ECON4640 - Postponed exam - Fall 2020

1 Agency and term limits

Assume there is one voter and two politicians: Politician A and Politician B. In Period 1, the voter elects Politician A. Politician A can then choose whether to be honest or corrupt. If she is honest she will receive the official salary $w_1 \geq 0$. If she is corrupt she will receive $w_1 + b$, where $b > 0$ is a constant. In Period 2, the voter chooses whether to elect Politician A or Politician B. The elected politician can then choose to be honest and receive payoff $w_2 \geq 0$ or to be corrupt and receive payoff $w_2 + b$. The politicians discount Period 2 payoffs with δ.

1. What is the optimal strategy for the politician elected in Period 2?
   Answer: Being corrupt gives payoff $w_2 + b$ while being honest gives w_2. The optimal strategy is thus to be corrupt.

2. Assume that the voter elects Politician A in Period 2 if and only if she has been honest in Period 1. Under which condition does A have incentives to be honest in Period 1?
   Answer: Being honest gives $w_1 + \delta(w_2 + b)$. Being corrupt gives $w_1 + b$. She has incentives to be honest when $w_1 + \delta(w_2 + b) \geq w_1 + b \Leftrightarrow \delta w_2 \geq (1 - \delta)b$

3. Assume the voter can choose the official salaries w_1 and w_2 before Period 1. Which choice of w_1 and w_2 can ensure that Politician A is honest in the Period 1 at the lowest cost $w_1 + w_2$? Explain the intuition behind the result.
   Answer: w_1 does not help making sure that $\delta w_2 \geq (1 - \delta)b$. Thus, it is optimal to set $w_1 = 0$ and $w_2 = \frac{1-\delta}{\delta}b$. Only Period 2 wages give the politician incentives to get reelected. Only paying the politician if she has been honest gives most incentives per dollar.

4. Consider Figure 2 from Ferraz and Finan (2011)[1] below. What does this figure tell us? Does it prove that re-election incentives reduce corruption? Explain.
   Answer: It shows that municipalities in which the incumbent won by a small margin, there is more corruption in the next four years. If the continuity assumption holds (and we have good reasons to believe that), this represent the causal effect of the incumbent winning on subsequent corruption. This is related to term limits since a reelected incumbent cannot run for a third term. It does not prove that re-election incentives cause less corruption. There are other differences between a re-elected incumbent and an elected non-incumbent. Most importantly an incumbent has more experience, and could engage more in corruption due to having better connections or knowing better how to extract corrupt rents.

[1] Ferraz, C., & Finan, F., Electoral Accountability and Corruption: Evidence from the Audits in Local Governments, *American Economic Review*, 101(4), 1274–1311 (2011).

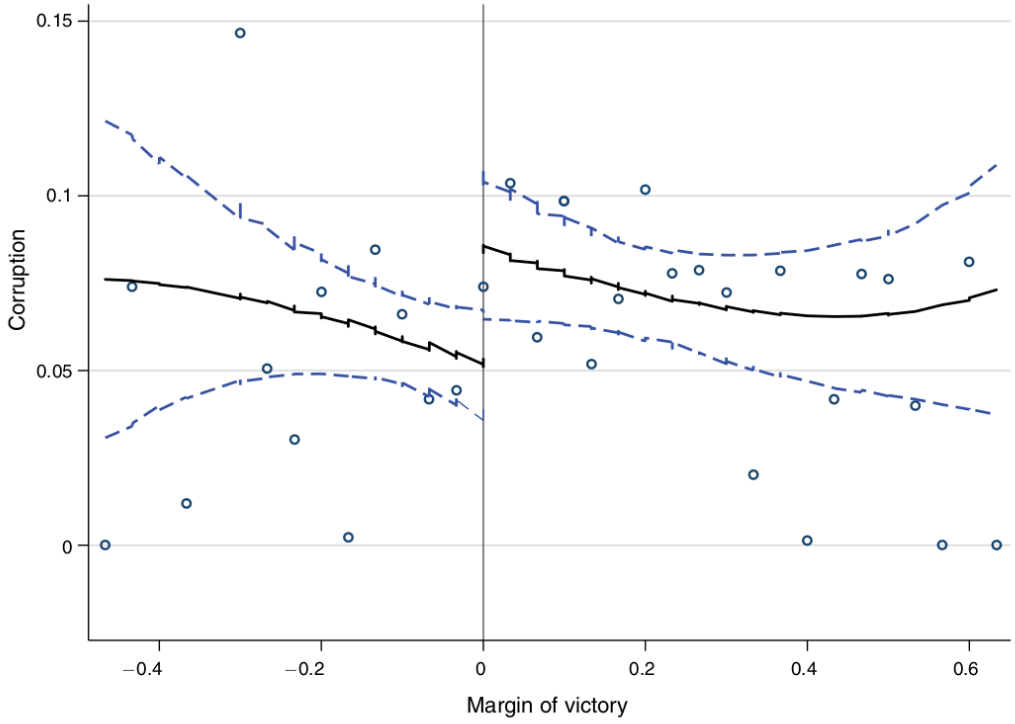

FIGURE 2. THE EFFECTS OF REELECTION INCENTIVES ON CORRUPTION

Notes: Figure shows the share of audited resources involving corruption by the margin of victory for incumbents who ran for reelection in 2000. Each figure presents mean corruption for a bin size of 30 percentage points (hollow circles) along with the fitted values from a third degree polynomial fit on each side of the discontinuity. The dashed lines denote 90 percent confidence intervals. These estimates were computed for a sample size of 328 municipalities.

2 Gender quotas

Critically discuss the following argument regarding gender quotas in politics:

> Politics is dominated by men worldwide. This is seen as a problem by many observers, and has lead to calls for gender quotas in politics. Perhaps the main reason that male domination of politics is seen as a problem is that it is believed to lead to policies favoring men at the expense of women. This is a misconception. Even though politicians are predominantly male, 50% of voters are female. Politicians that do not cater to the preferences of women will simply not be elected. On the other hand, male politicians who propose policies that favor women would have a large probability of being elected. Thus, male politicians do not lead to policies favoring males. Advocates of gender quotas typically cite Chattopadhyay and Duflo (2004)[2] as evidence that gender quotas in politics lead to policies more in favor of females. This study has, however, several flaws. First, Chattopadhyay and Duflo (2004) claim that Village Council head positions are "randomly" reserved to women, when in fact whether the position was reserved only depended on the "serial legislative number" of the Village Council, which is not random. Second, the study is based on only about 250 Village Councils, making it impossible to draw conclusions with any statistical precision.

Answer: Some points to discuss

[2]Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica*, 72(5), 1409-1443.

1. In the Downsian model the identity and preferences of the candidates do not matter. The theoretical argument is correct inside the Downsian model. In other models, however, like the citizen candidate model, the probabilistic voting model, and the agency models, the preferences of the politicians do matter. Thus, theoretically it might be the case that male politicians lead to policies favoring males.

2. It is true that reserving positions to females was not random. One could convincingly argue, however, that it was "as good as random". Ranking village councils according to the "serial legislative number" the first, fourth, seventh, tenth etc were reserved. It seems unlikely that being on the ninth vs tenth place should be correlated with covariates that matter for policies in a systematic way. These numbers where also allocated to village councils before the reform was announced, making it very difficult to manipulate which village councils are reserved. Finally, the show in a randomization test that being reserved is not correlated with any pre-determined characteristics.

3. 250 villages is enough to detect statistically significant effects in this study. In Table V, Columns 3 and 6, there are several policies in which there is a statistically significant difference between reserved and unreserved village councils.

3 Municipal taxes in Norway

In a paper in 2004, Lars-Erik Borge and Jørn Rattsø[3] studied the determinants taxes in Norwegian municipalities. For this exam, you do not need to read the paper.

Borge and Rattsø use a panel of Norwegian municipalities. Their measure of taxation is property taxes, where typically the rich pay more than the poor, and what they call poll taxes. Poll taxes are taxes that do not vary with income.[4] Some of their results are shown below. Specifically, they use the poll tax for a standard house ("Poll tax"), the property tax for a standard house ("Pr. tax"), and the property tax as a share of the two taxes ("Pr. tax sh.").

In addition to the tax variables, their main variable of interest is the median to mean income ration y_m/y. In addition, they control for exogeneous municipal revenue (l), mean income ($\bar{y}$), share of the inhabitants living in rural areas ($RURAL$), population size (POP), fraction children below 7 (CH), young, i.e. 7-15 (YO), and elderly, i.e. above 80 (EL), in- and out-commuting (CO_IN and CO_OUT), and the share of socialist representatives in the municipal council (SOC).

1. Explain theoretically why we could expect the median/mean income ratio to have an effect on politically determined tax rates. You can focus on property taxes.
   Answer: This is a straightforward version of the Meltzer-Richard model. A good answer should lay out the backbones of the model, say something about necessary assumptions for the median voter to be decisive, and explain the comparative statics related to a men preserving spread.

2. Consider first the findings on property taxes. Explain what we can read from the Table below. You can focus on Model A. To what extent does this support the theory you explained above?

[3] Borge, L.-E., & J. Rattsø (2004). Income distribution and tax structure: Empirical test of the Meltzer-Richard hypothesis, *European Economic Reveiw* 48(4), 805-826.

[4] In practice housing related utility charges, such as charges for water supply, discharge of sewage, garbage collection and chimney sweep.

NB: For some of their estmations, Borge and Rattsø use a Tobit model. You can interpret these coefficients as if they were from an ordinary OLS model.
Answer: There is a consistent negative coeffficient on the median/mean ratio, which is a measure of equality. Hence increased *in*equality seems to be associated with higher property taxes. NB: Causality is tricky, but is covered more below.

3. Would the theoretical results be different for property and poll taxes? Is this reflected in the empirical findings?
Answer: Property taxation has the usual Meltzer-Richard properties as long as the amount of property is positively related to income, whereas the effect on poll taxes typically have the opposite sign as a reduction in poll taxes is a sort of redistribution. The sign flips for poll taxes, in line with theoretical predictions.

4. Discuss to what extent the results in the table can be given a causal interpretation, i.e. that there is a causal effect of the median/mean income ratio on municipal taxes.
Answer: Although the study controls for some variables, there are plenty of possible omitted variables. And they do not include municipality fixed effects, which could reduce the problem. Reverse causality possible (e.g. something related to dead-weight losses), but not so likely. Also possible spatial and temporal correlation in error terms, but not really a threat to identification.

5. What could be done to improve this study?
Answer: Something to improve causality. Some points for mentioning general strategies, but should be more specific for a good score. Admittedly, there are not plenty of relevant instruments and RDs

Table 1
Estimation results

	Model A			Model B			Model C			Model D		
	Poll tax	Pr. tax	Pr. tax sh.	Poll tax	Pr. tax	Pr. tax sh.	Poll tax	Pr. tax	Pr. tax sh.	Poll tax	Pr. tax	Pr. tax sh.
y_m/y	5355	−8556	−1.189	6117	−5889	−0.834	5199	−7103	−0.967			
	(3.91)	(−3.31)	(−3.39)	(4.54)	(−2.32)	(−2.43)	(3.73)	(−2.68)	(−2.67)			
$(y_{0.75} - y_{0.25})/y$										−3812	2436 (1.27)	0.362 (1.39)
										(−3.59)	(1.27)	(1.39)
l	−0.045	−0.157	−0.000022	−0.039	−0.154	−0.000022	−0.063	−0.128	−0.000018	−0.041	−0.162	−0.000023
	(−4.46)	(−5.67)	(−5.88)	(−3.94)	(−5.54)	(−5.75)	(−6.34)	(−4.77)	(−4.87)	(−4.12)	(−5.78)	(−5.99)
$\bar{y}$	0.011	−0.047	−0.0000052	0.029	−0.064	−0.0000075	0.025	−0.079	−0.0000010	−0.009	−0.032	−0.0000030
	(1.00)	(−2.40)	(−1.94)	(4.03)	(−3.9)	(−2.83)	(2.53)	(−4.22)	(−3.94)	(−0.80)	(−1.40)	(−0.96)
RURAL	−248	−3570	−0.479	−247	−3879	−0.521	342	−4829	−0.661	−290	−0.363	−0.487
	(−0.99)	(−6.35)	(−6.28)	(−1.02)	(−6.88)	(−6.81)	(1.41)	(−8.27)	(−8.24)	(−1.16)	(−6.32)	(−6.24)
POP	0.0055	0.0049	0.00000034	0.0048	0.0036	0.00000017	0.0016	0.0100	0.00000109	0.0041	0.0069	0.00000061
	(1.74)	(1.34)	(0.68)	(1.52)	(0.96)	(0.33)	(0.50)	(2.65)	(2.10)	(1.32)	(1.88)	(1.23)
CH	−20588	−13508	−1.247	−24149	−20473	−2.196	−24460	−1613	0.402	−20389	−17055	−1.736
	(−4.06)	(−1.25)	(−0.85)	(−4.85)	(−1.90)	(−1.50)	(−4.74)	(−0.15)	(0.27)	(−4.79)	(−1.57)	(−1.18)
YO	−23441	−2831	−0.407	−24243	−21750	−2.911	−15839	−21525	−2.954	−22138	−179	−0.069
	(−5.15)	(−0.26)	(−0.28)	(−5.91)	(−2.18)	(−2.16)	(−3.49)	(−2.04)	(−2.04)	(4.79)	(−0.02)	(−0.05)
EL	−7999	−21786	−2.580	−9076	−3709	−4.506	−18215	700	0.668	−10059	−16395	−1.856
	(−1.65)	(−1.96)	(−1.71)	(−1.93)	(−5.68)	(−3.02)	(−3.87)	(0.07)	(0.46)	(−2.07)	(−1.50)	(−1.25)
CO_OUT	2579	−3971	−0.556	2636	−3709	−0.520				2403	−3796	−0.530
	(7.33)	(−6.07)	(−6.24)	(7.50)	(−5.68)	(−5.86)				(6.76)	(−5.85)	(−6.00)
CO_IN	−1375	1405	0.152	−1882	781	0.070				−1525	1680	0.190
	(−2.42)	(1.41)	(1.12)	(−3.40)	(0.79)	(0.52)				(−2.69)	(1.69)	(1.41)
SOC	848	3413	0.454				1151	3164	0.426	936	2941	0.390
	(2.19)	(4.41)	(4.32)				(2.92)	(3.94)	(3.87)	(2.43)	(3.89)	(3.80)
# obs.	1176	1176	1176	1176	1176	1176	1176	1176	1176	1176	1176	1176
Estimation	OLS	TOBIT	TOBIT	OLS	TOBIT	TOBIT	OLS	TOBIT	TOBIT	OLS	TOBIT	TOBIT
R^2_{adj}	0.219			0.211			0.184			0.217		
Log likelihood		−1690	−160		−1701	−170		−1713	−185		−1695	−165

OLS and TOBIT estimates with t-values in parentheses.