Lobbying and Legislative Uncertainty

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   $\Rightarrow$ Build a structural model to take to U.S. House data
3. Ultimately, want to identify cross-industry measures of legislative uncertainty

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- **Lobbying with Uncertainty**: Coates & Ludema 2001, Le Breton & Salanie 2003, Le Breton & Zaphorozhets (2007)
- **Vote Buying in Legislatures**: Groseclose & Snyder 1996, Banks 2000, Dal Bo 2007

Some Stylized Facts

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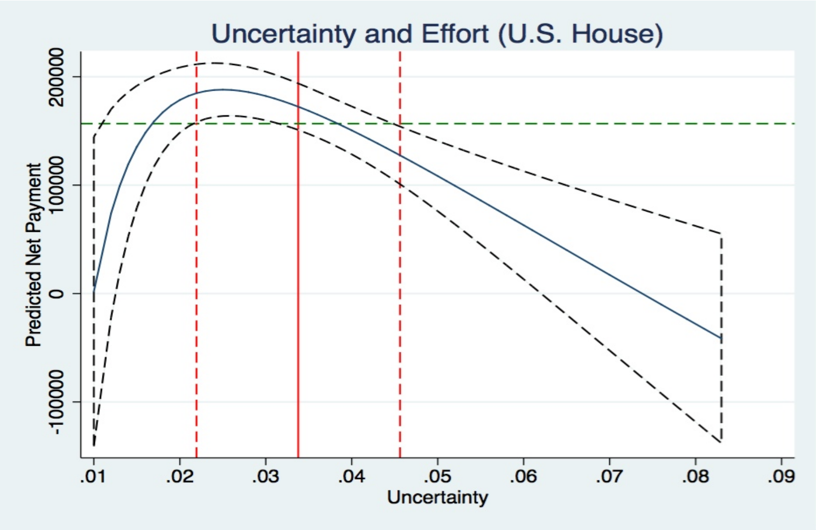
Adding uncertainty to standard model captures (2) — (4)

Overview


Uncertainty and Effort (U.S. House)
Predicted Net Payment
200000
100000
0
-100000
.01
.02
.03
.04
.05
.06
.07
.08
.09
Uncertainty

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Use multi-dimensional ideal-point estimation to identify measures of uncertainty

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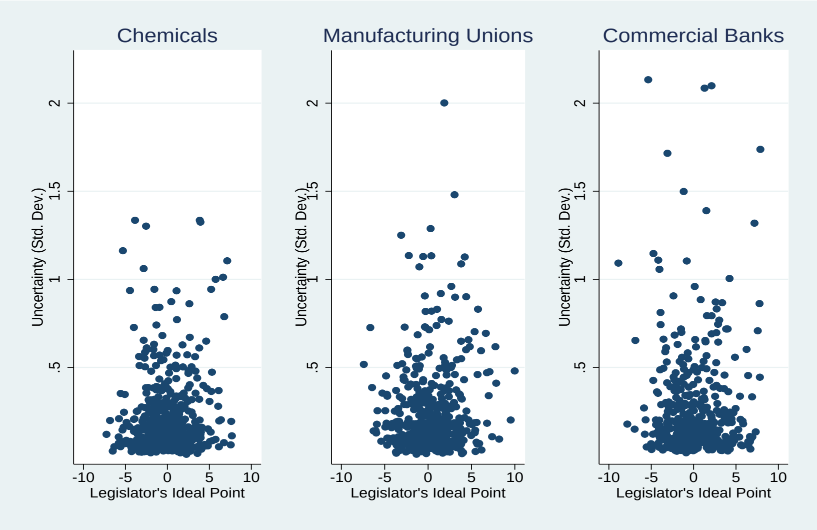
Chemicals
Manufacturing Unions
Commercial Banks
Uncertainty (Std. Dev.)
Legislator's Ideal Point
2
1.5
1
.5
-10
-5
0
5
10

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Two vote buyers, A and B

- A prefers x, B prefers s

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   i. Observes $\underline{a}$

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   iii. Each legislator votes for her preferred policy

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  - Assuming $\theta \sim$ Logistic $(0, 1)$, it's $\frac{1}{1+e^{-(\beta i - \alpha - a_i + b_i)}}$

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- In three-seat legislature, max probability that $\geqslant 2$ legislators vote for $s \times W_B -$ bribes

Vote Buyer B's Objective Function

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$$\max_{b_{-.5}, b_0, b_{.5}} W_B \Big[\Pr(X(-.5) = 1) \Pr(X(0) = 1)(X(.5) = 0) + \Pr(X(-.5) = 1) \Pr(X(0) = 0) \Pr(X(.5) = 1) + \Pr(X(-.5) = 0) \Pr(X(0) = 1) \Pr(X(.5) = 1) + \Pr(X(-.5) = 1) \Pr(X(0) = 1) \Pr(X(.5) = 1) \Big] - \sum_{j \in \{-.5, 0, .5\}} b_j$$

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- She wants x to win instead of s

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$$\frac{e^{-Y}+e^{-Z}}{(1+e^{-Y})(1+e^{-Z})}\frac{e^{-X}}{(1+e^{-X})^2}=\frac{1}{W_B} \tag{1}$$

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Two non-negative bribes

When Vote Buyer B pays bribes to exactly two legislators, the bribes are such that the two bribed legislators' ideal points gross of bribes are equalized. Which two legislators are bribed depends on the bias parameter α.

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When Vote Buyer B pays bribes to exactly one legislator, it may be any one of the three legislators depending on the bias parameter α.

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No Non-Negative Bribes

When Vote Buyer B has a low willingness to pay, he does not bribe any legislator.

Varying Uncertainty Across Legislators

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Conjecture

When there is no bias in the positions of the legislators ($\alpha = 0$), the bribes of legislators whose ideal points are at the median in terms of uncertainty receive the highest relative bribes.

Two Vote Buyers

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Both Vote Buyers Bribe

It is possible for both vote buyers to bribe legislators on the same vote.

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- Derive tight identification of empirical estimates from structural model
- Provide micro-founded explanations for the variation in uncertainty that lobbies face

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- helps in understanding lobbying strategies
- may shed light on why some lobbies are more successful than others
- will help in the identification of measures of uncertainty that can be used in many applications