Does terrorism lead to populism?

GV482 Coursework

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1 Introduction

This project attempts to explore the impact of terrorism on populism.

2 Descriptive Statistics

The panel data used in this project contains 329 observations and 2896 variables. The unit of observation is national elections. The data encompasses 33 EU member countries, including the UK ($N = 33$), and spans from 1980 to 2020. The data is unbalanced due to the nature of different electoral cycles, with a minimum of 6 observations (elections) per country, and a maximum of 16. The election dates for each country are presented in Figure 1. It can be seen that most elections have been held at regular intervals, with few exceptions of snap elections.

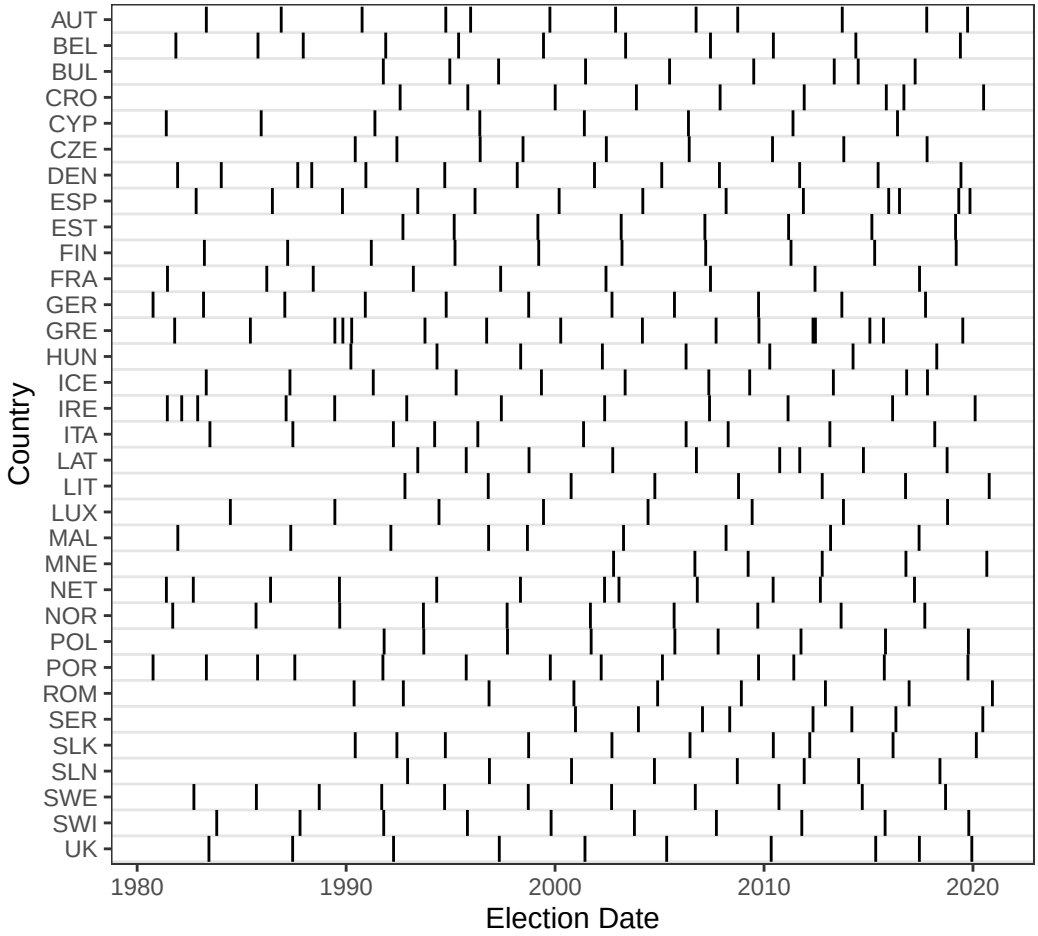

Figure 1: Election date by country

The unweighted summary statistics for key variables are provided in Table 1.

Table 1: Summary statistics of the populism dataset (unweighted)

	N	Mean	SD	Min	Q1	Median	Q3	Max
PopulistLeft	329	6.41	8.80	0.00	0.40	2.40	9.70	44.88
PopulistRight	329	8.96	11.20	0.00	0.50	5.50	13.60	69.50
HomeAttacksY1	329	11.10	32.42	0.00	0.00	1.00	4.00	305.00
HomenkillY1	329	3.38	16.18	0.00	0.00	0.00	0.00	193.00
HomenwoundY1	329	16.96	109.47	0.00	0.00	0.00	2.00	1825.00
GrowthY1	231	6.25	6.91	−14.78	2.65	5.19	8.43	47.93
UnemploymentY1	238	8.66	4.67	1.79	5.23	7.60	10.62	24.98
Export_penetrationY1	154	10.85	5.61	0.00	7.24	9.28	14.06	27.13
Import_penetrationY1	154	13.41	6.61	0.00	8.99	11.41	17.12	38.16
Immigration_percentY1	208	0.90	0.82	0.01	0.34	0.68	1.21	4.71
Emigration_percentY1	206	0.65	0.50	0.00	0.29	0.55	0.87	2.41

In later analysis, the weights of observations are adjusted according to the national population and number of elections held in each country. This is explained further in Section 3.1. The summary statistics of the weighted dataset are presented in Table 2.

Table 2: Summary statistics of the populism dataset (weighted)

	N	Mean	SD	Min	Q1	Median	Q3	Max
PopulistLeft	329	7.00	8.19	0.00	0.40	2.40	10.36	44.88
PopulistRight	329	8.87	11.17	0.00	1.00	5.50	12.95	69.50
HomeAttacksY1	329	31.16	55.08	0.00	1.00	1.00	34.00	305.00
HomenkillY1	329	9.59	26.66	0.00	0.00	0.00	6.00	193.00
HomenwoundY1	329	49.58	166.33	0.00	0.00	0.00	19.44	1825.00
GrowthY1	231	6.05	6.30	−14.78	2.28	5.19	7.71	47.93
UnemploymentY1	238	9.20	4.28	1.79	6.70	7.60	10.67	24.98
Export_penetrationY1	154	9.23	3.96	0.00	7.10	9.28	9.99	27.13
Import_penetrationY1	154	11.77	5.64	0.00	8.31	11.41	12.06	38.16
Immigration_percentY1	208	0.64	0.48	0.01	0.29	0.68	0.91	4.71
Emigration_percentY1	206	0.44	0.34	0.00	0.12	0.55	0.63	2.41

The weighted mean vote share of populist parties in each election year is presented in Figure 2. The figure suggests that the vote share of populist parties had been increasing from 1980 to 2020. Over the same period, right-wing populism had been more prevalent, whereas left-wing populism had been on the decline.

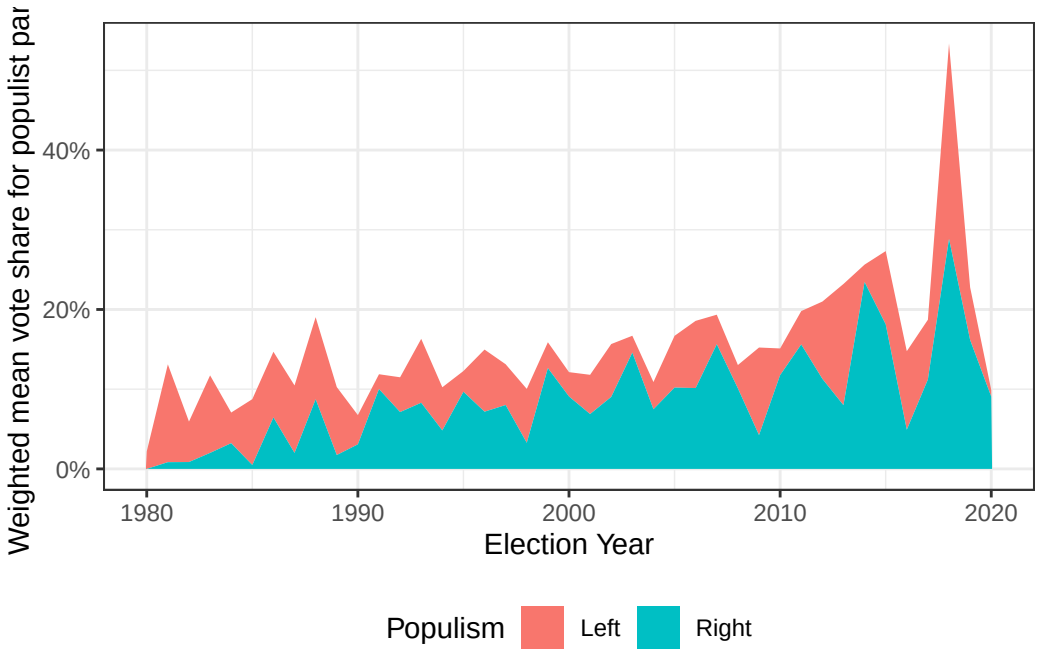

Figure 2: Weighted mean vote share of populist parties in elections over time

As for terrorism, Figure 3 summarises the total number of attacks and the casualties thereof within 1 year prior to national elections. Despite more frequent attacks before 2000, the highest number of casualties were seen before elections in 2004 and 2017, attributed to the 2004 Madrid train bombings and 2016 Nice truck attack, respectively.

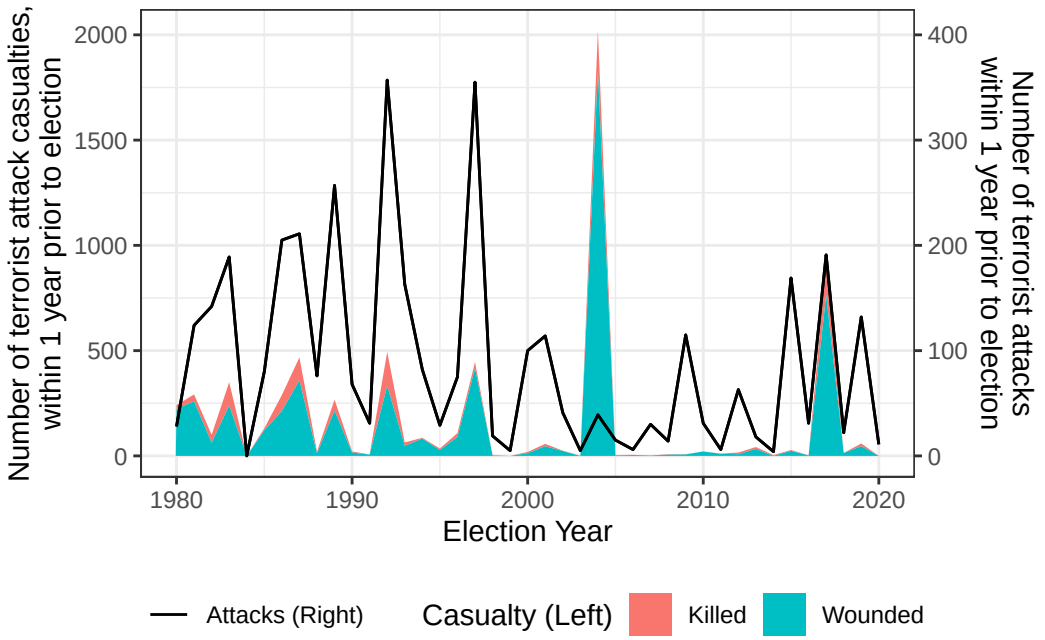

Figure 3: Number of terrorist attacks and casualties thereof 1 year prior to elections over time

3 Identification Strategies

To identify the impact of terrorist attacks on the vote share of populist parties, this project employs a number of specifications and measurements to cross-validate results and overcome the shortcomings of each specification.

3.1 Weights

Since the unit of observation for this project is national elections, unweighed analysis risks over-representing countries with more elections and less population. To account for this distortion, this project weighs the observations by their national population at the time, divided by the number of national elections for that nation. As a result, the sum of weights of each country is proportional to their (election weighted-average) population:

$$w_{i,t} \propto \frac{\text{Population}_{i,t}}{\text{Number of Elections}_i}$$

For convenience, this project sets the sum of weights to the number of observations ($\sum_{i,t} w_{i,t} = 329$).

3.2 Dependent Variables

This project takes on three dependent variables - Total vote share for left-wing populist parties `PopulistLeft`, Total vote share for right-wing populist parties `PopulistRight`, and Total vote share for all populist parties `PopulistTotal`. This is to distinguish the effect of terrorism on different streams of populism, as left-wing and right-wing populisms have followed different trends historically (Figure 2), it is sensible to assume that terrorism may have a differential impact on them.

3.3 Independent Variables

There are two sets of independent variables the effects of which on populist vote shares are of interest: local terrorist attacks and foreign terrorist attacks. To make their coefficients comparable, the same measurement of terrorist attacks is used in each regression.

3.3.1 Effect of Local Terrorist Attacks

There are four sets of measurements of local terrorist attacks used in this project:

- Number of terrorist attacks in home country i, l year(s) before election (`HomeAttacksY*`).
- Casualties, the numbers of people killed or wounded in terrorist attacks in home country i, l year(s) before election (`HomenkillY*`+`HomenwoundY*`).
- (Proxies for) Number of terrist attacks attributed to Left/Right/Islamic groups in home country i, l year(s) before election (`HomeleftproxyY*`/`HomerightproxyY*`/`HomeIslClaimY*`).
- (Proxies for) Casualties, the number of people killed or wounded in terrorist attacks in home country i, l year(s) before election (`Homenkill_*Y*`+`Homenwound_*Y*`).

The total number of attacks/casualties (first two sets of measurements) are used in regressions where the dependent variable is total populist vote share; left/right/Islamic group-segregated measurements (last two sets of measurements) are used when the dependent variable is regressions where the dependent variable is left/right segmented vote share.

The number of people killed or wounded in terrorist attacks are added up to form a *casualty* count to avoid multicollinearity, as they highly correlate ($\text{corr}(HomenkillY1, HomenwoundY1) = 0.82$).

All independent variables are taken up to 4 years before election ($1 \leq l \leq 4$). Coefficient β_l denotes the effect of local terrorism in l year(s) before election on the populist vote share.

3.3.2 Effect of Foreign Terrorist Attacks

Due to the internal mobility of people and cultural proximity within the EU, the terrorist attacks in other EU countries may also affect domestic populist vote share. Hence the inclusion of foreign terrorist attacks in our estimation.

Similar to local terrorist attacks, the number of terrorist attacks, the casualties thereof, and the left/right/Islamic segregated measurements of them are used as measurements. However, the same measurements of foreign countries ($i' \in N$) rather than the home country (i) are taken, and a weighted sum of such measurements is calculated as the measurement of foreign terrorist attacks ($\sum_{i' \in N} c_{i,i'} \text{Terrorism}_{i',t-l}$). The weight $0 \leq c_{i,i'} \leq 1$ measures the geographical/cultural proximity of home country i and foreign country i':

- Geographical: $c_{i,i'}^{geo} = \begin{cases} 1 \text{ when home country } i \text{ borders country } i' \\ 0 \text{ when home country } i \text{ does not border country } i' \end{cases}$ (Variable `Border*`).
- Cultural: $0 \leq c_{i,i'}^{cul} \leq 1$, with 1 meaning country i is culturally identical to country i' and 0 meaning the country i is not at all culturally similar to country i' (Variable `percent_culturalsimilarity*`).

The linguistic proximity is not included for two reasons. Firstly, the linguistic proximity is included in the cultural similarity index. Secondly, the linguistic proximity data is missing for two countries: Luxembourg and Montenegro.

Similarly, this composite index can be taken up to 4 years before the election ($1 \leq \theta_l \leq 4$). Hence, the coefficient θ_l can be interpreted as the impact of terrorist attacks in a bordering or culturally identical foreign country on domestic populist vote share. This coefficient is also comparable to the effect of domestic terrorist attack (β_l).

3.4 Control Variables

A number of control variables are selected as they are believed to affect the outcome (populist vote share) but not (significantly) affected by terrorism. Some of these variables are correlated with terrorism, the inclusion of them in this case reduce the omitted variable bias; others help to improve the precision of our estimation and increase the statistical power.

- Growth in % (`GrowthY*`). Lower growth may induce terrorism and is expected to increase populist vote share. Terrorism is not expected to affect growth at the national level.
- Unemployment in % (`UnemploymentY*`). Higher unemployment may increase terrorism and is expected to increase the populist vote share (Algan et al., 2017; Guiso et al., 2019). Terrorism is not expected to affect unemployment at the national level.
- Export penetration as % of GDP (`Export_penetrationY*`). Higher export penetration implies potentially higher pressure under globalisation, which induces populism.

- Import penetration in % of GDP (`Import_penetrationY*`). Higher import penetration implies local firms losing in global competition, which induces populism.
- Immigration as % of population (`Immigration_percentY*`). Higher immigration is expected to increase support for populism, due to cultural shocks (Inglehart & Norris, 2016; Margalit, 2019) or a reputation shock (Wolton, 2023).
- Emigration as % of population (`Emigration_percentY*`).

All control variables are available and taken up to 3 years before election.

3.5 Baseline Model - Two-Way Fixed Effects

$$Y_{i,t} = \alpha_i + \lambda_t + \sum_{l=1}^{4} \beta_l \text{Terrorism}_{i,t-l} + \sum_{l=1}^{4} \theta_l \sum_{i' \in N} c_{i,i'} \text{Terrorism}_{i',t-l} + \sum_{l=1}^{4} X_{i,t-l}^{'} \gamma_l + \epsilon_{i,t} \quad (1)$$

In the baseline setting of this project, a two-way fixed effects (TWFE) framework is used to identify the causal effect of terrorism on populist vote share. The functional form is presented in Equation 1. The unit fixed effects (α_i) controls for the effects of time-invariant confounders in each country. The time fixed effects (λ_t) controls for the effects of events that uniformly affect populist share in all countries across the EU. β_l denotes the effect of local terrorism $\text{Terrorism}_{i,t-l}$ in country i, l year(s) before election in year t. θ_l denotes the effect of foreign terrorism $\text{Terrorism}_{i',t-l}$, weighted by the proximity $c_{i,i'}$ between home country i and foreign country i'. X_{it-l} is a vector of control variables for country i, l year(s) before election in year t. Their corresponding coefficients form a vector γ_l. $\epsilon_{i,t}$ is the error term.

Table 3: TWFE regression results for total populist vote share. (Dep Var: Total populist vote share)

	Total Attacks				Total Casualties			
	$c = 0$		$c = c^{geo}$	$c = c^{cul}$	$c = 0$		$c = c^{geo}$	$c = c^{cul}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
HomeTerrorism$_{t-1}$	0.058	0.193	0.143	0.177	−0.006*	−0.003	−0.003	−0.001
	(0.035)	(0.145)	(0.120)	(0.132)	(0.003)	(0.006)	(0.007)	(0.006)
HomeTerrorism$_{t-2}$	−0.031	−0.311**	−0.231*	−0.379***	0.014	0.015	−0.003	0.019
	(0.046)	(0.096)	(0.095)	(0.102)	(0.009)	(0.009)	(0.010)	(0.015)
HomeTerrorism$_{t-3}$	0.029	0.459*	0.415+	0.238	0.018	0.040***	0.028+	0.019
	(0.032)	(0.220)	(0.231)	(0.222)	(0.013)	(0.010)	(0.015)	(0.014)
HomeTerrorism$_{t-4}$	0.025	−0.330+	−0.270	−0.324*	−0.001	0.001	0.000	0.000
	(0.019)	(0.167)	(0.165)	(0.151)	(0.003)	(0.006)	(0.006)	(0.004)
ForeignTerrorism$_{t-1}$			0.270**	0.019			0.003	0.002
			(0.089)	(0.037)			(0.002)	(0.006)
ForeignTerrorism$_{t-2}$			−0.040	−0.100+			0.037**	0.002
			(0.075)	(0.049)			(0.011)	(0.006)
ForeignTerrorism$_{t-3}$			−0.096	−0.199*			0.002	−0.027**
			(0.090)	(0.085)			(0.005)	(0.008)
ForeignTerrorism$_{t-4}$			−0.001	−0.076+			0.003	−0.005
			(0.065)	(0.044)			(0.006)	(0.009)
Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Weighted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F_{home}	1.41 [4,32]	2.72+ [4,26]	2.31+ [4,26]	3.67* [4,26]	3.04* [4,32]	4.33** [4,26]	0.97 [4,26]	0.87 [4,26]
$F_{foreign}$			3.4* [4,26]	2.45+ [4,26]			6.23** [4,26]	7.98*** [4,26]
N	329	125	125	125	329	125	125	125
R^2 Adj.	0.671	0.858	0.868	0.871	0.657	0.859	0.882	0.887
R^2 Within Adj.	0.070	0.081	0.141	0.161	0.029	0.088	0.232	0.266
Std.Errors	Clustered	Clustered	Clustered	Clustered	Clustered	Clustered	Clustered	Clustered
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

4 Robustness Checks

References

Algan, Y., Guriev, S., Papaioannou, E., & Passari, E. (2017). The european trust crisis and the rise of populism. *Brookings Papers on Economic Activity*, *2017*(2), 309–400. https://doi.org/10.1353/eca.2017.0015

Guiso, L., Herrera, H., Morelli, M., & Sonno, T. (2019). Global crises and populism: The role of eurozone institutions*. *Economic Policy*, *34*(97), 95–139. https://doi.org/10.1093/epolic/eiy018

Inglehart, R., & Norris, P. (2016). Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2818659

Margalit, Y. (2019). Economic Insecurity and the Causes of Populism, Reconsidered. *Journal of Economic Perspectives*, *33*(4), 152–170. https://doi.org/10.1257/jep.33.4.152

Wolton, S. (2023). White, male, and angry: A reputation-based rationale. *CEPR Discussion Paper*, *18084*. https://cepr.org/publications/dp18084

Table 4: TWFE regression result for right populist vote share. (Dep Var: Right populist vote share)

	Total Attacks			Total Casualties		
	$c = 0$	$c = c^{geo}$	$c = c^{cul}$	$c = 0$	$c = c^{geo}$	$c = c^{cul}$
	(1)	(2)	(3)	(4)	(5)	(6)
HomeLeft	0.428*	0.465**	0.097	−0.023	−0.033*	−0.023
	(0.164)	(0.139)	(0.275)	(0.020)	(0.013)	(0.028)
HomeRight	−0.207	−0.190	−0.278	0.151*	0.141+	0.118+
	(0.139)	(0.121)	(0.221)	(0.065)	(0.070)	(0.060)
HomeIslam	−0.576*	−0.696*	−0.188	0.020	0.032+	0.023
	(0.266)	(0.310)	(0.438)	(0.021)	(0.016)	(0.028)
ForeignLeft		0.081	−0.448+		−0.006	−0.006
		(0.102)	(0.255)		(0.013)	(0.007)
ForeignRight		−0.178	−0.018		0.003	−0.033+
		(0.105)	(0.170)		(0.033)	(0.018)
ForeignIslam		0.234	0.427		0.012	0.015+
		(0.208)	(0.432)		(0.015)	(0.008)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Weighted	Yes	Yes	Yes	Yes	Yes	Yes
F_{home}	2.34+ [3,26]	3.76* [3,26]	0.68 [3,26]	2.95+ [3,26]	5.22** [3,26]	1.59 [3,26]
$F_{foreign}$		2.44+ [3,26]	2.86+ [3,26]		1.14 [3,26]	3.4* [3,26]
N	125	125	125	125	125	125
R^2 Adj.	0.772	0.781	0.777	0.765	0.764	0.768
R^2 Within Adj.	0.144	0.178	0.163	0.120	0.117	0.132
Std.Errors	Clustered	Clustered	Clustered	Clustered	Clustered	Clustered
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001