Political Economics (HT24):

Question 1: Multi-dimensional politics [50%]

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 an equal size of voters in each group. Thus the total number of voters is simply $N = \mathcal{J}$, when group mass is normalized to 1. Policy is a vector:

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

where $g^J \geq 0$ is the amount of local public goods provided to all members of group $J \in \mathcal{J}$. Individuals in group J have preferences:

$$w^J = c^J + 2\sqrt{g^J} \tag{2}$$

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) [1/6 pts] Setting aside assumptions on electoral competition for now. What is the socially optimal policy, $\mathbf{g}^*$?

(b) [1/6 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 $\mathbf{g}^*$. Assume that τ is exogeneously set to a level that exactly finances the default allocation, e.g. $\tau N = \mathcal{J}\bar{g}$, where $\bar{g}$ is the mean group allocation. For convenience, let $\mathcal{J}$ be odd, and assume indifferent policy makers support the proposition. What would be the equilibrium allocation in this setting? Compare this to the socially optimal solution in part (a).

(c) [1/6 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

$$w^{iJ} = y - \frac{1}{N}\sum_J g^J + 2\sqrt{g^J} + (\sigma^{iJ} + \delta)D_B \tag{5}$$

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 (i.e. $g^1, ..., g^{\mathcal{J}}$), and compare it to the equilibrium policy derived in part (b). What might be an explanation for the difference between the two equilibria, specifically in relation to *policy divergence*?

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

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

Question 2: Electoral accountability and corruption [50%]

In the paper *Electoral Accountability and Corruption: Evidence from the Audits of Local Governments*[1] the authors examine the effects of electoral accountability on corruption in local governments in Brazil. The context of the study is a political reform which relaxed term limits on Brazilian mayors, allowing them to run for re-election after one term of service. The two main threats to identification in the study are unobserved municipal-level confounds and unobserved characteristics of individual politicians.

(a) [1/6 pts] (a) What would be an ideal experiment to find the causal effect of re-election incentives on corruption?

(b) [1/6 pts] (b) Due to the infeasibility of the ideal experiment, how do the authors address the threat of unobserved municipal-level confounds? Describe the empirical approach and interpret the coefficient -0.038 on column (4) in Table 6 (see below).

(c) [1/6 pts] (c) What are some alternative explanations for why second term mayors may be more corrupt? Explain how the authors address these issues? Interpret the first row coefficients in columns (1) and (5) of Table 7 (see below) in the context of these alternative explanations.

[1] Ferraz, C. and Finan, F., 2011. Electoral accountability and corruption: Evidence from the audits of local governments. *American Economic Review*, 101(4), pp.1274-1311.

TABLE 6— THE EFFECT OF REELECTION INCENTIVES ON CORRUPTION, CONTROLLING FOR UNOBSERVED MUNICIPAL CHARACTERISTICS

Dependent variable	Share of audited resources involving corruption						
	Incumbents who run for reelection in 2000 (1)	Linear (2)	Quadratic (3)	Cubic (4)	Linear spline (5)	Quadratic spline (6)	Cubic spline (7)
Mayor in first term	−0.031	−0.039	−0.040	−0.038	−0.043	−0.047	−0.028
	[0.014]**	[0.019]**	[0.019]**	[0.022]*	[0.019]**	[0.024]*	[0.029]
Observations	328	328	328	328	328	328	328
R^2	0.27	0.27	0.27	0.27	0.27	0.28	0.28
Mayor characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipal characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Political and judicial institutions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lottery intercepts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State intercepts	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of reelection incentives on the share of resources involving corruption. The estimation samples in columns 1–7 include only municipalities where the incumbent ran for reelection. In columns 2–4, the functional form assumption for the running variable is specified at the top of each column. Mayor characteristics include the age, gender, education, and party affiliation of the mayor. Municipal characteristics: population expressed in logarithms, percentage of the population that has at least a secondary education, percentage of the population that lives in the urban sector, new municipality, log GDP per capita per in 2002, Gini coefficient. Political and judicial institutions include: effective number of political parties in the legislature, the number of legislators divided by the number of voters, the share of the legislature that is of the same party as the mayor, and whether the municipality is judiciary district, and the amount of resources sent to the municipality expressed in logarithms. Robust standard errors are displayed in brackets.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

TABLE 7—THE EFFECT OF REELECTION INCENTIVES ON CORRUPTION CONTROLLING FOR ABILITY AND EXPERIENCE

Dependent variable	Share of audited resources involving corruption					
	Second-term and first-term later reelected (1)	Second-term and first-term later reelected *predicted* (2)	Full sample (3)	Full sample (4)	Second-term and first-term that served as previous mayors (5)	Second-term and first-term that served as mayor or legislator in past (6)
Mayor in first-term	−0.04 [0.013]***	−0.034 [0.018]*	−0.027 [0.012]**	−0.030 [0.012]**	−0.038 [0.014]***	−0.027 [0.017]
Mayor with political experience			−0.007 [0.011]			
Number of years in political office				0.008 [0.007]		
Number of years in political office²				−0.002 [0.001]		
R^2	0.27	0.29	0.21	0.21	0.30	0.29
Observations	313	294	476	476	287	311
Mayor characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Municipal characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Political and judicial institutions	Yes	Yes	Yes	Yes	Yes	Yes
Lottery intercepts	Yes	Yes	Yes	Yes	Yes	Yes
State intercepts	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports the effects of reelection incentives on the share of resources involving corruption. Column 1 compares the corruption levels of second term mayors to those of the subset of first term mayors that were reelected in the subsequent mayor elections. Column 2 compares the corruption levels of second term mayors to those of the subset of first term mayors who were predicted to be reelected, based on a propensity score. Column 3–4 is estimated on the full sample. Column 5 includes only municipalities with a second-term mayor and first-term mayors who had a mayor in a previous term. Column 6 includes only municipalities with a second-term mayor and first-term mayors who had been either a mayor or legislator in a previous term. Mayor characteristics include the age, gender, education and party affiliation of the mayor. Municipal characteristics: population expressed in logarithms, percentage of the population that has at least a secondary education, percentage of the population that lives in the urban sector, new municipality, log GDP per capita per in 2002, Gini coefficient. Political and judicial institutions include: effective number of political parties in the legislature, the number of legislators divided by the number of voters, the share of the legislature that is of the same party as the mayor, and whether the municipality is judiciary district, and the amount of resources sent to the municipality expressed in logarithms. Robust standard errors are displayed in brackets.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.