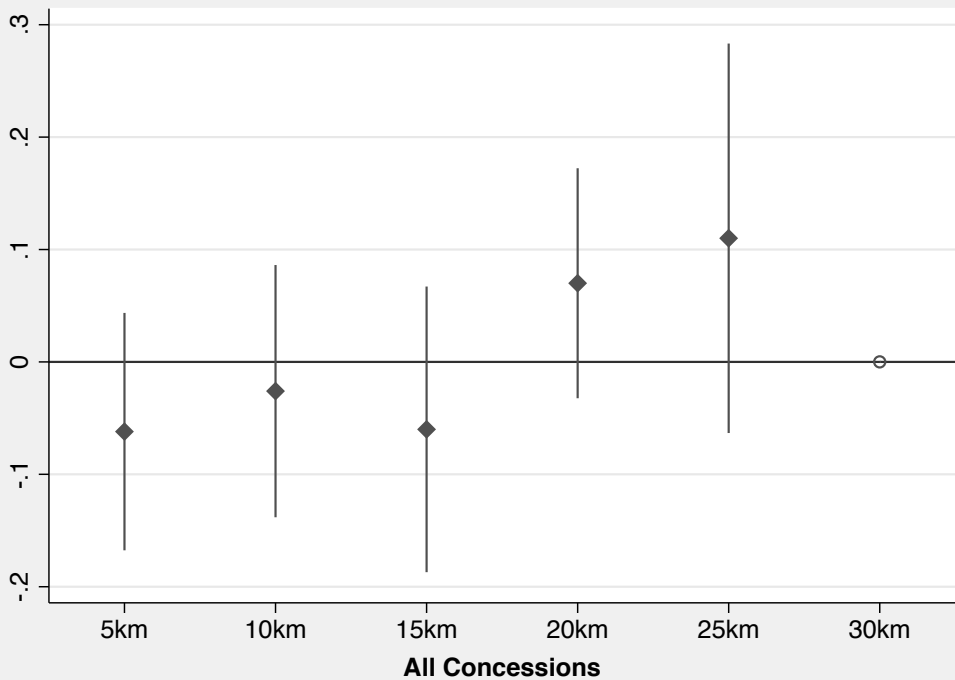
Concessions



Matching and Estimation

- Matching variables
 - population density, distance to roads, urban travel time, slope, elevation, precipitation, temperature, and pre-treatment levels of and trends in luminosity.
 - wealth, education, employment, gender composition, and age of local populations.
- Treatment definition
 - Variation in distance: 5km, 10km, 15km, 20km, 25km, 30km.
 - Variation in sector
 - Variation in investor nationality
 - Variation in CRS activities
- Analysis
 - Difference-in-Difference with matching
 - Difference in Night-time lights across time (2006 vs. 2013)
 - Difference across units (treated vs. not)

Overall Effect



Overall Effect

- Interpretation?
 - A. Concessions to foreign investors do not have any effect on local growth.
 - B. Concessions have both positive and negative effect, but that these effects cancel each other out.

- If B. is the case, what mechanisms might be at play?
 1. Technology transfers
 2. Labor productivity
 3. Local agglomeration
 4. Crowding out

1. Technology Transfers

- Argument
 - Direct or indirect transfers
 - However, 'technology gap' matters

- Observable implications
 1. Sector: Mining ↑, Agriculture ↓
 2. Nationality: China ↑, U.S. ↓
 3. Sector × Nationality: China mining ↑, U.S. mining ↓
 4. Distance: close by ↑, further away ↑

2. Labor Productivity

- Argument
 - Upgrade skills of workers
- Observable implications
 5. CSR: With CRS \uparrow , without CSR \downarrow
 6. Nationality: U.S. \uparrow , China \downarrow
 7. CSR \times Nationality: U.S. no CSR \uparrow , China no CSR \downarrow
 8. Sector: agriculture \uparrow , mining \downarrow
 9. Distance: close by \uparrow , further away \downarrow

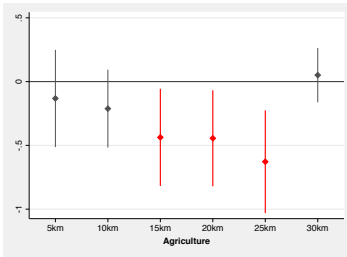
3. Local Agglomeration

- Argument
 - Formal sectors provide higher incomes, which generate demand for non-concession related businesses
 - Increased forward-backward linkages
- Observable implications
 10. Sector: Mining ↑, Agriculture ↓
 11. Nationality: U.S. ↑, China ↓
 12. Distance: close by ↑, further away ↓

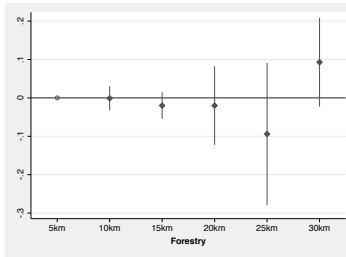
4. Crowding Out

- Argument
 - Foreign firms replace domestic firms
- Observable implications
 - 13. Sector: Mining ↑, Agriculture ↓

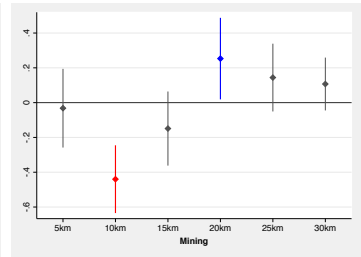
Sector



(a) Agriculture

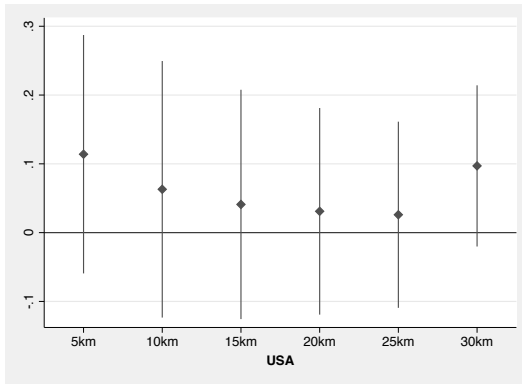


(b) Forestry

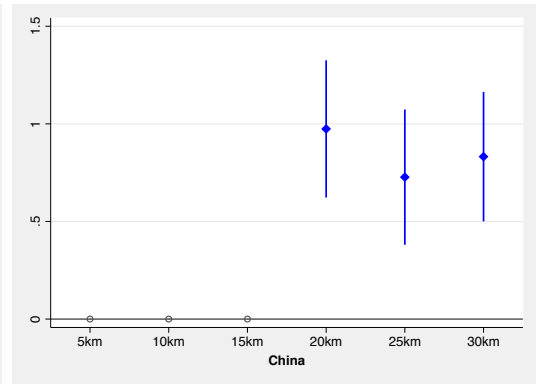


(c) Mining

Investor Nationality

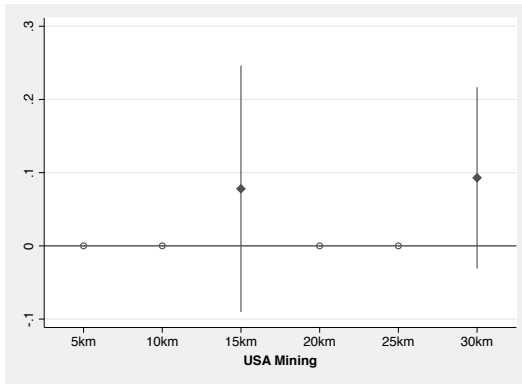


(a) USA

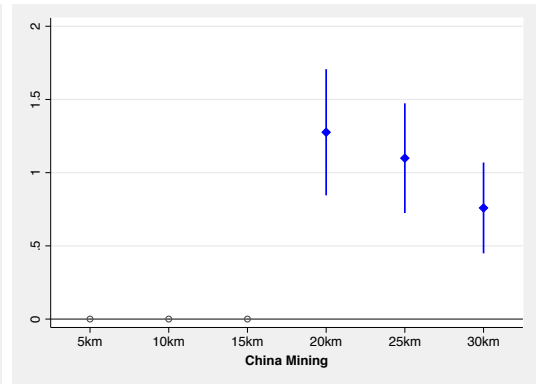


(b) China

Sector \times Investor Nationality

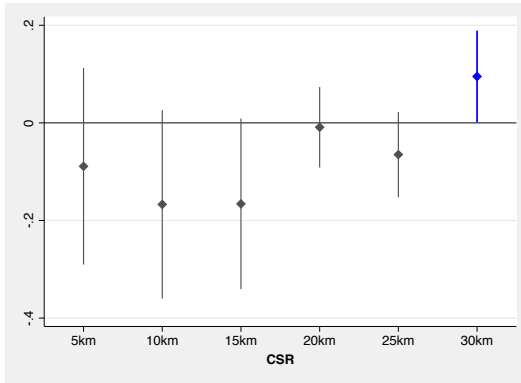


(a) USA Mining

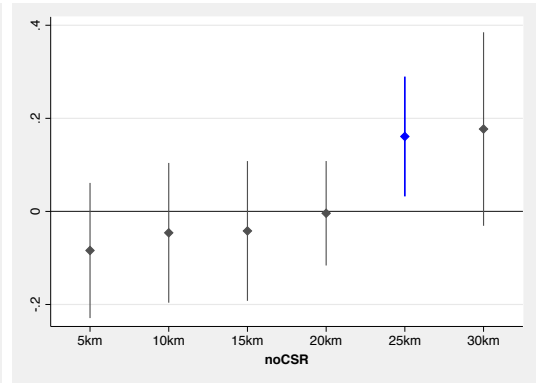


(b) China Mining

Corporate Social Responsibility

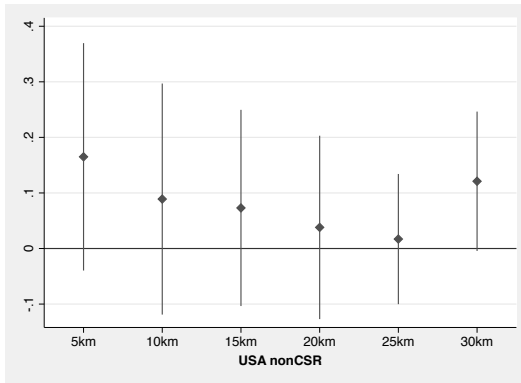


(a) Project with CSR

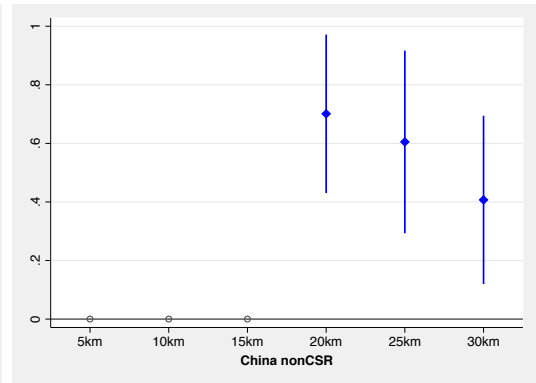


(b) Project without CSR

(Non)CSR \times Investor Nationality



(a) U.S. Project without CSR



(b) Chinese Project without CSR

Findings

Green = support, Yellow = partial support, Red = no support

Technological Transfers

Implication 1	Sector: Mining ↑, Agriculture ↓
Implication 2	Nationality: China ↑, U.S. ↓
Implication 3	Sector × Nationality: China mining ↑, U.S. mining ↓
Implication 4	Distance: close by ↑, further away ↑

Labor Productivity

Implication 5	CSR: With CRS ↑, without CSR ↓
Implication 6	Nationality: U.S. ↑, China ↓
Implication 7	CSR × Nationality: U.S. no CSR ↑, China no CSR ↓
Implication 8	Sector: agriculture ↑, mining ↓
Implication 9	Distance: close by ↑, further away ↓

Local Agglomeration

Implication 10	Sector: Mining ↑, Agriculture ↓
Implication 11	Nationality: U.S. ↑, China ↓
Implication 12	Distance: close by ↑, further away ↓

Crowding out

Implication 13	Sector: Mining ↑, Agriculture ↓
----------------	---------------------------------

Concluding Remarks

- Findings
 - No overall effect on growth.
 - Evidence consistent with the interpretation that different causal mechanisms cancel each other out (technology transfers vs. crowding out)
- Empirical advances
 - Quasi-experimental approach
 - New Data
 - Ability to differentiate between different concession attributes.