

PEREG Lecture 06

Alternatives to Public Interest and Capture II:
Reputational Models, Avoidance Models



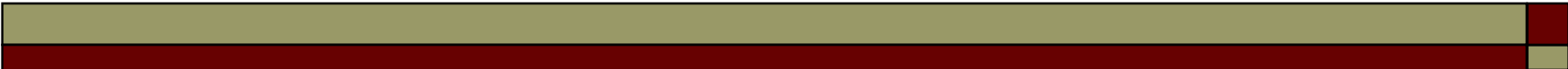
Gordon and Hafer

- Why do firms and special interests give money when votes are not really purchaseable?
- Hall and Wayman: buy time
- Gordon and Hafer: buy avoidance of regulation.



Gordon and Hafer Model

- Two players, F and A (regulator)
- Nature chooses F's type (lies on continuum), chooses whether alarm is revealed.



$$u^A(m, k, \tau) = b - a(m)m\omega + r(\tau)m(1 - k)\omega$$

$$u^F(m, k, c, \tau) = -c - f(k)m(1 - k)\omega - \tau(k + m(1 - k))\omega$$

Agency's Expected Utility dependent on distribution of types

$$E[u^A(m, k, \tau) | P(\tau)] = b - a(m)m\omega + m\omega \int_{\tau_\ell}^{\tau_h} p(t | c)r(t)(1 - k^*(t)) dt.$$

Gordon and Hafer: Predictions

Proposition 1. *In the unique separating sequential equilibrium behavioral profile:*

- (1) *the level of the agency's monitoring of the firm, and hence the proportion of committed violations that are detected, is decreasing in the size of the contribution, ceteris paribus;*
- (2) *the size of the contribution is increasing in the per unit costliness of compliance for the firm, ceteris paribus; and*
- (3) *the level of the firm's compliance is decreasing in the per unit costliness of compliance, ceteris paribus.*

Gordon and Hafer:

Predictions re Fire Alarms

***Proposition 2.** For sufficiently high costs of compliance:*

- (1) the firm contributes strictly less when the alarm sounds than when it does not;¹⁴*
- (2) the firm is strictly more compliant when the alarm sounds than when it does not; and*
- (3) the agency monitors the firm strictly more when the alarm sounds than when it does not.*

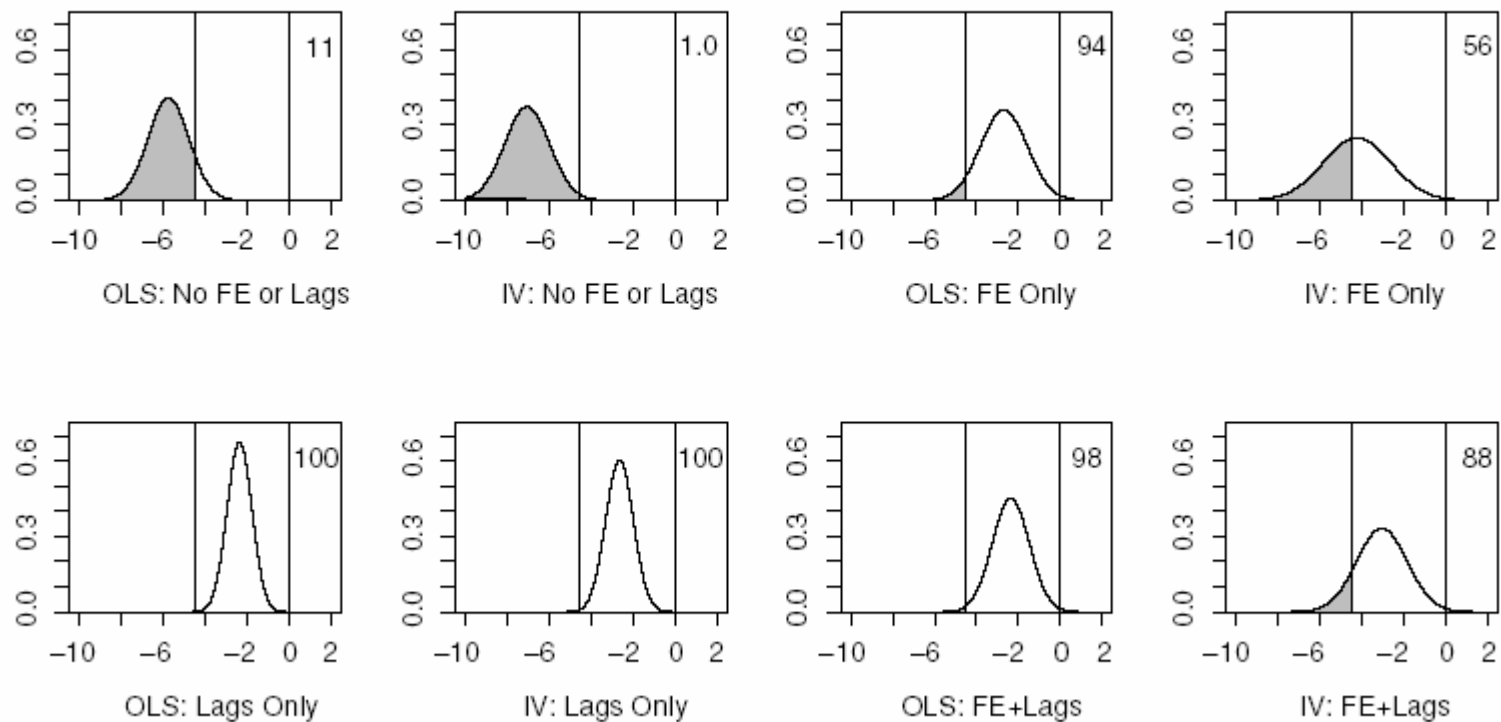
For all other types, the alarm has no impact on the behavior of the firm and the agency.

Problems...

- This is classic burning money; no legislature ever receives F's cash.
- Dependence on eqm refinement
- Derivation of a comparative static across subgames; if these are different eqa, problem

Empirical Issues

FIGURE 1. The Magnitude of the Expenditure Effect Across Specifications



Tests of Second Hypothesis: Low Type Firms Contribute Less under Alarm Subgame

TABLE 3. The Effect of Fire Alarms on Operator Political Expenditures: OLS Estimates

Explanatory Variable	(1)	(2)
Scrams at operator's plants	-3.63* (2.34)	-1.52 (1.20)
Plants under operator's control	11.41* (2.28)	11.57* (2.17)
Cash on hand	0.001 (0.05)	-0.02** (2.88)
ΔCash on hand	-0.01 (0.74)	0.01 (1.45)
Total assets	0.003** (5.84)	0.002** (3.18)
ΔTotal assets	-0.002* (2.17)	-0.002* (2.48)
Profit ratio	279.47 (1.93)	119.01 (1.16)
ΔProfit ratio	-156.63 (1.90)	-76.29 (1.30)
Intercept	59.53** (3.08)	80.55* (2.29)
Operator fixed effects	No	Yes
Year effects	Yes	Yes
R^2	0.57	0.85
N	310	310

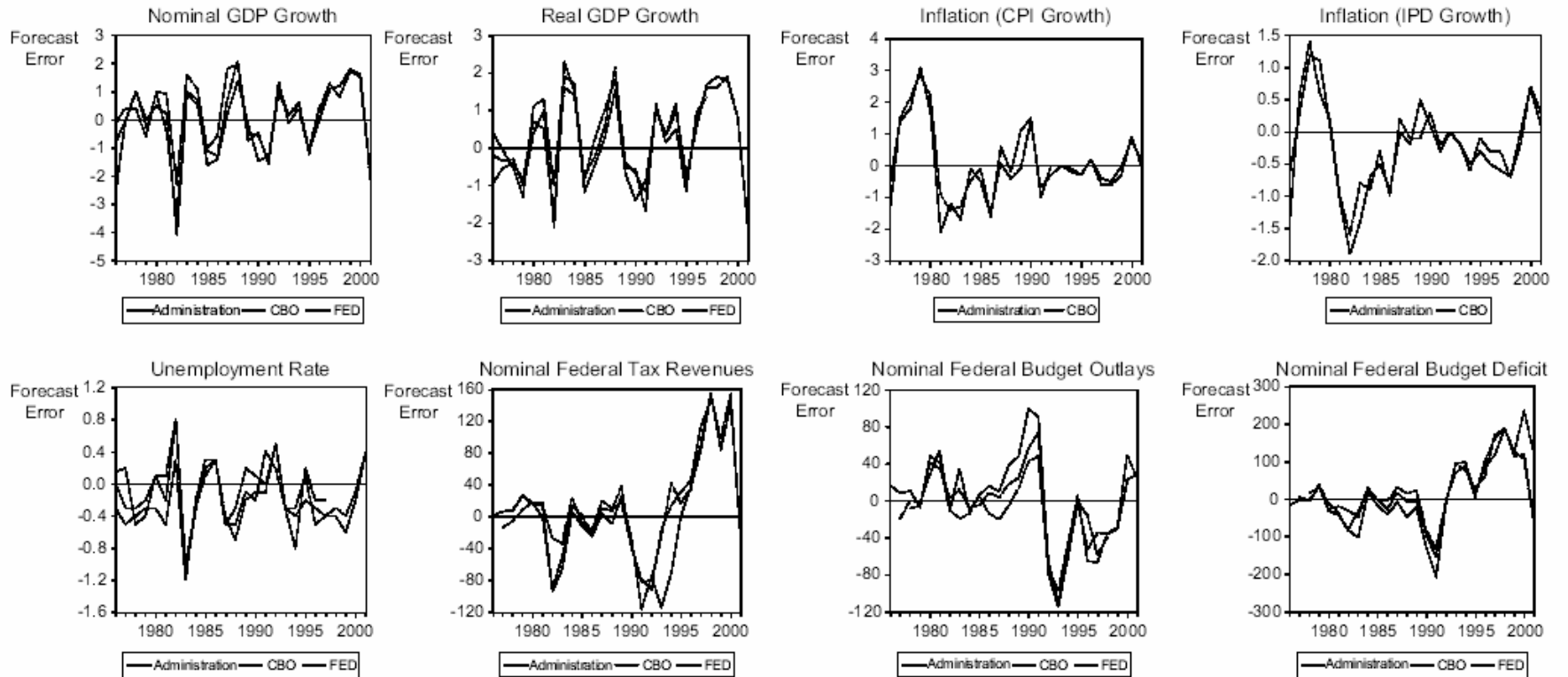
Note: Absolute value of groupwise heteroscedasticity-consistent t -statistics in parentheses. * $p < 0.05$ and ** $p < 0.01$ (two-tailed tests).



Krause and Douglas (2005)

- Evidence for reputational consideration driving forecast agencies
- Null theory is “strategic design” (Moe).
- Intuition: OMB, CBO, Fed all do the same thing, so their forecasts can be compared upon a common metric.

Figure 1
 Forecast Errors for Various U.S. Macroeconomic and Fiscal Projection Variables (Presidential Administrations [Admin.], Congressional Budget Office [CBO], and Federal Reserve [Fed])



Krause and Douglas (2005): Methods and Models

Basic forecast equation is:

$$Y_{t+1} = \alpha + \beta(Y_{t+1}^*) + \epsilon_{t+1}$$

To reduce (but not eliminate!) stationarity issues, write as:

$$Y_{t+1} - Y_t = \alpha + \beta(Y_{t+1}^* - Y_t) + \epsilon_{t+1}$$

Can also conduct “forecast dominance” tests from following regression:

$$Y_{t+1} = \phi + \psi_i(Y_{it+1}) + \psi_j(Y_{jt+1}) + \xi_{t+1}$$

Table 2

Tests of Forecast Unbiasedness Broken Down by Agency and Projection Variable (Presidential Administrations [Admin.], Congressional Budget Office [CBO], and Federal Reserve [Fed])

Model	$\hat{\alpha}$	$\hat{\beta}$	$H_0: \hat{\alpha} = 0, \hat{\beta} = 1$	RMSE	Q-statistic $\chi^2 \sim (5)$	White Test $\chi^2 \sim (3)$	Jarque-Bera $\chi^2 \sim (2)$
Nominal Gross Domestic Product Growth							
Admin.	0.40 (0.68)	0.93** (0.08)	<i>0.73 [0.70]</i>	1.37	3.96 [0.56]	1.39 [0.50]	6.72* [0.03]
CBO	0.89 (0.69)	0.87** (0.09)	<i>2.37 [0.31]</i>	1.35	4.38 [0.50]	0.15 [0.93]	2.89 [0.24]
Fed	0.19 (0.67)	1.00** (0.08)	<i>0.63 [0.73]</i>	1.16	7.82 [0.17]	3.11 [0.21]	0.73 [0.69]
Real Gross Domestic Product Growth							
Admin.	0.20 (0.57)	0.99** (0.16)	<i>0.61 [0.74]</i>	1.27	2.50 [0.78]	3.00 [0.22]	1.03 [0.60]
CBO	0.26 (0.52)	0.98** (0.15)	<i>0.69 [0.71]</i>	1.21	2.56 [0.77]	1.17 [0.56]	1.16 [0.56]
Fed	0.31 (0.47)	0.98** (0.14)	<i>1.33 [0.52]</i>	1.12	4.53 [0.48]	1.51 [0.47]	1.35 [0.51]
Inflation: Consumer Price Index							
Admin.	-0.04 (0.57)	1.02** (0.15)	<i>0.09 [0.96]</i>	1.21	9.32 [0.09]	12.48** [0.00]	0.42 [0.81]
CBO	-0.48 (0.51)	1.11** (0.14)	<i>0.95 [0.62]</i>	1.14	10.24 [0.07]	14.27** [0.00]	0.76 [0.68]
Inflation: Implicit Price Deflator							
Admin.	-0.07 (0.28)	0.96** (0.08)	<i>3.56 [0.18]</i>	0.70	23.14** [0.00]	7.34* [0.03]	0.35 [0.84]
CBO	-0.03 (0.25)	0.96** (0.07)	<i>2.77 [0.25]</i>	0.68	11.93* [0.04]	7.75* [0.02]	0.67 [0.71]
Unemployment Rate							
Admin.	0.02 (0.57)	0.98** (0.09)	<i>3.53 [0.17]</i>	0.39	2.04 [0.84]	13.02** [0.00]	1.14 [0.57]
CBO	-0.10 (0.57)	1.00** (0.09)	<i>3.04 [0.22]</i>	0.40	5.43 [0.37]	14.14** [0.00]	0.23 [0.89]
Fed	0.49 (0.54)	0.90** (0.08)	<i>8.22* [0.02]</i>	0.38	2.87 [0.72]	5.87* [0.05]	1.06 [0.59]
Tax Revenues							
Admin.	70.80** (22.73)	-0.05 (0.25)	<i>21.12** [0.00]</i>	49.81	2.27 [0.81]	3.88 [0.14]	1.31 [0.52]
CBO	83.69* (29.26)	-0.28 (0.40)	<i>11.50** [0.00]</i>	48.97	1.72 [0.89]	5.98* [0.05]	2.84 [0.24]
Fed	81.35* (25.33)	-0.29 (0.37)	<i>12.74** [0.00]</i>	37.32	6.35 [0.27]	6.93* [0.03]	1.02 [0.60]
Budget Outlays							
Admin.	66.63** (9.86)	-0.12 (0.13)	<i>78.68** [0.00]</i>	22.37	6.34 [0.28]	2.98 [0.23]	0.02 [0.99]
CBO	67.36** (11.56)	-0.11 (0.15)	<i>67.20** [0.00]</i>	22.60	6.92 [0.23]	0.14 [0.93]	0.25 [0.78]
Fed	63.13** (11.91)	-0.06 (0.16)	<i>47.72** [0.00]</i>	23.40	5.00 [0.42]	0.92 [0.63]	0.19 [0.91]
Budget Deficit							
Admin.	9.20 (10.74)	-0.36 (0.22)	<i>39.75** [0.00]</i>	55.00	2.93 [0.71]	0.55 [0.76]	1.62 [0.45]
CBO	4.67 (10.60)	-0.22 (0.33)	<i>14.21** [0.00]</i>	57.59	3.19 [0.67]	2.66 [0.26]	0.74 [0.69]
Fed	2.24 (10.05)	-0.38 (0.33)	<i>18.22* [0.00]*</i>	48.99	6.96 [0.22]	0.71 [0.70]	0.85 [0.65]

Note: Bootstrap standard errors are in parentheses. Probability levels are in brackets. Italicized amounts contain the Wald joint hypothesis test that $\alpha = 0, \beta = 1$. The general model specification is given by equation (1) for the macroeconomic variables in levels and by equation (2) for the fiscal variables in first-difference form.

* $p < .05$; ** $p < .01$.

Table 3
Regression-Based Comparative Tests of Forecast Accuracy across Government Agencies (Presidential Administrations [Admin.], Congressional Budget Office [CBO], and Federal Reserve [Fed])

Models	$\hat{\phi}$	$\hat{\psi}_{\text{Admin.}}$	$\hat{\psi}_{\text{CBO}}$	$\hat{\psi}_{\text{Fed}}$	TR ₁	TR ₂	TR ₃	TR ₄	TR ₅	TR ₆	RMSE
Nominal Gross Domestic Product Growth											
Admin. versus CBO	0.69 (0.79)	0.30 (0.80)	0.60 (0.75)	—	1.18 [0.76]	2.23 [0.53]	—	1.16 [0.35]	2.12 [0.35]	—	1.37
CBO versus Fed	0.20 (0.73)	—	0.04 (0.46)	0.95 (0.50)	5.10 [0.16]	0.53 [0.91]	—	5.10 [0.08]	0.01 [0.99]	—	1.19
Admin. versus Fed	0.16 (0.71)	0.05 (0.59)	—	0.95 (0.58)	2.75 [0.43]	0.60 [0.90]	—	2.66 [0.26]	0.01 [0.99]	—	1.19
Admin. versus CBO versus Fed	0.17 (0.92)	0.04 (0.89)	0.01 (0.66)	0.94 (0.61)	2.49 [0.65]	5.03 [0.28]	0.49 [0.98]	2.46 [0.48]	5.03 [0.17]	0.01 [0.99]	1.22
Real Gross Domestic Product Growth											
Admin. versus CBO	0.28 (0.56)	-0.12 (0.76)	1.09 (0.73)	—	2.71 [0.44]	0.66 [0.88]	—	2.19 [0.33]	0.05 [0.98]	—	1.23
CBO versus Fed	0.21 (0.47)	—	0.59 (0.54)	0.41 (0.56)	0.84 [0.84]	2.76 [0.43]	—	0.58 [0.75]	1.18 [0.56]	—	1.11
Admin. versus Fed	0.21 (0.54)	0.30 (0.64)	—	0.70 (0.61)	1.39 [0.71]	1.88 [0.60]	—	1.32 [0.52]	0.25 [0.88]	—	1.14
Admin. versus CBO versus Fed	0.25 (0.56)	-0.22 (0.88)	0.74 (0.81)	0.46 (0.65)	2.17 [0.71]	0.74 [0.95]	2.48 [0.65]	2.11 [0.55]	0.51 [0.92]	1.14 [0.77]	1.14
Inflation: Consumer Price Index											
Admin. versus CBO	-0.45 (0.56)	0.12 (0.76)	0.99 (0.79)	—	1.65 [0.65]	0.84 [0.84]	—	1.65 [0.44]	0.56 [0.76]	—	1.17
Inflation: Implicit Price Deflator											
Admin. versus CBO	-0.06 (0.27)	0.28 (0.64)	0.68 (0.63)	—	4.56 [0.21]	3.02 [0.39]	—	1.39 [0.50]	0.53 [0.77]	—	0.69
Unemployment Rate											
Admin. versus CBO	-0.05 (0.59)	0.59* (0.26)	0.40 (0.28)	—	6.41 [0.09]	7.82 [0.05]	—	2.49 [0.29]	5.09 [0.08]	—	0.39
CBO versus Fed	0.24 (0.93)	—	0.28 (0.39)	0.65* (0.29)	10.10* [0.02]	10.82* [0.02]	—	5.94* [0.05]	3.19 [0.20]	—	0.38
Admin. versus Fed	0.34 (0.75)	0.35 (0.45)	—	0.57 (0.40)	4.87 [0.18]	9.14* [0.03]	—	2.11 [0.35]	2.19 [0.34]	—	0.38
Admin. versus CBO versus Fed	0.26 (0.98)	0.23 (0.54)	0.14 (0.47)	0.56 (0.43)	4.48 [0.35]	11.62** [0.02]	8.96 [0.06]	2.82 [0.51]	7.02 [0.07]	2.76 [0.43]	0.39
Tax Revenues											
Admin. versus CBO	82.24** (29.46)	0.28 (0.24)	-0.60 (0.47)	—	22.50** [0.00]	14.02** [0.00]	—	19.91** [0.00]	11.96** [0.00]	—	49.35
CBO versus Fed	97.90** (24.65)	—	-0.93* (0.45)	0.44 (0.47)	28.23** [0.00]	19.26** [0.00]	—	27.90** [0.00]	18.87** [0.00]	—	34.44
Admin. versus Fed	81.40** (25.66)	-0.01 (0.32)	—	-0.29 (0.55)	27.48** [0.00]	11.05** [0.01]	—	25.08** [0.00]	11.04** [0.01]	—	38.35
Admin. versus CBO versus Fed	97.74** (25.58)	0.21 (0.29)	-1.06* (0.52)	0.30 (0.58)	41.94** [0.00]	23.95** [0.00]	16.65** [0.00]	39.91** [0.00]	23.91** [0.00]	16.64** [0.00]	34.87



Issues

- We can't reject the null, but what does that mean?
- Is there another way of getting at reputation using these data?
- Or do we need different data?