Political Economics (HT22):
Postponed exam

Question 1: Multi-dimensional politics [60%]

One example of multi-dimensional politics is the provision of local public goods (e.g. schools, hospitals, infrastructure, etc.). Consider a model where there are $\mathcal{J}$ groups of voters with n voters in each group. Thus the total number of voters is $N = \mathcal{J}n$. Policy is a vector

$$\mathbf{g} = \{g^1, g^2, ..., g^{\mathcal{J}}\} \tag{1}$$

where g^J is the amount of local public goods provided to all members of group J. Assume the preference of an individual in group J is

$$w^J = c^J + ln(g^J) \tag{2}$$

Income, y, and taxes, τ, are equal across individuals. Thus an individual in group J has budget constraint:

$$c^J = y - \tau \tag{3}$$

The government spends all its revenue on providing the local public goods.

$$\sum_J g^J = N\tau \tag{4}$$

(a) [15 pts] Setting aside assumptions on electoral competition for now. What is the socially optimal policy, $\mathbf{g}^*$?

Answer: Substitute budget constraints into voter welfare to give objective function

$$\begin{aligned} &max_{\mathbf{g}} \sum_J [y - \frac{1}{N} \sum_J g^J + ln(g^J)] \\ &= Ny + max_{\mathbf{g}} \sum_J [ln(g^J) - g^J] \end{aligned}$$

Taking first order conditions for each g^J in $\mathbf{g}$ yields:

$$\frac{1}{g^J} - 1 = 0 \implies g^J = 1$$

Thus the socially optimal policy is to provide each group equally with 1 unit of the local public good, $\mathbf{g}^* = \{1, 1, ..., 1\}$.

(b) [15 pts] Assume that the allocation of local public goods are decided through legislative bargaining, where each group J is represented by a member of the legislature. One member, a, is chosen as the agenda setter and a "closed rule" process is carried out, where the agenda setter proposes a take-it-or-leave-it allocation of public goods. If the proposal fails to achieve a simple majority, the allocation defaults to $\mathbf{g}^*$. Qualitatively, what does the allocation of local public spending look like in such a decision making system?

Answer: Here the agenda setter has the power to exclude $\frac{\mathcal{J}-1}{2}$ groups from receiving any spending and transfer nearly half of the resources to her own constituents. She can win the majority vote by ensuring that half of the members get at least as much as they would if the vote were to fail and default to the social optimum.

(c) [15 pts] Now assume that political competition in this same setting is characterized by the assumptions behind the Downsian model. Specifically two parties, A and B, announce and commit to their policies, $\mathbf{g}^A$ and $\mathbf{g}^B$, in advance of a majority vote. Would the socially optimal policy derived above be an equilibrium in such a case? Why or why not.

Answer: The Downsian model typically assumes that political competition occurs over a single-dimensional policy space and relies on the median voter theorem to find an equilibrium. In the local public good setting detailed above, if one party committed to the socially optimal policy, $\mathbf{g}^*$, the other party could respond by offering an alternative that gave a bit more to $\mathcal{J}-1$ groups, at the expense of 1 group. This would win against the socially optimal policy in a pairwise vote, which thus can't be an equilibrium. Even if we could define a median voter in this setting, in general, we could not apply the median voter theorem, because of the above logic.

(d) [15 pts] Now assume that political competition in this setting is characterized by the assumptions behind the probabilistic voting model. Specifically, in addition to voters shaping their preferences over the local public good policy, $\mathbf{g}$, they also have an individual bias, σ^{iJ} either for or against the ideological position of party B relative to A. Also, the timing of the model is such that there is the possibility of a scandal hitting either party after they announce their policy commitments. This scandal, δ, can either hurt or improve every voters' perception of Party B relative to A. Voter preferences are given by

$$w^{iJ} = y - \frac{1}{N}\sum_J g^J + ln(g^J) + (\sigma^{iJ} + \delta)D_B \tag{5}$$

where D_B is an indicator variable for Party B winning the election. Individual biases are distributed uniformly over the unit interval $[-\frac{1}{2\phi^J}, \frac{1}{2\phi^J}]$ that can vary across groups of voters. The scandal shock is drawn from a uniform distribution on $[-\frac{1}{2\psi}, \frac{1}{2\psi}]$.

Since parties are only motivated by obtaining office, they set their policy, $\mathbf{g}_A$ in order to maximize the probability of being elected, p_A. Use the expression for p_A

below to solve for the equilibrium policies of both parties. Comment on the result, particularly the distribution of public spending, and compare it to the socially optimal policy derived earlier.

$$p_A = \frac{1}{2} + \frac{\psi}{\phi}\frac{1}{N}\sum_J \phi^J[ln(g_A^J) - \frac{1}{N}\sum_J g_A^J - (ln(g_B^J) - \frac{1}{N}\sum_J g_B^J)] \tag{6}$$

where $\phi = \frac{1}{N}\sum_J \phi^J$.

Answer: First with respect to Party A's decision, we take first order condition of p_A with respect to each g_A^J.

$$w^{iJ} = y - \frac{1}{N}\sum_J g^J + ln(g^J) + (\sigma^{iJ} + \delta)D_B \tag{7}$$

This results in the optimal policy decision

$$\frac{\psi}{\phi}\frac{1}{N}[\frac{\phi^J}{g_A^J} - \frac{1}{N}\sum_J \phi^J] = 0$$
$$g_A^J = \frac{\phi^J}{\phi}$$

Since the problem is symmetric for each party, both A and B will promise the same platform, which targets the "swing voter" in each group. This is the voter that is least interested in non-policy related payoffs, i.e. is the least ideologically biased voter. This result implies that public spending is increasing in ϕ^J, which inversely measures the dispersion of the ideological bias. That is the higher is ϕ^J the more voters can be persuaded by the party's policy platform. If ϕ^J is not equal across groups this implies that resources will not be targeted equally across groups as they were in the socially optimal allocation.

Question 2: Money in politics [40%]

For a well-functioning democracy, it is often argued that campaign finance should be controlled in some way. In their paper, Avis, et al (2022) [1], the authors investigate the effect of spending limits in Brazilian municipal elections. They find a discontinuity where maximum allowable campaign spending in 2016 is higher for some municipalities depending on the level of their spending in 2012, which was the election prior to the spending reform's announcement.

(a) [10 pts] Table 5 from this paper is presented below. Interpret the number 0.121 in the second row of the table.

Answer: Incumbent politicians, in municipalities that are arbitrarily close to the discontinuity in campaign spending limits, are 12 percentage points more likely to be re-elected when campaign spending limits are higher. This represents a significant increase from the average incumbent re-election rate of 23%.

(b) [20 pts] The authors claim that campaign spending limits have a causal effect on political competition. With reference to their choice of a regression discontinuity research design and its validity, why would we believe them?

Answer: The characteristics of the municipalities don't change discontinuously at the threshold. So arbitrarily close municipalities in the running variable (2012 campaign spending) are essentially identical in all aspects other than their exposure to the treatment (tighter restrictions on 2016 campaign spending). The authors should verify the continuity assumption. They do so by ensuring that municipal characteristics do not vary discontinuously at the threshold. In addition, this RD treatment is based on historical campaign spending before the reform was even announced, and thus could not be manipulated in order to determine treatment. One caveat, however, is the external validity of this approach. Like with all RD designs, the findings are specifically relevant for municipalities at the discontinuity.

(c) [10 pts] Assume that a candidate's electoral success is increasing in campaign spending, and thus donations are an effective way of getting a candidate elected. In reality, for whatever reason, few voters donate, and the total amount of donations is small. In theory, how could this puzzle be explained?

Answer: If politicians can commit to policies before donations are made, the mere threat of transferring donations to opponents is enough to influence politics without the need to actually make the donations. We see this in the probabilistic voting model with donations, where the group that can donate is able to attract a larger share of resources than those who can't donate, even though donations are zero in equilibrium. One could also discuss the commitment problems in an agency model where donors give to politicians in advance of the election hoping for a reward once elected. The lack of commitment means that donations may not be effective in achieving policy influence, however.

[1] Avis, E., Ferraz, C., Finan, F., & Varjão, C. (2022). Money and politics: The effects of campaign spending limits on political entry and competition. American Economic Journal: Applied Economics, 14(4), 167-99.

Table 5—Effects of Campaign Spending Limits on Incumbents

	Linear optimal bandwidth				With controls	Quadratic	Means
	Mean	BW	Observations	(1)	(2)	(3)	(4)
Panel A. All incumbents							
Rerun	0.616	0.919	2,325	0.057	0.061	0.050	0.029
	(0.026)			(0.031)	(0.033)	(0.050)	(0.027)
Reelection	0.227	0.607	1,596	0.119	0.121	0.111	0.102
	(0.025)			(0.040)	(0.040)	(0.043)	(0.028)
Panel B. All incumbents who rerun in 2016							
Reelection (conditional on running)	0.388	0.532	895	0.137	0.139	0.145	0.117
	(0.025)			(0.044)	(0.046)	(0.062)	(0.024)
Change in vote share	−0.107	0.831	1,367	0.017	0.052	0.048	0.049
	(0.012)			(0.017)	(0.023)	(0.030)	(0.012)
Incumbent share of spending	0.461	0.890	1,462	0.043	0.027	0.040	0.036
	(0.010)			(0.019)	(0.020)	(0.026)	(0.015)
Panel C. Incumbents with high spending in 2012							
Reelection (conditional on running)	0.377	0.504	440	0.229	0.207	0.284	0.168
	(0.052)			(0.061)	(0.059)	(0.082)	(0.032)
Change in vote share	−0.150	0.453	418	0.112	0.108	0.115	0.077
	(0.021)			(0.027)	(0.026)	(0.032)	(0.015)
Incumbent share of spending	0.468	0.534	463	0.074	0.054	0.086	0.044
	(0.020)			(0.026)	(0.026)	(0.032)	(0.019)
Panel D. Incumbents with low spending in 2012							
Reelection (conditional on running)	0.434	0.313	194	−0.060	−0.172	−0.087	−0.056
	(0.053)			(0.093)	(0.105)	(0.132)	(0.034)
Change in vote share	−0.071	0.253	147	−0.132	−0.166	−0.204	−0.039
	(0.028)			(0.033)	(0.035)	(0.050)	(0.014)
Incumbent share of spending	0.428	0.253	149	0.008	−0.024	0.002	−0.019
	(0.030)			(0.050)	(0.047)	(0.069)	(0.018)
Bandwidth	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	0.2
Polynomial order	One	One	One	One	One	Two	Zero
Municipal controls	No	No	No	No	Yes	No	Yes

Notes: Each figure in columns 1–4 reports the estimate and standard error of a separate regression. Standard errors in parentheses, clustered by party. Includes state and party fixed effects. The mean is the estimated value, based on specification (1), of the dependent variable for a municipality at the cutoff point whose spending limit is R$108,039. In panel A the sample consists of all incumbents who are not term limited. In panel B the sample consists of incumbents who choose to rerun in 2016. The sample is further restricted to incumbents with 2012 spending over R$108,039 in panel C and below this amount in panel D.