

GUNS AND KIDNEYS

HOW TRANSPLANT TOURISM FINANCES GLOBAL CONFLICT

Transplant Tourism

Transplant tourists travel from high income to low income destinations to illegally obtain an organ.

Transplant tourists pay between US\$ 100,000 and US\$ 200,000 for a kidney. Local donors report to receive between US\$ 500 and US\$ 10,000 for a kidney:

Highly profitable business.

Hypothesis:

Non-state armed groups use proceeds from transplant tourism agreements to finance violent attacks.

Do non-state armed groups use proceeds from transplant tourism to finance attacks?

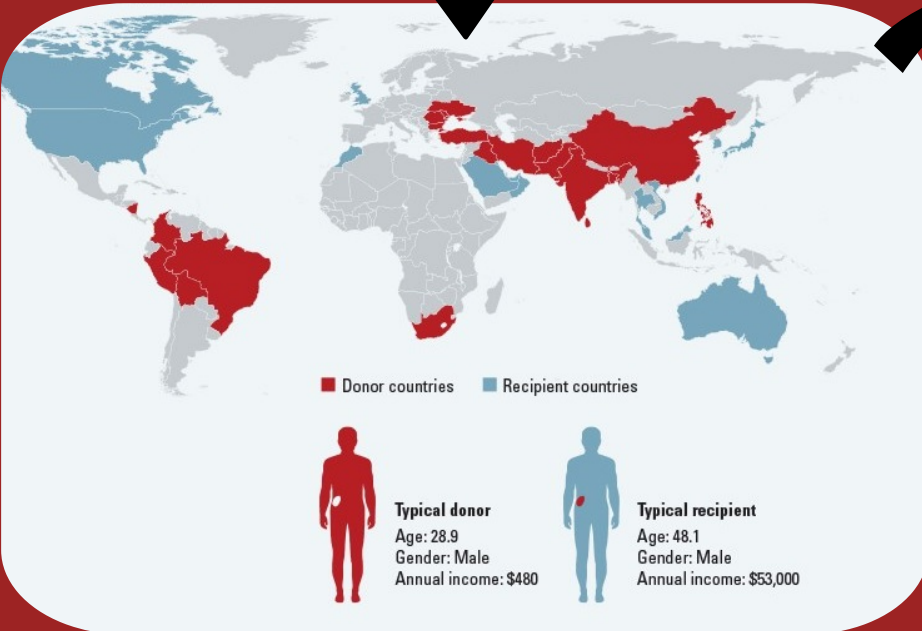
I assess **how non-state armed conflict** in 8 countries notorious for transplant tourism **evolves with exogenous changes in U.S. kidney demand.**

Within each country, I compare the effect in localities with a transplant center to the effect in localities without a transplant center.

$$Conflict_{it} = \beta_1 Transplant\ infrastructure_i \times Kidney\ demand_t + FE_i + FE_t + \epsilon_{it}$$

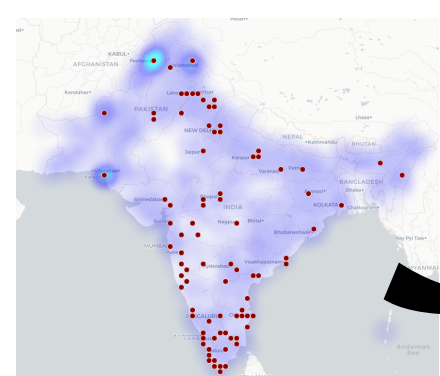
— at location i : 0.5° latitude \times 0.5° longitude cell

— at time t : month



Conflict events

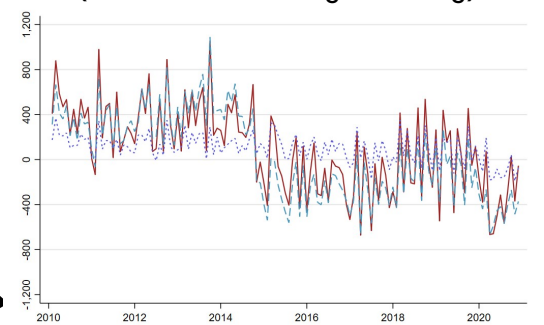
(Armed Conflict Location Event Data)



Transplant centers
(hand-collected; authorized centers as most illegal transplants happen alongside legal transplants)

U.S. waiting list patients for kidneys

(United Network of Organ Sharing)



Change in number of waiting list patients

Change in number of waiting list patients with income:
They should be more capable of buying a kidney abroad, so I expect a stronger effect.

Change in number of waiting list patients on dialysis:
They should be unable to travel, so I expect no effect.

DO NON-STATE ARMED GROUPS FINANCE THEIR ATTACKS BY ORGAN TRADE?

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Higher kidney demand increases conflict in localities with a transplant center.

Dependent variable: Probability of conflict (in basis points)

	No transplant center		With transplant center		With transplant center and waiting list patients	
Transplant center						
× waiting list (WL) patients			90.8***	73.6***		
			(16.3)	(15.8)		
× WL patients with income			244.1***	189.8***		
			(37.3)	(35.3)		
× WL patients on dialysis			0.9	5.5		
			(14.0)	(13.7)		
Observations	2,143K	2,142K	2,143K	2,142K	2,143K	2,142K
Cell fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Month fixed effects	Yes	No	Yes	No	Yes	No
Country × month FEs	No	Yes	No	Yes	No	Yes
Base prob. transplant cells	538.4	538.4	538.4	538.4	538.4	538.4

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In a cell with a transplant center, conflict probability increases from 5.4%

- to 6.3% with a 1 SD increase in waiting list patients.

- to 7.8% with a 1 SD increase in patients with income.

- not significantly with an increase in patients on dialysis.

Groups with a transplant center at their home region perform more attacks when kidney demand is higher.

Dependent variable: Group's probability of conflict (in basis points)

	No transplant center at home region		With transplant center at home region		With transplant center at home region and waiting list patients	
Transplant center at home region						
× waiting list (WL) patients			28.4**	27.4**		
			(13.8)	(13.4)		
× WL patients with income			59.3**	64.2**		
			(29.6)	(29.9)		
× WL patients on dialysis			6.9	3.6		
			(13.6)	(12.7)		
Observations	95,715	95,580	95,715	95,580	95,715	95,580
Group fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Month fixed effects	Yes	No	Yes	No	Yes	No
Country × month FEs	No	Yes	No	Yes	No	Yes
Base prob. transplant groups	217.0	217.9	217.0	217.9	217.0	217.94

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The probability that groups with a transplant center at their home region perform an attack increases from 2.2%

- to 2.5% with a 1 SD increase in waiting list patients.

- to 2.8% with a 1 SD increase in patients with income.

- not significantly with an increase in patients on dialysis.

Higher kidney demand is associated with an increase in suspicious payments.

Dependent variable: Log suspicious payments

	No transplant countries		With transplant countries	
Trafficking country				
× waiting list (WL) patients	0.249**			
	(0.12)			
× WL patients with income		0.165**		
		(0.08)		
× WL patients on dialysis			0.187**	
			(0.09)	
Observations	17,850	16,275	17,325	
Country fixed effects	Yes	Yes	Yes	
Month fixed effects	Yes	Yes	Yes	
Mean log payments transplant countries	0.49	0.54	0.51	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Suspicious payments from and to countries notorious for organ trafficking increase by 24.9% with a 1 SD increase in waiting list patients.

Dependent var.: Group's probability of conflict outside home region

	No transplant center at home region		With transplant center at home region		With transplant center at home region and waiting list patients	
Transplant center at home region						
× waiting list (WL) patients			25.6**	24.7**		
			(12.7)	(12.3)		
× WL patients with income			51.6*	55.9*		
			(29.0)	(29.3)		
× WL patients on dialysis			6.5	3.5		
			(12.3)	(11.4)		
Observations	95,715	95,580	95,715	95,580	95,715	95,580
Group fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Month fixed effects	Yes	No	Yes	No	Yes	No
Country × month FEs	No	Yes	No	Yes	No	Yes
Base prob. transplant groups	160.6	161.3	160.6	161.3	160.6	161.32

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The probability that groups with a transplant center at home perform an attack in other regions increases from 1.6%

- to 1.9% with a 1 SD increase in waiting list patients.

- to 2.1% with a 1 SD increase in patients with income.

- not significantly with an increase in patients on dialysis.