The Eye of the TIGER: The Politics of Recovery Act Transportation Spending

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Abstract

The 2009 American Recovery and Reinvestment Act (ARRA, or Recovery Act) was proposed by Barack Obama while still president-elect and passed by Congress soon after his inauguration as part of a broader effort to reverse the economic downturn of the prior two years. One of the most visible parts of the Recovery Act was the Transportation Income Generating Economic Recovery (TIGER) grant program administered by the Department of Transportation (USDOT), which allocated money to state and territorial governments for "shovel ready" projects that might stimulate the economy. USDOT had broad discretion in allocating these monies, unlike much previous transportation spending that formally or informally was earmarked by Congress to specific districts or states. This paper examines the allocation of TIGER Grant money to states, to identify whether or not monies were more likely to be allocated to states that would serve the reelection interests of the incumbent Democratic Party from 2009–16, and whether the pattern of allocation of TIGER Grants (and the successor program known as BUILD Grants) changed under the Trump administration after 2016.

1 The Politics of Discretionary Spending Allocation

Contemporary discussions of the federal budget in the United States typically divide annual government spending into two broad categories, "mandatory" and "discretionary" spending, with mandatory spending referring to programs with dedicated funding sources that do not require annual appropriations, including entitlement programs like Social Security and Medicare, and the

remainder of the budget being classified as discretionary spending and subject to annual appropriations decisions made by Congress (Austin 2017, 1). However this terminology refers to spending from the *congressional* perspective; in the modern era, presidents and executive branch agencies generally have been obliged follow the specific budgetary allocations made by Congress in legislation [1] so the degree of *executive* discretion over how the budget is spent is presumably quite a bit smaller.

Hence historically the main focus of the study of discretionary spending for political purposes has been on "pork-barrel spending" by Congress, either to curry favor for reelection in their own districts or states or for use in logrolling with other members in pursuit of other legislative priorities (Dilger 1998; Lee 2002; Lee 2003; Knight 2004), although the evidence for widespread logrolling in the modern Congress is weak at best (Levitt and Poterba 1999). However, in recent years there has been greater interest in looking at the political dimension of budget allocation decisions made by the executive branch (Kriner and Reeves 2015c), including presidential decisions regarding disaster declarations and military base closures (Kriner and Reeves 2015b) and trade policy (Lowande, Jenkins, and Clarke 2018). Rottinghaus and Waggoner (2018) argue that presidents respond to requests from members of Congress for distributive benefits for strategic political purposes, particularly to requests from members ideologically close to them.

One reason for this new emphasis on executive discretion has perhaps been due to limitations on congressional earmarks which have been imposed by the leadership, particularly during periods of control by the Republican Party, which has argued in recent years that earmarking leads to greater profligacy in legislative appropriations (Kirk, Mallett, and Peterman 2011, 2). However,

[1]Notably, presidential decisions to reallocate spending or refuse to spend money appropriated by Congress have been politically controversial and, in some cases, deemed to be illegal since budget reforms challenged the Nixon administration's use of impoundment to cut spending in the 1970s (Wlezien 1994).

as they point out, despite leadership efforts to rein in earmarking, a number of formal and informal practices have allowed members to continue to direct spending, both through the use of "soft" earmarks that do not specify specific amounts of spending and through "hard" earmark language that has been included in appropriations bills despite House rules purporting to limit the use of earmarking (2011, 3–4). Panagopoulos and Schank also suggest that Republican efforts in the mid-2000s to limit the use of earmarks for pork-barrel spending were largely ineffective (2008, 11–14). Regardless the empirical evidence indicates that the impact of earmarks on federal spending is tiny in the context of the total budget, accounting for "approximately 0.1% of total nondefense federal outlays" in 1999 (Lee 2003, 714).

While it is true only a relatively small share of federal spending is attributable to earmarks, and thus concerns about earmarks inflating the budget overall would be misplaced, nonetheless given the large scale of the contemporary federal budget this spending is still quite substantial in real dollar terms, which means it can have a noticeable impact if concentrated in particular areas. To this end, Kriner and Reeves analyzed federal spending at the county level from 1984 to 2008, and found strong evidence that presidential spending decisions disproportionately reward counties in swing states and counties in states where the president was most strongly supported in recent elections (2015 a). Their findings suggest that there is a direct link between presidents' directed discretionary spending and electoral considerations (see also Kriner and Reeves 2014).

Accordingly it is reasonable to expect this link to be particularly strong in situations where executive branch discretion is very high. Such was the case with aspects of the federal stimulus packages adopted by Congress during the "Great Recession" starting in 2008, which gave budgetary authority to several cabinet agencies with relatively few strings attached to that spending.

2 TIGER and BUILD Grants

The discretionary grant programs examined in this paper originated with the American Recovery and Reinvestment Act (ARRA) of 2009, forming part of a broader stimulus package that was proposed by Barack Obama soon after his election and passed by Congress early in his presidency (Stoney and Krawchenko 2012, 492–93). The ARRA included funding for "capital investments in surface transportation infrastructure" but did not apply a specific title to the funding program or detailed criteria governing how this spending should be spent (Peterman 2019, 1); these decisions were left to the Department of Transportation (USDOT). From 2009 through 2017, the program was known as the Transportation Income Generating Economic Recovery (TIGER) grant program; in 2018, the program was renamed to become the Better Utilizing Investments to Leverage Development (BUILD) grant program, now with a greater emphasis placed on directing spending toward rural projects and leveraging non-federal funds. Unlike many federal programs, the TIGER/BUILD grant program is not permanently authorized by Congress; instead, it is a spending program funded on a year-to-year basis as part of the appropriations for the Department of Transportation, and thus it is vulnerable to discontinuation by Congress on a more frequent basis than spending programs authorized by statute.[2] This vulnerability suggests that the administration would be more responsive in its grant awards to the interests of members of Congress—particularly those members who serve on the appropriations committees with control over the program's continuation.

TIGER and BUILD grant awards have been based on applications submitted by state governments and federal territories and their political subdivisions, applying either individually or

[2]Of course, the appropriations committees can choose to reduce or zero-out funding for a previously-authorized program with similar effect, although such a decision would likely attract more negative attention from the committees responsible for authorizing the program, as well as stakeholders in the administration and outside of government.

Criterion	Year Introduced
Demonstrated Project Readiness	2009
Project Costs and Benefits	2009
Cost Sharing or Matching	2009
Geographic Diversity Among Recipients	2009
Livability/Quality of Life	2011
Economic Competitiveness	2011
Safety	2011
State of Good Repair	2011
Environmental Sustainability/Protection	2011
Innovation	2011
Partnerships	2011
Additional Non-Federal Revenue	2018

Adapted from U.S. Department of Transportation (2018) and Peterman (2019, 3–4).

Table 1: TIGER and BUILD Grant Criteria

collectively, to fund a portion of particular projects; in general these projects must have been eligible for partial federal funding out of general transportation funds provided to the states and territories (Peterman 2019, 14).

Both the original TIGER grants and the BUILD grants that followed them were scored based on various criteria described in Table 1, with the most critical criterion being that projects be "shovel-ready" so there would be immediate, visible stimulus to the economy, which rewarded projects that were either very limited in their environmental impact or at the conclusion of the environmental impact study process required by the National Environmental Policy Act (NEPA). Requirements that the funds have "an equitable geographic distribution," along with "an appropriate balance [between] urban and rural areas," and funding for a "variety of modes" (14) were also included.

The sheer multitude of criteria—despite the majority being framed in technical terms—and lack of transparency in decision-making give USDOT (and, by extension, the president and their administration) an opportunity to weigh those criteria in such a way to accomplish politically

desirable outcomes. Given that the amount of funding requested has greatly outstripped the availability of funds; as of the 2018 BUILD grant round, 24 times as much funding was requested as was awarded over the ten rounds to date (Peterman 2019, 5), the TIGER/BUILD grants provide a very compelling opportunity to test whether the Obama and Trump administrations have continued the political allocation of federal expenditures for electoral purposes as Kriner and Reeves suggest has previously been the case.

3 Hypotheses

Accordingly I examine several hypotheses connected to the direct electoral incentives of the president and their party in directing spending. Specifically, I hypothesize that there will be more grants, and a greater amount of grant money, awarded to states that gave greater support to the president in the most recent presidential election, based on their percentage of the total vote in the state; I also expect that more grants will be directed toward states that were competitive (battleground) states at the last presidential election, defined here as a victory margin of 55% of the two-party vote or less. These expectations follows directly from Kriner and Reeves' findings regarding presidents' decisions about discretional spending allocation (2015 a). I would also anticipate greater funding for states with more of the president's co-partisans in the House and the Senate (Christenson, Kriner, and Reeves 2017), indicated as a percentage of the state's delegation in each chamber.[3]

Given the role of the appropriations committees in allocating money to the Department of Transportation, I also hypothesize that states with members serving on these committees will

[3]For the purpose of this analysis, independent senators and representatives are treated as Democrats, as both Angus King and Bernie Sanders caucus(ed) with the Democrats.

receive more funding. Even though appropriators did not have any formal role in choosing projects, it would seem to be likely that the administration would be sensitive to their preferences regarding the use of spending authority to ensure that the grant programs would be continued in future years; as noted above, the TIGER/BUILD grants are not continuing, statutory programs but instead rely entirely on the goodwill of the appropriations committees for their continuation in future years.

Finally, we should control for three factors that would likely influence the demand for transportation spending within states: the state's estimated population (U.S. Census Bureau 2018); the amount of infrastructure in the state, given by the estimated number of lane-miles of public highways in the state (in thousands) (Federal Highway Administration 2019a), and the annual number of vehicle-miles traveled in the state per resident (Federal Highway Administration 2019b).[4] Although the grant criteria did not restrict spending to highways, and quite a few grants did fund railroad, bike/pedestrian, maritime, and mass transit projects, as is typical of federal transportation spending, the plurality of projects selected involved highway construction and maintenance.

4 Data and Methods

Information on all 608 TIGER and BUILD grant awards from 2009 through 2019 was extracted from maps retrieved from the Department of Transportation's website (U.S. Department of Transportation 2019). This information was used to identify the number of awards and total

[4] A lane-mile is the product of the number of highway lanes and distance; for example, a 100-mile highway that has two lanes in each direction would account for 400 lane-miles. Vehicle-miles traveled is the total number of miles driven by all of the highway vehicles in the state in a given year.

amount awarded for each state for each year; data for six projects located in the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands were omitted from the analysis. State-level presidential election results were compiled from data assembled by the MIT Election and Science Lab (2017). Data on Senate membership, congressional delegation composition, and committee membership by senators and representatives was derived from the @unitedstates project on GitHub (2019), supplemented by historical committee composition data compiled by Stewart and Woon (2017).

Variable	Definition
approp	Number of appropriations committee members from the state in both chambers
congressprez	Percentage of state's senators and representatives who are from the president's party
GrantCount	Number of TIGER/BUILD grants awarded to the state in the grant cycle
LaneMilesK	Estimated lane-miles of roadways in the state, in thousands
marginal	Coded 1 if winning major-party candidate received 50–55% of the vote in the most recent presidential election, 0 otherwise
popM	State's estimated population, in millions
prezvote	Percentage of the total statewide vote received by the president's party in the most recent presidential election
TotalGrantsM	Total TIGER/BUILD grants awarded to the state in the grant cycle, in millions of nominal dollars
TotalGrantsShare	State's percentage of the total allocation of TIGER/BUILD grants in the grant cycle
trump	Coded 1 for the 2017–2019 TIGER/BUILD grant rounds, 0 otherwise
VMTPC	Estimated vehicle-miles traveled per capita in the state in the year

Table 2: Definitions of variables used in the analysis.

The hypotheses suggest the use of three dependent variables in the analysis: a count of the number of grants given to a state in a particular year, the share of spending allocated to the state in a given year, and the total TIGER/BUILD expenditures in the state for a given year. To account for changes in congressional membership and committee composition over time, for each explanatory variable, the data was coded based on the political situation as of the date the award was officially

announced by a press release from USDOT; these award dates varied from April of the calendar year through March of the following calendar year (WSP USA, n.d.).

	count	mean	std	min	25%	50%	75%	max
approp	550.000	1.647	1.349	0.000	1.000	1.000	2.000	8.000
congressprez	550.000	49.922	31.735	0.000	25.000	50.000	75.000	100.000
GrantCount	550.000	1.095	0.953	0.000	0.000	1.000	1.000	6.000
LaneMilesK	550.000	172.969	115.382	9.523	84.327	166.978	238.517	680.981
marginal	550.000	0.311	0.463	0.000	0.000	0.000	1.000	1.000
popM	550.000	6.344	7.062	0.560	1.833	4.480	7.170	39.557
prezvote	550.000	51.015	10.384	25.374	42.685	51.514	58.767	75.705
TotalGrantsM	550.000	14.224	17.714	0.000	0.000	10.000	20.000	130.000
TotalGrantsShare	550.000	1.977	2.045	0.000	0.000	1.695	2.963	10.461
trump	550.000	0.273	0.446	0.000	0.000	0.000	1.000	1.000
VMTPC	550.000	10.321	1.965	6.275	8.875	10.263	11.331	18.068

Table 3: Descriptive statistics for variables in the analysis.

To make the scales of the variables more consistent and ease interpretation of the findings, the scales of three variables were adjusted: the state population was expressed in millions, lane-miles were expressed in thousands of miles, and grant expenditures were expressed in millions of dollars. Descriptive statistics for the variables are presented in table 3.

For the count model, a Poisson regression model is estimated, while a models of total expenditures and expenditure shares by year are estimated by Gaussian regression. As the data are cross-sectional time series in format, models with random effects for each state and year is appropriate (Bell and Jones 2015); a fixed administration effect was also included in each model. These models were estimated using Bayesian mixed effects models with the `bambi` module for Python, version 0.1.5 (Yarkoni and Westfall 2016), using the `PyMC3` backend, version 3.8 (Salvatier, Wiecki, and Fonnesbeck 2016); minimally informative priors were provided for each variable's effects.

5 Findings

	coefficient	s.d.	lower bound	upper bound
Intercept	-1.108	0.440	-1.984	-0.254
popM	0.026	0.012	0.002	0.051
trump[T.True]	0.125	0.235	-0.332	0.602
VMTPC	-0.014	0.028	-0.070	0.039
approp	0.014	0.052	-0.086	0.119
marginal[T.True]	0.035	0.099	-0.172	0.217
prezvote	0.015	0.008	-0.000	0.031
LaneMilesK	0.001	0.001	-0.000	0.002
congressprez	0.001	0.003	-0.004	0.006
1|state_sd	0.126	0.072	0.000	0.249
1|trump:year_sd	0.310	0.108	0.138	0.522

Table 4: Poisson mixed effects regression model of grant awards by state.

	coefficient	s.d.	lower bound	upper bound
Intercept	-8.267	7.377	-23.015	5.969
popM	0.898	0.218	0.482	1.342
trump[T.True]	5.469	6.093	-6.883	17.420
VMTPC	0.089	0.448	-0.793	0.966
approp	0.140	0.825	-1.472	1.775
marginal[T.True]	-2.182	1.604	-5.322	0.917
prezvote	0.266	0.116	0.045	0.501
LaneMilesK	0.007	0.010	-0.013	0.029
congressprez	-0.001	0.038	-0.080	0.072
1|state_sd	3.352	1.089	1.083	5.514
1|trump:year_sd	8.466	2.637	4.399	13.685
TotalGrantsM_sd	14.081	0.455	13.194	14.969

Table 5: Linear mixed effects regression model of total grants (in millions of dollars) by state.

The results of the regression models are presented in tables 4–6, including 95th percentile highest posterior density intervals for each parameter. In general, the three models are in agreement, suggesting the choice of dependent variable is not particularly critical to the analysis, although the strength of the evidence for a significant effect varies to some extent for particular variables.

	coefficient	s.d.	lower bound	upper bound
Intercept	-0.943	0.824	-2.538	0.707
popM	0.123	0.027	0.066	0.174
trump[T.True]	-0.080	0.180	-0.430	0.273
VMTPC	-0.015	0.057	-0.124	0.100
approp	0.069	0.101	-0.125	0.267
marginal[T.True]	-0.203	0.198	-0.601	0.178
prezvote	0.045	0.014	0.018	0.071
LaneMilesK	0.001	0.001	-0.002	0.003
congressprez	-0.003	0.004	-0.012	0.006
1|state_sd	0.498	0.116	0.276	0.736
1|trump:year_sd	0.076	0.064	0.000	0.198
TotalGrantsShare_sd	1.676	0.054	1.571	1.782

Table 6: Linear mixed effects regression model of grant percentage share by state.

In all three models, the effect of the state's population on grant awards was positive. This finding is not terribly surprising as we would expect more populous states to have greater transportation needs. However, we do not see similar effects for the amount of vehicle use per capita or the number of lane-miles, suggesting that the extent or intensity of use of existing highway infrastructure was not a major consideration in grant allocation.

Most of the political variables had no substantial effect; however, there is evidence that support for the president's party at the previous election did lead to greater TIGER and BUILD spending in the state. In all three models, the effect of state-level presidential support is positive with a 95% credible interval. Interestingly, however, there is no discernible effect of electoral marginality on grant allocations; presidents seem no more inclined to use these funds to sway or retain swing-state voters than to spend them in states less critical for their party's future fortunes.

The impact of having co-partisans in the House and Senate from the state, and the effect of the state having members on one or both of the appropriations committees, was not clearly positive in any of the three models. And, despite the emphasis in the Trump administration toward

greater spending on rural projects and road infrastructure, the change of administration does not appear to have had a substantial effect on overall spending decisions independent of the other political factors included in the model.[5]

6 Conclusions

Overall, the findings of this paper are surprising to some extent, especially given the highly opaque nature of USDOT's procedure for deciding how to allocate funds to the states through the TIGER/BUILD grant program, which would seem on the surface to provide opportunities for presidents to steer funding effectively to serve their political interests. Despite the vulnerability of the TIGER/BUILD grant program to congressional appropriations decisions, there does not appear to be any appreciable benefit to states that have members serving on the House and Senate appropriations committees. Perhaps this can be explained in part because relatively few states lack representation on one of these committees; for example, in 2019, 31 states had at least one House appropriations committee member and 29 states had at least one Senate appropriator, leading to 45 of 50 states having at least one member in one of the two committees. Nonetheless, even states without members have had some success in receiving TIGER and/or BUILD grants; Wyoming, for example, received over $14 million in grants in each of 2017, 2018, and 2019 without committee representation.

Similarly, the lack of responsiveness to the partisan composition of the state's congressional delegation is also somewhat surprising; one would reasonably expect in-partisans to be more

[5]These findings are not substantially affected by other model specifications, including other definitions of state marginality, using separate variables for the House and Senate delegations and appropriations committee membership, and different modeling approaches for the state and year random effects.

successful in lobbying for funding (formally or informally), but this does not appear to have been the case. The only political factor that appears to have produced consistent support for funding was the share of the vote the president received in the state in the most recent presidential election. However, even in this case the funding does not appear to have been allocated efficiently to serve the president's electoral interests; if it had been, we would expect to see greater funding for projects in states that were won or lost narrowly at the previous election, but instead funding appears to have been more oriented toward rewarding states that strongly supported the president's party. This finding appears to be consistent across administrations.

Why are the effects found in this analysis inconsistent with previous research suggesting a greater degree of responsiveness to Congress and electoral considerations? One possibility is that the TIGER and BUILD grants, despite large "headline" numbers, are a drop in the bucket when compared to total state and federal infrastructure spending. For example, the first phase of New York City's Second Avenue Subway—consisting of two miles of tunnel and three new subway stations—had a final cost of $4.45 billion when it opened in late 2017, the equivalent of several years' funding of the entire TIGER/BUILD grant program (Rosenthal 2017). Although few transportation projects have been as expensive per mile of construction as the Second Avenue Subway, nonetheless even the largest grant awards from TIGER and BUILD have been under 5% of that figure. Similarly, the Georgia Department of Transportation spent just over $1.1 billion of state and federal funds in FY 2019, exceeding the total TIGER/BUILD award budget in 8 of the 11 years of the program (Shelby 2019).

It is also possible that presidents Obama and Trump made limited use of their discretion over TIGER and BUILD grant spending for political purposes because they had relatively few opportunities to do so. Of the 11 rounds of grants, only four took place during periods of unified

government; all have taken place in a time of heightened political polarization, in which the president's ability to engage in "horse trading" with members to build support for legislation in exchange for particularistic state or district benefits would be limited due to ideological constraints resulting from members' increasingly restive primary election constituencies. Moreover Congress is passing less primary legislation today than it did in past eras, so there are fewer critical votes on legislation for presidents to influence than was the case in the "textbook Congress" era. And, given greater polarization in American politics, the electoral benefits of appealing outside one's party base with "pork barrel" spending may be limited. Accordingly a strategy of steering funding to loyal constituencies may be more politically optimal than in the past.

One final possibility is that the level of aggregation in this analysis is not sufficently fine-grained to detect some political motivations in spending; Kriner and Reeves (2015 a) conducted their analysis at the county level rather than the state level, so an analysis of this data either at the county level or the congressional district level might be more fruitful.

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