

The Geographical Expansion of Drug Trafficking Organizations and Property Crime

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Drug trafficking organizations (DTO)



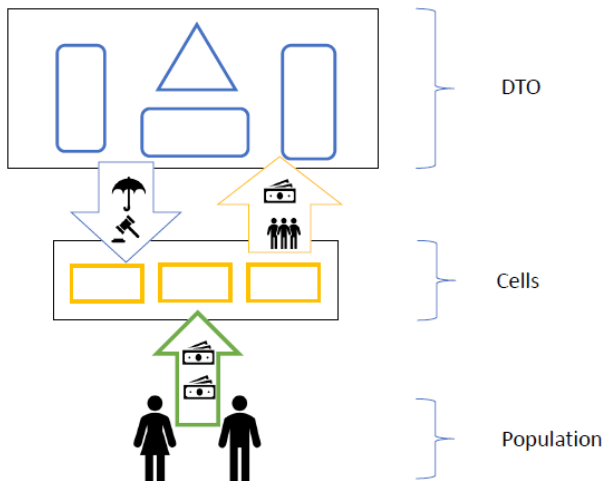
Drug Trafficking Organizations (DTO) aim to be exclusive operators of trade route(s), i.e. property crimes do not lie in their field of interest

Criminal cells commit property crime and are loosely attached to the DTO. Criminal cells can be a threat, but they provide know-how, manpower, income.

Does DTO presence increase or decrease property crime?

DTO and crime cells

Power structure



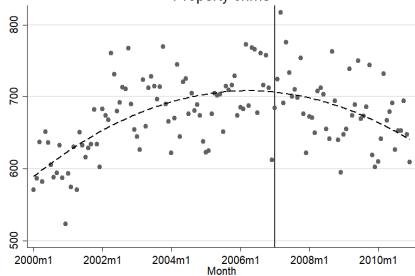
- May attempts, this one: start in Dec. 2006
- 60,000 related deaths in 10+ years
- Other -unintended- consequences?

What does a negative effect imply for the time *after*? → Colombia is a cautionary tale.

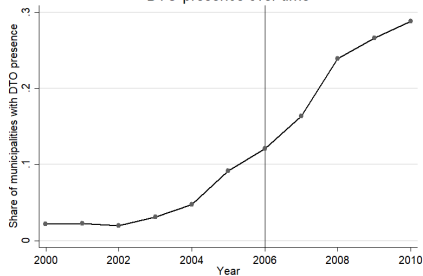
- Organized crime and criminal cells : Shelling (1984); Calderón et al. (2015); Lessing (2015); Diaz-Cayeros et al. (2015)
- State interventions and spread of DTO: Corona Juárez (2014), Calderón et al. (2015); Osorio (2015); Dell (2015)
- State intervention in Mexico and violent crime: Espinal-Enríquez and Larralde (2015), Brückner and Ciccone (2010); Calderón et al. (2015); Castillo et al. (2013); Corona Juárez (2014); Dell (2015); Draca and Machin (2015); Enamorado et al. (2016); Espinosa and Rubin (2015); Guerrero-Gutiérrez (2011); Lessing (2015)
- Links between intervention in Mexico and other crimes: Calderón et al., 2015; Guerrero-Gutiérrez, 2011; Jones (2013)

Property crime in Mexico

Property crime



DTO presence over time



$$\ln Crime_{it} = \alpha_2 + \beta_2 Presence_{i,t} + \gamma_2 z_{it} + \phi_t + \eta_i + u_{it}$$

Relationship between DTO presence and crime rate unclear:

- more crime \rightarrow less police \rightarrow more DTO (?)
- less crime \rightarrow less competition \rightarrow more DTO (?)

Solution:

Exploit exogenous variation in the DTO presence due to a (military) state intervention that targeted heads of DTO to document the channel.

$$Presence_{it} = \alpha_1 + \beta_1 Intervention_{j,t-1} + \gamma_1 z_{it} + \phi_t + \eta_i + u_{it}$$
$$InCrime_{it} = \alpha_3 + \beta_3 \widehat{Presence}_{i,t} + \gamma_3 z_{it} + \phi_t + \eta_i + u_{it}$$

Exclusion restriction of the intervention is unsure \rightarrow not an IV but a documentation of the channel.

Results:

- Intervention associated with presence and number of DTO in the immediate vicinity.
- Negative association between DTO presence and property crime.

	Mean	St. dev.	Min.	Max.
Crime category				
Theft	24.16	41.63	0	639
Other property crime	13.90	29.37	0	954
DTO presence				
DTO (=1)	0.212	0.409	0	1
Nr. of DTO	0.411	0.946	0	9
State intervention				
Any capture (=1)	0.045	0.207	0	1
Nr. of captures	0.010	0.134	0	4
Other characteristics				
ln(tot. population)	9.317	1.535	4.62	14.37
Per capita night lights	0.096	0.084	0.00	1.43
Male population 15-39 years old %	0.184	0.025	0.10	0.34
Male population 15-39 years old (absolute)	8364.670	27135.722	13	414495
Unemployment rate	3.389	1.524	1.18	8.17

Notes: There are 12200 observations (2440 municipalities for 5 years). Crime is reported crime per 100 thousand population. Source: INEGI. DTO presence was compiled by Coscia and Rios (2012), one municipality in 2010 is missing DTO information, thus the total number is 12199. Total population, male population and measures of state intervention were compiled by Calderon et al. (2015). Per capita night lights is the municipality-pixel year mean, source: NOAA. Unemployment rate the yearly average at the federal state level, source: BIE. Data for the D.F not included.

	DTO presence (=1) _(i,t)			Nr. of DTO _(i,t)		
	(1)	(2)	(3)	(4)	(5)	(6)
Any capture (=1) _(j,t-1)	0.08*** (0.03)			0.12*** (0.05)		
Leader's capture (=1) _(j,t-1)		0.19** (0.08)			0.32** (0.15)	
Lieutenant's capture (=1) _(j,t-1)		0.04 (0.03)			0.05 (0.03)	
Number of captures _(j,t-1)			0.06** (0.02)			0.08** (0.03)
Pop. males 15-39 yo _(i,t)	2.95*** (0.83)	2.98*** (0.82)	2.94*** (0.84)	5.40*** (1.67)	5.45*** (1.65)	5.39*** (1.67)
Per capita night lights _(i,t)	0.11 (0.10)	0.12 (0.10)	0.12 (0.10)	0.30 (0.19)	0.32 (0.19)	0.31 (0.19)
ln(tot. population) _(i,t)	-0.27** (0.11)	-0.27** (0.11)	-0.27** (0.11)	-0.41** (0.19)	-0.42** (0.18)	-0.41** (0.19)
Constant	2.92*** (1.07)	2.96*** (1.06)	2.92*** (1.08)	4.65** (1.89)	4.71** (1.87)	4.64** (1.90)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	7865	7865	7865	7865	7865	7865

Notes: Standard errors in parentheses. Observations clustered at the municipality level. Sample has been limited to municipalities that had no DTO presence in the previous period. One municipality is missing DTO presence information for the year 2010.

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

	(1) Nr. captures	(2) Nr. captures	(3) Any capture	(4) Any capture
DTO (=1)	-1.85*** (0.67)		-1.28*** (0.46)	
Nr. of DTO active		-0.43*** (0.14)		-0.38*** (0.13)
Pop. males 15-39 yo	-0.30 (0.29)	0.69* (0.36)	-0.21 (0.25)	0.60* (0.32)
Population density (per km2)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Per capita night lights	1.54 (11.96)	13.70* (7.65)	10.68 (8.97)	15.79** (7.30)
Unemployment rate (yearly average)	0.04 (0.03)	0.03 (0.02)	0.02 (0.02)	0.02 (0.02)
Year fixed effects	Yes	Yes	Yes	Yes
Municipality fixed effects	Yes	Yes	Yes	Yes
N	12199	12199	12199	12199
F	11.42	19.57	19.84	28.23

Notes: Dependent variable is $\ln(\text{crime})$ of other property crime. Standard errors in parentheses. Observations clustered at the municipality level. One municipality is missing DTO presence information for the year 2010. The unemployment rate is for the federal state.

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

Main results:

- The intervention associated with the geographical spread of DTO
- DTO presence **is** negatively associated with changes in property crime

Next steps:

- Heterogeneity: different DTO
- Identification methods

Thank you for your time!