The Relationship Between Territorial Control and Opium Revenue in Afghanistan

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Abstract

Does opium revenue has something to do with the territorial control? This article uses metadata from the Afghanistan National Quarterly Assessment Research (ANQAR) to plot the distribution of territorial control and opium revenue in Afghanistan, then examines the correlation between microlevel economic shocks and state capacity.

1 Summary

1.1

In the article, due to the absence of clearly defined front lines in asymmetric civil war, the author aims to find a novel method to measure territorial control in those areas effectively. Being regarded as a latent variable, it is estimated via HMM.

To test the validity of this model, the writer use Armed Conflict Location & Event Data Project (ACLED) database to study Nigerian civil wars; use Data on deforestation from 2013 to 2016 come from satellite images via the forest monitoring system from the Instituto de Hidrolog´ıa, Meteorolog´ıa y Estudios Ambientales to study the civil wars between FARC and Columbia government.

In conclusion, the writer finds that HMMs is a fruitful avenue to do the estimation.(Therese Anders,2019)

1.2

Given that manipulating civilian interests is as necessary as achieving military success, author wants to find out how civilians influence the distribution of territorial control, and try to use community collective action capacity(CAC) to explain and complement conventional theories.

The context of the test is the communist insurgency in the Philippines. The data comes from military intelligence reports from 2011-2014, a household-level census (2008-2010) and interviews with village elders in Eastern Mindanao. The article comes to a conclusion that community collective action capacity increases rebel control in areas lacking government control, but deters rebel control in areas under state protection and service provision. (Michael A. Rubin,2019)

1.3

The article is trying to understand the relationship between violent contexts of territorial control and residence's vote choice, namely the political behavior within those areas.

In the context of Colombia, or to be more specific, the 2006 Colombian presidential elections. The author uses a national survey conducted in Colombia in 2005 by the Latin American Public Opinion Project (LAPOP) of Vanderbilt University, which

interviewed 3 083 adults from 76 municipalities..

This article support findings made by previous researchers that individuals tend to line up their political views with those prevailing in their political milieu. Furthermore, it specifically takes armed actors into account and suggests that an armed actor could exercise an influence on people's vote choice; the nature of influence relates to the individual military power of guerrillas and paramilitaries.(Miguel García-Sánchez,2016)

1.4

Generally, to measure territorial control, researchers use geospatial analysis by computing service areas or fuctional regions around the points of control. However, in places with limited road infrastructure, existing GIS methods are not enough. Thus, In this article, authors aim to use a novel GIS approach to measure yearly territorial control in Sub-Saharan Africa.

The research is based on Uppsala Conflict Data Program's (UCDP) Georeferenced Event Data (GED) dataset for 1989-2010 as well as spatial data on land cover, terrain, population locations, and available sparse transportation networks.

In conclusion, this hybrid approach turns out to be a useful method to make use of vector data and raster layers simultaneously to combine on-road and off-road movements, and it has many applications for territorial control study.(Ran Tao&Daniel Strandow&Michael Findley& Jean-Claude Thill&James Walsh,2016)

1.5

Territorial control not only occurs in civil wars, but also in some countries like Honduras where violence conflicts could rival civil wars. In the article, the authors study how neighborhood social characteristics affect the use of violence for territorial control.

The context of the research is nine neighborhoods in three of the most violent cities on Honduras's northern coast, La Ceiba, El Progreso, and Choloma. The article use neighborhood-level homicide data compiled by the National Autonomous University of Honduras Violence Observatory to measure the level of violence; qualitative reports from residents regarding the incidence of other violent crimes and the presence of organized criminal groups; group discussions and interviews conducted by the research team in the nine selected neighborhoods of Choloma, La Ceiba, and El Progreso between May and September of 2013.

The authors conclude that criminal groups which control neighborhoods may vary their use of violence in response to community mobilization, and communities with denser interpersonal ties and higher expectations for collective actions improve their safety in the midst of violence.(Louis-Alexandre Berg&Marlon Carranza,2018)

2 Measurement Strategy

2.1 Concerns

(1)In the estimation, all the unaccessible areas are regarded as rebel-controlled districtd. However, there are some places controlled by government unaccessible because of their inferior infrastructure, and vice versa (Rebels may not exclude surveys).
(2)At the margin, it might be difficult to decide whether the villages are under state control.
(3)This strategy requires a great many enumerators and could take quite long time.
(4)Since the survey is time-consuming and civil wars are unpredicted, the situation in the country might have changed dramatically even before finishing the survey. Thus, the data could become inaccurate.
(5)The enumerators might make make mistakes in the survey process and might even provide fake data.

2.2 Deviation and Benchmark

If we are talking about the final result, namely the relationship between territorial control and revenue, there are many factors could result in biased outcomes. Thus, to measure how much the devi-

ation is depends on how inaccurate those factors are. For example, to what extent could the accessible2survey be a proxy for state capacity? What's the accuracy of data provided by the survey firms? Is the revenue data reliable? To what extent could we use the data for research during a certain period(timeliness)? What error might be engendered by the regression model we choose?

To benchmark our findings, we can use the estimated coefficients to make prediction and compare the outcomes with the real ones(just like the process of machine learning:use a group of data to build model, and use the other group to test the model). In addition, we could also find research made by other people on the same topic to make comparison.

3 Outcomes

3.1 Map

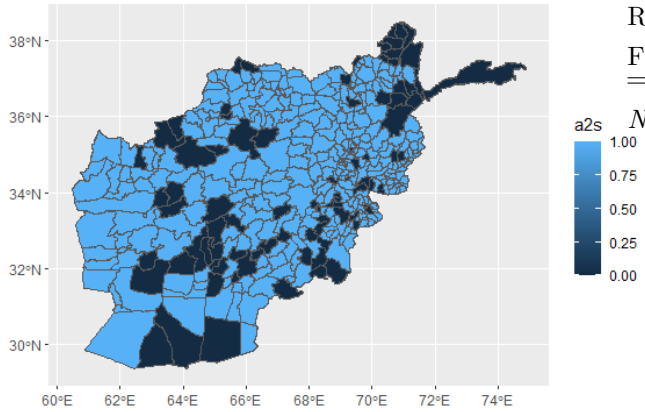

Figure 1: Territorial Control in Afghanistan(2015)

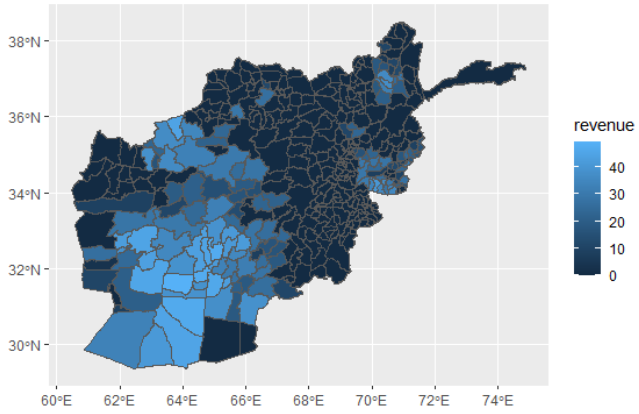

Figure 2: opium revenue in Afghanistan(2015)

3.2 Regression

*** Figures are shown in appendix**

Table 1: Linear Regression

	Dependent variable:
	accessible2survey
revenue	-0.003^{**}
	(0.001)
Constant	0.812^{***}
	(0.025)
Observations	398
R^2	0.013
Adjusted R^2	0.011
Residual Std. Error	0.412 (df = 396)
F Statistic	5.339^{**} (df = 1; 396)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 2: Probit Regression Model

	Dependent variable:
	accessible2survey
revenue	-0.011^{**}
	(0.005)
Constant	0.883^{***}
	(0.086)
Observations	398
Log Likelihood	-206.532
Akaike Inf. Crit.	417.064
Note:	*p<0.1; **p<0.05; ***p<0.01

3.3 Conclusion

Given that the coeffient is -0.003361, the correlation is negative. The coefficient's statistical significance is 0.05, namely we can say it is statistically significant at the level of 5%. Since accessible2survey is a binary variable, limited dependent variable model(LDVM)is a better choice. As shown in table 2, the coefficient is also statistically significant at the level of 0.05.

The results are somehow consistent with the article that territorial control shapes a variety of conflict processes including economical development, and economic factors are useful to explain the distribution of territorial control(Michael A. Rubin,2019). However, considering that the R^2 is so small that there must be some other factors at work as well such as CAC(Michael A. Rubin,2019) In addition, it's easy to relate violence to drug traffic, so the outcomes are resistent with the conclusion that territorial control also affects criminal violence in the area(Louis-Alexandre Berg,Marlon Carranza,2018).

References

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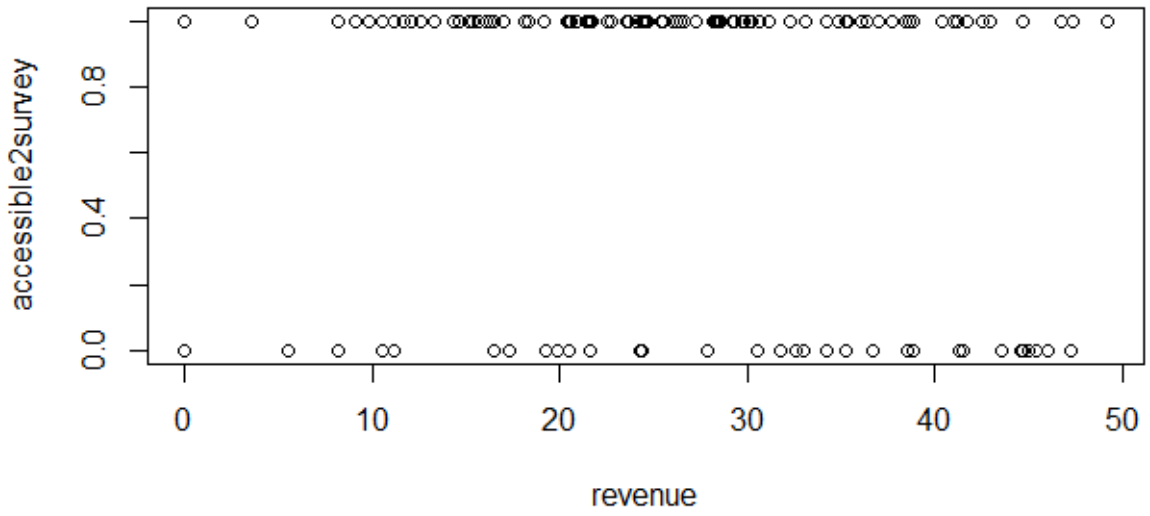

Figure 3: raw data

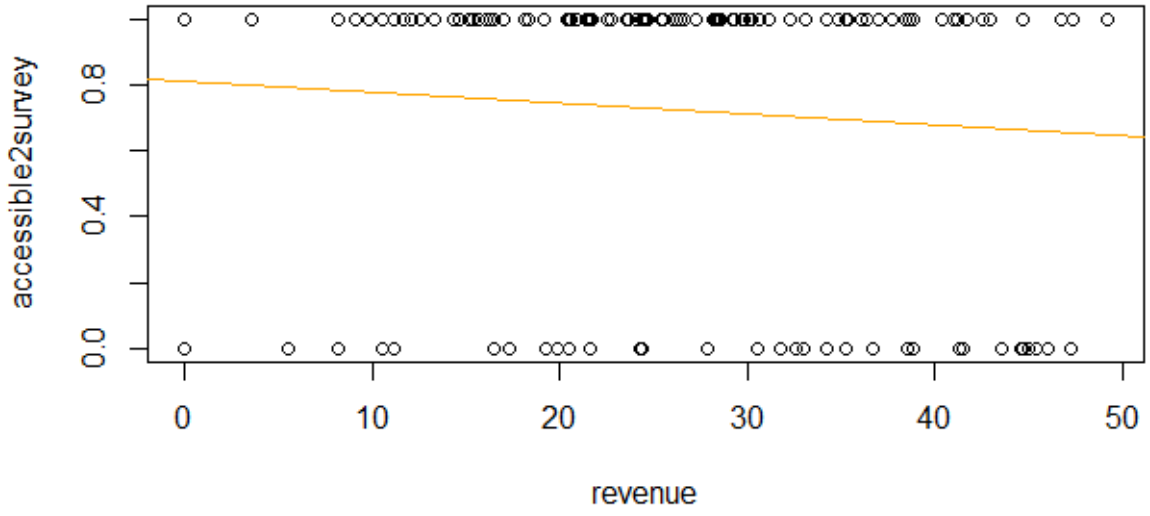

Figure 4: linear regression