Policy or Partisanship: Replicating Results From An Analysis of Quasi-Experimental Evidence From Brexit

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Note for Trisha: Change the title above to something other than the paper's original title.

Acknowledgements

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I. Introduction: Overview of Original Paper

This replication examines the paper "Policy or Partisanship: Replicating Results From An Analysis of Quasi-Experimental Evidence From Brexit." In the paper, the authors aim to explore one key question: "are voters motivated by policy preferences, or partisan identities?" The authors answer the question in the context of the UK's political system, exploiting the UK's Brexit referendum – which caused an abrupt change in the British Conservative Party's stance on leaving the European Union, and via a vote "so narrow that it was more or less a coin flip." The authors' methodology is relatively simple: they employ an uninterrupted time-series design, examining panel survey data from the British Election Study to compare referendum attitudes and party affiliation in the data immediately before and after the referendum ("Wave 8" and "Wave 9" data, respectively). Given the brief gap between the 2 waves, and their ability to identify/eliminate potential confounders (e.g. a change in the Labour Party's stance on Brexit), they assume their identification strategy is sound. They ultimately fit and run several linear regression models that find that voters are most motivated by policy: following Brexit, "Europhilic" (citizens that supported remaining in the EU) Conservatives disaffiliated from the Conservative party; indeed, the less Euroskeptic a Conservative was pre-referendum, the more likely they were to disaffiliate. The "policy story" holds when examining pre-referendum non-Conservatives; here, the authors determine that the more Euroskeptic pre-referendum non-Conservatives were, the more likely they were to switch to the Conservative Party.

The authors also explore various related questions, such as whether the intensity of pre-referendum Conservatives' partisanship influenced to what degree they followed their party as it adopted a new position; they ultimately find that the positive relationship between Conservatives' perception of their party's position on Brexit and their position on Brexit is strongest for the most partisan Conservatives. The authors also look at whether newly minted Conservative voters also updated their stances on other policy issues to further align themselves with the Conservative party; looking specifically at the issue of redistribution, they find that this is indeed the case. The authors' other results/conclusions are discussed in detail in the next section.

In the next section, I replicate [1] the authors' main results (6 tables and 2 figures), providing my analyses/interpretation. Then, in the third section, I consider ways to extend the authors' work, in this case, by employing another regression method particularly suited to analyses with binary outcomes (such as switching parties) – logistic regression.

[1] The data and code used in the report can be obtained here:

II. Replicated Results and Discussion

Table 1: Euroskepticism and Defection from the Conservatives

	Dependent variable:		
	Defect from Conservatives		
	(1)	(2)	(3)
Pre-Referendum Euroskepticism	-0.003^{*}	-0.001	0.0001
	(0.001)	(0.001)	(0.001)
Perceived Change in Conservative Euroskepticism		0.011^{*}	0.009^{*}
		(0.004)	(0.004)
Age			-0.001^{***}
			(0.0002)
Female			-0.007
			(0.007)
White			-0.058^{**}
			(0.019)
Scotland			0.002
			(0.012)
Wales			0.021
			(0.014)
Pre-Referendum Euroskepticism:Perceived Change in Conservative Euroskepticism		-0.001^{*}	-0.001^{*}
		(0.001)	(0.001)
Constant	0.101^{***}	0.084^{***}	0.181^{***}
	(0.011)	(0.011)	(0.023)
Observations	7,330	6,476	6,216
R^2	0.001	0.001	0.006
Adjusted R^2	0.0004	0.001	0.005
Residual Std. Error	0.272 (df = 7328)	0.261 (df = 6472)	0.258 (df = 6207)
F Statistic	3.912^{*} (df = 1; 7328)	2.709^{*} (df = 3; 6472)	4.554^{***} (df = 8; 6207)
Note:			*p<0.05; **p<0.01; ***p<0.001

Table 2: Euroskepticism and Joining the Conservatives

	Dependent variable:		
	Joined Conservatives		
	(1)	(2)	(3)
Pre-Referendum Euroskepticism	0.007^{***}	0.007^{***}	0.006^{***}
	(0.0005)	(0.001)	(0.001)
Perceived Change in Conservative Euroskepticism		-0.003^{*}	-0.004^{**}
		(0.001)	(0.001)
Age			0.0004^{***}
			(0.0001)
Female			-0.002
			(0.003)
White			-0.008
			(0.007)
Scotland			-0.017^{***}
			(0.005)
Wales			-0.012
			(0.006)
Pre-Referendum Euroskepticism:Perceived Change in Conservative Euroskepticism		0.001^{***}	0.001^{***}
		(0.0002)	(0.0002)
Constant	-0.001	0.00004	-0.007
	(0.003)	(0.004)	(0.009)
Observations	18,517	15,139	14,554
R^2	0.012	0.015	0.017
Adjusted R^2	0.012	0.015	0.017
Residual Std. Error	0.198 (df = 18515)	0.204 (df = 15135)	0.202 (df = 14545)
F Statistic	216.857^{***} (df = 1; 18515)	78.431^{***} (df = 3; 15135)	31.854^{***} (df = 8; 14545)
Note:			*p<0.05; **p<0.01; ***p<0.001

```
## Warning: Removed 6083 rows containing non-finite values (stat_smooth).
```

```
## Warning: Removed 6083 rows containing missing values (geom_point).
```

Table 3: Individual Shifts in Euroskepticism

	Dependent variable:	
	Change in Personal Euroskepticism:	
	Moderate Conservatives	Very Strong Conservatives
Perceived Change in Conservative Euroskepticism	0.139^{***}	0.220^{***}
	(0.011)	(0.020)
Female	-0.055	-0.109
	(0.054)	(0.113)
Age	0.006^{***}	0.004
	(0.002)	(0.004)
White	0.094	-0.186
	(0.154)	(0.300)
Scotland	0.131	0.099
	(0.096)	(0.192)
Wales	0.017	-0.324
	(0.111)	(0.245)
Constant	-1.161^{***}	-0.573
	(0.178)	(0.340)
Observations	5,000	1,180
R^2	0.038	0.101
Adjusted R^2	0.036	0.097
Residual Std. Error	1.882 (df = 4993)	1.883 (df = 1173)
F Statistic	32.559^{***} (df = 6; 4993)	22.025^{***} (df = 6; 1173)
Note:		*p<0.05; **p<0.01; ***p<0.001

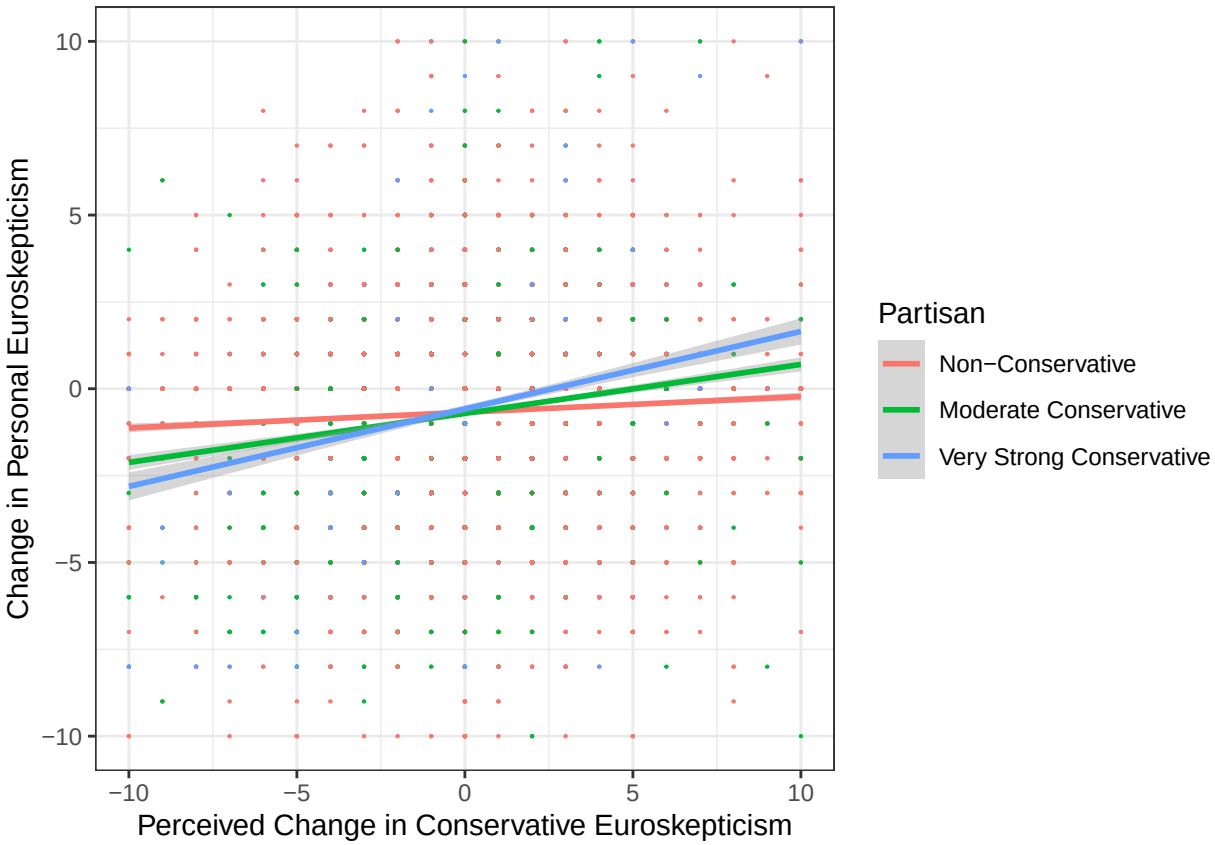
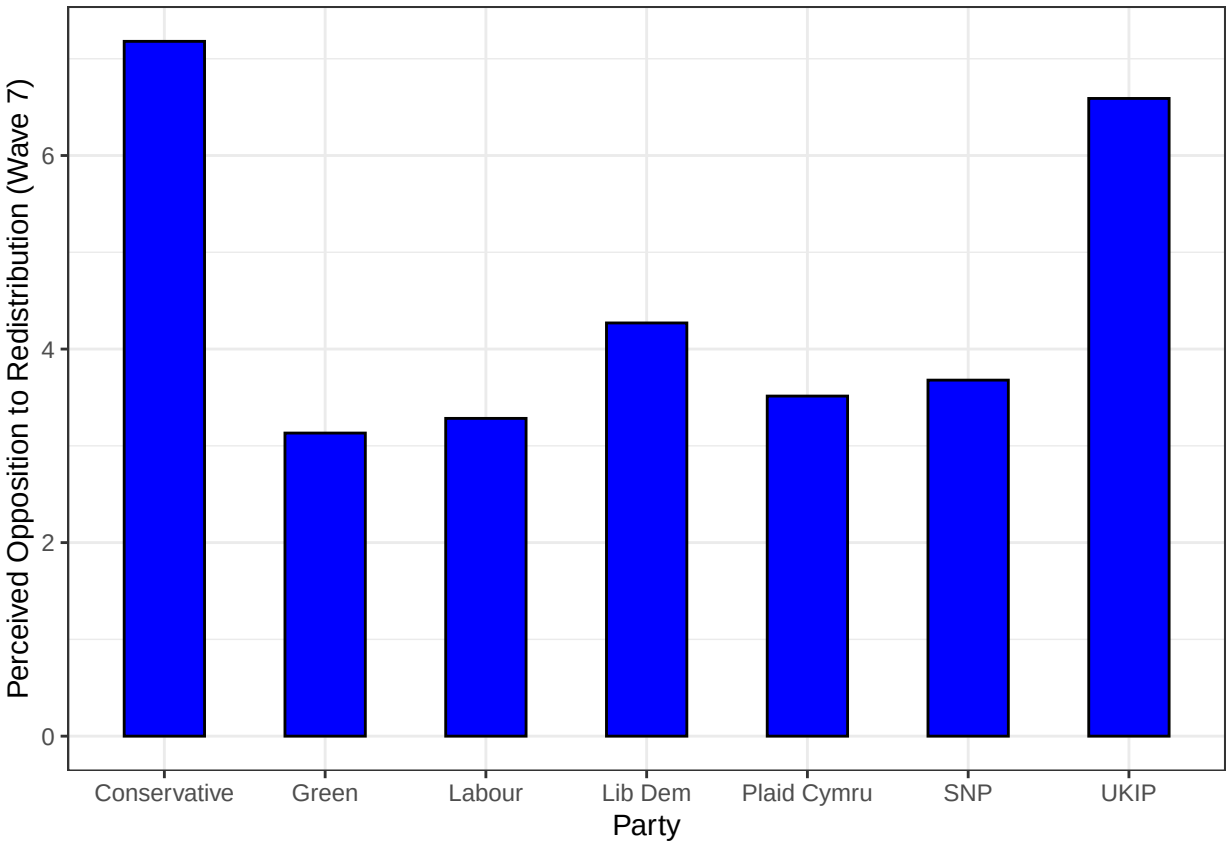

Change in Personal Euroskepticism
10
5
0
−5
−10
−10
−5
0
5
10
Perceived Change in Conservative Euroskepticism
Partisan
Non−Conservative
Moderate Conservative
Very Strong Conservative

Table 4: Joining the Conservatives and Opposition to Redistribution

	Dependent variable:		
	Change in Opposition to Redistribution		
	Overall	Non-UKIP	UKIP
Joined Conservatives	0.542^{***}	0.605^{***}	0.042
	(0.133)	(0.158)	(0.285)
White	0.179	0.155	0.360
	(0.119)	(0.120)	(0.528)
Age	−0.001	−0.003	0.008
	(0.002)	(0.002)	(0.007)
Female	−0.009	0.0001	0.003
	(0.052)	(0.054)	(0.191)
Scotland	-0.162^{*}	−0.109	−0.472
	(0.071)	(0.071)	(0.468)
Wales	−0.051	−0.112	0.536
	(0.091)	(0.094)	(0.312)
Constant	−0.161	−0.094	−0.518
	(0.144)	(0.146)	(0.631)
Observations	9,065	8,086	979
R^2	0.003	0.003	0.007
Adjusted R^2	0.002	0.002	0.001
Residual Std. Error	2.477 (df = 9058)	2.415 (df = 8079)	2.906 (df = 972)
F Statistic	4.155^{***} (df = 6; 9058)	3.804^{***} (df = 6; 8079)	1.090 (df = 6; 972)
Note:			*p<0.05; **p<0.01; ***p<0.001


Perceived Opposition to Redistribution (Wave 7)
0
2
4
6
Conservative
Green
Labour
Lib Dem
Plaid Cymru
SNP
UKIP
Party

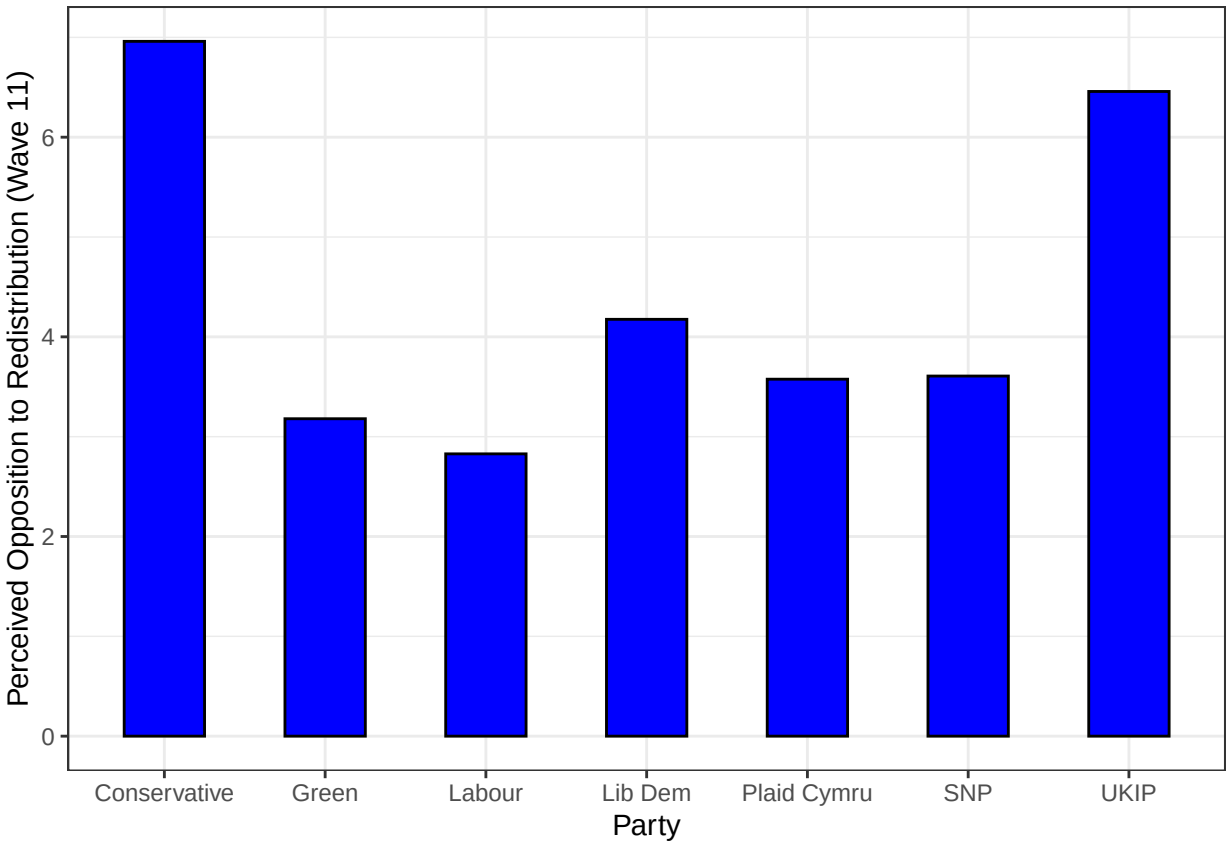


Table 5: Euroskepticism and Defecting from Conservatives

	Dependent variable:		
	Defected from Conservatives		
	(1)	(2)	(3)
2015 Euroskepticism	-0.029^{***}	-0.031^{***}	-0.026^{***}
	(0.003)	(0.003)	(0.003)
Perceived Change in Conservative Euroskepticism		0.009	0.010
		(0.008)	(0.008)
Age			-0.004^{***}
			(0.001)
Female			0.023
			(0.015)
White			-0.020
			(0.041)
Scotland			-0.053^{*}
			(0.026)
Wales			0.024
			(0.027)
Interaction		-0.001	-0.001
		(0.001)	(0.001)
Constant	0.358^{***}	0.362^{***}	0.608^{***}
	(0.023)	(0.028)	(0.053)
Observations	2,142	1,902	1,902
R^2	0.047	0.059	0.096
Adjusted R^2	0.047	0.058	0.092
Residual Std. Error	0.332 (df = 2140)	0.321 (df = 1898)	0.315 (df = 1893)
F Statistic	105.620^{***} (df = 1; 2140)	39.927^{***} (df = 3; 1898)	25.150^{***} (df = 8; 1893)
Note:			*p<0.05; **p<0.01; ***p<0.001

Table 6: Euroskepticism and Switching Vote to Conservatives

	Dependent variable:		
	Switched to Conservatives		
	(1)	(2)	(3)
2015 Euroskepticism	0.047^{***}	0.049^{***}	0.047^{***}
	(0.002)	(0.002)	(0.002)
Perceived Change in Conservative Euroskepticism		0.005	0.004
		(0.004)	(0.004)
Age			0.002^{***}
			(0.0004)
Female			-0.015
			(0.012)
White			0.061^{*}
			(0.028)
Scotland			0.010
			(0.015)
Wales			-0.034
			(0.020)
Interaction		0.001^{*}	0.001^{*}
		(0.001)	(0.001)
Constant	-0.068^{***}	-0.076^{***}	-0.228^{***}
	(0.011)	(0.012)	(0.035)
Observations	4,388	3,758	3,758
R^2	0.164	0.203	0.210
Adjusted R^2	0.164	0.202	0.208
Residual Std. Error	0.367 (df = 4386)	0.364 (df = 3754)	0.363 (df = 3749)
F Statistic	861.685^{***} (df = 1; 4386)	318.651^{***} (df = 3; 3754)	124.664^{***} (df = 8; 3749)
Note:			*p<0.05; **p<0.01; ***p<0.001

III. Proposed Extension

```
# Note that our dependent variable is binary (switching -- Yes or No).

# What if we re-created Table 1 using logistic regression?

table1reg_logistic <- glm(formula = partyswitcher ~ EUIntegrationSelf8,
                          family = binomial(link = "logit"),
                          data = merged)

intreg1_logistic <- glm(partyswitcher ~ EUIntegrationSelf8 * Conchange,
               family = binomial(link = "logit"),
               data = merged)

intreg1a_logistic <- glm(partyswitcher ~ EUIntegrationSelf8 * Conchange + age.x
                + gender.x + white + country.x,
                family = binomial(link = "logit"),
                data = merged)
```

```
stargazer(table1reg_logistic, intreg1_logistic, intreg1a_logistic,
          title = "Euroskepticism and Defection from the Conservatives (Logistic)",
          covariate.labels = c("Pre-Referendum Euroskepticism",
                               "Perceived Change in Conservative Euroskepticism",
                               "Age",
                               "Female",
                               "White",
                               "Scotland",
                               "Wales",
                               "Pre-Referendum Euroskepticism:Perceived Change in Conservative Euroskep
                               "Constant"),
          dep.var.labels   = "Defect from Conservatives",
          no.space = TRUE, star.cutoffs = c(0.05, 0.01, 0.001),
```

```
          font.size = "tiny",
          header = FALSE)
```

Table 7: Euroskepticism and Defection from the Conservatives (Logistic)

	Dependent variable:		
	Defect from Conservatives		
	(1)	(2)	(3)
Pre-Referendum Euroskepticism	-0.033^{*}	-0.015	0.005
	(0.017)	(0.020)	(0.021)
Perceived Change in Conservative Euroskepticism		0.140^{*}	0.129^{*}
		(0.058)	(0.062)
Age			-0.013^{***}
			(0.003)
Female			-0.109
			(0.101)
White			-0.619^{**}
			(0.214)
Scotland			0.036
			(0.178)
Wales			0.292
			(0.192)
Pre-Referendum Euroskepticism:Perceived Change in Conservative Euroskepticism		-0.017^{*}	-0.016^{*}
		(0.007)	(0.007)
Constant	-2.170^{***}	-2.415^{***}	-1.260^{***}
	(0.139)	(0.165)	(0.293)
Observations	7,330	6,476	6,216
Log Likelihood	$-2,052.692$	$-1,699.461$	$-1,588.203$
Akaike Inf. Crit.	4,109.383	3,406.922	3,194.406
Note:			*p<0.05; **p<0.01; ***p<0.001

```
# Let's look at the null and residual deviance for our last model:

pchisq(3209.2 - 3176.4, 6215 - 6207, lower = FALSE)
```

[1] 6.691329e-05

```
# We're definitely in the tail, which suggests that our model is statistically
# different from the mean model. That's good!

# Let's look at the odds ratios:

exp(table1reg_logistic$coefficients[])
```

```
   (Intercept) EUIntegrationSelf8
     0.1142154          0.9672463
```

```
# Question for Le: How should I interpret/consider the logistic regression
# approach -- in particular, how should I compare it to the "regular" lm
# approach utilized in the paper?

# Can plot some graphs -- look at the magnitudes across the scales of indep.
# variable.
# Can do some inverse-logit/predict -- can define high level and a low level; compare
# 1 to 2, 2 to 3, etc. -- and discuss your findings in your report.

# Initial attempt at interpretation of Table 1 logistic regressions:

# Here, for each model, we calculate the odds ratio of the various coefficients; the odds
# ratio represents: P/1-P (or the probability of leaving the Conservatives/the
# probability of not leaving the Conservatives). With that said, if the value of
# an odds ratio is > 1, then the ratio suggests the predictor is associated with
```

```
# an increase in the probability of leaving the Conservatives. The magnitude of
# that effect can be directly compared via the numbers, with adjustment for
# variation via multiplication by the standard deviation.

# Let's consider the most simple regression/model:

# The odds ratio for EUIntegrationSelf8 is 0.9672463; this suggests that a one-unit increase
# in pre-referendum Euroskepticism is associated with a decrease in the
# probability of defection from the Conservatives (as we would predict, given
# that the Conservatives adopt an anti-integration view post-referendum).

#...
```

IV. Bibliography

https://poseidon01.ssrn.com/delivery.php?ID=527000067124025067095113075070106108039003024042071075093075112088110
EXT=pdf&INDEX=TRUE

https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/QVTCYP