

Protecting Property through Political Office in China

Appendix

Appendix A

Table A1: Comparing PC Entrepreneurs and Others

	PC Entrepreneurs	Non-PC Entrepreneurs	<i>p</i> -value
Firm Level			
Extraction	4.111% (0.162) (0.043)	5.519% (0.105) (0.022)	0.000
Ex-SOE Firm	0.337 (0.010)	0.189 (0.004)	0.000
Firm age	8.835 (0.010)	7.473 (0.049)	0.000
Individual Level			
Ex-government official	0.216 (0.009)	0.181 (0.004)	0.000
CCP membership	0.542 (0.010)	0.296 (0.005)	0.000
Age	47.474 (0.156)	44.624 (0.088)	0.000
Education	3.554 (0.018)	3.443 (0.009)	0.000
Gender: Whether an entrepreneur is a male	0.904 (0.006)	0.855 (0.004)	0.000
Obs.	2,325	9,692	

Note. Summary statistics from ACFIC survey 2000-2012. Standard deviation in parentheses. For descriptive statistics of all variables, see Appendix Table A3. Right-hand column reports *p*-values for two-sided *t*-test.

Table A2: Provincial Congress: Percent of Entrepreneurs from the Private and State Sectors

Province	Private Sector	State Sector	Total
Hunan	29%	9%	38%
Guangdong	24%	7%	31%
Shandong	24%	11%	35%
Jilin	20%	14%	34%
Liaoning	20%	12%	32%
Hebei	26%	8%	34%
Fujian	20%	7%	27%
Henan	19%	10%	29%
Zhejiang	18%	2%	20%
Hubei	18%	12%	30%
Heilongjiang	17%	11%	28%
Anhui	16%	10%	26%
ShannXi	16%	6%	22%
Sichuan	15%	3%	18%
Inner Mongolia	15%	2%	17%
Chongqing	15%	8%	23%
Jiangsu	14%	9%	23%
Tianjin	13%	15%	28%
Gansu	11%	1%	12%
Guangxi	11%	2%	13%
Shanxi	11%	9%	20%
Beijing	10%	21%	31%
Jiangxi	10%	5%	15%
Hainan	9%	4%	13%
Qinghai	8%	2%	10%
Shanghai	8%	26%	34%
Guizhou	7%	4%	11%
Xinjiang	7%	4%	11%
Ningxia	7%	2%	9%
Yunnan	6%	0%	6%
Tibet	2%	1%	3%

Note. Data collected in December 2016, reflecting deputy composition of the 12th provincial congress of each province. All provincial congresses held elections in spring 2017. The lists of provincial congress deputies come from the official websites of local congresses (if available) or from internet searches. Ownership information comes from <http://www.tianyancha.com/> (Accessed Dec. 2016). In some cases, the occupation or the ownership status of the company of the entrepreneur-legislator was unclear and was estimated based on our educated guesses.

Table A3: Summary Statistics: ACFIC Survey

Variable	Obs.	Mean	Std. Dev.	Min	Max
Firm level					
PC membership	12017	0.193	0.395	0	1
Extraction	12017	0.0525	0.099	0	1
Ex-SOE firm	12017	0.218	0.413	0	1
Firm age	11554	7.736	4.776	0	28
Individual level					
Ex-government official	12017	0.188	0.391	0	1
CCP membership	12017	0.343	0.475	0	1
Age	11951	45.18	8.49	16	84
Gender	11993	0.865	0.342	0	1
Education Level					
1	183			0	1
2	1407			0	1
3	3877			0	1
4	5578			0	1
5	866			0	1

Note. ACFIC Surveys 2000, 2002, 2004, 2006, 2008, 2010 and 2012. The unit for total expenditure, extraction expenditure, and public relation expenditure is 10,000 yuan (1 U.S. Dollar = 8.11 Chinese yuan, average exchange rate in 2000-2012). Extraction is calculated as forced unofficial payment to governments as a percentage of a firm's total expenditure. Education is a categorical variable: 1 denotes primary school education, 2 denotes middle school education, 3 denotes high school or vocational education, 4 denotes college education, and 5 denotes above. This sample only includes entrepreneurs who responded to the *tanpai* question. Whether one is a PC deputy does not predict the *tanpai* missingness.

Table A4: Main Results: PC membership on Extraction

	OLS (no weights)	OLS (entropy bal weights)	Matches=1	Matches=2	Matches=4
PC membership	-0.641 (0.202)	-0.763 (0.195)	-1.243 (0.287)	-1.183 (0.269)	-1.157 (0.259)
Obs.	10921	10921	11012	11012	11012

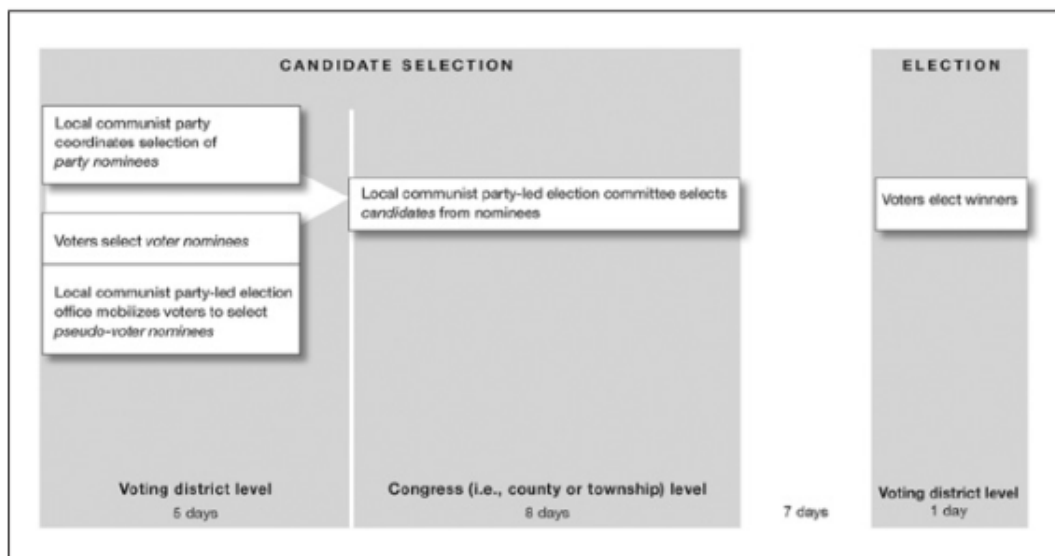
Note. The table only presents the coefficient and standard error of the treatment (of being a PC member) effect under each specification. Robust standard errors are in the parentheses. The dependent variable level of extraction is defined as extraction value as a percentage of the firm's total expenditures in a given year. All firm- and individual-level variables are either matched or included as covariates in the models. Year, province, and industry fixed effects are also included.

Table A5: Entropy Balancing: Covariates Balance

	Treatment		Control (before)		Control (after)	
	Mean	Variance	Mean	Variance	Mean	Variance
Firm age	8.83	22.07	7.469	22.62	8.829	22.07
Ex-SOE firm	0.3373	0.2236	0.2084	0.165	0.3373	0.2235
Ex-government official	0.22	0.172	0.185	0.151	0.22	0.172
Individual age	47.30	55.70	44.55	73.06	47.30	55.70
CCP membership	0.547	0.248	0.295	0.208	0.547	0.248
Education	3.564	0.714	3.454	0.715	3.564	0.714
Gender	0.905	0.0866	0.856	0.124	0.905	0.086

Note. Results of entropy balancing across the treatment group (entrepreneurs with a PC status, N=2,209) and the control group (other entrepreneurs, N=9,176).

Figure A1: Candidate Selection and Election in Township and County Congresses in Manion (2016)



Note. Figure from Manion (2016), 53.

Table A6: OLS and Fixed Effects Models with and without Entropy Balancing Weights

	OLS	FE	OLS with ebal weights	FE with ebal weights
PC membership	-0.977 (0.203)	-0.641 (0.202)	-0.938 (0.201)	-0.761 (0.195)
Ex-SOE firm	-0.824 (0.185)	0.228 (0.200)	-0.700 (0.204)	-0.265 (0.212)
Firm age	0.036 (0.021)	0.029 (0.022)	0.036 (0.024)	0.040 (0.024)
Ex-government official	0.689 (0.233)	0.298 (0.268)	0.529 (0.246)	0.186 (0.284)
CCP membership	-0.463 (0.193)	-0.244 (0.200)	-0.233 (0.210)	0.012 (0.216)
Age	-0.086 (0.012)	-0.072 (0.013)	-0.104 (0.013)	-0.089 (0.013)
Gender	-1.110 (0.313)	-0.954 (0.324)	-1.378 (0.430)	-1.311 (0.456)
Education FE		✓		✓
Province FE		✓		✓
Year FE		✓		✓
Constant	✓	✓	✓	✓
Observations	11385	10921	11385	10921
R-squared	0.0142	0.0575	0.0185	0.0670

Note. The table presents the full sets of coefficients and robust standard errors from four specifications: OLS, Fixed Effects, OLS and Fixed Effects with ebal weights. Again the dependent variable extraction is defined as extraction value as a percentage of the firm's total expenditures in a given year.

Robustness

Alternative Dependent Variable: Profit

Entrepreneurs report their annual profit in the surveys. A company that has a PC member might have been making more profit in the first place, but if an entrepreneur with a PC status makes more profit after adjusting for observed differences, we might be more certain that the variable “expropriation” is in fact capturing forced payments instead of voluntary bribes and legitimate taxes and fees. Although the mechanism leading to greater profitability cannot be conclusively established, this result is consistent with the claim that lowering payments to government officials improves profitability.

Table A7: Dependent Variable: Profit

	OLS (no weights)	OLS (entropy bal weights)	OLS (no weights)	OLS (entropy bal weights)
PC membership	29.122 (7.500)	30.481 (8.420)	-0.586 (1.732)	0.908 (0.950)
Obs.	9015	9015	9200	9200

Note. The dependent variables are profit normalized. In the first two specifications (columns), profit is constructed as the absolute value of profit divided by the logarithm of sales volume. In the third and fourth specifications, profit is constructed as the absolute value of profit divided by total expenditure. The table only presents the coefficients and standard errors of PC membership under each specification. Robust standard errors are in the parentheses. All firm- and individual-level variables are included as covariates in the models. Province and industry fixed effects are included.

Missingness

The following variables suffer from a small degree of missingness: Firm age, Firm’s main industry; Entrepreneur’s age, gender, education.

Table A8: Summary: Missing Values

	Obsevatons Missing	% Missing
Firm age	463	3.85
Main industry	501	4.17
Entrepreneur age	66	0.55
Gender	24	0.20
Education	106	0.88

Note. Total N=12,017. No other variables do not suffer from missingness.

There are several ways to deal with missingness besides listwise deletion, which results in loss of valuable information and selection bias. One could substitute the mean values into the missingness. A more commonly used method is multiple imputation (King et al. 2001). Under the assumption of missingness at random (MAR), the method of multiple imputation imputes m values for each missing item and creates m complete data sets. Assumptions also need to be made on the distribution of the variables, and jointly multivariate normal model usually works well in a wide variety of cases (King et al. 2001).

Using both methods of mean substitutions and multiple imputation, results are consistent with the main findings.

Table A9: Robustness Check: Results from Multiple Imputation: Full Dataset

	OLS (no weights)	OLS (entropy bal weights)	Matches=1	Matches=2	Matches=4
PC membership	-0.604 (0.193)	-0.711 (0.186)	-1.167 (0.278)	-1.150 (0.257)	-1.103 (0.246)
Obs.	12017	12017	12017	12017	12017

Note. Five multiply imputed datasets generated using Amelia II package. Table shows results using the same specifications as those in the main results section. Standard errors are adjusted following King et al. (2001).

Only Looking at Year 2012

One commentator suggests I conduct a robustness check only looking at years where my fieldwork overlaps with the survey years. The following exercise reflects such an analysis. In year 2012, having a PC membership protects an entrepreneur from government expropriation. The effect size is similar to those estimated in the main specifications.

Table A10: Main Results: PC Membership on Extraction. Year 2012

	OLS (no weights)	OLS (entropy bal weights)	Matches=1	Matches=2	Matches=4
PC membership	-0.964 (0.570)	-1.174 (0.521)	-1.373 (0.863)	-1.398 (0.503)	-1.752 (0.713)
Obs.	2718	2718	2760	2760	2760

Note. The table only presents the coefficient and standard errors of the treatment effect under each specification. Robust standard errors are in the parentheses. The dependent variable extraction is defined as extraction value as a percentage of the firm's total expenditures in a given year. All firm- and individual-level variables are either matched or included as covariates in the models. Province and industry fixed effects are also included.

Quantile Regressions

We can also identify the effect of PC memberships on the level of expropriation at different quantiles, using quantile regression analysis. Quantile regression helps identify the effect on the distribution, not on specific individual units. Table A11 presents the results from quantile regression at the quantiles 0.4, 0.5, 0.6, 0.7, 0.8 and 0.9.

Table A11: Quantile Regression Estimates of PC Membership on Expropriation

Quantile	Coefficient of PC Membership	Standard Error	Percent reduction in expropriation
0.4	0.000	(0.000)	0%
0.5	0.003	(0.028)	0%
0.6	-0.158	(0.102)	3.01%
0.7	-0.581	(0.209)	11.07%
0.8	-1.091	(0.286)	20.78%
0.9	-1.600	(0.867)	30.48%

Note. All quantile regressions contain the same controls included in the main OLS regression. Standard errors are bootstrapped, replications=100. I do not report results below the 40th percentile, because the level of expropriation equals 0. I calculate “percent reduction in expropriation” by dividing the estimated coefficients of PC membership by 5.25%, the average firm percentage point expenditure on involuntary payment.

Original Wording of the Survey Questions

Original Survey Wording

(In Chinese. Translated into English by author)

A. Tax: How much tax did your company pay last year?

企业全年纳税为()万元

B. Fee: How much fee did your company pay last year?

缴纳各种规费为()万元

C. Extraction: How much forced payment did the local government extract from your company?

应付各种摊派有()万元

D. Public Relation Spending: How much did your company spend on PR?

公关, 招待有()万元

Total Expenditure = A+B+C+D

Expropriation (%) = C/Total Expenditure

Treatment Variable: Are you a People' s Congress deputy?

您现在是不是人大代表?

Appendix B Summary of Personal Interviews

	Interview Number	Location	Industry/Bureau/Profession	Date
1	G1210	Beijing	Banking and Finance	June 2012
2	O1210	Beijing	Economics Professor	June 2012
3	O122	Beijing	Banking and Finance	June 2012
4	O123	Beijing	Economist	June 2012
5	O1214	Beijing	Economist	June 2012
6	O125	Beijing	Political Science Professor	June 2012
7	O126	Beijing	Business Researcher	June 2012
8	O121	Beijing	Political Science Scholar	June 2012
9	G121	Hunan1	Provincial People's Congress Office	June 2012
10	G1212	Hunan1	Provincial People's Congress Office	June 2012
11	G1213	Hunan1	Provincial People's Congress Office	June 2012
12	G122	Hunan1	County People's Congress Office	June 2012
13	G123	Hunan1	County People's Congress Office	June 2012
14	G124	Hunan1	Finance and Banking	June 2012
15	G126	Hunan2	County CPPCC Office	June 2012
16	G1262	Hunan2	Banking and Finance	June 2012
17	G127	Guangdong1	Banking and Finance	June 2012
18	G128	Guangdong1	Banking and Finance	June 2012
19	G129	Guangdong1	District CPPCC Office	June 2012
20	P122	Guangdong1	Manufacturing	June 2012

21	P123	Guangdong1	Manufacturing	June 2012
22	P1218	Hunan1	Dairy Production	July 2012
23	P1219	Hunan1	Architecture	July 2012
24	P1220	Hunan1	Online Commerce	July 2012
25	P12202	Hunan1	IT	July 2012
26	P124	Hunan1	Interior Design	July 2012
27	M121	Guangdong1	CPPCC Off-season Meeting	July 2012
28	O1211	Guangdong1	CPPCC Deputy	July 2012
29	O124	Hangzhou	Public Policy Professor	July 2012
30	G1211	Wenzhou	Business Association	July 2012
31	G12112	Wenzhou	Business Association	July 2012
32	G12113	Wenzhou	Business Association	July 2012
33	P125	Zhejiang1	Garment Manufacturing	July 2012
34	O1212	Zhejiang1	Political Commentator	July 2012
35	P1221	Zhejiang1	Electronics	July 2012
36	P1222	Zhejiang1	Trading	July 2012
37	P126	Guizhou1	Pharmaceutical	July 2012
38	P128	Guizhou1	Entertainment	July 2012
39	O1210	Guizhou1	Banking and Finance	July 2012
40	P1215	Guizhou1	IT	July 2012
41	P127	Guizhou1	Bookstore Owner	July 2012
42	P129	Guizhou1	Real Estate	July 2012
43	P1210	Guizhou1	Automobile Retail	July 2012

44	P1211	Guizhou1	Real Estate	July 2012
45	G1212	Hunan1	Federation of Industry and Commerce	July 2012
46	G1213	Hunan1	Federation of Industry and Commerce	July 2012
47	P1217	Hunan1	Manufacturing	July 2012
48	G1214	Hunan1	Taxation	August 2012
49	G1215	Hunan1	Taxation	August 2012
50	G12152	Hunan1	Taxation	August 2012
51	P1212	Hunan1	Food	August 2012
52	P12122	Hunan1	Communication	August 2012
53	O1213	Hunan1	Law Scholar	August 2012
54	G1216	Hunan1	Finance and Banking	August 2012
55	O127	Hunan1	Finance and Banking	August 2012
56	G1218	Hunan1	Taxation	August 2012
57	G1219	Hunan1	Taxation	August 2012
58	G1220	Hunan1	Taxation	August 2012
59	P1213	Hunan1	Jewelry	August 2012
60	P1216	Hunan1	Real Estate and Construction	August 2012
61	P1214	Hunan1	Online Commerce	August 2012
62	G1217	Hunan1	Finance and Banking	August 2012
63	G132	Hunan1	Work Safety	January 2013
64	O131	Beijing	Political Science Professor	January 2013
65	G131	Hunan1	Taxation	January 2013
66	P132	Hunan1	Manufacturing	January 2013

67	P133	Hunan1	Online Travel Agency	January 2013
68	P134	Hunan1	Online Commerce	January 2013
69	P1342	Hunan1	Online Commerce	January 2013
70	G133	Hunan1	Taxation	January 2013
71	G134	Hunan2	Taxation	January 2013
72	P135	Hunan2	Manufacturing	January 2013
73	G137	Hunan2	Taxation	January 2013
74	P137	Hunan2	Firecracker	January 2013
75	P1372	Hunan2	Transportation	January 2013
76	P1373	Hunan2	Electronics	January 2013
77	P1374	Hunan2	Retail	January 2013
78	P1375	Hunan2	Pharmaceutical	January 2013
79	P1376	Hunan2	Retail	January 2013
80	P1377	Hunan2	Pharmaceutical	January 2013
81	P1378	Hunan2	Clothing Retail	January 2013
82	M131	Hunan2	Federation of Industry and Commerce	January 2013
83	P136	Hunan1	Manufacturing	January 2013
84	P1311	Zhengzhou	Real Estate	January 2013
85	P138	Hunan1	IT	January 2013
86	P139	Hunan1	IT Retail	January 2013
87	P131	Hunan1	Interior Design Company	January 2013
88	P131f	Hunan1	Yoga Studio Owner	January 2013
89	G135	Hunan1	Finance and Banking	February 2013

90	P1310	Hunan1	Real Estate	February 2013
91	G136	Guangdong1	District People's Congress Office	July 2013
92	O141	Shanghai	Political Science Professor	May 2014
93	P1312	Hunan1	Manufacturing	August 2013
94	P151	Hunan1	Manufacturing	January 2015
95	P152	Hunan1	Tourism	January 2015
96	O151	Hunan1	Private Bank Manager	January 2015
97	P153	Hunan1	Interior Design (repeat)	January 2015
98	O154	Hunan1	Interior Design	January 2015
99	G151	Hunan1	Provincial PC Standing Committee Official	January 2015
100	G152	Hunan3	County PC Standing Committee Official	January 2015
101	G153	Hunan4	County PC Standing Committee Official	January 2015
102	G153	Hunan4	County PC Standing Committee Official	January 2015
103	P154	Hunan1	International Trade	January 2015
104	P155	Guizhou2	Agriculture	January 2015
105	P156	Beijing	Online Commerce	January 2015
106	P157	Shanghai	Construction	January 2015

Note: P denotes Private Entrepreneur; G denotes Government Official; O denotes Other; and M denotes Meeting. Location shows the location of the interview, either the name of the city or name of the province. Within each province, names of the cities are anonymized as numbers.

Appendix C

I show a separating perfect Bayesian equilibrium (PBE) exists in this game where the connected entrepreneur runs and the unconnected not run. Note that I do not argue that this is not necessarily the only equilibrium.

All entrepreneurs make a revenue of r . The cost of running for office for the connected is c_c , and the cost for the unconnected is c_{uc} . If a bureaucrat extracts from an entrepreneur, the amount of expropriation is a fixed value of e . If the bureaucrat expropriates from a connected entrepreneur, the punishment is p_c ; if the expropriated entrepreneur is a legislator, the punishment is p_l , regardless of the type of the entrepreneur. There is no punishment if the bureaucrat expropriates from an unconnected entrepreneur who does not run for office.

In a separating PBE, each entrepreneur type chooses a different message, so that the message perfectly identifies his type. In this case, if there exists a separating PBE, it must be that the connected entrepreneur plays “run” (R) and the unconnected type plays “not run” (NR). In other words,

$$\sigma_e(t) = Run \text{ if } t = C$$

$$\sigma_e(t) = NotRun \text{ if } t = UC$$

Let $\mu(t_i|A)$ be the probability the Player Bureaucrat assigns to type i after observing action A .

If the bureaucrat sees that the entrepreneur plays R, he will assign probability 1 to type C. This is the only belief consistent with Bayes’ rule, because both the left-hand and the right-hand information sets are reached with positive probability along the equilibrium path.

To see this, recall Bayes’ rule:

$$\mu(C|R) = \frac{P(R|C)P(C)}{P(R)} = \frac{P(R|C)P(C)}{P(R|C)P(C)+P(R|UC)P(UC)}$$

We know from the structure of the game that,

$$P(R|C) = 1 \text{ and } P(R|UC) = 0$$

Plugging in to the above and we get:

$$\mu(C|R) = 1 \text{ and } \mu(UC|R) = 0$$

In the same way, we solve for

$$\mu(C|NR) = 0 \text{ and } \mu(UC|UR) = 1$$

Next, we discuss best responses for the bureaucrat. If the bureaucrat observes “R”, his expected utility from playing E and NE are:

$$\begin{aligned} EU_b(E, R) &= \mu(C|R) * U_b(E, R; C) + \mu(UC|R) * U_b(E, R; UC) \\ &= U_b(E, R; C) = e - p_c - p_l \end{aligned}$$

and

$$EU_b(NE, R) = \mu(C|R) * U_b(NE, R; C) + \mu(UC|R) * U_b(NE, R; UC)$$

$$= U_b(NE, R; C) = 0$$

Therefore, observing “Running,” the bureaucrat’s best response:

$$BR_b(R) = E, \text{ if } e - p_c - p_l > 0$$

$$BR_b(R) = NE, \text{ if } e - p_c - p_l < 0$$

We assume that $e - p_c - p_l < 0$, hence

$$BR_b(R) = NE$$

If the bureaucrat observes “NR”, his expected utility from playing E and NE are:

$$EU_b(E, NR) = \mu(C|NR) * U_b(E, NR; C) + \mu(UC|NR) * U_b(E, NR; UC)$$

$$= U_b(E, NR; UC) = e$$

and

$$EU_b(NE, NR) = \mu(C|NR) * U_b(NE, NR; C) + \mu(UC|NR) * U_b(NE, NR; UC)$$

$$= U_b(NE, NR; UC) = 0$$

Therefore, observing “Not Running,” the bureaucrat’s best response is:

$$BR_b(NR) = E, \text{ because we assume that } e > 0$$

Therefore, the bureaucrat’s best response is always to “expropriate” (E) when observing NR.

Because the bureaucrat’s beliefs are Bayesian by construction, and his strategy is a best response given those beliefs, an equilibrium exists if and only if neither type of the entrepreneur has an incentive to deviate.

First, let us look at the connected entrepreneur. The assigned strategy is to play R with the payoff

$$U_c(R, NE; C) = r - c_c$$

If he deviated and play UR instead, the bureaucrat’s beliefs would continue to be as above; that is, he would believe, upon seeing UR played, that the entrepreneur was of the UC type with probability 1, and would therefore play E. The entrepreneur’s payoff from deviating would therefore be

$$U_c(NR, E; C) = r - e$$

Therefore, the connected entrepreneur would not deviate iff $r - e < r - c_c$, that is, $c_c < e$.

Next, let us look at the unconnected entrepreneur. The assigned strategy is to play NR with the payoff

$$U_{uc}(NR, E; NC) = r - e$$

If he deviated and play R instead, the bureaucrat’s would believe that the entrepreneur was of the C type with probability 1, and would play NE . The entrepreneur’s payoff from deviating would be:

$$U_{uc}(R, NE; NC) = r - c_{uc}$$

The unconnected entrepreneur would not deviate iff $r - c_{uc} < r - e$, that is, $e < c_{uc}$.

Therefore, both types of entrepreneur would not deviate iff $c_c < e < c_{uc}$

In this separating equilibrium, the connected entrepreneur always runs for legislative offices and the low-level bureaucrat does not expropriate from the entrepreneur; the unconnected entrepreneur does not run for office, and the low-level bureaucrat expropriates from the entrepreneur.