Distributive Politics and Electoral Incentives: Evidence from Seven US State Legislatures A comment

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In this comment, I show that the results of Aidt and Shvets (forthcoming) do not hold up when the panel properties of their data are properly taken into account.

This paper is a comment on Aidt and Shvets, forthcoming in this journal. They study the effect of electoral incentives on the allocation of public services across legislative districts in seven US states (Arizona, Colorado, Louisiana, Missouri, Ohio, Oklahoma and South Dakota) between 1992 and 2005. Thus, they have panel of 598 districts over 14 years but their empirical analysis completely ignores this fact. In this comment, I show that their results do not hold after the panel properties of the data have been properly taken into account.

To explain the problem with their empirical analysis, I start by describing their estimating equation, which is the following

(1) $$y_{ijt} = \gamma(\text{last term})_{ijt} + \alpha_i + \upsilon_{jt} + \varepsilon_{ijt}$$

where i denotes a legislator, j a state, and t a year. The outcome y_{ijt} denotes the per capita transfer to the district of legislator i from the state budget in state j in year t. The variable last term is a dummy variable equal to one if a legislator is in his last allowed term under the term limit laws of the state and zero otherwise. α_i is a legislator fixed effect, υ_{jt} is a state-specific year effect, and ε_{ijt} is an error term. The parameter of interest is γ—the last term effect—which is predicted to be positive.

The problem with specification (1) is that it does not take into account three important, and by now well-known issues, in panel data or difference-in-difference analyses, namely (i) serial correlation in the errors, (ii) functional form issues, and (iii) omitted confounding factors at the district level.

Starting with the problem of serial correlation, Bertrand et al. (2004) show that serially correlated outcomes lead to a serious overestimation of *t*-statistics and significance levels. The standard solution is to cluster the standard errors at the panel dimension, i.e., legislative

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districts in this context. Importantly, since the number of districts is large—598—the clustered standard errors will have good asymptotic properties. Panel A in Table 1 shows the results of the estimated last term effects in Aidt and Shvets' analysis when the standard errors are clustered at the district level These standard errors (reported within brackets) are about 50% larger than the standard errors (reported within parentheses) used by Aidt and Shvets. As a result of the clustering, their results are no longer statistically different from zero at conventional levels. It is noteworthy that the standard errors clustered at the district level are biased downwards if there is correlation across districts. There are at least two reasons to expect a correlation over districts. The first reason is that fiscal transfers from the state budget to the districts are a joint decision among all legislators in the State's lower chamber. The other reason is that the construction of a district's outcome measures gives rise to a correlation over districts since when a local government unit straddles two or more legislative districts, the transfer to each legislative district is attributed according to the share of the unit's area that lies in each district. As a result, the reported clustered standard errors at the district level in Table 1 are still likely to be too small.[1]

Turning to the problem of functional form, it is well-known that a fixed effect or a difference-in difference analysis relies on strong functional form assumptions (e.g., Athey and Imbens 2006) One simple way of testing the sensitivity of a fixed effect analysis to functional form issues is to take the natural logarithm of the outcome variable, i.e., log (y_{ijt}), in equation (1). Panel B of Table 1 shows that estimated last term effects are no longer significant when the outcome variables are expressed in logarithmic form. This finding also holds independent of whether the standard errors are clustered at the district level.

The third panel data problem of specification (1) is that it does not include district-fixed effects. This is an import specification problem since the identification of the parameter γ in equation (1) is based on the occurrence of elections and they only vary at the district and time levels. In other words, it is essential to control for unmeasured district characteristics in specification (1) to avoid an omitted variable bias. Panel C of Table 1 displays the results when district fixed effects are added to specification (1). The estimated last term effects are much smaller than in the Aidt and Shvets paper and they are also not significantly different from zero. Once more, this finding holds independently of whether the standard errors are clustered at the district level. Moreover, I find similar results when excluding legislator-fixed effects and only including districts-fixed effects.

[1] Clustering at the state level is not going to solve this problem since there are too few clusters (seven States) for reliable inference using a standard cluster adjustment.

To sum up, the empirical analysis by Aidt and Shvets does not hold up when the panel properties of the data (serial correlation, functional form, districts-fixed effects) are properly taken into account.

References

Aidt, Toake and Julia Shvets (forthcoming), "Distributive Politics and Electoral Incentives: Evidence from Seven US State Legislatures" *American Economic Journal: Economic Policy*.

Athey, Susan, and Guido W. Imbens (2006), "Identification and Inference in Nonlinear Difference-in-Differences Models." *Econometrica*, 74, 431-497.

Bertrand, Marianne, Esther Duflo and Sendhil Mullainathan (2004), "How Much Should We Trust Differences-in-Differences Estimates?" *Quarterly Journal of Economics*, 119(1), 249-275

Table 1. Robustness checks of Aidt and Shvets (forthcoming)

	Total	Education	Discretionary	Nondiscretionary
	Panel A. Serial correlation			
Last term effect	-14.4	-9.8	-9.5	-5.0
	(6.6)	(4.2)	(4.2)	(4.2)
	[10.0]	[6.4]	[5.6]	[6.7]
	Panel B: Functional form			
Last term effect	-0.010	-0.016	-0.021	-0.012
	(0.014)	(0.014)	(0.021)	(0.014)
	[0.021]	[0.022]	[0.029]	[0.022]
	Panel C: District fixed effects			
Last term effect	-3.7	-5.7	-3.2	-0.4
	(5.8)	(4.1)	(3.9)	(3.8)
	[8.8]	[6.4]	[5.0]	[6.4]

Notes: Panel A reports the results from Table 4 in Aidit and Shvets (forthcoming). Panel B reports results when the outcome variable is expressed in logarithmic form. Panel C reports results from the specification with district fixed effects. Standard errors as used by Aidit and Shvets are reported within parenthesis. Standard errors clustered at the district level are reported within brackets.