

## Question 1: Political failure [30 points]

Three citizens live in country Home: Anne, Beverly and Christa. They each have income  $y$  (hence, the total income in Home is  $3y$ ). They derive benefit from consuming private goods  $c$  that they buy from their own income, and from consuming goods  $g$  that are provided by the government. The publicly provided good  $g$  is financed by a proportional income tax of rate  $\tau$ , and there is no deadweight loss of taxation. The three citizens use all of their after-tax income to buy private goods  $c$ . The publicly provided good  $g$  is also a private good, in the sense that it is both rival and excludable. All prices are normalized to 1.

Anne, Beverly and Christa differ with regards to how they value the publicly provided good  $g$ . Specifically, the utility function of citizen  $i$  is:

$$W^i(c, g) = c + H^i(g),$$

where

$$\begin{aligned} H^{Anne}(g) &= g^{2/3} \\ H^{Beverly}(g) &= \frac{3}{2}g^{2/3} \\ H^{Christa}(g) &= \frac{1}{3}g + g^{2/3}. \end{aligned}$$

- (a) What is the optimal level of  $g$ , if we adopt a *utilitarian* (additive) social welfare function? (Hint: Start by writing down the citizens' and the government budget constraint.) [12 points]
- (b) Assume that all three citizens have the right to vote. What is the equilibrium level of  $g$ , according to the median voter model? Is this equilibrium level of  $g$  smaller or larger than what is optimal under a utilitarian social welfare function? [12 points]
- (c) Assume now that, aside from using tax revenues to finance the publicly provided good  $g$ , the government can also use tax revenues for own rents  $r$ , from which the three citizens do not derive any utility. Explain in words what the equilibrium level of rents are, according to the median voter model. [6 points]

## Question 2: Political representation and gender bias [30 points]

The increasing share of female political representation may have consequences for policymaking as well as women's future electoral prospects and voter attitudes toward female leaders.

- (a) The paper by Chattopadhyay and Duflo (2004) builds on the premise that politicians' preferences do matter for policy and investigates the impact of female leadership on policy decisions. Discuss why it may be difficult to measure the causal effect of women's representation on policy decisions and how the authors solve this issue in their study by exploring the Indian context. [10 points]
- (b) Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009) explore whether exposure to female leaders changes the electorate's view of women's ability to lead. One initial result is that women are more likely to stand for, and win, elected positions in councils required to have female councilors in the previous two elections. The paper then uses survey data, asking the electorate to evaluate their leaders, and finds that repeated exposure improves voter evaluation of female councilors. However, these results may be due to changes in the selection, or behavior, of female leaders over time. Discuss first how selection and/or behavior of female politicians may affect the findings and what the authors do within the context of the voter evaluation data to deal with this. Then discuss how they use experimental data to measure the voter bias and how the experimental setup partially solves the problem of the survey data. [20 points]

### Question 3: Mass media [30 points]

Snyder and Strömberg (2010) estimate the impact of press coverage on citizen knowledge, politicians' actions, electoral outcomes and policy. In order to identify the causal effect of active media coverage of voters' House representative, they exploit variation in the match, or "congruence", between newspaper markets and U.S. congressional districts.

- (a) How do Snyder and Strömberg define congruence between newspaper markets and congressional districts? Explain the intuition for why variation in congruence is likely to capture variation in press coverage that is exogenous to citizen knowledge and political outcomes. [10 points]
- (b) Snyder and Strömberg present numerous results on the effects of press coverage on various political outcomes. What are their results on the effect of press coverage on the incumbency advantage? [7 points]
- (c) Assume that you would attempt to identify the incumbency advantage by estimating the following regression with OLS (this is not what Snyder and Strömberg do):

$$Vote_d^{Democrat} = \beta_0 + \beta_1 I_d^{Democrat} + \varepsilon_d,$$

where  $Vote_d^{Democrat}$  is the Democratic share of votes in district  $d$  and  $I_d^{Democrat}$  is a dummy variable for whether the incumbent in district  $d$  is a democrat.

Explain why  $\hat{\beta}_1^{OLS}$  would be a biased estimate of the incumbency advantage. Derive an expression for the OLS bias, and sign the bias. [13 points]

#### **Question 4: Social interactions as drivers of political beliefs [10 points]**

**NOTE: Students that successfully completed the paper report and got the full score (10 points) should skip this question completely. Students that obtained 5 points should skip part (b).**

An important question for policymakers is whether tastes for public social policies are driven by the electorate or if they can be considered an outcome of the political system itself. Alesina and Fuchs-Schündeln (2007) examine precisely this issue: namely, are individual policy preferences exogenous or are they endogenous to political regimes?

- (a) Highlight the main argument, the methodology and data used to explore the question, and four reasons that may explain tastes for public services. [5 points]
- (b) In particular, what is the empirical challenge and how does the empirical strategy in the paper address the potential problems? [5 points]