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?

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?

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.

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.

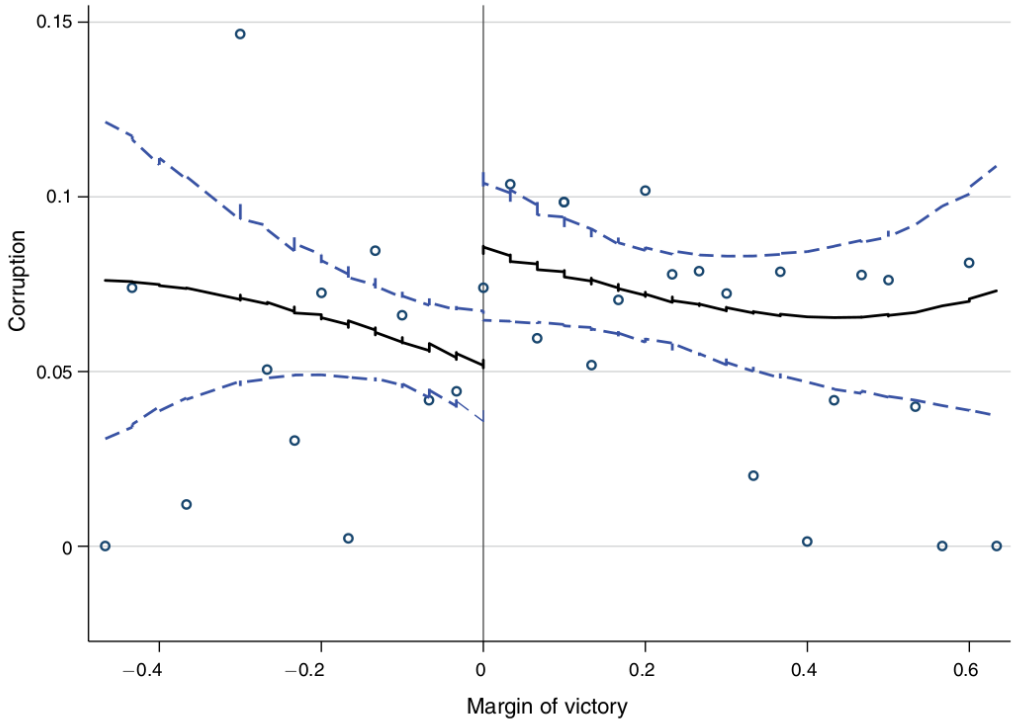

FIGURE 2. THE EFFECTS OF REELECTION INCENTIVES ON CORRUPTION

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.

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

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.

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.

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?
   NB: For some of their estmations, Borge and Rattsø use a Tobit model. You can interpret

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

[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.

these coefficients as if they were from an ordinary OLS model.

3. Would the theoretical results be different for property and poll taxes? Is this reflected in the empirical findings?

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.

5. What could be done to improve this study?

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.