

Political Economics

Problem Set 3

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Note

The solution to this problem set should be uploaded to Studentportalen no later than **December 5** at 24:00. Write your individual answers on computer and put your name at the top of the document. This problem set is about rents for politicians, agency models and Institutions. Please carefully motivate your answers. For any questions concerning the exercises, send me an e-mail at davide.cipullo@nek.uu.se. My office is **E434** at the Department of Economics. Good luck!

1. **Rents for politicians.** Consider voters who have the following quasi-linear utility function: $U_i = c_i + G^{\frac{1}{2}}$, where c_i is private consumption and G is a public good. There are two politicians, Jack and Susan (henceforth J and S), who run for office. They have linear expected utility function: $U_p = P[R + r_p]$, $p \in \{J, S\}$ where P is the probability of winning the election. $R > 0$ is an exogenous ego-rent from being in office, while $r \geq 0$ represents endogenous rent that an elected politician can extract from the public budget. Voters' budget constraint is $c_i = (1-t)w_i$, where w_i is private income. Politicians do not know individual wages, but they know that wages are distributed with expected value $E(w_i) = \bar{w}$. The government budget constraint is $t\bar{w} = G + r$.

Candidates announce policy platforms in terms of t and G , before the elections. The winner is committed to implement the preferred policy.

- (a) What level of rents r will candidates announce prior to the election to maximize expected utility?
- (b) Derive the sign of $\frac{\partial U(\cdot)}{\partial r}$ for consumers and explain the economic intuition.
- (c) Derive consumers' preferred tax rate as a function of w_i and \bar{w} .
- (d) Discuss why demand for taxation depends on the wage relative to the average.
- (e) Suppose instead that politicians may not commit. Do their proposals prior to the election change? Does the policy implemented by the winner changes? No maths is required but carefully explain the economic intuition.
- (f) Discuss briefly the link between commitment and rent extraction.

2. **Agency Models.** Consider an agency problem with two time periods with one election in between. Voters are homogeneous, with utility function $U_{i,t} = \ln(G_t)$, where G_t is public good spending at time t . There are two types of politician: one good politician (henceforth 1) with utility function $U_{1,t} = \ln(G_t)$, and one rent-seeking politician (henceforth 2) with utility function $U_{2,t} = G_t^\alpha r_t^{1-\alpha}$, where r_t represents an endogenous ego-rent that the politician may extract when in office. The government budget constraint is $\tau = G_t + \delta_t r_t$, where δ_t is a random variable (whose expected value is $E(\delta)$) representing the cost associated with rent

extraction in time period t , and τ is exogenous tax revenues of the government. Timing is the following: Nature picks an incumbent politician from a pool of politicians. He or she is good (ρ_1) with probability μ and rent-seeker (ρ_2) with probability $1 - \mu$, where $0 < \mu < 1$. The incumbent observes his or her own type and δ_t , that are hidden from the voters, that only know the expected value $E(\delta)$. Then, the incumbent politician implements a policy according to her type. Voters observe the implemented policy and update their beliefs about the incumbent's type.

The election takes place and voters make decision according to their updated belief. After the election, δ_t for time period 2 is realized, and the winner implements a policy for the second period. Throughout the exercise, assume that politicians are risk-neutral.

- (a) Which policy will each type of politician implement in the last time period?
- (b) Assume that in the first time period the rent-seeking politician is in office, and that voters will re-elect a politician if she implements their preferred policy. Derive the value of δ_2 that makes the rent-seeking politician indifferent between extracting rents in the first period and pooling with the good politician.
- (c) During the elections, the incumbent faces an opponent drawn at random by Nature. Discuss in words under which condition voters would support the incumbent against the random challenger.
- (d) In point (b), we assumed that voters will re-elect a politician if she implements their preferred policy. Let $\theta \in [0, 1]$ the probability that the bad politician will pool with the good one in the first round. Use Bayes' rule to derive whether to support the incumbent that implemented $G_1 = \tau$ is consistent with voters' belief at the time of the elections.
- (e) Use Bayes' rule to show that to re-elect the incumbent who did not implement $G_1 = \tau$ is never consistent with voters' belief.
- (f) Assume instead that the good politician is drawn by Nature. Will she have the chance to reveal with certainty her type to voters? Discuss (no maths is required).
- (g) Consider an alternative version of the model. Now the government budget constraint is $\tau = \delta_t(G_t + r_t)$, where δ_t now is a random variable that represents a loss of resources that the incumbent politician has to face to finance her policies. All other assumptions are as in the text. Discuss why under this budget constraint the rent-seeking politician might potentially extract rents during both periods.
- (h) Consider now a three-periods model, with two elections in the middle. Apart for that, consider the same assumptions stated in the main text of the problem. Assume also that in the first time period the rent-seeking politician is in office, and that voters will re-elect a politician if she implements their preferred policy. Derive the value of δ_t that makes the rent-seeking politician indifferent between extracting rents in the first period and pooling with the good politician. Can we conclude that in this case the rent-seeking politician is better-off compared to (a)?

3. Institutions. Answer the following questions in a short paragraph each.

- (a) Provide an economic intuition on why majoritarian and proportional voting rules lead to different economic policies.
- (b) Make one real-world example of inclusive institution and one of extractive institution in ancient history. Briefly compare economic performances back in time and nowadays between the two localities.