Gov 52 Final Project

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Introduction

In their paper "Legislative Term Limits and Polarization," Michael Olson and Jon Rogowski explore the causal impact of the adoption of legislative term limits on representation in state governments.[1] The paper specifically asks how legislative term limits affect representation and polarization and if this relationship is modified by the professionalism of the legislature. The authors hypothesize that the implementation of term limits will increase polarization, and that the increase will be greater in more professional legislatures. This hypothesis is generated based on two reasons:

- Firstly, the authors theorize that term limits reduce a legislator's need to understand and respond to their constituency's demands as they know that they will not have the possibility of a long career or repeated reelection.
- Secondly, the authors theorize that qualified candidates will be less likely to run for positions with term limits due to the reduced job security and as a result parties will be more inclined to run candidates with strong ideological views and party loyalty.

To answer the above questions, the paper uses panel data on roll call voting in the years between 1993 and 2016 by state as well as indicators for a divided government, legislative professionalism, and party competitiveness. The primary model used by the authors is a multiunit difference-in-difference design described by this linear regression model:

$Y_{it} = \beta_0 + \beta_1 \ Term \ limits_{it} + X_{it}\Omega + D_i + T_t + \epsilon_{it}$

In the above regression, Y is the level of polarization in state i in year t, the term limits variable indicated whether state i had term limits in year t, Ω is a vector of coefficients for state-level time varied covariates X_{it} (divided government, legislative professionalism, party competitiveness), D_i is an indicator for state fixed effects, T_t is an indicator for year fixed effects, and ϵ is a random error term.

The authors concluded that the implementation of term limits led to higher levels of polarization in state legislatures as evidenced by an increased ideological gap between the parties in voting patterns. Furthermore, the authors conclude that this effect is larger for more professional legislatures, those which have longer sessions and higher salaries. The authors also find that the effects of term limit appeared to be twice as large for republican legislators as for democratic legislators. Finally, these results were robust across a large number of model types and specifications.

Replication Analysis

[1] Replication data and code for this report can be accessed in the Harvard Dataverse at https://doi.org/10.7910/DVN/GDZTK8

Summary Statistics

In this paper, the authors seek to understand how the implementation of term limits effects polarization in state legislatures. The main outcome variable is legislative polarization. This is a measure of polarization devised by Shor and McCarty (2011) which uses roll call voting to classify each legislator's voting behavior on an ideological score from 0-3. The main explanatory variables used by the authors are term limits, divided government, logged legislative professionalism, and party competitiveness. Term limits is a binary variable that takes a value of 1 in state-years in which the legislature had a term limit. The divided government variable is also a binary variable taking the value of 1 in divided legislatures. The legislative professionalism variable created by Squire (1992) and updated in Squire (2017), is a measure of a legislature's professionalism which takes into account salary, staff, and time in session. Finally, the party competitiveness variable is a measure of the majority party's seat share advantage. Below is a summary of each of these variables, specifically each variable's mean, median, minimum, maximum, and standard deviation.

Recreation of Table A.1: Summary Statistics of Key Variables

```
##
## Summary Statistics of Key Variables
## ============================================================
## Statistic                  Mean  Median  Min   Max   St. Dev.
## ------------------------------------------------------------
## Legislative Polarization 1.439  1.398  0.128 3.608   0.502
## Term Limits              0.201    0      0     1     0.401
## Divided Gov.             0.492    0      0     1     0.500
## ln(Leg. Professionalism) 0.198  0.170  0.027 0.629   0.120
## Party Competitiveness    13.469 11.029 0.500 41.137  8.941
## ------------------------------------------------------------
```

Main Models

To estimate the effect of term limits on legislative polarization, the authors use a variety of fixed effect linear models. In each model, the authors use a combination of the explanatory variables as well as state and year fixed effects to estimate legislative polarization. By including fixed effects for year and state, the authors seek to account for differences in legislative polarization caused by these dummy variables. The main models are described in Table 1.

The baseline model created by the authors (column 1), is a linear regression of term limits on legislative polarization with fixed effects for both year and state.

```
# Baseline model: l_diffs is legislative polarization, term_limit_temp is term limits

baseline_model <- felm(l_diffs ~ term_limit_temp |state+year|0|state, data=pol_dat)
```

The authors then create a second model in which covariates for divided government, legislative professionalism, and party competitiveness are added (column 2).

```
# Extended model: legprofscore is legislative professionalism, temp_abs_diff is
# party competitiveness

extended_model <- felm(l_diffs ~ term_limit_temp
                       +divided_gov
                       +legprofscore
                       +temp_abs_diff
                     |state+year|0|state
                     ,data=pol_dat)
```

Then, the same baseline and extended models are applied to exclusively state legislature houses (columns 3, 4) and senates (columns 5,6).

Recreation of Table 1: Term Limits and Polarization

```
##
## Term Limits and Polarization
## ------------------------------------------------------------------------
##                                        Polarization
##                            ---------------------------------------------
##                               Pooled           House           Senate
## ------------------------------------------------------------------------
##                             (1)     (2)     (3)     (4)     (5)     (6)
## ------------------------------------------------------------------------
## Term Limits              0.118** 0.113** 0.150** 0.141**  0.039   0.036
##                          (0.052) (0.052) (0.048) (0.047) (0.090) (0.090)
## Divided Gov.                      0.002           0.002           0.029
##                                  (0.017)         (0.019)         (0.023)
## ln(Leg. Professionalism)          0.061           0.059           0.064
##                                  (0.048)         (0.049)         (0.059)
## Party Competitiveness            -0.003          -0.004*          0.001
##                                  (0.002)         (0.002)         (0.003)
## State Fixed Effects        Yes     Yes     Yes     Yes     Yes     Yes
## Year Fixed Effects         Yes     Yes     Yes     Yes     Yes     Yes
## Projected R Squared       0.039   0.06    0.054   0.078   0.002   0.011
## ------------------------------------------------------------------------
##
```

As seen in the table above, the coefficient on term limits is statistically significant at an alpha level of 0.05 in both the baseline and extended models for the pooled data and house data and is not statistically significant for the senate data. In the pooled and house models, the effect of term limits is robust to the additional covariates.

In every model, the effect of term limits is positive, meaning that the implementation of term limits is correlated with an increase in legislative polarization on average. The magnitude of this effect is greatest in the lower chambers (house) and smaller in upper chambers.

Substantively, the authors theorize that the positive relationship between term limits and legislative polarization has two causes. The first is that legislators that are aware that their term is ending are less inclined to meet the demands of their consitutncies and will instead pursue their own ideological aims or the aims of their party. The second mechanism is that less qualified candidates, and candidates more beholden to their political party, are more likely to hold office in legislatures with term limits. Both of these causes would lead to increased polarization in voting patterns.

Models by Political Party

The authors then sought to identify differential effects of term limits on legislative polarization for democrats and republicans. To do this, the authors use a second measure of legislative polarization with lower values indicating more liberal views and higher values indicating more Republican views. The extended model is recreated for each chamber-party combination. Results are displayed in Table 2.

Recreation of Table 2: Term Limits and Asymmetric Polarization: Party Medians

```
##
## Term Limits and Asymmetric Polarization
## ------------------------------------------------------------------------
##                                        Party Medians
##                          ---------------------------------------------
##                                 Democrats              Republicans
## ------------------------------------------------------------------------
##                            (1)     (2)     (3)     (4)     (5)     (6)
## ------------------------------------------------------------------------
## Term Limits              -0.037  -0.057  -0.024  0.077** 0.084**  0.012
##                          (0.037) (0.036) (0.052) (0.032) (0.037) (0.053)
## Divided Gov.             -0.004  -0.005  -0.017  -0.001  -0.003   0.012
##                          (0.012) (0.014) (0.013) (0.009) (0.010) (0.017)
## ln(Leg. Professionalism) -0.030  -0.055   0.011   0.031   0.004  0.075*
##                          (0.038) (0.040) (0.042) (0.030) (0.031) (0.043)
## Party Competitiveness    -0.000   0.000  -0.003  -0.004* -0.003* -0.002*
##                          (0.002) (0.002) (0.002) (0.002) (0.002) (0.001)
## Chamber                  Pooled   House  Senate  Pooled   House  Senate
## State Fixed Effects        Yes     Yes     Yes     Yes     Yes     Yes
## Year Fixed Effects         Yes     Yes     Yes     Yes     Yes     Yes
## Projected R Squared       0.011   0.024   0.026   0.112    0.1    0.021
## Observations               987     987     987     987     987     987
## ------------------------------------------------------------------------
##
```

As seen above, the coefficient on term limits is negative for all Democrats indicating that term limits move Democratic legislators to more liberal voting patterns. On the other hand, the coefficient on term limits is positive for all Republicans indicating that term limits move Republican legislators to more conservative voting patterns. Another important insight is that the magnitude of the coefficient is greater for Republican legislators meaning that term limits have a larger effect on Republicans than Democrats. Finally, the coefficient is only statistically significant at an alpha level of 0.05 for the pooled and lower house models for Republicans. Substantively, the authors argue that these results show that increased polarization in legislatures is primarily caused by a shift of Republican legislators to the ideological right.

Models for Additional Measures

After determining the effects of term limits on legislative polarization, the authors then sought to determine the effect of term limits on related measures of a legislature's effectiveness. The specific additional measures the authors use are party share contributions (the share of campaign contributions coming from political party committees) and PAC share contributions (the share of campaign contributions coming from political action committees.)

This analysis also focuses on the effect of legislative professionalism. Specifically, the below models include an interaction term of legislative professionalism and term limits. This is included in order to determine if

the effect of term limits differs at different levels of legislative professionalism. Results are displayed in table 3.

Recreation of Table 3: Term Limits, Legislative Professionalism, and Party Influence

```
##
## Term Limits, Legislative Professionalism, and Party Influence
## ------------------------------------------------------------------------------------------
##                                                 Dependent variable:
##                                  ---------------------------------------------------------
##                                  Pooled Polarization Party Contributions PAC Contributions
## ------------------------------------------------------------------------------------------
##                                            (1)                (2)                (3)
## ------------------------------------------------------------------------------------------
## Term Limits                              0.342**            0.080**            -0.136
##                                          (0.164)            (0.040)            (0.086)
## ln(Leg. Professionalism)                  0.052              0.065             -0.028
##                                          (0.050)            (0.040)            (0.034)
## Term Limits X ln(Professionalism)        0.141*             0.036*             -0.053
##                                          (0.081)            (0.021)            (0.043)
## Controls                                   Yes                Yes                Yes
## State Fixed Effects                        Yes                Yes                Yes
## Year Fixed Effects                         Yes                Yes                Yes
## Projected R Squared                       0.084              0.060              0.040
## Observations                               987                398                398
## ------------------------------------------------------------------------------------------
##
```

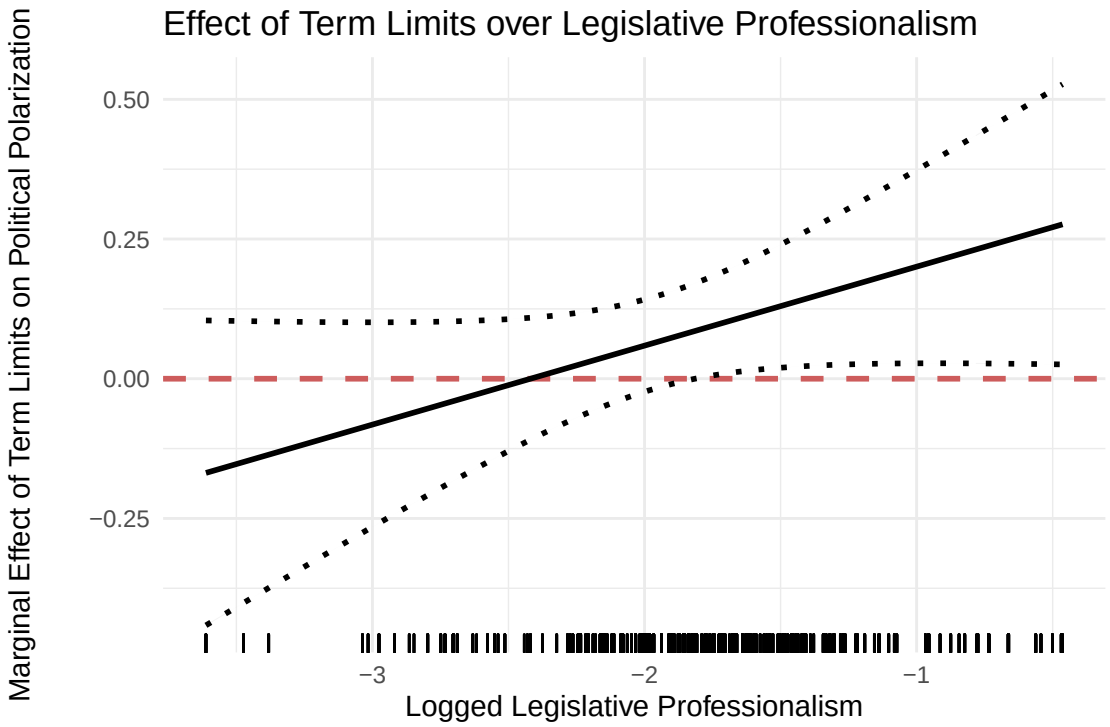
As seen above, the coefficient on term limits is positive and statistically significant at an alpha level of 0.05 for the party contributions model. This suggests that the implementation of term limits is correlated with an increase in party contributions to campaigns. On the other hand, the share of contributions that come from PACs decreases with term limits although the coefficient in this case is not statistically significant at an alpha level of 0.05.

The authors theorize that the relationship between term limits and party contributions is caused by a desire from political parties to fill seats with ideologically consistent legislators. Specifically, the political parties see term limits as a way to gain more political influence and consistent voting. On the other hand, the authors theorize that PACs main goal is to gain access to legislators and therefore are less willing to spend money on term limited legislators.

The coefficient on the interaction of term limits and legislative professionalism is positive and statistically significant in both the pooled polarization model and the party contributions model. This suggests that the effect of term limits on these two measures is greater in more professional legislatures.

The authors theorize that this is because legislators in more professional settings typically have more knowledge and expertise than those in less professional settings. Therefore, the implementation of term limits forces these experienced legislators out of office and replaces them with significantly less qualified, and typically more ideologically consistent, legislators. This means that the effect of term limits will have a greater magnitude in professional legislatures. The interaction between term limits and legislative professionalism is presented graphically in figure 1.

Recreation of Figure 1: Effect of Term Limits over Legislative Professionalism



This graph show that as logged legislative professionalism increases, the marginal effect of term limits on political polarization also increases. As the authors theorized, the effect of term limits is greatest in professional legislatures.

Model Robustness Checks

to confirm the relationship between term limits and political polarization, the authors run models with additional covariates as a robustness check. The additional covariates include state level variables such as logged population, per capita income, unemployment rate, percent foreign born, and Gini coefficient. Results are presented in Table B.3.

```
# Additional Covariates Model:

ec_senate_cov <- felm(s_diffs~term_limit_temp
                      +divided_gov+legprofscore
                      +temp_abs_diff+gov_party
                      +logpop+pc_income
                      +unemploy+pct_fb
                      +gini
                      |state+year|0|state
                      ,data=pol_dat)
```

Recreation of Table B.3: Term Limits and Polarization: Additional Covariate Control

```
##
## Term Limits and Polarization: Additional Covariate Control
## ---------------------------------------------------
##                                 Polarization
##                            -------------------------
##                             Pooled   House    Senate
## ---------------------------------------------------
##                               (1)      (2)      (3)
## ---------------------------------------------------
## Term Limits                0.090**  0.117**   0.006
##                           (0.043)  (0.041)  (0.082)
## Divided Gov.               0.008    0.009    0.038*
##                           (0.015)  (0.017)  (0.019)
## ln(Leg. Professionalism)   0.030    0.028    0.035
##                           (0.032)  (0.034)  (0.047)
## Party Competitiveness      -0.003  -0.004*   0.001
##                           (0.002)  (0.002)  (0.002)
## Democratic Governor        0.013    0.023    0.000
##                           (0.020)  (0.024)  (0.024)
## ln(Population)            1.272**  1.216**  1.155**
##                           (0.423)  (0.441)  (0.458)
## Per Capita Income        -0.012** -0.014** -0.021**
##                           (0.005)  (0.004)  (0.007)
## Unemployment Rate          -0.007   -0.003  -0.044*
##                           (0.008)  (0.009)  (0.023)
## Percent Foreign Born       -1.260   -1.201   -1.209
##                           (1.154)  (1.203)  (1.837)
## State Gini Coefficient     -0.329   -0.326   0.216
##                           (0.283)  (0.293)  (0.501)
## ---------------------------------------------------
## State Fixed Effects          Yes      Yes      Yes
## Year Fixed Effects           Yes      Yes      Yes
## Projected R Squared         0.269    0.257    0.153
## Observations                 987      987      987
## ---------------------------------------------------
##
```

As seen above, the coefficient on term limits continues to be positive and statistically significant at an alpha level of 0.05 for the pooled data and lower chamber data. This suggests that the effect of term limits is robust to a variety of additional covariates.

Extension

Conclusion

Bibliography

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