Replication

Paper:Opportunistic Election Timing, a Complement or Substitute for Economic Manipulation?

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Paper Background

- **Research question**: how do parliamentary governments combine two commonly available strategies: 1) economic manipulation before elections 2) opportunistic election timing to enhance their reelection chance

- H1: Complement - Governments use two strategies together
  H2: Substitution - Use one strategy in place of the other

- Consumption to Investment$_{i,t}$

$= \beta_1 \text{Electoral Cycle}_{i,t} + \beta_2 \text{Dissolution Powers}_{i,t} + \beta_3(\text{Electoral Cycle}_{i,t} \times \text{Dissolution Powers}_{i,t}) + \sum_{k=1}^{K} \gamma_k X_{k,i,t} + h_t + \varepsilon_{i,t}$;

Methods

- Dataset: 360 entries 20 parliamentary democracies countries from 1997-2015
- Runs 8 panel regressions model

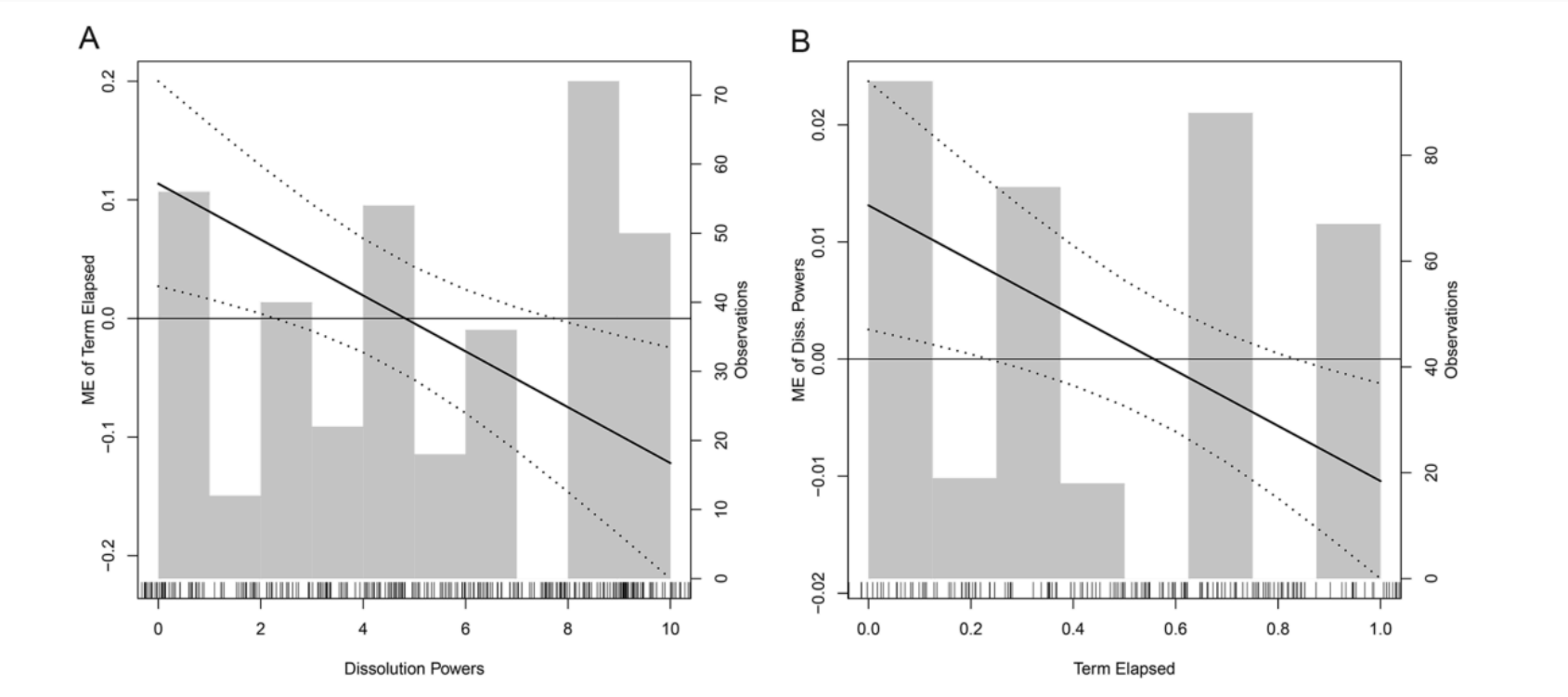
- Finding: the Dissolution Powers variable is consistently negative when interacting with the Electoral Cycle, indicating that the higher the dissolution powers, the less the government engages in fiscal manipulation, which support H2

TABLE 1

Table 1. Dissolution Powers and Economic Manipulation over the Election Cycle

	Dependent Variable: Consumption to Investment (Log)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Consumption to investment (lag)	.878***	.874***	.447***	.419***	.906***	.909***	.499***	.473***
	(.029)	(.030)	(.090)	(.100)	(.018)	(.015)	(.102)	(.103)
Electoral cycle	.110**	.107**	.084***	.089***	.116**	.111**	.089**	.094***
	(.045)	(.053)	(.031)	(.032)	(.046)	(.055)	(.039)	(.033)
Dissolution powers	.013**	.012**	.024**	.025*	.012**	.011*	.017**	.017**
	(.006)	(.006)	(.011)	(.013)	(.006)	(.006)	(.008)	(.008)
Electoral cycle × dissolution powers	−.023***	−.023***	−.018***	−.017*	−.024***	−.024***	−.019***	−.019*
	(.008)	(.008)	(.006)	(.006)	(.008)	(.008)	(.007)	(.006)
GDP growth	−.022***	−.011***	−.011***	−.029***	−.021***	−.012***	−.014***	−.030***
	(.004)	(.003)	(.002)	(.006)	(.004)	(.003)	(.004)	(.008)
GDP (log)	−.004	−.005	−.081	−.162				
	(.010)	(.010)	(.071)	(.136)				
Inflation	−.002**	−.001	.002	.003				
	(.001)	(.001)	(.002)	(.003)				
Revenue	−.004**	−.003	−.003	−.012				
	(.002)	(.002)	(.009)	(.009)				
Debt to GDP	.001	.001	.003***	.002**				
	(.001)	(.001)	(.001)	(.001)				
Vote share	.003***	.003***	.003	.003				
	(.001)	(.001)	(.002)	(.002)				
Government fractionalization	.199**	.175**	.168	.208*				
	(.087)	(.081)	(.130)	(.116)				
Constant		.308				.119**		
		(.224)				(.059)		
Country fixed effects	X	X	✓	✓	X	X	✓	✓
Year fixed effects	✓	X	X	✓	✓	X	X	✓
Time trend (cubic)	X	✓	✓	X	X	✓	✓	X
Observations	360	360	360	360	360	360	360	360
R^2	.861	.853	.370	.402	.857	.848	.331	.367
Adjusted R^2	.849	.847	.302	.308	.847	.844	.273	.282

Panel A/B



Finding support H2

Panel A: The effect of the proportion of the electoral term that has elapsed on fiscal manipulation, considering different levels of the incumbents' dissolution powers

Panel B: The effect of an increase in dissolution powers on fiscal manipulation across different stages of the electoral term.

Extension

- Q: what is the most significant factor that leads to economic manipulation?
- **Hypothesis**: Economic manipulation is associated with economic downturns, whether the government is run by a single party do not directly cause economic manipulation
- $\text{Logit}(\text{Economic\_Manipulation}) = \ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1(\text{change\_GDP}) + \beta_2(\text{single\_party}) + \beta_3(\text{Year}) + \beta_4(\text{inflation}) + \beta_5(\text{revenue}) + \epsilon$

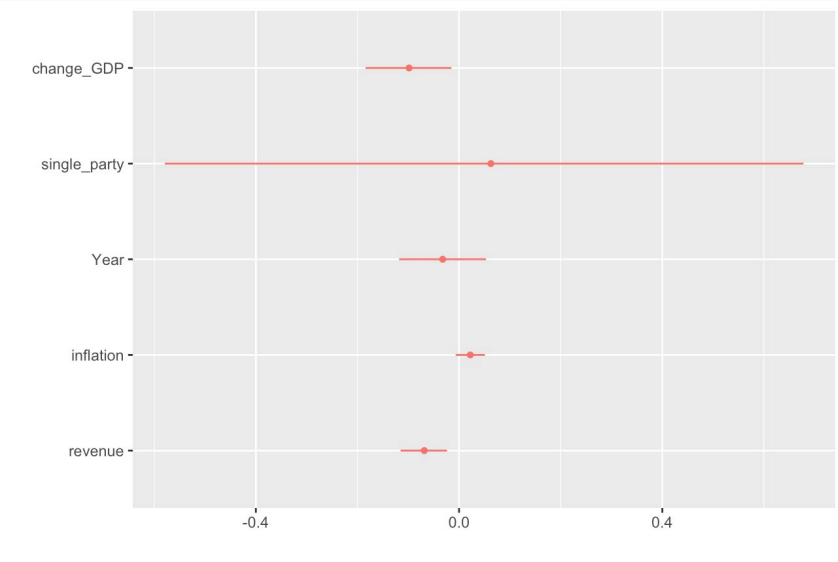
Dependant variable

Calculation of Year-over- Year Change in Logarithmic Consumption Investment indicates economic manipulation through investment fluctuations. The threshold of significant Economic Manipulation based on the third quartile(0.75)

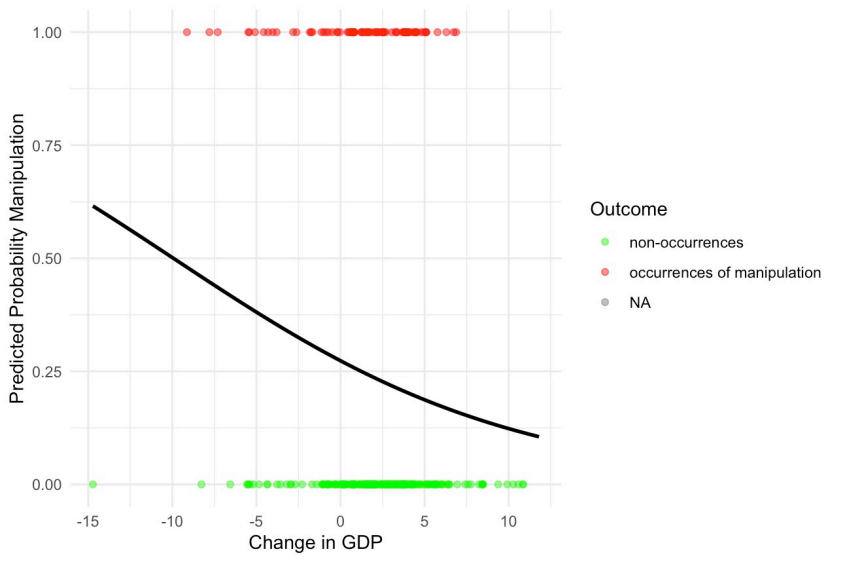
Regression summary

```
Call:
glm(formula = Economic_Manipulation ~ change_GDP + singl
Year + inflation + revenue, family = "binomial", data =
      Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept)  64.76035   86.37837   0.750  0.45342
change_GDP   -0.09838    0.04277  -2.300  0.02144 *
single_party  0.06259    0.31953   0.196  0.84469
Year         -0.03226    0.04350  -0.742  0.45834
inflation     0.02207    0.01461   1.510  0.13100
revenue      -0.06850    0.02322  -2.949  0.00318 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05
```

Result Visuals



dot-and-whisker plot



predicted probability manipulation by GDP change

Findings

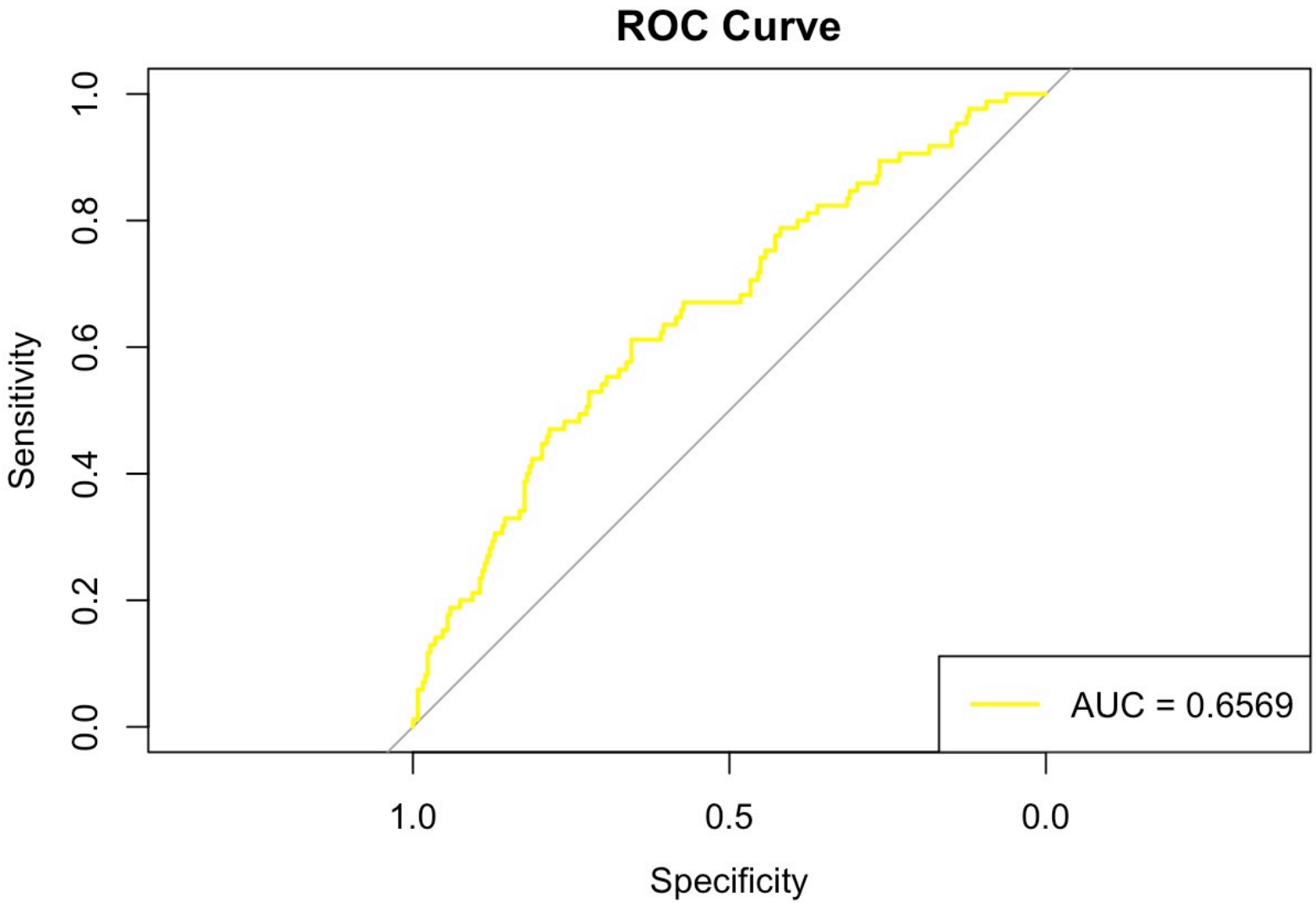
- A one-unit increase in change- GDP is associated with a 9.4%($e^{-0.09838}$) decrease in the likelihood of significant economic manipulation

- a whisker crossing the zero line in a confidence interval plot indicates there is not sufficient evidence to prove that the effect is different from zero

- The descending line indicates that higher GDP change is associated with lower probabilities of manipulation.

ROC Curve

- AUC score of 0.6569 is better than 0.5, the model can identify economic manipulation,cutoff value 0.75, better than by random

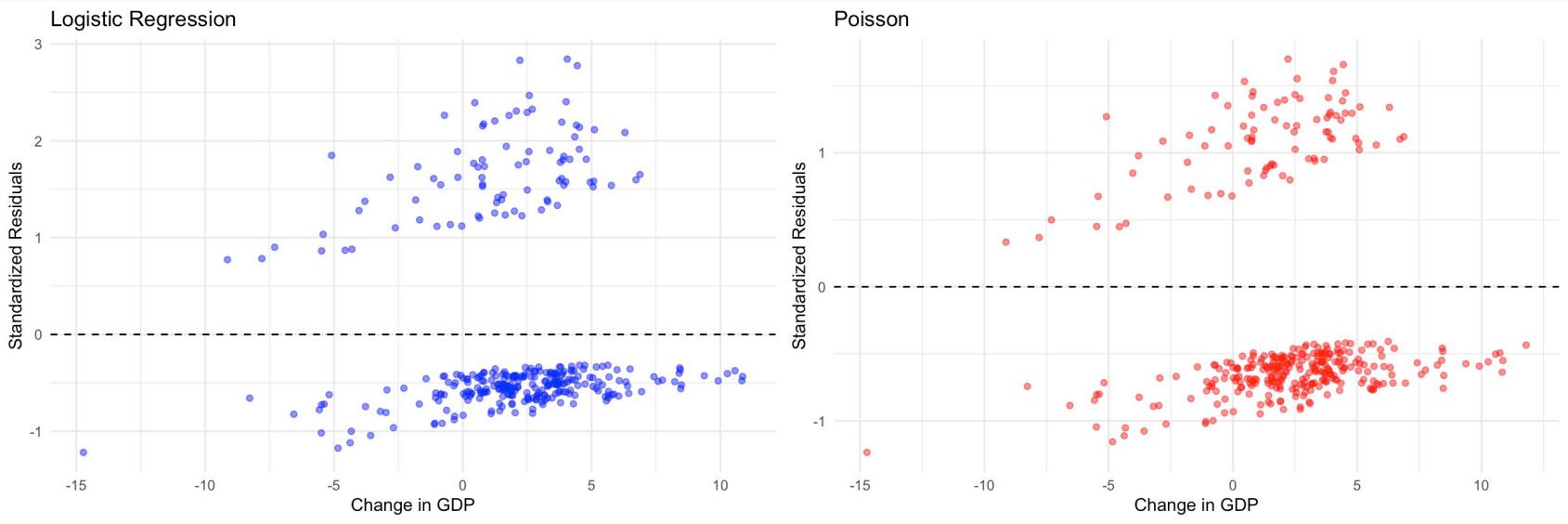


Try Poisson regression

glm(formula = manipulation-count : change GDP + single party + Year + inflation + revenue, family = "poisson", data = data)

```
Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept)  6.205242  70.374296   0.088  0.92974
change_GDP  -0.061445   0.032417  -1.895  0.05803 .
single_party 0.053297   0.260506   0.205  0.83789
Year        -0.003348   0.035436  -0.094  0.92473
inflation    0.014914   0.011800   1.264  0.20626
revenue     -0.050677   0.019480  -2.602  0.00928 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
```

Standardized Residuals plots



- Poisson plot: a fan-shaped pattern, variance of the residuals is not constant, This is a sign of overdispersion.
- Logistic regression plot shows residuals that are more evenly scattered around the zero line, a better fit for the data

Conclusion

- We can answer the extend question!
- Hypothesis is true: Economic manipulation is associated with economic downturns, whether the government is run by a single party does not directly cause economic manipulation.