Power in Numbers: Examining the Influence of Political Majorities on Growth within the United States

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Honors Thesis
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Abstract:

In this paper I examine the relationship between the size of a political majority in state legislatures and its effect on state growth. The data used in this paper covers the 50 US states over the time period from 1993 to 2011. In order to calculate these effects, I implement an OLS empirical strategy in which I regress 2- and 4-year growth rates on the size of the political majority within a particular legislative chamber and a number of other covariates. My empirical strategy accounts for a possible non-linear relationship between growth and the size of the majority and that the relationship might depend on which political party is in the majority. I also tested the longevity of these effects on growth by lagging the majority variable. I show that large republican majorities provide strong increases to growth, while democratic majorities offer detrimental effects to growth. These effects appear to be short lived and do not persist into the futureTJ93.45 2 dutit amajorid ad dohaves oshost7 Ifects on e

questions arise from this model, depending on the results. If for example, I find that strong republican majorities lead to higher growth rates than larger democratic ones or vice versa, then in those states where the majority yields lower growth voters should now be choosing their representatives not only on how they the citizen relate their own political beliefs with candidates, but they should also be accounting for how the other party ¶ V F D Q G L G D W H 6 W D W H ¶ V may Lafect the H growth rate. With this in mind the results of this model may suggest that every state should be run by the same large majority. However, the model may also suggest that smaller more competitive majorities are more beneficial to growth. These implications may prove to have profound implications for the way in which future US elections are decided and how voters choose their representatives. Other possible implications for this paper surround the way in which voting and legislative bodies identify or define majorities. If certain levels of political majorities yield better, or worse, growth levels there may be policy implications for how parties campaign or align themselves in elections. In order to answer these questions I will use state level data taken from the years 1993 to 2011.

Finally I will examine the long lasting effects of majorities on state growth. The data I am using in this paper offers observations on term lengths of two or four years, with that in mind I intend to see how the majority of a given term effects growth two and three time periods after the initial majority leaves office. The results will show how O R Q J D V W D W H ¶ V affected by J U R Z W K Z L G a given political majority; furthering the implications for voters as they enter each election cycle. The initial findings of the paper suggest that large republican majorities provide significant L Q F U H D V H V W R D V W D W H ¶ V J U R Z W K Z L t Q L I L F D Q W D Q G O R Q J H U O D V W L Q J Q H J D W L Y H H I I H F W V R Q D V W D W H ¶ V J U R Z W K

Background Literature:

This analysis fits into two main strands of the political economy literature: the first field considered how increased majorities in state legislatures impacted the potential problem of free riding in the legislature itself (Rogers 2002), while the second field encompassed two distinct but related topics: the first being the impact of congressional representation on state economic growth Levitt and Poterba (1999), while the second covered the role of state fiscal policy G H F L V L R Q V R Q G Garrett and Rhine (2011). These two fields offer me the materials and theory upon which my own research is based. Through a combination of models, I will be able to examine how certain O H Y H O V R I impact state growth L H V ¶

Through the work of Rogers ³) U H H 5 L G L Q J L Q 6 (2002), one understands the implication of increased majorities on legislative production. Building off of the results of

(Rogers 2002 pp. 61-62). This definition comes from Rogers comes from own calculation where he identified the total number of bills passed into law and divided it by the number of legislators in the respective legislative body. As the number of legislators from the same party increases, the DELOLW\ IRU OHJLVODWRUV WR IUHH ULGH RII WKH ZRUN R DOVR EH XQGHUVWRRG IURP WKH VWDQG SRLQW RI D OHJLV

representation in congress impacted state income per capita (Levitt and Poterba 1999 p. 186). An

elected. Their paper provided a strong base for modeling growth with respect to political variables. From this work I began to understand how to model growth while incorporating political variables, but it also posed the question that the potential existed in the literature to try and examine how different types of policies enacted could be related to certain politicians or political parties (Levitt and Poterba 1999 p. 210). In this way one could begin to formulate potential questions and hypothesis concerning how larger majorities could influence growth relative to smaller ones. In order to understand how these types of policy decisions effect growth I examined Garrett and Rhine ¶ V S DESdHdu Economic Freedom and E GarretGa³mm[(a)3(fe)7Grgld U.So sm 598.78

also offered me insight into the control variables that should be included in a model of state growth to help control for omitted variable bias.

A final paper which provided additional support to the idea that majorities influence state growth, through certain policy agendas, was the work of Tom

model, Professor Svec helped me to determine how to measure growth while also capturing the effects of political majorities. In conjunction with Professor Svec I also relied on the decisions made by Levitt and Poterba (1999), Tomljanovich (2004), and Garrett and Rhine (2011) in order to account of some of the growth variables used in my model.

Equation one will exist in three different forms depending on the length of time being used to

given chamber. That means that the calculation of the majority changes based on the majority itself, for example if the Democrats are in the majority, then the calculation is:

(Total number of Democrats ±Total number of Republicans)/

(Total number of Democrats + Total number of Republicans)

If the Republicans are in the majority then the variable was calculated:

(Total number of Republicans ±Total number of Democrats)/

(Total number of Democrats + Total number of Republicans)

Writing the majority in this way ensures that the majority variable is a positive number, and also ensures that the variable exist continuously between the value of (0.50 and 1]. An evenly split chamber will have a majority of 0 as the difference between Republicans and Democrats will be zero in either calculation.

In order to calculate the size of the majority I am utilizing data from Shor and McCarty, ³7 K H , G H R O R J L F D O 0 D S S L Q J (2013). This dataset offers individual level data o Q V W D W H S R O L W L F L D Q V R Y H U W K H \ H D U V W R D O O R Z H G P H W R F R Q V W U X F W W K H S R O L W L F D O The D U L D E O H V

Accounting for the fact that there are not elections every year for representatives, while also trying to capture potential time effects of S R O L W L F D O P D M R U L W \ ¶ V G H F L V L R C growth, Professor Svec suggested that I measure growth over different lengths of time. An examination of the data found that two different term lengths exist in lower and upper chambers of state legislatures. Legislator terms can be either 2 or 4 year in length and vary by state in both the lower and upper chambers of the legislature. In order to account for the impact that majorities have on growth, I constructed two separate measures of GDP depending on the term lengths being examined. This allowed for growth to capture the potential friction that exists between a policy decision being made and its actual impact on the economy. In order to account for this potential friction I intend to measure growth using three different averages:

Growth for term lengths of 2 years:

$$(Y_{t+2} \pm Y_t) / Y_t$$

Growth for term lengths of 4 years:

$$(Y_{t+4} \pm Y_t) / Y_t$$

From these equations I computed growth rates over 2 and 4 year periods. I then used this

As in Rogers (2002) I separated out the two chambers of each state in order to test the effects of growth on the higher and lower chambers[1]. I used equations (2) and (3), along with several other models where growth leads the explanatory variables, to measure how the majority LPSDFWHG WKH XSSHU DQG ORZHU FKDPEHUV RI WKH VWDW way the results will be able to speak to any potential influence from the different chambers of a VWDWH¶V OHJLVODWXUH. I utilized a binary variable to distinguish between the two parties. The variable took on a value of one when the republicans held the majority. To capture the effects of

effects as an explanatory variable also serves to capture any macroeconomic events that impacted the nation as a whole; specifically thinking of events such as September 11th or the fina

republican coefficients, but also the significance of the quadratic estimates used in later models. The coefficients are statistically significant at the five and one percent levels respectively.

In order to put these variables in context, I will interpret them under a hypothetical movement of the majority in both the Republican and Democratic Party by ten percent. With respect to the Republican majority, a ten percent rise in the majority results in a 1.06 percentage point rise in growth. Conversely in the context of a democratically controlled chamber, a ten percent rise in growth results in a 0.699 percentage point drop in growth. These results offer drastically different results, the figures suggest that in a state suffering from economic hardship, like many of the US states in the wake for the 2008 recession, voters should vote for republicans LI WKH YRWHU¶V EHOLHI LV WKH JRYHUQPHQW SOD\V D YLW Keeping in mind the example of an economically stagnate state, who may be experiencing growth of around 1 or 1.5 percent growth, the data suggests that if this state had an increase in the republican majority of 10 percent it should see growth of approximately 2 to 2.5 percent.

In order to test the longevity of these results I tested the influence of a given majority over time. Columns (2) and (3) in table 2.1 represent growth regressions where the explanatory variables are measures in the current two year period, while the GDP calculation is taken from the proceeding periods four and six years into the future respectively. These models intend to show the effect V RI WRGD\¶V PDMRULW\ RQ WRPRUURZ¶V JURZWK republican majority drops off after the term in which the majority exist ends. However, democratic majorities still exhibit harmful effects to growth, even four years after the majority was initially elected. If the democratic majority increased by ten percent today, GDP four years from now would decrease by 0.658 percentage points. This implies that voters should not vote for democrats if they are concerned about the short and medium run growth of their states.

increases to a democratic majority are as follows: in the two years after the election of a democratic majority, a ten percent increased in the majority from 50 percent results in a 1.17 percentage point decrease to growth. When examined from the average, at tem percent increase to a democratic majority results in a 0.635 percentage point decrease to growth.

of the baseline models provide significant results. However the quadratic models offered several interesting results.

Looking to table 3.2, in the two years following an election, democratic majorities in upper chambers who use two year terms appear to affect growth when examined from the extreme case of increasing a majority by ten percent, when that majority is already 50 percent. The increase caused a 1.45 percentage point decrease

Examining the quadratic forms of the senate models, both the democrat and republican variables demonstrate some significant results. Examining the response of growth to a small increase in political majorities found in column (16) of table 3.4, when the majority moves from even to a ten percent increase for democrats the result is a 2.68 percentage point drop in growth, significant at the one percent level. In the republican case, a ten percent increase in the majority, from an even split, results in a 2.65 percentage point increase to growth, significant at the ten percent level. Interestingly when the republican majority is large, the effect on growth is negative; this was the only instan Bs (e)4(of(ne)-2(ga)4(ti)-3(ve)4 ve)4foe45(c)4(ms of r)3(e)4(publi)-3(c)-5(a)4

majorities prevent growth of any kind from occurring; and if a state desires to not only grow its economy, but grow it quickly it should promote large republican majorities.

Although these question offer further opportunities to examine the data used in this paper, I believe several important factors must be addressed in any interpretation of these results. First any model trying to model growth runs into the problems of inherent endogeneity as well as omitted variable bias. So many things factor into the calculation of GDP that no one model will ever capture all the components, as result there could be some factors of growth not included in these models which lead to biased estimators. Second, the time period over which this data was taken included two recessions, the worst terrorist attack in 60 years, and two ten plus year long wars all of which influenced the macro economy, these shocks could also be biasing the results of the paper, along with a relatively small sample size. Finally, in thinking about how these models relate to the strength of a given states economy, these figures represent relative growth rates rather than the actual size of an economy. Historically speaking the states which tend to have large republican majorities are the South and Midwestern states, thinking about the size of

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Appendix B:

Lower Chamber Tables:

Table 2.1 Lower Chamber Results without Square Terms:

	(1)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2.2 Lower Chamber Results with Square Terms:

Table 3.2 Upper Chamber 2 Year Term Results with Square Terms:

VARIABLES	(10) growth	(11) lead2	(12) lead4
sen_maj	0.0222	0.0229	0.0587
	(0.0744)	(0.0712)	(0.0826)
rep_sen	0.00955	-0.00286	0.0155
	(0.0140)	(0.0133)	(0.0153)
rep_sen_maj	-0.126	-0.0995	-0.172
	(0.104)	(0.0999)	(0.118)
sen_majsq	0.0222	-0.118	0.0587
(Maj = 0)	(0.0744)	(0.0521)	(0. 0826)
sen _majsq	-0.1452***	-0.0908	0.0087
(Maj = 0.5)	(0.0670)	(0.0698)	(0.0771)
sen _majsq	-0.0642	-0.0607*	0.032

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3.3 Upper Chamber 4 Year Term Results without Square Terms:

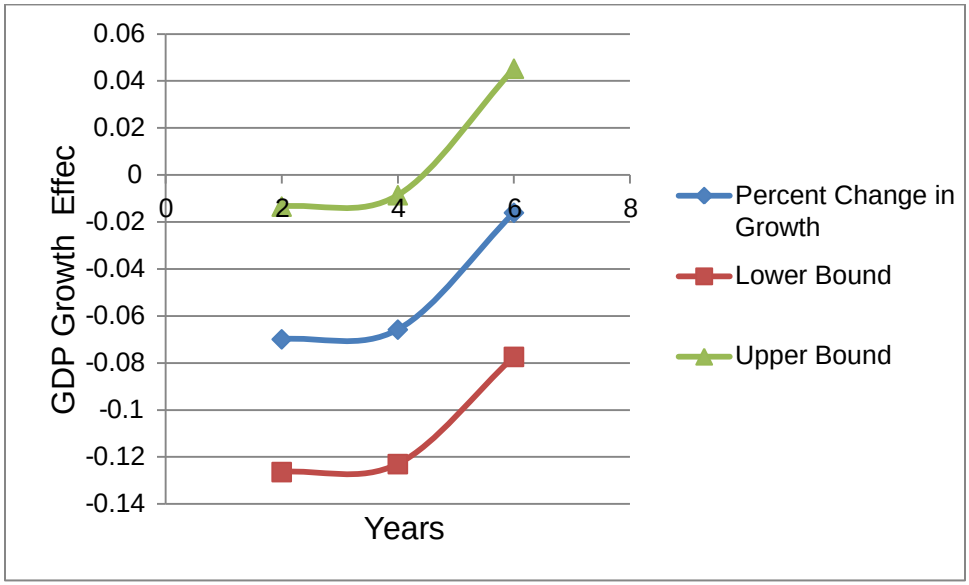
VARIABLES			
sen_maj	-0.160***	-0.0586*	
	(0.0319)	(0.0325)	
rep_sen	-0.0225	0.00431	
	(0.0141)	(0.0151)	
rep_sen_maj	-0.0141	-0.0291	
	(0.0676)	(0.0727)	
pop	-2.01e-08	-7.77e-09	
	(1.57e-08)	(1.80e-08)	(2.46e-08)
trans	-2.92e-10	-8.21e-10	-2.66e-10
	(9.35e-10)	(1.23e-09)	(1.87e-09)
unemp	-0.00211	0.0175***	0.0241***
	(0.00497ETQq31		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

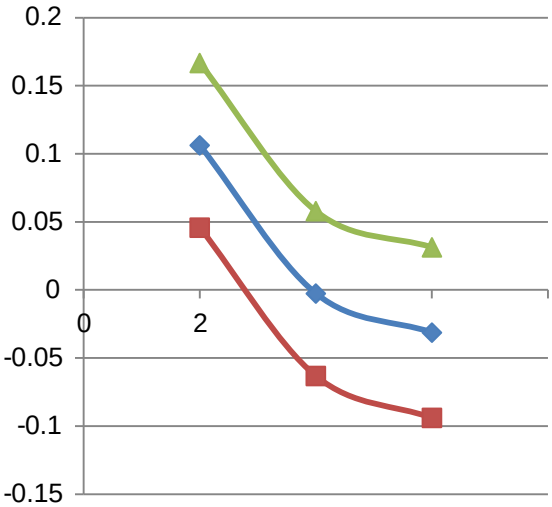
Appendix D

Impulse Response Functions:

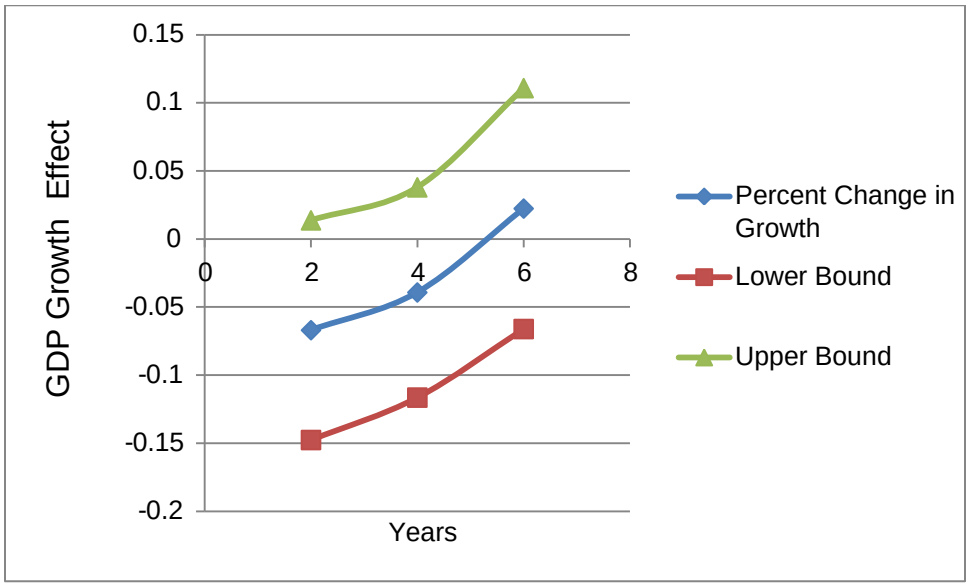
Lower Chamber Democrats with 2 year terms



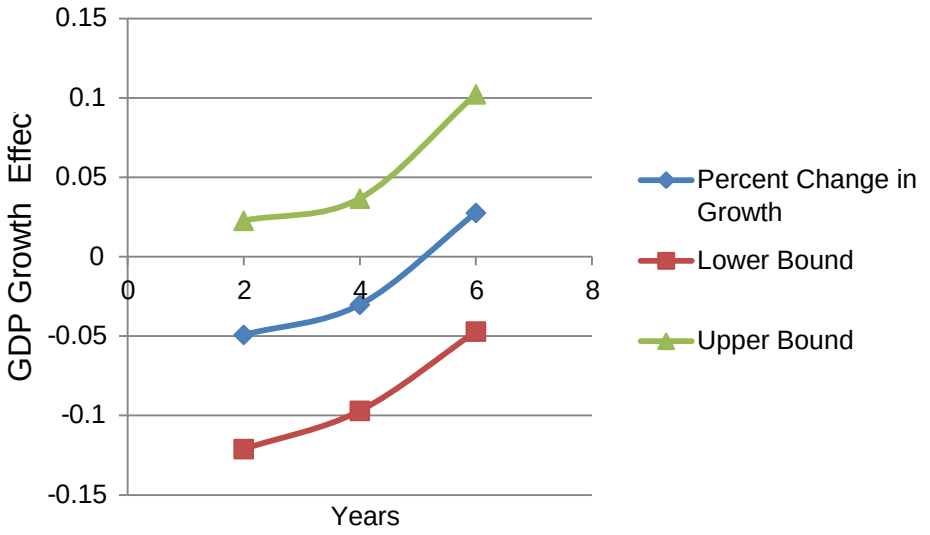
Lower Chamber Republicans with 2 year terms



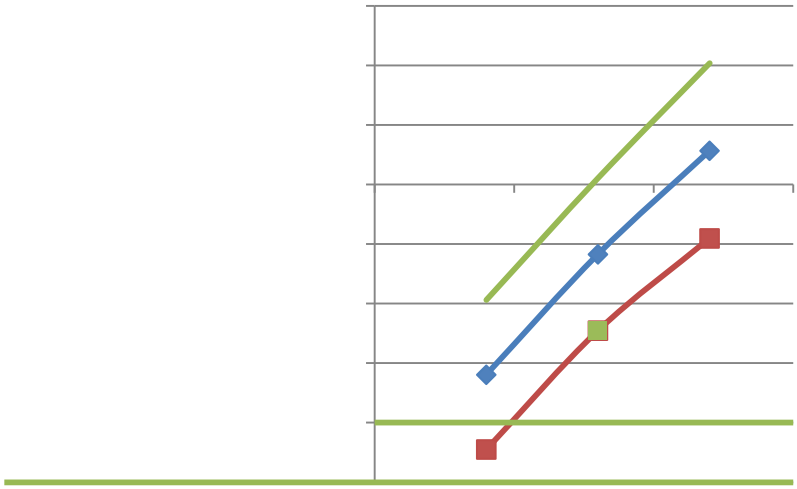
Upper Chamber Democrats with 2 year terms



Upper Chamber Republicans with 2 year terms



Upper Chamber Democrats with 4 year terms



Upper Chamber Republicans with four year terms