

# ECON-S410: Seminars on econometrics

Capital Cities, Conflict and Misgovernance



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April 2021

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# 1 Introduction

## 2 Paper's context

## 3 Paper's results

## 4 Our contribution

Our goal is to read all the paper's analysis and verify if we could upgrade some of the methods. It could be changing the regression, adding variables, anything that the econometric field would allow us to do and to make all the analysis more correct.

### 4.1 Impact of the regime change

One of the regressions, the regression that checks the impact of the distance to the capital on the conflict made on a panel data could have some upgrades.

In fact, it is true that, as the paper has verified, the distance to the capital has an impact, but the last regime transition wasn't controlled. A grid cell that was recently in a conflict could be less attracted by a new conflict, it could be because of the conflict impacts or in order to see how the new regime would perform. It was thus interesting to conduct a Regression Discontinuity Design verifying if, when the last regime transition was a long time ago, the probability of waking a conflict would rise.

One of our assumptions is that 5 years is enough to recover from a conflict, as long mentally as physically. Of course, maybe changing this assumption would change the results.

As ConfIntra is a binary variable, we decided to work differently than the paper. We kept our regression as a panel data, but we did not perform a linear regression, we decided to go for a logit one.

Our first idea was to compute a regression where we have put a variable that verifies when was the last regime transition in order to verify the time without regime transition on the conflict. We also decided to keep the same control variables as the paper analysts.

Figure 1: Conflict regression on last transition

Estimates	Estimate	Std. error	Pr(>   z  )	Signif. value
logdistcap	-0.8194	0.0124	<2e-16	0.001
logbdist2	-0.1122	0.0075	<2e-16	0.001
degtemper	-0.0023	0.0014	0.0992	0.1
prec	-0.0021	0.00003	<2e-16	0.001
last.transition	-0.0890	0.0028	<2e-16	0.001

Through these results, we can see that an increase in the last.transition variable, translated by a

longer time of peace, would lead to a lower probability of conflict.

As it comes to the RDD itself, the treatment group are all the cells that have not been touched by a regime transition since less than 6 years. The control group are all the cells that have seen a regime change exactly 6 years before, which means they are not eligible to the treatment, but are close enough to the treatment group. We also add the non-eligible group for the comparison.

Figure 2: Regression discontinuity: coefficients

Estimates	Treatment group	Control group	Non-eligible group
logdistcap	-0.7906	-12.08	-0.4778
logbdist2	-0.1065	1.569	-0.3649
degtemper	0.0055	0.0231	0.0510
prec	-0.0020	0.0065	-0.0002

It would appear that the treatment group has a smaller coefficient, which would mean that being closer to the last regime transition would lead to a smaller probability of conflict. That conclusion comes to a contradiction with the previous regression we have made about the peaceful time length.

## 5 Our results

## 6 Conclusion

## 7 Annexes

### Annexe 1: Regression results on the last transition impact

```

ConfIntra ~ logcapdist + logbdist2 + degtemper + prec + last.transition |
year

Estimates:
              Estimate Std. error z value Pr(> |z|)
logcapdist    -8.194e-01  1.124e-02 -72.882  <2e-16 ***
logbdist2     -1.122e-01  7.502e-03 -14.956  <2e-16 ***
degtemper      -2.393e-03  1.452e-03  -1.649   0.0992 .
prec           -2.172e-03  3.067e-05 -70.819  <2e-16 ***
last.transition -8.905e-02  2.851e-03 -31.240  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

residual deviance= 69986.66,
null deviance= 94511.02,
nT= 202712, N= 37

( 748336 observation(s) deleted due to missingness )
( 97527 observation(s) deleted due to perfect classification )

Number of Fisher Scoring Iterations: 9

Average individual fixed effect= 4.873

```

## Annexe 2: Regression of the treatment group

```

binomial - logit link

Confintra ~ logcapdist + logbdist2 + degtemper + prec | year

Estimates:
      Estimate Std. error z value Pr(> |z|)
logcapdist -7.906e-01 1.567e-02 -50.445 <2e-16 ***
logbdist2  -1.065e-01 9.987e-03 -10.667 <2e-16 ***
degtemper   5.495e-03 1.953e-03  2.814  0.0049 **
prec        -2.085e-03 3.981e-05 -52.379 <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

residual deviance= 39513.07,
null deviance= 59367.18,
nT= 111314, N= 34

( 9371 observation(s) deleted due to missingness )
( 63509 observation(s) deleted due to perfect classification )

Number of Fisher Scoring Iterations: 9

Average individual fixed effect= 3.629

```

## Annexe 3: Regression of the control group

```

binomial - logit link

Confintra ~ logcapdist + logbdist2 + degtemper + prec | year

Estimates:
      Estimate Std. error z value Pr(> |z|)
logcapdist -1.208e+01 1.600e+00 -7.548 4.42e-14 ***
logbdist2   1.569e+00 2.389e-01  6.568 5.10e-11 ***
degtemper    2.314e-02 4.793e-02  0.483  0.629
prec         6.578e-03 9.084e-04  7.241 4.46e-13 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

residual deviance= 208.55,
null deviance= 921.05,
nT= 927, N= 3

( 1229 observation(s) deleted due to missingness )
( 22337 observation(s) deleted due to perfect classification )

Number of Fisher Scoring Iterations: 9

Average individual fixed effect= 71.572

```

#### Annexe 4: Regression of the non-eligible group

```
binomial - logit link

ConfIntra ~ logcapdist + logbdist2 + degtemper + prec | year

Estimates:
      Estimate Std. error z value Pr(> |z|)
logcapdist -4.778e-01  8.332e-03 -57.34  <2e-16 ***
logbdist2  -3.649e-01  5.266e-03 -69.29  <2e-16 ***
degtemper   5.105e-02  7.615e-04  67.04  <2e-16 ***
prec        -2.989e-04  1.705e-05 -17.53  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

residual deviance= 116595.6,
null deviance= 168819.9,
nT= 635426, N= 52

( 101170 observation(s) deleted due to missingness )
( 103292 observation(s) deleted due to perfect classification )

Number of Fisher Scoring Iterations: 10

Average individual fixed effect= 0.345
```