

The Impact of Voter Turnout on Referendum Outcomes

Vincent Munley (Lehigh University)
Abián García-Rodríguez (European Commission)
Paul Redmond (ESRI)

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How Could Voter Turnout Affect Referendum Outcomes?

Look to the literature on general elections

- The Labor Party in Australia benefit from compulsory voting (Fowler, 2013)
- Higher turnout benefits the Democratic Party in the US (Gomez et al., 2007)

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- People who vote infrequently are more likely to be left-leaning than people who always vote
 - ▶ Greater voter turnout benefits left-leaning political parties, candidates
- Referendums (sometimes) represent a vote for liberal v conservative policies

What we do

- Estimate the causal impact of voter turnout on referendum outcomes
 - ▶ Instrumental variables (IV)
 - ▶ Use rainfall as an instrument for voter turnout
- Use 25 years of Irish referendum data
- We explore heterogeneous effects of turnout by referendum type (social issues v 'regime related' issues)

Why Study Referendums?... (And Why Ireland?)

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- Ireland has extensive experience with referendums (Barrett, 2017)
 - ▶ 4th in Western Europe, behind Switzerland, Liechtenstein and Italy
- Variety of issues covered (administrative; economic; social)
- Ireland also suitable from a methodological (IV) standpoint
 - ▶ Garcia-Rodriguez & Redmond (2020) find a strong relationship between rainfall and voter turnout

Related Literature

- Closest work is Rudolph (2020)
 - ▶ Uses IV to estimate effect of turnout on Brexit referendum
 - ▶ Higher turnout led to greater support for "leave"

Our Data

- We study 28 referendums over the period 1992-2019
- To categorise referendums into "types", we draw on Sinnott (1995) and Barrett (2017)

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- 11 referendums relating to "social issues"
- 17 referendums relating to "regime-related issues"

Social Referendums

Social Change / Social Transition (n=11)

- Referendum 12 -- Right to Life -- 1992
 - Referendum 13 -- Limits on Travel for Abortion -- 1992
 - Referendum 14 -- Abortion Information -- 1992
 - Referendum 15 -- Dissolution of Marriage- 1995
 - Referendum 21 -- Prohibition of Death Penalty -- 2001
 - Referendum 25 -- Protection of Human Life in Pregnancy -- 2002
 - Referendum 31 -- Children -- 2012
 - Referendum 34 -- Marriage Equality -- 2015
 - Referendum 36 -- Termination of Pregnancy -- 2018
 - Referendum 37 -- Repeal of Blasphemous Matter -- 2018
 - Referendum 38 -- Dissolution of Marriage -- 2019
-

Figure

Regime-related Referendums



Table 1: Referendum Categories

Regime Related (n=17)

- Referendum 16 -- Bail -- 1996
- Referendum 17 -- Cabinet Confidentiality -- 1997
- Referendum 18 -- Amsterdam Treaty -- 1998
- Referendum 19 -- British-Irish Agreement -- 1998
- Referendum 20 -- Local Government -- 1999
- Referendum 23 -- International Criminal Court -- 2001
- Referendum 24 -- Nice Treaty 1 F -- 2001
- Referendum 26 -- Nice Treaty 2 P -- 2002
- Referendum 27 -- Citizenship -- 2004
- Referendum 28F -- Lisbon Treaty 1 F -- 2008
- Referendum 28P -- Lisbon Treaty 2 P -- 2009
- Referendum 29 -- Judges' Remuneration -- 2011
- Referendum 30F -- Houses of Oireachtas Inquiries -- 2011
- Referendum 30P -- Treaty on Stability, Coordination and Governance in the EMU -- 2012
- Referendum 32 -- Abolition of Seanad -- 2013
- Referendum 33 -- Court of Appeal -- 2013
- Referendum 35 -- Age of Eligibility Election of President -- 2015

Figure

Data

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- For social referendums, a yes vote indicates support for more liberal policies
- The 12th and 25th proposed amendments are the exceptions
- A yes vote indicates socially conservative endorsement
- To achieve a consistent "left / right" or "liberal / conservative" interpretation, use (1-%Yes)

Data

- Demographic control variables come Census SAPS
- % Retired; % Farmers; % Post-secondary education; Herfindahl index

Data

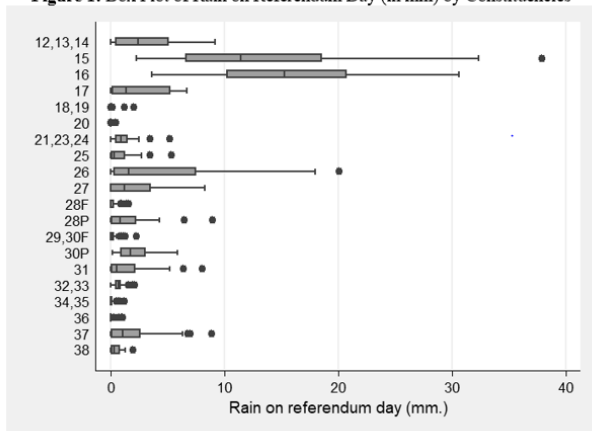
- Demographic control variables come Census SAPS
- % Retired; % Farmers; % Post-secondary education; Herfindahl index
- Additional variables
 - ▶ Household income per person (county-level)
 - ▶ Unemployment rate (NUTS-3 regions)

Data

- Rainfall data
- Collected from the archives of Met Éireann
 - ▶ Historic daily rainfall data from 511 meteorological stations

Summary Statistics

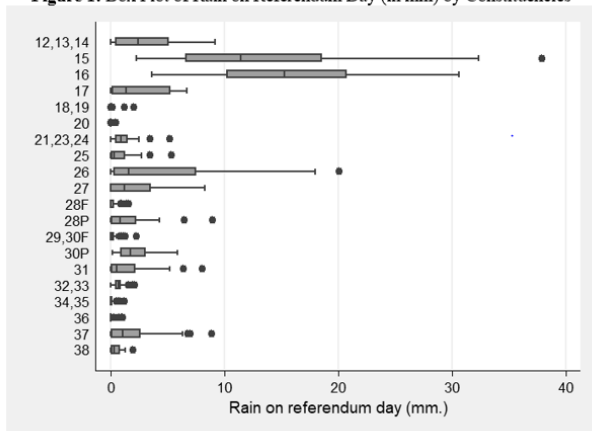
Figure 1: Box Plot of Rain on Referendum Day (in mm) by Constituencies



Sources: Met Éireann Data, Authors' Calculations.

Summary Statistics

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- 15th Amendment (1995): 3.7mm in Dublin and 38mm in Kerry South

Empirical Strategy

- We could regress referendum support on voter turnout
- However, turnout may be endogenous
- Reverse causality
 - ▶ In perceived close elections, the voter's value of voting (and hence turnout) increases (Hansford and Gomez, 2010; Artés, 2014)
 - ▶ An expected close outcome incentivises parties and candidates to mobilise voters (Cox, 1988; Arnold and Freier, 2016)
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- In such cases, OLS estimates could be biased
- The proposed solution - instrumental variables (IV)
- Use rainfall as an instrument for voter turnout
- A valid instrument should have a strong relationship with voter turnout and should affect the referendum outcome only through its effect on voter turnout

Empirical Strategy

To illustrate the approach, let us suppose that...

- An extra 1mm of rain \rightarrow 1 p.p. decrease in %Yes votes
- An extra 1mm of rain \rightarrow 2 p.p. decrease in turnout
- If the only way rain affects %Yes is through turnout, then
 - ▶ A 1 p.p. decrease in turnout leads to a 0.5 p.p. decrease in %Yes

$$\beta_{IV} = \frac{\frac{\partial y}{\partial z}}{\frac{\partial x}{\partial z}}$$

Empirical Strategy

Two-stage least squares (2SLS)

$$\textcircled{1} \quad \textit{Turnout}_{i,r} = \alpha + \beta \textit{Rainfall}_{i,r} + \mathbf{X}'_{i,r} \theta_x + \sum_{\rho=r_2}^R \delta_{\rho} I_{\rho} + \epsilon_{i,r}$$

Use the **predicted values**, \hat{T} , from (1) in the second stage

$$\textcircled{2} \quad \% \textit{Yes}_{i,r} = \alpha + \beta \hat{T}_{i,r} + \mathbf{X}'_{i,r} \theta_x + \sum_{\rho=r_2}^R \delta_{\rho} I_{\rho} + \epsilon_{i,r}$$

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Local average treatment effect (LATE)

Using rainfall to instrument turnout has support in the literature on general elections (Artes, 2015; Arnold and Freier, 2016; Hansford and Gomez, 2010)

Results



Table 3: 2SLS First Stage Results

VARIABLES	(1)	(2)	(3)
	All	Social	Regime
	Referendums		
Rainfall (Daily, mm)	-0.197*** (0.048)	-0.191** (0.077)	-0.204*** (0.061)
Real Income (1,000 Euro)	0.583*** (0.102)	0.238 (0.147)	0.919*** (0.129)
Unemployment Rate	-0.011 (0.077)	-0.258** (0.127)	0.139 (0.094)
% Retired	0.334*** (0.067)	0.185 (0.113)	0.438*** (0.079)
% Farmers	0.144*** (0.025)	0.070** (0.034)	0.214*** (0.036)
Socioeconomic Group Homogeneity	-0.171 (0.113)	-0.112 (0.145)	-0.309* (0.178)
% Post 2nd Level Education	0.076*** (0.025)	0.042 (0.046)	0.103*** (0.029)
Constant	34.674*** (2.760)	46.492*** (3.924)	38.692*** (2.977)
Referendum fixed effects	Yes	Yes	Yes
Observations	1,145	443	702
First Stage F	17	6	10

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1



Results

Table 4: 2SLS Second Stage Results by Referendum Type (Social v Regime)

VARIABLES	(1) All Referendums	(2) Social	(3) Regime
Voter Turnout (%)	1.626*** (0.436)	1.591*** (0.612)	0.487 (0.336)
Real Income (1,000 Euro)	-0.401 (0.316)	0.184 (0.281)	0.0780 (0.314)
Unemployment Rate	0.536*** (0.139)	0.722*** (0.234)	0.294*** (0.106)
% Retired	-0.678*** (0.182)	-0.544*** (0.211)	-0.334** (0.155)
% Farmers	-0.227*** (0.071)	-0.363*** (0.060)	0.142* (0.074)
Socioeconomic Group Homogeneity	0.320 (0.226)	0.676** (0.263)	-0.060 (0.152)
% Post 2nd Level Education	0.099* (0.056)	0.233*** (0.075)	0.159*** (0.048)
Constant	3.791 (15.79)	-18.44 (28.87)	-8.319 (12.08)
Referendum fixed effects	Yes	Yes	Yes
Observations	1,145	443	702

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Results

Table 4: 2SLS v OLS

VARIABLES	(1) Social	(2) Regime
2SLS Estimates	1.591*** (0.612)	0.487 (0.336)
OLS Estimates	0.316*** (0.057)	0.138*** (0.034)

Summary

- Turnout matters for social referendums but not regime-related referendums
- Higher turnout → greater support for liberal social policies
- Consistent with the literature for general elections
 - ▶ Increased turnout leads to greater support for left-leaning parties (see, e.g., Fowler, 2013; Gomez et al., 2007)

Sloczynski (2021)

	Estimates	Variance	dy/dz		dx/dz	
ref1	0.0536	7.8157	0.01337	0.01172	0.24949	0.21857
ref11	1.06077	1.10544	-0.73965	-0.09165	-0.69727	-0.0864
		8.92113		-0.07994		0.13217
Pooled	-0.60479					

Results

100 people			
	Turnout		Yes
40 vote	0.4		0.5
41 vote	0.41		0.512195
	0.01		0.012195
		<u>1.219512</u>	

Figure

Summary Statistics

Table 2: Summary Statistics

	All referendums	Regime	Social
% Yes Votes	61.27	61.39	61.09
% Voter Turnout	51.24	49.21	54.47
Rainfall (Daily, mm)	2.22	1.98	2.61
Real Income (1,000 Euro)	17.85	18.24	17.22
Unemployment Rate	9.84	9.81	9.91
% Retired	11.19	11.06	11.38
% Farmers	8.93	8.42	9.75
Socioeconomic Group Homogeneity	13.39	12.90	14.16
% Post 2nd Level Education	26.03	26.00	26.09