POLITICAL COMPETITION AND RURAL WELFARE: EVIDENCE FROM PAKISTAN

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RESEARCH QUESTION

- Can stronger political competition improve rural livelihoods in developing countries?

PREVIEW OF THE RESULTS

- We examine whether stronger political competition can improve rural livelihoods in Pakistan
- Greater political competition in a Provincial Assembly constituency during the 2008 elections predicts better access to publicly-provided infrastructure and amenities, but no changes in perceived access to justice or security
- Findings robust to a more plausibly exogenous measure of political competition exploiting political parties' national popularity and instrumental variables

MOTIVATION: PUBLIC GOODS PROVISION IS CRITICAL TO DEVELOPMENT, AND YET….

- Evidence from developed countries and urban settings: more competitive political races improve public goods provision/ boost welfare (Stansel, 2005; Besley et al., 2010; Hatfield and Kosec, 2013)
- Evidence from developing country settings: less developed; little understanding of mechanisms
- Cross-country studies: mixed impacts of democracy on public goods provision (Boix, 2001; Stasavage, 2005a; Ross, 2006; Besley and Kudamatsu, 2006)

Rural road and electricity in Kasur District, Punjab Province, Pakistan

MOTIVATION: THEORETICAL AMBIGUITY ABOUT THE IMPACTS OF POLITICAL COMPETITION IN DEVELOPING COUNTRY SETTINGS

- Political competition exerts weak electoral incentives when governance is non-transparent/ the press is not free (Stromberg, 2004)
- Tiebout sorting may not work in rural/ poor settings (De Brauw et al., 2014)
- In weak party systems, political competition increases the complexity of legislative bargaining and thus may worsen public goods provision (Gottlieb and Kosec, 2018)
- So what does political competition do for rural livelihoods in a developing country?

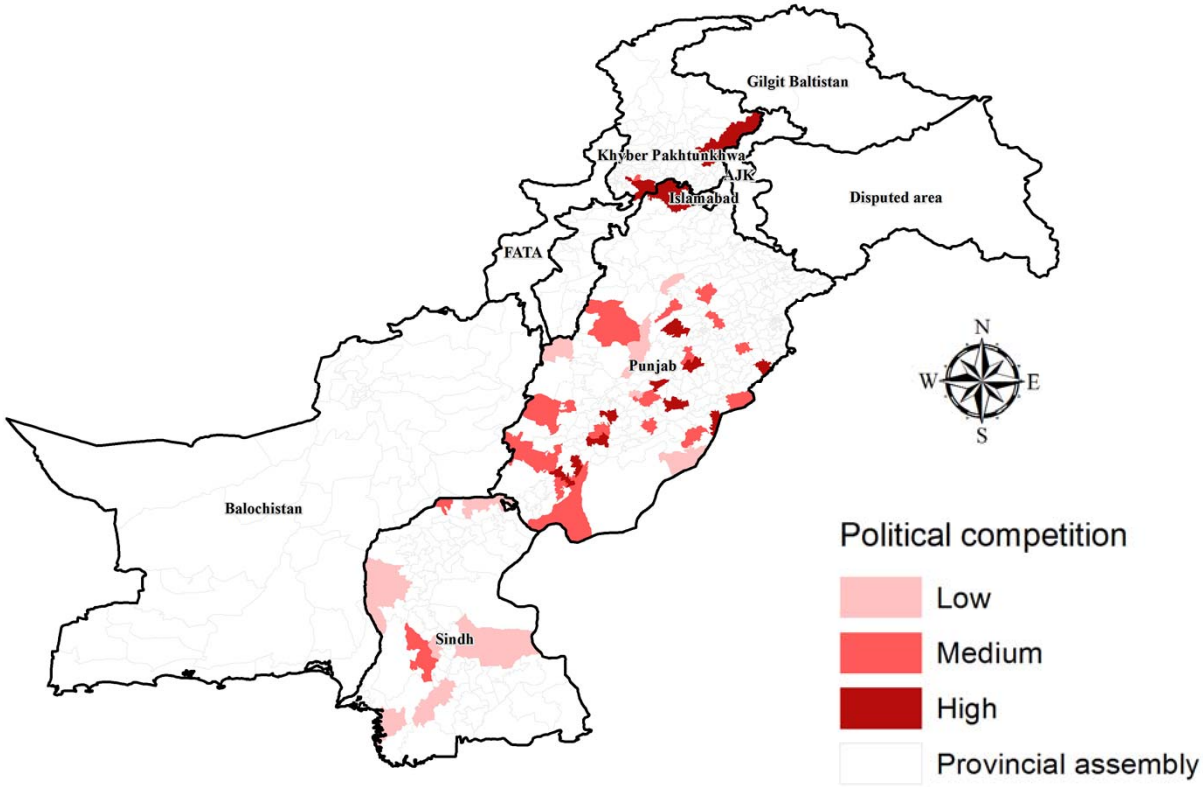
Rural electricity and drinking water facilities in Kasur District, Punjab Province, Pakistan.

BACKGROUND ON POLITICS IN PAKISTAN

- Four provinces, each with a unicameral legislature (Provincial Assembly, or PA)
- One PA seat allocated per constituency by a first-past-the-post system (candidate with most votes wins)
- Each political party can field up to one candidate per constituency
- PA members have representative, legislative and oversight roles; influence the design, location, and budgetary allocation of government projects, policies, and programs
- Most recent national elections at time we collected household survey data (in 2012): 2008

POLITICAL COMPETITION IN PAKISTAN IN THE 2008 ELECTIONS

- Data: Pakistan Rural Household Panel Survey, Round 1.5 (Oct. – Nov. 2012)
- 942 land-cultivating households (from 19 randomly-selected districts in Punjab, Sindh, and KPK provinces)
- Span 57 Provincial Assembly (PA) constituencies
- Tercile of political competition in each PA constituency in 2008 elections shown (measured with a Herfindahl index, or HHI ranging from 0 to 1)



PUBLIC GOODS OUTCOMES

- Infrastructure and amenities index (average of dummies for having access to: electricity, flush toilet, piped drainage system, piped water, piped gas, electrified village, fixed line telephone, non-mud roads, and public transportation)
- Security index (average of 12 *N(0,1)* variables constructed from 12 questions about perceived degree of access to security) (e.g., To what extent are locks necessary to prevent theft?)
- Justice index (average of 7 *N(0,1)* variables constructed from 7 questions about perceived degree of access to justice) (e.g., To what extent do laws and law enforcement in your community prevent crime?)

ECONOMETRIC SPECIFICATION

- We estimate:

$$Y_{ijk} = \beta_0 + \beta_1 P_{jk} + \beta_2 \boldsymbol{X_{ijk}} + \propto_k + \varepsilon_{ijk}$$

Where:

- Y_{ijk} is a public goods or welfare-related outcome from a 2012 household survey
- P_{jk} is political competition (1 –HHI) in 2008 (0-1 variable)
- $\boldsymbol{X_{ijk}}$ is a vector of location, demographic, socioeconomic, and land controls
- $\propto_k$ are district fixed effects
- Standard errors clustered at the provincial assembly level

IDENTIFICATION

- Construct "predicted" level of political competition:

  Compute a PA's level of political competition (1-HHI) using not the vote shares of its competing parties, but the votes shares that those parties won nationally (a measure of their national popularity)

- Three estimates:
  - OLS, use actual political competition
  - OLS, use predicted political competition
  - IV, instrument for actual with predicted political competition
- Latter two: exploit that part of local political competition due to the popularity of the competing parties *elsewhere* in Pakistan

IDENTIFICATION

- Example:

Three parties compete in a PA constituency's elections, and they win vote shares equal to 50%, 25%, and 25% of the votes. Political competition is:

$(1\text{-HHI}) = 1 - (0.5^2 + 0.25^2 + 0.25^2) = 1 - 0.375 = 0.625$

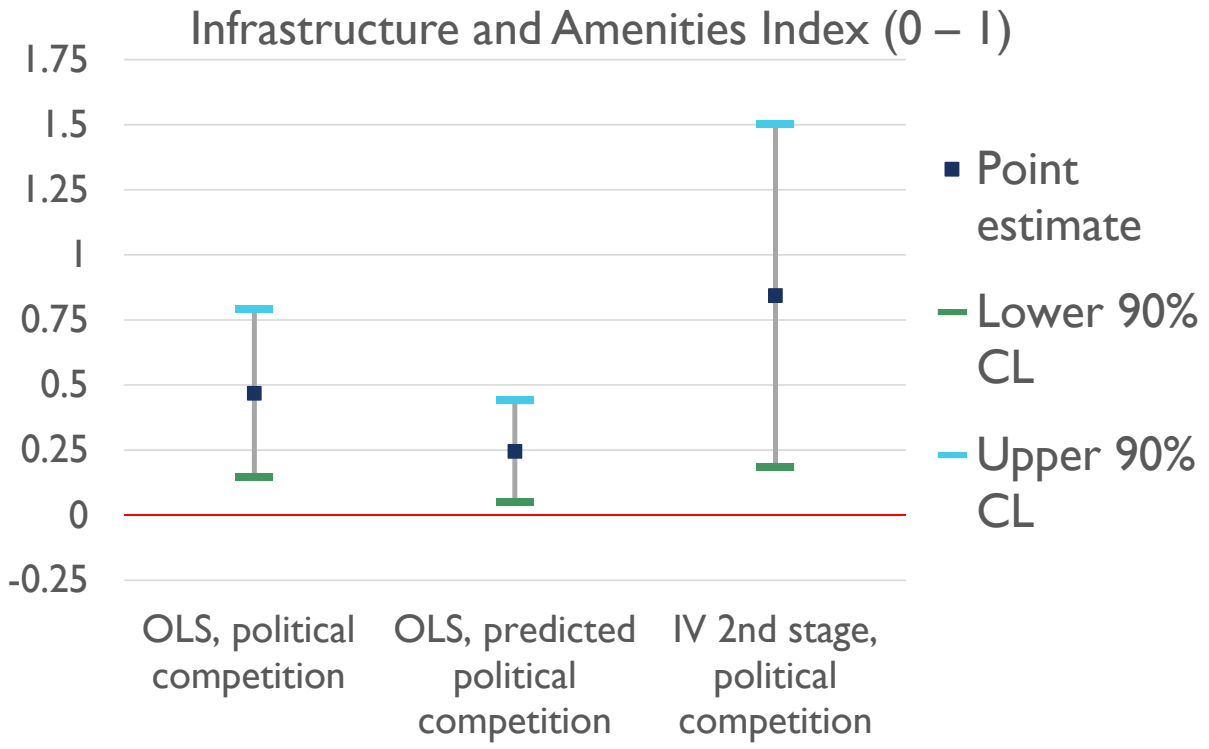
Now say that nation-wide (i.e. across all constituencies except this one), these parties got 35%, 10%, and 5% of the vote. Then predicted political competition is:

$(1\text{-HHI}) = 1 - (0.70^2 + 0.20^2 + 0.10^2) = 1 - 0.540 = 0.460$

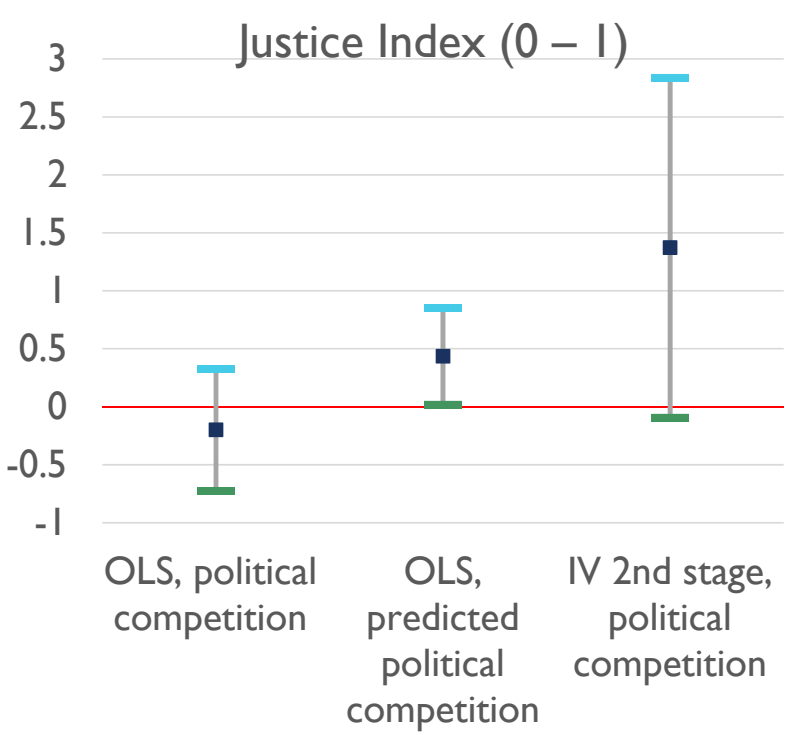
- Identifying assumption of IV regressions: the identities of parties competing in a locality, and their national popularity, only affect public service delivery and welfare outcomes in that locality through their effects on local political competition

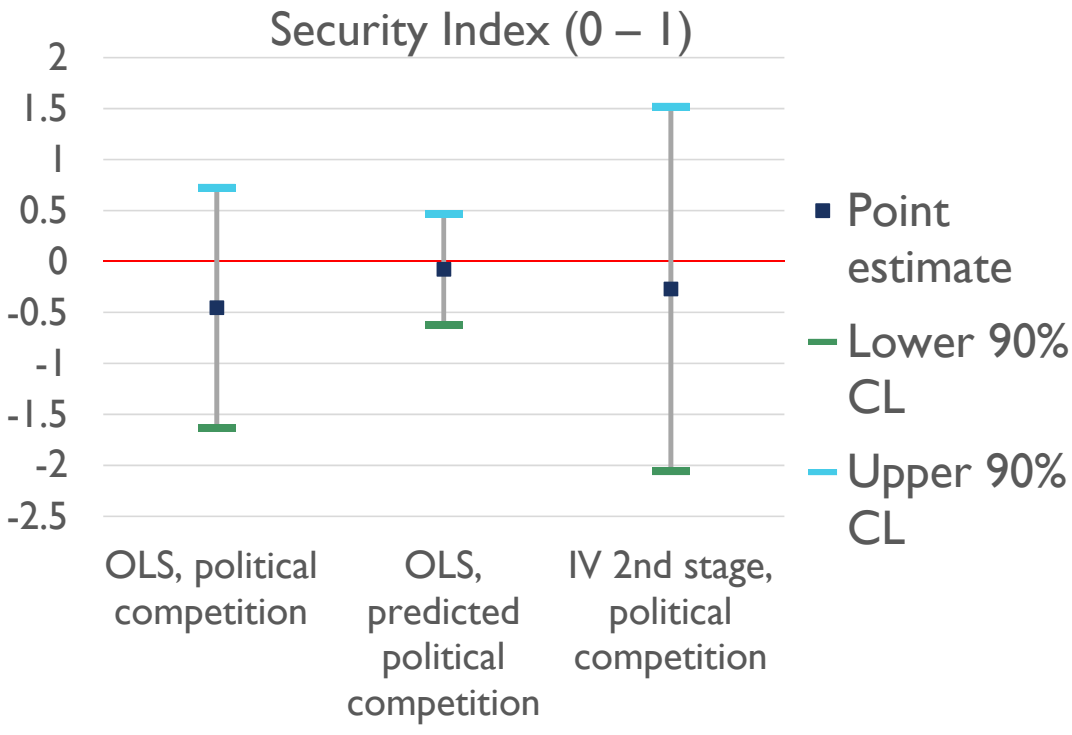
POLITICAL COMPETITION IMPROVES ACCESS TO PUBLIC INFRASTRUCTURE AND AMENITIES

- Greater political competition always associated with greater access to infrastructure and amenities
- OLS: 0.1 unit increase in political competition (approx. 1 S.D. increase) associated with a 0.05 unit (approx. 0.25 S.D.) increase in infrastructure and amenities index



POLITICAL COMPETITION DOES NOT ROBUSTLY AFFECT PERCEIVED ACCESS TO JUSTICE OR SECURITY





CONCLUSIONS

- We examine whether stronger political competition can improve rural livelihoods in Pakistan
- Greater political competition in a Provincial Assembly constituency during the 2008 elections predicts better access to publicly-provided infrastructure and amenities, but no changes in perceived access to justice or security
- Findings robust to a more plausibly exogenous measure of political competition exploiting political parties' national popularity and instrumental variables

REPLICATION: "POLITICAL COMPETITION AND RURAL WELFARE: EVIDENCE FROM PAKISTAN" BY KATRINA KOSEC, HAMZA HAIDER, DAVID SPIELMAN, AND FATIMA ZAIDI (OXFORD ECONOMIC PAPERS, 2018)

- In the interest of time, we are going to replicate only the regression results related to public goods
- Thus, we are going to replicate regression Tables 3 (panel A) and 4
- To get started:
  - Find a place on your computer to save the .dta file given to you: HHregs_share.dta
  - Save the dofile replication_IV_Kosec_WIUT.do in the same place or elsewhere. Open it now.
  - Change line 21 so it provides the location where you have placed the .dta file

CONSTRUCTING OUR INDEXES

- Dofile includes code to construct the public goods indexes constructed from 28 individual variables:
  1. Perceived access to justice index (7 variables)
  2. Infrastructure and amenities index (9 variables)
  3. Perceived security index (12 variables)
- Many reasons to use an index (e.g., avoiding multiple hypothesis testing; get sense of 'overall' impact)
- We averaged each set of variables after putting them on a common scale:
  - For dummy variables, we consider them to already be on the same 0-1 scale. This is the case for all components of (2).
  - For non-dummies, normalize them to be N(0,1) by subtracting the sample mean and dividing by the sample S.D., and only then average. This is the case for all components of (1) and (3).
- There are other ways to construct an index (e.g., principal components analysis – see pca command in Stata)
- Good practice to show your code to construct indexes when you provide replication files!

CONSTRUCT PUBLIC GOODS OUTCOMES (INDICES) AND SHOW SUMMARY STATISTICS FOR TABLE 1

- Highlight lines 1-189 and run them
- Let's look through these to familiarize ourselves with the data
- Key things to point out:
  - About 937 households
  - Some public goods outcomes have more vs. fewer 'missing' observations, so N varies across outcomes (means instrument strength will vary by outcome, too)
  - A "1 S.D. increase in political competition" means a 0.11 unit increase

TABLE 1 (P. 31)

Variable	Obs	Mean	Std. Dev.	Min	Max
justice	734	.0161299	.5894612	-2.528091	2.003728
indvil_inf~x	934	.445991	.2077208	0	1
security	766	-.0001243	.5076193	-1.843314	1.707912
dmlandowner	937	.7214514	.4485242	0	1
dm_rentsha~t	742	.0579515	.2338093	0	1
share_owne~r	742	.0252975	.1162799	0	1
pcexp	937	3195.616	2450.392	558.1973	62152.6
pcexp_abov~n	937	.416222	.4931945	0	1
nonland_we~h	937	613030.6	1040905	0	1.65e+07
total_land~n	937	.6648879	.4722817	0	1
gini_land_~h	937	.6049526	.1874126	0	.9285529
nonlandwea~n	937	.5186766	.4999179	0	1
gini_nonla~h	937	.3795172	.1138135	0	.6446343
pol_comp_PA	937	.5767373	.1112027	.3365139	.7608001
vote_share~r	937	.479182	.1223171	.2096049	.6931868
vote_margi~r	937	.8073791	.137002	.4064084	.9974033
hhi_instr1	937	.658631	.0999254	.1035478	.7703968

Table 1: Summary Statistics: Household-level Dataset

Variable	N	Mean	S.D.
Outcomes			
Justice index	734	0.02	0.59
Infrastructure and amenities index	934	0.45	0.21
Security index	766	0.00	0.51
Household owns land	937	0.72	0.45
Household rents out land	742	0.06	0.23
Share of owned land rented	742	0.03	0.12
Monthly expenditures per capita (Rs.)	937	3,196	2,450
Expenditures per capita above mean	937	0.42	0.49
Land wealth (Rs.)	937	2,004,207	3,999,874
Non-land wealth (Rs.)	937	613,031	1,040,905
Land wealth above mean	937	0.66	0.47
Gini coefficent based on land wealth	937	0.60	0.19
Non-land wealth above mean	937	0.52	0.50
Gini coefficent based on non-land wealth	937	0.38	0.11
Measures of political competition			
Political competition index (1 - HHI)	937	0.58	0.11
1 - (Vote share of winner)	937	0.48	0.12
1 - (Vote margin of winner)	937	0.81	0.14
Predicted political competition index (1 - predicted HHI)	937	0.66	0.10

TABLE 3 – IV FIRST STAGE RESULTS (P. 34)

- Now highlight and run lines 1 – 215 of code
- Below are F-stats for the column (2) – fully controlled/ preferred – specifications
- Note that sample size varies across the three main index outcomes, so I show the first stage for the sample used with each outcome. The paper only reports the one with the largest # of observations (the first one, below).
- Some problems of weak instruments; motivates multi-pronged identification approach

	(1)	(2)
Panel A: 1st stage for household-level dataset		
Predicted political competition index (0-1)	0.290***	0.292***
	(0.103)	(0.103)
Observations	937	937
R-squared	0.825	0.841
First stage F statistic	7.88	7.97

Public goods index (in paper):

```
. test hhi_instr1

 ( 1)  hhi_instr1 = 0

       F(  1,    56) =    8.07
            Prob > F =    0.0063
```

Justice index:

```
. test hhi_instr1

 ( 1)  hhi_instr1 = 0

       F(  1,    55) =    9.36
            Prob > F =    0.0034
```

Security index:

```
. test hhi_instr1

 ( 1)  hhi_instr1 = 0

       F(  1,    56) =   10.18
            Prob > F =    0.0023
```

TABLE 4 – MAIN RESULTS ON PUBLIC GOODS (P. 35)

- Now run the full dofile (from start to finish)
- The code will reproduce the table at right
- Note how the three identification strategies (OLS, OLS with predicted and thus more plausibly exogenous 'endogenous' variable, and IV) show similar findings
- Durbin-Wu-Hausman tests follow each; for 2 of the 3 outcomes, we reject the null that political competition can be treated as exogenous

Table 4: Effects of Political Competition on Justice, Infrastructure and Amenities, and Security Indices

	(1)	(2)	(3)	(4)	(5)	(6)
	Justice Index		Infrastructure/ Amenities Index		Security Index	
Panel A: OLS, political competition						
Political competition index (1 - HHI)	-0.270	-0.199	0.646***	0.469**	-0.652	-0.454
	(0.330)	(0.320)	(0.214)	(0.196)	(0.716)	(0.716)
Observations	734	734	934	934	766	766
R-squared	0.215	0.271	0.671	0.727	0.183	0.233
Panel B: OLS, predicted political competition						
Predicted political competition index (1 - predicted HHI)	0.684***	0.435*	0.399***	0.246**	-0.202	-0.078
	(0.236)	(0.253)	(0.124)	(0.119)	(0.284)	(0.331)
Observations	734	734	934	934	766	766
R-squared	0.220	0.272	0.663	0.721	0.180	0.231
Panel C: IV 2nd stage, political competition						
Political competition index (1 - HHI)	2.156**	1.372	1.377***	0.844**	-0.728	-0.270
	(1.071)	(0.891)	(0.522)	(0.400)	(0.949)	(1.088)
Observations	734	734	934	934	766	766
R-squared	0.176	0.256	0.639	0.720	0.183	0.233
Full control set	No	Yes	No	Yes	No	Yes