

# Regional Distribution of EU Funds in Hungary: When Does Politics Intervene and How?

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The views expressed in this paper are those of the authors and do not necessarily reflect the official view of the National Bank of Hungary.

## Motivation

- Distribution of EU funds affects inequality and performance
- Can be important source of favoritism and corruption
  - understanding its channels may help hampering political favoritism/corruption
- First study dealing with political partisanship in a new EU country – its results may be applied to the 11 new member countries
  - large sums (0.7 – 6% of GDP)
  - no direct cost (funded by other countries)
  - special institutional arrangement
    - strict formalistic EU rules
    - rent seeking domestic institutions
- Application-level data

## Questions

- Does the government have a preference for municipalities with politically aligned governance?
- Does this depend on the type of project?
  - Applicant (public, private)
  - Visibility (visible, not visible)
- At which stage it happens?
  - Application procedure
  - Decision-making process
- Does it affect voting outcomes?

## Related literature

- Controlling for welfare/productivity (Cadot et al., 2006; Coats et al., 2006)
- Political partisanship with panel data (Golden-Picci, 2008; Solé-Ollé et al., 2008)
- Swing districts (Arulampalam et al., 2009; Costa-I-Font, 2003)
- Political cycles (Veiga and Veiga, 2013)
- Different types of projects (Healy and Malhotra, 2009; Leigh, 2008)
- Effect of funds on voting outcomes (Healy and Malhotra, 2009; Leigh, 2008; Veiga and Veiga, 2013)

## Institutional setting, assumptions

- Assumptions
  - Each project improves welfare and has electoral gains
  - The institutions are such, that in absence of electoral gains, projects with the largest welfare improvement will be implemented
  - Voters can distinguish only imperfectly between the actions of the central and local governments
  - The electoral gain varies by project attributes
    - observability
    - time until effective

## Hypotheses

- The electoral gain depends on
  - Political alignment between central and local governments
  - Identity of the applicant
  - Visibility of the project

## Channels of favoritism

- In presence of strict EU regulation, how can government favor its party?
  - Manipulate decision making in favor of politically aligned townships
    - higher success rate
    - larger grants
  - Manipulate the application process in favor of politically aligned townships
    - application intensity
    - value requested

## EU Funds Data

- Structural and Cohesion Funds for Hungary 2004-2012
- 3-8% of GDP per year
- Application level data (~130,000)
  - o both successful and rejected applications
  - o place, date of each application
  - o amount applied for, granted, and received
- Application types
  - o visibility: subprograms involving construction, infrastructure, public transportation
  - o applicant type (public/private)
- We aggregate up the data by applicant type and visibility to the township-year level

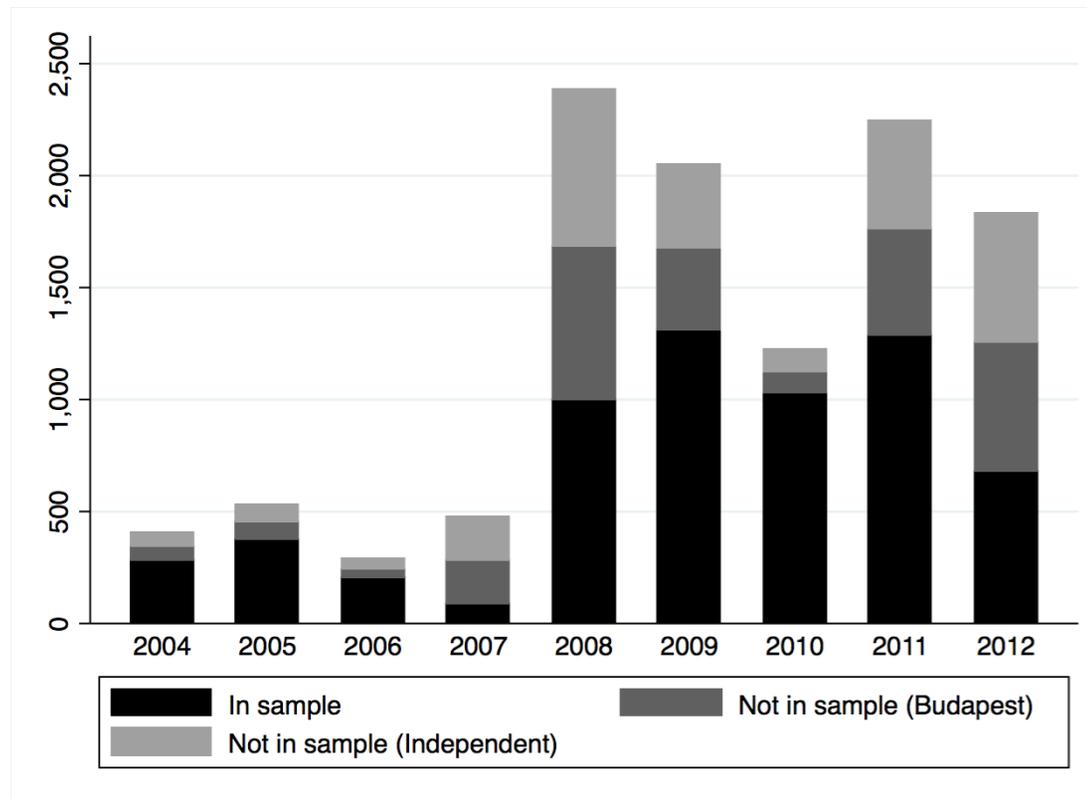
## Election and regional data

- Election data
  - Source: national election data
  - Each municipality is categorized into politically aligned/not aligned based on the mayor's political affiliation
    - if the mayor was independent, search the internet (for townships over 4,000)
    - if the mayor was politically affiliated in one cycle, we consider always politically affiliated
- Controls for the grade of development (T-Star)
  - Size (population)
  - Urbanization (population density)
  - Local labor markets (unemployment rate)
  - Grade of development, local economy (local tax revenues)

## Final Sample

- Drop Budapest and townships with independent mayors

### Distribution of Grant Value by Year



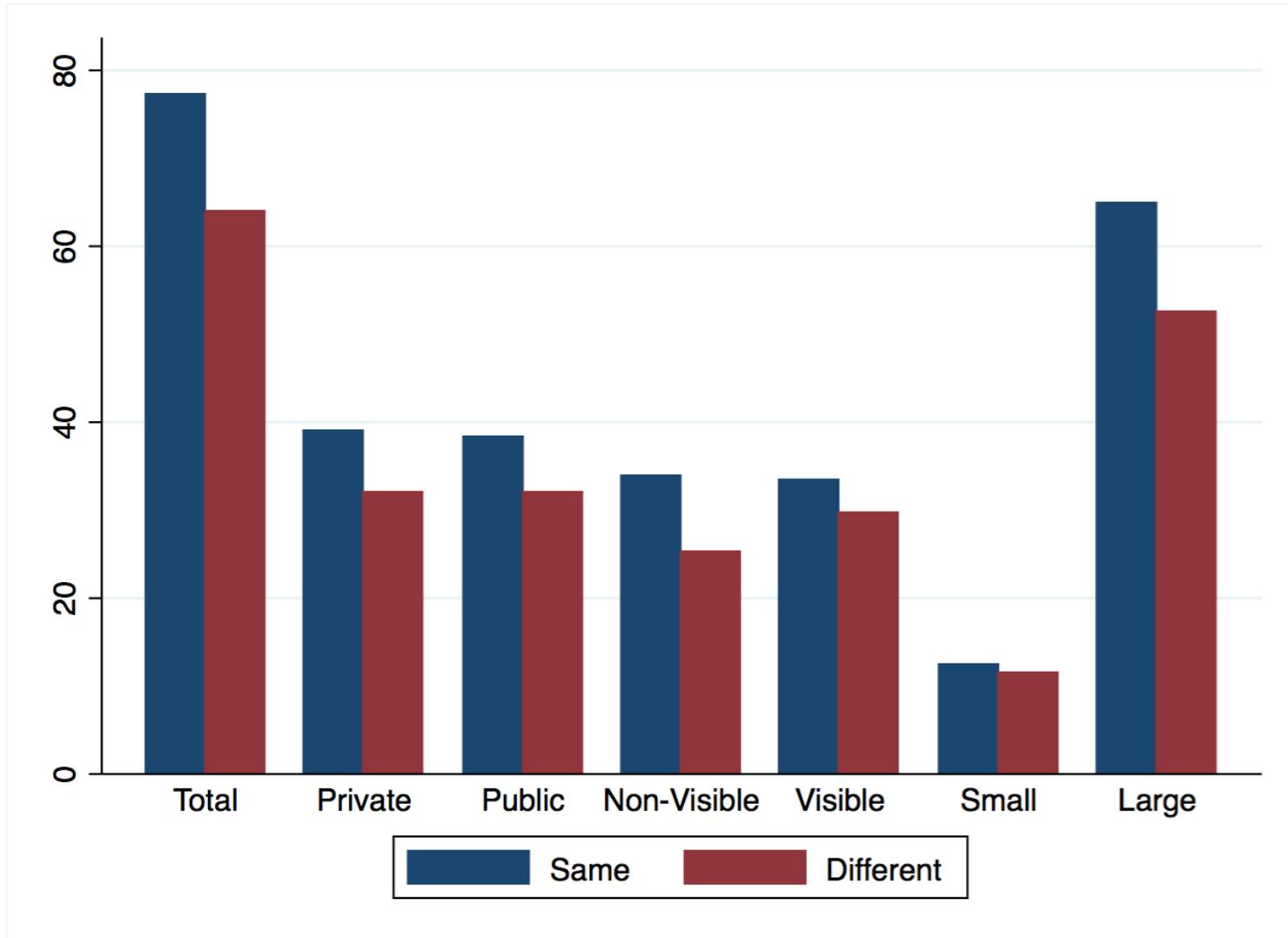
## Township Attributes by Political Orientation

	2004		2006		2010	
	Aligned	Not Aligned	Aligned	Not Aligned	Aligned	Not Aligned
Population (th.)	13.6	6.4	11.6	7.5	7.6	5.9
Tax rev./cap	20.3	13.9	23.1	17.8	21.3	26.7
Pop. dens.	2.0	1.1	1.8	1.2	1.2	1.8
UE rate	10.3	11.8	11.5	11.2	14.7	16.2
N. townships	219	239	166	429	607	96

## Distribution of Grant Value by Applicant Type and Visibility

	Applicant Type		Visibility	
	Private	Public	Non-Visible	Visible
2004-2006	0.47	0.53	0.56	0.44
2006-2010	0.47	0.53	0.45	0.55
2010-2012	0.54	0.46	0.44	0.56
2004-2012	0.50	0.50	0.47	0.53

# Yearly Grant Value by Political Alignment



## Methodology

Main specification:

$$\log\left(\frac{\textit{Grantvalue}}{\textit{Population}}\right)_{it} = \delta_0 + \delta_1 \textit{Aligned}_{it} +$$

$$\delta_2 X_{it} + \delta_3 \textit{Region}_i \textit{Year}_t + \delta_4 \textit{SettlType}_i + u_{it}$$

- If Grantvalue = 0, we replace  $\log(\textit{Grantvalue}/\textit{pop}) = 0$
- $X = (\ln(\textit{taxrev}/\textit{cap}), \ln(\textit{population density}), \textit{UE})$
- $u_{it} = \alpha_i + \varepsilon_{it}$
- Identifying assumption:  $\varepsilon_{it}$  is iid.
- $\delta_1$  is a measure of the proportion of politically diverted funds per inhabitant

## The Effect of Political Orientation on Grant Value per Capita (Cross section)

	Applicant Type			Visibility	
	Total	Private	Public	Non-Visible	Visible
<b>Aligned</b>	<b>0.091</b>	<b>-0.022</b>	<b>0.153***</b>	<b>-0.003</b>	<b>0.164***</b>
Tax rev./cap	0.121***	0.165***	0.009	0.185***	-0.024
Pop. density	0.052	0.043	0.035	0.034	0.045
UE rate	-0.003	-0.004	0.000	-0.001	-0.000

## The Effect of Political Orientation on Grant Value per Capita (Township Fixed-Effects Estimation)

	Total	Applicant Type		Visibility	
		Private	Public	Non- Visible	Visible
Aligned	0.103*	-0.042	0.157***	-0.021	0.185***

- Politically diverted funds =  $\delta_1 \times$  (average grant value/population)  $\times$  (average township size)
- Total:  $0.103 \times 65600 \times 8740 =$  Huf 59 mill (Eur. 197 th.)
- Public appl.:  $0.157 \times 34000 \times 8740 =$  Huf 46.7 mill (Eur. 155.5 th.)
- Visible proj.:  $0.185 \times 24400 \times 8740 =$  Huf 39.5 mill (Eur. 131.5 th.)

## Robustness checks

- Cleaning of mayors' political affiliation may affect the results – run on uncleaned sample
- Use another dependent variable – composition of the city council
- Many zeroes in the dependent variable – run Tobit regressions
- Program decision making can be automated or discretionary, and large projects are mostly discretionary – run only on discretionary projects
- Mayors' reputation may matter – run regressions with controls for tenure, mayor also MP, proportion of votes cast
- Maybe project size is what politicians concentrate on – run for small and large projects separately

## The Effect of Political Orientation on Grant Value per Capita by Grant Size

	Small	Large
<b>OLS</b>		
Aligned	0.033	0.075
<b>FIXED EFFECTS</b>		
Aligned	0.078*	0.021

## Effect of Mayor's Reputation on Grant Distribution

	Applicant Type		Visibility		
	Total	Private	Public	Non-Visible	Visible
Aligned	0.126**	-0.038	0.195***	-0.002	0.200***
Tenure	-0.017**	-0.014*	-0.029***	-0.022***	-0.012
MP	0.037	0.161	-0.081	0.024	0.061
Votes 50-70%	-0.030	-0.015	-0.019	-0.025	-0.013
Votes 70-90%	-0.095	-0.176*	0.012	-0.125	-0.016
Votes > 90%	0.023	-0.097	0.087	-0.089	0.050

## Pre-decision selection and decision making

- The dependent variable can be decomposed:

$$\frac{\textit{Grant value}}{\textit{Pop}} = \frac{\textit{Applic}}{\textit{Pop}} \frac{\textit{Success}}{\textit{Applic}} \frac{\textit{Appl Grant Value}}{\textit{Success}} \frac{\textit{Grant Value}}{\textit{Appl Grant Value}}$$

- Final grant value per capita is larger if
  - o applications per capita larger
  - o rate of success larger
  - o grant value applied for larger
  - o share of grant value and applied grant value larger
- We run separate regressions with these dependent variables to test the effect of political alignment in various stages of application and decision making

## The Effect of Political Influence on Application Process and Grant Success

	Applicant				Visibility
	Total	Type			Visible
		Private	Public	Non-Visible	
App./Pop.	0.110	-0.022	0.132***	-0.020	0.059***
Succ. App./App.	0.016	-0.002	0.037**	0.009	0.057**
G. Val. Req./Succ. App.	0.019	-0.012	0.056	0.047	0.174
G. Val. Awarded/Req.	-0.000	0.001	0.004	-0.002	-0.002

## Other channels of political favoritism: co-payments

- size of co-payments by political alignment: run the regression with co-payment as the depvar:

		Applicant Type		Visibility	
	Total	Private	Public	Non-Visible	Visible
Aligned	0.004	0.015**	-0.017***	0.001	-0.006

- average share of co-payment: 0.37 ( $0.017 \times 0.37 = 0.006$ )
- special funds for co-payments of local administrations: 59% of co-payments financed

## The effect of grants on voting outcomes

- Study the effect of grants on the probability of re-election of the incumbent mayor
- Run the regression for the two elections

$$\Delta(Votes_i) = \beta_0 + \beta_1 Votes_i + \beta_2 \log\left(\frac{Total\ Grant\ value}{Population}\right)_i + \beta_3 \Delta X_i + \beta_4 ElectYear_t + \beta_5 Region_i + \beta_6 SettlType_i + \varepsilon_i$$

## Estimated effect of grants on voting outcomes

	(1)	(2)	(3)
Total	0.004***		
Private		0.000	
Public		0.006***	
Not visible			0.001
Visible			0.007***

- Small effects: twice as large funds increase votes by less than 0.6 pp.
- The effects exist only for public grants and visible grants

## Conclusions

- Municipalities with political preferences aligned with the government receive larger amounts of EU money
  - The analysis finds this effect only for public and visible projects
- Channels of favoritism
  - More applications filed (public, visible)
  - Higher grant value requested (visible, not significant)
  - Higher success rates (public, visible)
  - Similar ratios of grant value awarded/requested
- The incumbent mayor's vote share increases in public and visible grants. Statistically significant but very small effect.