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Goetzke, Frank; Hankins, William; Hoover, Gary A.

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Partisan Determinants of Federal Highway Grants

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Frank Goetzke, William Hankins, Gary A. Hoover

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Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
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Partisan Determinants of Federal Highway Grants

Abstract

Using data on federal highway grants from the Department of Transportation's Federal Highway Administration, this paper investigates several questions regarding the political economy of highway funding. We investigate the period 1994 - 2008 and examine whether political alignment and political ideology play a role in determining how much highway funding per capita a state receives. We find evidence that Republican-dominated House of Representatives delegations receive more highway funding per capita compared to Democrats, especially in rural states. We also find that senators in the party of the president are able to secure more highway funding per capita. Overall, the distribution of highway spending over this time period appears to have been determined by political rather than deterministic considerations and in a way that is consistent with how the Interstate Highway System has distributed Republican voters to rural areas.

JEL-Codes: D720, H770.

Keywords: federal highway administration grants, political alignment, political ideology.

Frank Goetzke
Department of Urban and Public Affairs
University of Louisville
426 West Bloom Street
USA - Louisville, KY 40208
frank.goetzke@louisville.edu

William Hankins
Department of Finance, Economics, and Accounting, Jacksonville State University
Merrill Hall
USA - Jacksonville, AL 36265
whankins@jsu.edu

Gary A. Hoover
Department of Economics
University of Oklahoma
308 Cate Center Drive
USA - 73019 Norman OK
ghoover@ou.edu

1 Introduction

In recent years, an unprecedented low interest rate environment has led to calls from prominent economists to increase federal spending on public infrastructure projects.[1] However, as public choice theory predicts, the amount of spending that the Congress and the president allocate, and where that spending takes place, is often decided, not by an objective "need" or criteria, but rather based on political interests. Existing studies of distributive politics that analyze federal highway spending have not focused on the interaction between demographic determinants of federal highway spending and political determinants. However, the interplay between political determinants of highway funding and demographic characteristics is a topic that should be given scrutiny. Taken together, findings by Chen and Rodden (2013) and Nall (2015) show that Republican voters are more likely to live in rural areas of the country than Democratic voters and that this geographic sorting was facilitated by the Interstate Highway System.

In this paper, we use Federal Highway Administration data from 1994 – 2008 to examine how political ideology and political alignment impact the distribution of federal highway grants. Our results show that Republican legislators in the House of Representatives are associated with more highway spending per capita compared with Democratic delegations. However, when the amount of spending associated with a Republican delegation is conditioned on urban population share, we see that this funding advantage is only associated with rural Republican states, a finding that is consistent with the geographic partisan sorting described by Chen and Rodden (2013) and Nall (2015). Moreover, senators in the party of the president also receive more funding per capita, regardless of party. Interestingly, the relationships between highway funding and variables directly related to the quality of highway infrastructure limit us from saying that funding is directed towards states that demonstrate the most need. In particular, increased interstate congestion is only associated with more funding per capita at relatively low levels of congestion; conditional on relatively high levels of congestion, additional congestion is actually associated with *decreased* funding per capita. Furthermore, there is no statistically significant relationship between the number of

[1] For example, Summers (2014) argues for increased public investment as a way to increase aggregate demand. In a New York Times op-ed from 2014, Paul Krugman argues for increased public transportation investment for similar reasons `http://www.nytimes.com/2014/10/27/opinion/paul-krugman-ideology-and-investment.html?_r=0`.

deficient bridges and funding per capita. Overall, these results not only demonstrate that political ideology and alignment are important determinants of highway funding, but that as the Interstate Highway System has delivered Republican voters to rural areas, the funding has followed.

In the next section, we review the previous literature on the determinants of transportation funding. In Section 3 the hypotheses are stated and the data used to test those hypotheses are discussed. The empirical model is outlined in Section 4, which is followed by a presentation and discussion of the results in Section 5. Section 6 concludes.

2 Prior Analyses of Transportation Spending

Much of the existing literature examining highway funding is concerned with whether federal funding acts as a complement to or a substitute for state and local spending. In an early analysis, Phelps (1969), using data for the period 1951 – 1966, estimated that a one dollar per capita increase in federal grant spending led to more than $4 of additional state or local highway capital stock per capita. Concerned with the effect that federal highway grants had on state and local highway spending, Meyers (1987) showed that an additional dollar from the federal government displaced $0.63 cents of own-source state highway funding and also led to $1.50 more non-highway spending. Similarly, Goel and Nelson (2003) found evidence that states diverted highway user fees to general purpose expenditures and systematically devoted less money to the highway budget. Several authors (see Congleton and Bennett (1995), Gamkhar (2000), Gamkhar (2003), Goel and Nelson (2003), and Bruce et al. (2007)) have shown that federal highway funding tends to increase state and local highway funding, thus finding evidence of a "fly paper" effect. Nguyen-Hoang (2015) studied the effect that earmarking highway projects had on state highway spending. More earmarked projects relative to trend was not correlated with more highway spending. Conversely, a decrease in the number of earmarked projects relative to trend was associated with a decline in state highway funding.

Few of these authors have examined how factors such as political interests, alignment, or ideology are related to highway spending. Congleton and Bennett (1995) study of the 1980s found that the median voter model was better able to explain state highway spending as compared to

models focused solely on special interest explanations or models that combined these explanations. Gamkhar and Ali (2008) found evidence that having a House delegation member on the House Public Works committee was worth approximately $35 more per capita in federal highway demonstration grants. Additionally, they controlled for the seniority of a state's House delegation, however, this variable was not statistically significant across all regression specifications.[2] Bruce et al. (2007) found evidence that states with a Republican governor or a Republican majority in the state legislature tended to have a negative effect on state level transportation spending. In a study limited to counties in North Carolina, Walden and Eryuruk (2012) followed Congleton and Bennett (1995) and tested a median voter model, a special interest model, and an additional political model. From the political model, the authors found that counties with more voters registered to the governor's party received relatively more highway construction funding. However, all of these studies focus on how state governments distribute highway funding. More recently, Albouy (2013) examined how political alignment and ideology impact how the federal government distributes highway grants.[3] He found that states with a larger share of Republicans in their House of Representatives delegations received more transportation grants than those represented by Democrats. He also found some evidence that states with more legislators in the majority receive a larger amount of transportation spending.

3 Hypotheses and Data

– Insert Table 1 Here –

Summary statistics for all variables discussed in this section are presented in Table 1. Federal Highway Administration (FHA) spending data comes from the Department of Transportation's Federal Highway Administration and is available for all fifty states over the period 1994 – 2008. These funds are given by Congress to help states cover the capital expenses associated with constructing and improving highways and other types of transportation structures, such as bridges. Most of the federal highway budget is paid out of the Highway Trust Fund and approximately eighty percent of

[2] The empirical specification in Gamkhar and Ali (2008) controls for regional, rather than state fixed-effects.

[3] Albouy includes all grants for the Department of Transportation, not just federal highway grants.

federal highway spending follows a fixed formula (Kile, 2011). While this portion is mandatory, it is still authorized by Congress, and, as such, an outcome of legislative bargaining. Moreover, it is certainly plausible that legislators have the distribution of this mandatory spending in mind when the remaining portion, discussed below, is distributed. Also, the formula-based disbursement for a given state exhibits little variation over time, which is important to keep in mind given that we use a fixed-effects model. The remaining twenty percent (between \$8 – \$9 billion 2010 dollars during our period of analysis) is discretionary spending that is controlled by Congress. The variation in FHA spending is likely to come from these discretionary funds since state fixed-effects will absorb recurring funding amounts. While this spending is a relatively small portion of the federal domestic budget, it represents an important source for states seeking to make capital improvements to transportation infrastructure.

We are interested in two related but distinct sets of hypotheses concerning the distribution of federal highway funding. First, we expect political alignment to play a role in determining how much highway funding per capita a state receives. That is, holding other things constant, states with more House or Senate members in the party of the president or the chamber majority should receive more spending per capita. Alignment with the president is measured both by the percentage of a state's House delegation that belongs to the party of the president and the percentage of a state's Senate delegation belonging to the party of the president. These variables are created using data from the Biographical Directory of the United States Congress. Alignment with the majority is similarly measured as the percentage of a state's House and Senate delegation in the majority party, respectively. We also expect a state with a governor who is a member of the president's party to receive more highway funding per capita. The political affiliation of each state's governor is taken from various editions of the Book of the States.

These alignment hypotheses are informed by prior research. Only Albouy (2013) has examined how political alignment at the federal level influences the distribution of federal transportation grants, thus we look to prior research concerning various categories of federal grant spending. Hoover and Pecorino (2005) found evidence that states with more House members in the majority received more federal grant spending per capita. They also showed that having more legislators in

the party of the president was worth more federal grant spending as well. Both Larcinese, Rizzo, and Testa (2006) and Berry, Burden, and Howell (2010) showed that having more House members in the party of the president was worth more total federal spending.[4] Lastly, our expectations for how alignment between the governor and the president should influence transportation grants is informed by Hoover and Pecorino (2005) and Larcinese, Rizzo, and Testa (2006). Both found evidence that a state receives more funding per capita when the governor and the president are in the same party compared to when they are not. Hoover and Pecorino only found this relationship mattered for federal procurement spending whereas Larcinese et al. found the effect with respect to high-variation spending.

Our second set of hypotheses tests the relationship between political ideology and the distribution of federal highway grants. As discussed in Section 2, Albouy (2013) shows that Republican-dominated House delegations receive more federal transportation grants per capita. However, Albouy did not examine demographic characteristics that should influence how federal highway grants are distributed. Furthermore, his work did not concerned with how political factors are conditional on these demographic characteristics. Chen and Rodden (2013) point out that in most states, Democratic voters are disproportionately concentrated in larger cities. Building upon these findings, Nall (2015) shows that this geographic segregation of Republican and Democratic voters was facilitated by the Interstate Highway System. Specifically, Nall shows that the Interstate Highway system allowed suburban areas of the United States to become more Republican. Thus, we should expect Democratic legislators to be more concerned with the transportation needs of urban areas while Republican legislators should be more inclined to direct highway funding to rural areas. Political ideology is measured as the percentage of each state's House and Senate delegation belonging to the Republican Party, respectively. These data are also taken from the Biographical Directory of the United State Congress.

Apart from political alignment and ideology, the previous literature also gives us reason to expect a legislative delegation's tenure to matter for transportation funding. While Levitt and Poterba

[4]Specifically, both Larcinese et al. and Berry et al. followed Levitt and Snyder Jr (1995) and studied all federal spending that exhibited relatively higher year-on-year variation. However, a significant component of this spending was for federal grants.

(1999) found no evidence that states with more senior representatives received more federal funding per capita, Crain and Tollison (1977), Mathews, Stevenson, and Shughart (2009), and Young and Sobel (2013) all found a positive correlation between federal spending per capita and the tenure of a state's House delegation. Longer-serving representatives and senators have the ability to exploit established political relationships in order to secure more federal funding. Consistent with the majority of the previous literature, we focus on the average tenure of a state's House and Senate delegations as opposed to absolute or relative tenure.[5]. House and Senate tenure data is collected from the Biographical Directory of the United States Congress, McKibben (1997), and Albouy (2013).

We use several variables to control for the characteristics and usage of each state's highway system. All variables come from the Federal Highway Administration. Holding other things constant, it is reasonable to expect states with more urban interstate congestion to receive more highway funding. Thus, the variable Urban Interstate Congestion is measured as millions of miles traveled on the urban interstate system per mile of urban interstate. Urban interstate needs are also captured by including urban population share, which is measured as a state's urban population as a percentage of its total population.[6] Finally, we include a measure of the number of structurally deficient bridges per square mile. Scaling non-working bridges by a state's area is intended to account for the possibility that larger states will have more deficient bridges simply due to having more miles of highway infrastructure. If FHA grants are allocated based on need, then one would expect the contemporaneous relationship between funding and the number of structurally deficient bridges to be positive.

[5]We do conduct regressions using the relative tenure of each state's House and Senate delegations. Following Mathews, Stevenson, and Shughart (2009), relative tenure measures the average tenure of each state's House and Senate delegation in a given year relative to the chamber average in a given year. Neither House nor Senate relative tenure is statistically significant at the .05 level and the primary results are qualitatively similar. These results are available upon request

[6]Obviously, 1 - Urban Pop. Share is a state's rural population share.

4 Empirical Model

Equation 1 presents the regression model used to test the hypotheses discussed in Section 3 with the primary alignment and ideology variables written out.

$$\begin{aligned}
&\text{FHA Spending}_{i,t} = \boldsymbol{\mu}\mathbf{H_{i,t}} + \boldsymbol{\delta}\mathbf{P_{i,t}}\boldsymbol{\mu}\mathbf{X_{i,t}} + \beta_1\text{Urban Pop. Share} + \beta_2\text{Republican Share in House}_{i,t} \\
&+ \beta_3\text{Republican Share in Senate}_{i,t} + \beta_4\text{House Share with President}_{i,t} \\
&+ \beta_5\text{Senate Share with President}_{i,t} + \beta_6\text{House Share in Majority}_{i,t} + \beta_7\text{Senate Share in Majority}_{i,t} \\
&+ \alpha_i + \gamma_t + \epsilon_{i,t}
\end{aligned} \tag{1}$$

FHA Spendng is federal highway spending per capita. The vector $\boldsymbol{H}$ includes Urban Interstate Congestion as well as the square of this variable and Non-Working Bridges. The vector $\boldsymbol{P}$ includes political variables measuring governor-president alignment, average Senate delegation tenure, and average House delegation tenure. The vector $\boldsymbol{X}$ includes additional economic and demographic controls measuring median household income, the percentage of the population aged 65 and older, and the unemployment rate. Both federal highway spending and median household income are expressed in 2010 dollars. These control variables are taken from various editions of the Statistical Abstract of the United States. There are several time invariant state-specific characteristics that could be related both to the amount of FHA grants a state receives and to the characteristics of a state's legislative delegation. These include proximity to Washington D.C. as well as proximity to states that may be served by the same federally funded roadways. This last point is important because legislators from adjacent states may work together to ensure adequate funding levels. Since a given state's position relative to adjacent states is fixed, the effects of these networks, as well as other state level fixed effects, are absorbed by the term α_i.[7] Additionally, year fixed-effects are absorbed by including the term γ_t. The final term, ϵ_{it}, represents the error term. Standard errors are clustered at the state level.

The political ideology hypothesis discussed in Section 3 is tested using interaction terms. Recall

[7] Kuminoff, Parmeter, and Pope (2010) argue that where spatial networks such as those discussed above are a concern, a spatial fixed-effects (state fixed-effects in this case) model is preferred to a spatial lag model.

that Republican delegations are expected to direct more highway funding to rural areas compared to Democratic delegations. By interacting urban population share with the percentage of Republicans in a state's House and Senate delegations, respectively, we can estimate the change in highway funding per capita for all-Republican House or Senate delegations relative to a delegation composed entirely of Democrats. Similarly, a comparison can be made between a Republican House or Senate delegation in a state with average urban population share compared to an above average share (urban states) and a below average share (rural states). Thus, Equation 1 will be augmented with the interaction terms β_8Urban Pop. Share$\times$Republican Share in House and β_9Urban Pop. Share$\times$ Republican Share in Senate. Then, the equations of interest becomes the marginal effect of a Republican House or Senate delegation conditional upon Urban Population Share:

$$\frac{\partial(\text{FHA Spending}|\text{Urban Pop. Share})}{\partial\text{Republican Share in House}} = \hat{\beta}_2 + \hat{\beta}_8\text{Urban Pop. Share} \tag{2}$$

$$\frac{\partial(\text{FHA Spending}|\text{Urban Pop. Share})}{\partial\text{Republican Share in Senate}} = \hat{\beta}_3 + \hat{\beta}_9\text{Urban Pop. Share.} \tag{3}$$

5 Results

– Insert Table 2 Here –

Table 2 shows the results from the estimation of the baseline version of equation 1.[8] In Column 2 we attempt to account for the possibility of nonlinearities in the relationship between FHA grants and urban highway usage by including the quadratic of Urban Interstate Congestion. When the relationship between FHA grants and urban interstate congestion is restricted to be linear we show no statistically significant relationship. However, the coefficient on the quadratic term in Column 2 is negative and statistically significant at the five percent level. Thus, *ceteris paribus*, FHA grants per capita increases at a decreasing rate in areas where urban congestion is higher than average. The results presented in Column 2 also help us understand why the coefficient on Urban Interstate Congestion in Column 1 is negative and statistically insignificant. At relatively low levels of urban

[8] Regression estimation was conducted using the `reghdfe` package from Correia (2016).

congestion the marginal effect is positive and statistically significant. However, at higher levels of urban congestion, the marginal effect is actually negative and statistically significant. In other words, in states that already experience a relatively high level of urban congestion, additional congestion is correlated with *less* FHA funding per capita.

The estimated coefficient on Non-Working Bridges is not statistically significant. In fact, the standard errors are large relative to the point estimate, which is likely due to a lack of within-state variation. This lack of variation is the result of scaling the number of non-working bridges variable by the area of each state, as we discussed in Section 3.

The point estimate on Urban Pop. Share is negative, which would indicate that, other things held constant, more urban states are associated with less spending per capita. However, this point estimate is not statistically significant. As we will discuss below, this is not the end of the story for urban population share. It will play an important role when we examine how political ideology matters for federal highway funding.

An initial look at the political ideology hypotheses shows evidence that Republican House delegations are worth between $28.21 and $30.87 per capita more compared to non-Republican delegations, a finding consistent with Albouy (2013). However, we cannot show a similar association with Republican senators. In fact, the point estimate is surprisingly negative, though statistically insignificant.

The point estimates on the variables measuring the relationship between various levels of political alignment and highway funding are all positive, as we expected, but few are statistically significant. There is no evidence that having a House or Senate delegation in the majority is worth a statistically significant increase in funding compared to delegations in the minority party. While having a governor in the party of the president appears to be associated with between $7.97 and $8.52 more funding per capita compared to a state with a governor in the opposite party, this point estimate is only significant at the .10 level.

Surprisingly, neither the average tenure of a State's House or Senate delegation appear to be associated with federal highway funding. The point estimates are extremely small and, again, in the case of the Senate the point estimate is inexplicable negative.

The inclusion of the interaction terms discussed in Section 4 help us tell a more interesting story of how political ideology and demographic characteristics matter for highway funding.

– Insert Table 3 Here –

– Insert Figure 1 Here –

The results from the regression specifications including the interaction terms are presented in Table 3. However, because we are now using interaction terms constituting two continuous variables, the interpretation of the marginal effects are best made using Figures 1 – 4. While the results from Table 2 implied that a Republican House delegation was worth more FHA funding per capita than a non-Republican delegation, Figures 1 and 3 show that this advantage might only hold for rural states. The estimated marginal effect calculated from Column 4 of Table 3 implies that at the lowest urban population share, a Republican House delegation is worth approximately \$46.29 compared to a non-Republican delegation. However, as a state's urban population share increases, the value of a Republican delegation falls. In fact, at the average urban population share, the marginal effect of a Republican House delegation is not statistically different from zero.

Our interpretation of this finding is that the Republican funding advantage shown in Table 2 and identified by Albouy (2013) might only be true for rural states. In states with a larger urban population share, a Republican delegation is not associated with anymore funding than a non-Republican delegation. The idea that Republicans reward states with a larger rural population share makes sense in light of the stories of geographic political sorting told by Chen and Rodden (2013) and Nall (2015).

6 Conclusion

This work set out to investigate whether political alignment and political ideology play a role in the allocation of federal highway spending over the period 1994 to 2008. Our findings reveal that the association between Republican House of Representatives delegations and transportation funding discovered by Albouy (2013) is strongest in rural states. Recent trends in geographic partisan

sorting, as discussed by Chen and Rodden (2013), have resulted in Republican voters being more likely to live in rural areas. As Nall (2015) shows, this sorting was facilitated by the development of the Interstate Highway System. Thus, Republican delegations continue to reward areas with relatively low urban population shares, where Republican voters are more likely to live.

We also find some evidence that political alignment is important for highway funding. In particular, having a Senate delegation aligned with the president is worth more highway funding per capita compared to split delegations or those in the opposite party. Interestingly, our estimates provide little evidence that highway funding is associated with common transportation problems such as urban interstate congestion or having bridges in need of repair. These findings reveal the importance of political considerations in the federal highway funding process. When highway funding is seen as a political tool, the allocation of this funding is likely to be diverted to where the political need, rather than the infrastructure need, is greatest.

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Table 1: Summary Statistics

Variable	Mean	SD	Min	Max
FHA Grants	145.61	95.12	46.78	719.78
Republican Share in House	0.54	0.31	0	1
Republican Share in Senate	0.52	0.41	0	1
House Share with President	0.50	0.31	0	1
Senate Share with President	0.50	0.41	0	1
House Share in Majority	0.56	0.31	0	1
Senate Share in Majority	0.54	0.41	0	1
Avg. House Tenure	8.47	4.52	0	33.83
Avg. Senate Tenure	11.68	11.67	0	40.50
Governor with President	0.47	0.50	0	1
Urban Interstate Congestion	4.06	1.25	0.80	7.22
Non-Working Bridges	0.091	0.087	0.0004	0.41
Urban Pop. Share	0.72	0.15	0.35	0.95
Median Household Income (thousands of dollars)	50.48	7.77	34.23	72.69
Percent Elderly	12.66	1.86	4.6	18.6
State Unemployment Rate	4.8	1.19	2.2	8.9

FHA Grants stands for Federal Highway Administration Grants per capita. Republican Share in House and Republican Share in Senate stand for the percentage of Republicans in the House or Senate delegation, respectively. House Share with President and Senate Share with President stand for the percentage of a House or Senate delegation, respectively, in the president's party. House Share in Majority and Senate Share in Majority stand for the percentage of a House or Senate delegation, respectively, in the chamber majority. Avg. House Tenure and Avg. Senate Tenure stand for the average tenure of a House or Senate delegation, respectively. Governor with President stands for alignment between a state's governor and the president. Urban Interstate Congestion is measured as millions of miles traveled per urban interstate mile. Non-working bridges are measured as deficient bridges per square mile. Urban Pop. Share is the share of a state's population living in a urban area. Median Household Income is measured in 2008 dollars. Percent Elderly measures a state's proportion of the population aged 65 and older.

Table 2: Partisan Determinants of Federal Highway Grants: Baseline Results

	(1) FHA Grants	(2) FHA Grants
Urban Interstate Congestion	−2.856	88.38**
	(9.484)	(41.42)
Urban Interstate Congestion^2		−9.486**
		(3.784)
Non-Working Bridges	−59.48	−67.37
	(194.2)	(173.8)
Urban Pop. Share	−157.4	−148.4
	(165.0)	(170.5)
Republican Share in House	30.87**	28.21**
	(12.74)	(12.61)
Republican Share in Senate	−7.174	−5.712
	(7.265)	(6.746)
House Share with President	3.182	2.721
	(9.997)	(9.365)
Senate Share with President	10.19**	8.305*
	(4.737)	(4.492)
House Share with Majority	9.734	8.446
	(8.766)	(8.502)
Senate Share with Majority	1.771	1.008
	(3.013)	(2.748)
Avg. House Tenure	0.0835	0.229
	(0.956)	(0.867)
Avg. Senate Tenure	−0.445	−0.425
	(0.510)	(0.489)
Governor with President	8.524*	7.973*
	(4.494)	(4.159)
Observations	750	750
Adjusted R^2	0.905	0.908

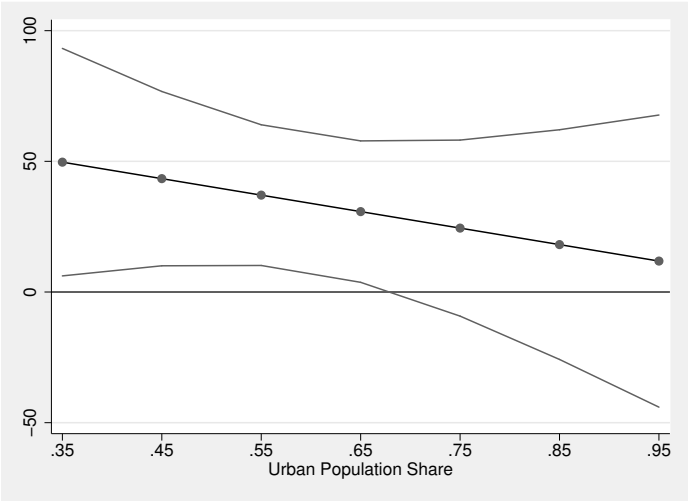
* $p < .10$, ** $p < .05$, *** $p < .01$. Parentheses contain standard errors that are clustered at the state level. All regressions include state fixed-effects and year fixed-effects. The variables median household income, the percentage of the population aged 65 and older, and the state unemployment rate are included in all regressions but the results are not reported. Full results available upon request.

Table 3: Partisan Determinants of Federal Highway Grants: Interaction Specification

	(3) FHA Grants	(4) FHA Grants
Urban Interstate Congestion	−2.042	88.29**
	(9.456)	(40.77)
Urban Interstate Congestion^2		−9.403**
		(3.697)
Non-Working Bridges	−58.08	−66.02
	(188.3)	(169.2)
Urban Pop. Share	−89.34	−87.99
	(171.9)	(174.6)
Republican Share in House	71.77	67.62
	(43.78)	(44.78)
Urban Pop. Share × Republican Share in House	−63.08	−60.94
	(69.91)	(72.25)
Republican Share in Senate	30.23	26.85
	(30.05)	(22.05)
Urban Pop. Share × Republican Share in Senate	−51.40	−44.67
	(39.88)	(29.64)
House Share with President	3.281	2.832
	(9.802)	(9.186)
Senate Share with President	10.97**	9.038**
	(4.708)	(4.388)
House Share with Majority	10.03	8.762
	(8.802)	(8.534)
Senate Share with Majority	2.031	1.247
	(3.033)	(2.768)
Avg. House Tenure	0.169	0.310
	(0.967)	(0.881)
Avg. Senate Tenure	−0.423	−0.408
	(0.509)	(0.483)
Governor with President	8.799*	8.225*
	(4.557)	(4.216)
Observations	750	750
Adjusted R^2	0.905	0.908

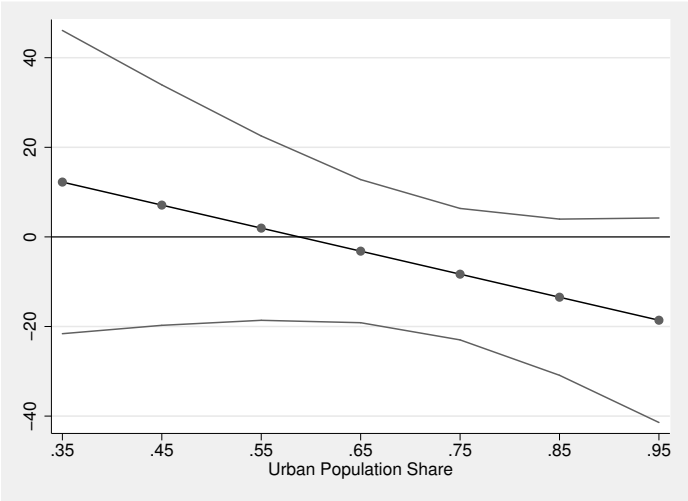
* $p < .10$, ** $p < .05$, *** $p < .01$. Parentheses contain standard errors that are clustered at the state level. All regressions include state fixed-effects and year fixed-effects. The variables median household income, the percentage of the population aged 65 and older, and the state unemployment rate are included in all regressions but the results are not reported. Full results available upon request.

Figure 1: Marginal Effect of Republican House Delegation Conditional on Urban Congestion based on Column 3 of Table 3



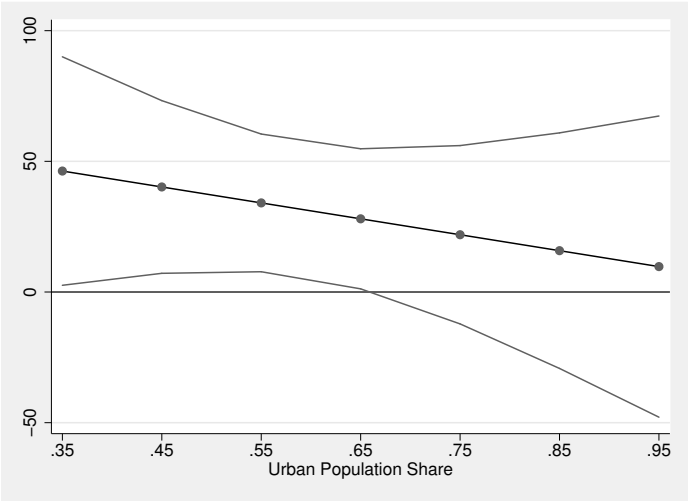
The vertical axis is measured in dollars per capita. The horizontal axis, read from left to right, measures the range of urban population shares. Error bands represent 95% confidence intervals. Marginal effects computed from regression coefficients in Column 3 of Table 3.

Figure 2: Marginal Effect of Republican Senate Delegation Conditional on Urban Congestion based on Column 3 of Table 3



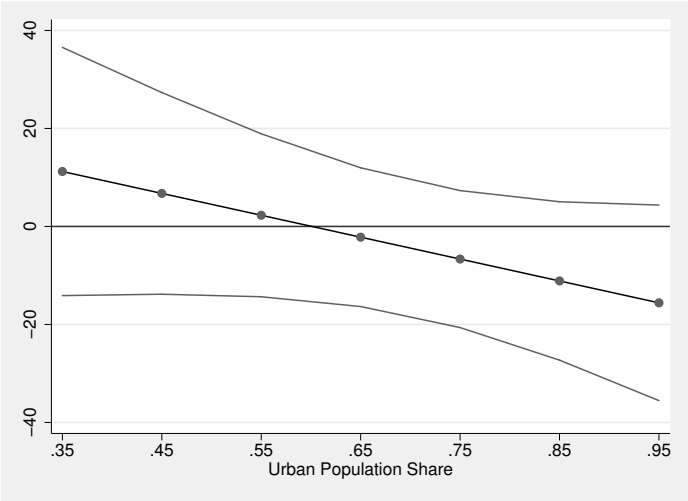
The vertical axis is measured in dollars per capita. The horizontal axis, read from left to right, measures the range of urban population shares. Error bands represent 95% confidence intervals. Marginal effects computed from regression coefficients in Column 3 of Table 3.

Figure 3: Marginal Effect of Republican House Delegation Conditional on Urban Congestion based on Column 4 of Table 3



The vertical axis is measured in dollars per capita. The horizontal axis, read from left to right, measures the range of urban population shares. Error bands represent 95% confidence intervals. Marginal effects computed from regression coefficients in Column 4 of Table 3.

Figure 4: Marginal Effect of Republican Senate Delegation Conditional on Urban Congestion based on Column 4 of Table 3



The vertical axis is measured in dollars per capita. The horizontal axis, read from left to right, measures the range of urban population shares. Error bands represent 95% confidence intervals. Marginal effects computed from regression coefficients in Column 4 of Table 3.