

Equilibrium Administrations

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- Government administration = policy making + policy implementation
- Standard models study policy making with exogenous politicians (Downs, 1957) or endogenous politicians (Osborne and Slivinski, 1996; Besley and Coate, 1997).
- Implicitly, policy implementation (the bureaucracy) is exogenous.
- We propose a model with an endogenous bureaucracy (and exogenous politicians).

- Three distinguishing features of working in the modern public sector.
 - 1 Bureaucrats value providing government output.
 - Known as *Public Service Motivation*
 - Makes workers more productive (Dal Bo et al., 2013, Ashraf et al., 2018)
 - 2 Bureaucrats have policy preferences
 - This affects sorting into government (Hanna and Wang, 2017; Barfort et al., 2019)
 - Bureaucracies are ideologically heterogenous, and this can create conflict with politicians (Golden, 2000; Lewis, 2008, Bolton et al., 2016)
 - 3 When deciding to enter government, bureaucrats anticipate that they will serve different governments over their careers
 - Job protections allow bureaucrats to “wait out” government they disagree with (Golden, 2000)
 - Among U.S. federal employees, turnover is higher before elections than after (Doherty et al., 2019).

- These features mean that the bureaucracy, and its performance, is endogenous to policy ideology.
 - Bureaucrats' effort to create output depends on the policy
 - Decision to enter government depends on anticipated policies and election probabilities
- If politicians realize this, then policy choices are endogenous to the bureaucracy
 - Politicians trade off output and policy ideology given the bureaucracy they face
 - Bureaucrats' expectation regarding policy ideologies must be consistent with this
- Voters' choices reflect preferences over output and ideology
 - Bureaucrats' expectation regarding election probabilities must be consistent with this
- We call this an *equilibrium administration*

Our results:

- 1 We explain bureaucratic neutrality or partisanship as equilibrium phenomena (rather than, e.g., an institutional choice)
 - Relevant for understanding partisanship under civil service
- 2 Political polarization \Leftrightarrow partisanship in the bureaucracy
 - Partisanship leads to lower output, and higher output fluctuations with political transitions
- 3 Political competition \Leftrightarrow politically neutral bureaucracy
- 4 Interventions that increase bureaucrat production can have unintended political consequences
 - Higher public sector pay can lead to more partisanship
 - Higher PSM can lead to more political polarization.

A model with “citizen bureaucrats”

- Governments implement policies $x \in [-1, 1]$ with output $Q \geq 0$. A continuum of citizens have ideology $b \sim U[-\frac{l}{2}, \frac{l}{2}]$, l is large. Utility given by $Q \times (\alpha - |x - b|)$.
 - $\alpha > 0$ is value from government output at ideal policy
- Two parties represent citizens with ideology -1 (party L) and 1 (party R), respectively. Will be elected with probability p_L and p_R . Choose policies x_L and x_R if elected.
- Citizens decide whether to work in government (become a bureaucrat) or the private sector, for additional payoff.
 - The private sector pays $w > 0$.

- Bureaucrats choose level of effort $q \in \{0, 1\}$ and obtain additional payoff $q \times (\phi - |x - b|)$.
 - $\phi > 0$ is our measure of *Public Service Motivation*
 - An *optimal production decision* for bureaucrat b is

$$q_b(x) = \begin{cases} 1 & \text{if } |x - b| \leq \phi, \\ 0 & \text{if } |x - b| > \phi. \end{cases}$$

- The bureaucracy B will consist of the citizens who have chosen the public sector given a *policy lottery* $\chi = (x_L, x_R, p_L, p_R)$.
An *optimal bureaucracy* is

$$B(\chi) = \{b : p_L q_b(x_L)(\phi - |x_L - b|) + p_R q_b(x_R)(\phi - |x_R - b|) \geq w\}$$

- Output becomes $Q(x) = \frac{1}{I} \int_B q_b(x) db$.

Equilibrium Administration

A policy lottery $\chi^* = (x_L^*, x_R^*; p_L^*, p_R^*)$ and a bureaucracy B^* constitutes an *equilibrium administration* if

- 1 given policy lottery χ^* , B^* is an optimal bureaucracy, i.e., $B(\chi^*) = B^*$.
- 2 given the bureaucracy B^* , $x_P^* = x_P(B^*)$ for party $P = L, R$, where $x_P(B) = \arg \max_{x \in [-1, 1]} Q^{B^*}(x)(\alpha - |x - b_P|)$ is an *optimal policy* (and $b_L = -1$, $b_R = 1$)
- 3 given policies (x_L^*, x_R^*) and bureaucracy B^* , the fraction of voters who prefer party L to party R is p_L^* , i.e. p_L^* is the fraction of citizens in the set $\{b \in [-\frac{1}{2}, \frac{1}{2}] : Q^{B^*}(x_L^*)(\alpha - |x_L^* - b|) \geq Q^{B^*}(x_R^*)(\alpha - |x_R^* - b|)\}$.

Expectations about elections (p_L, p_R) and policies the parties will implement (x_L, x_R)



citizens' career choices



optimal bureaucracy $B(\chi)$



elected party chooses optimal policy $x(B)$

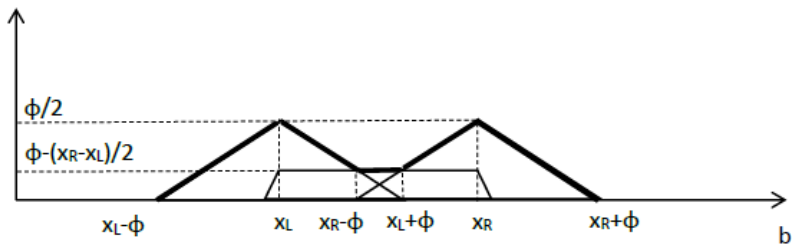
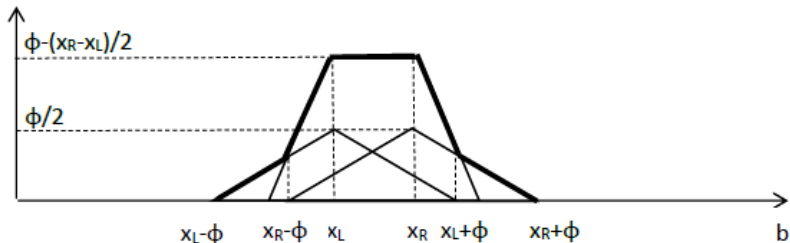


bureaucrats make optimal production decisions $q(x)$, this yields output $Q^B(x)$

In equilibrium, (p_L, p_R) must be consistent with voters' expected utility over $x(B)$ and $Q^B(x)$.

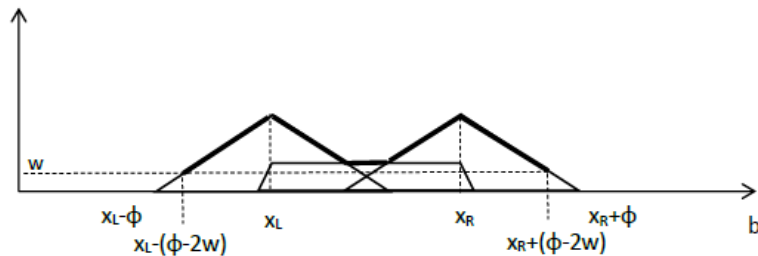
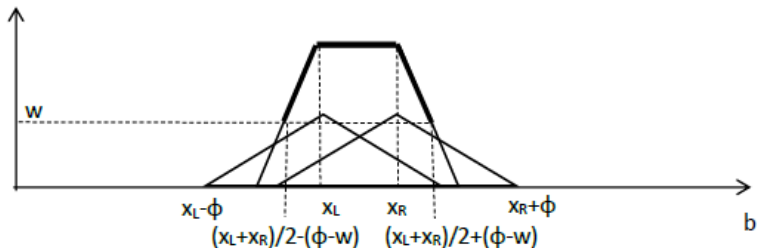
- Recall that:
 - given policy x , bureaucrat with ideology b chooses $q_b(x) = 1$ (“works”) iff $\phi \geq |x - b|$
 - given policy lottery χ , citizen with ideology b chooses the public sector iff $p_L q_b(x_L)(\phi - |x_L - b|) + p_R q_b(x_R)(\phi - |x_R - b|) \geq w$
- Bureaucrats may be *neutral* ($q_b(x_L) = q_b(x_R) = 1$) or *partisan* ($q_b(x_P) = 1$ for exactly one of the parties).
 - Bureaucracy B may be *fully neutral* (N), *fully partisan* (P), or *partially partisan* (PP).

Example of partially partisan (PP) bureaucracies with $p_L = 1/2$ and $w = 0$.



- Polarization $\Delta x = x_R - x_L$ reduces neutrality and increases partisanship.
- Note the two different “technologies” for producing output: large bureaucracies with many partisans, small bureaucracies with many neutrals.

The private-public wage gap w screens out partisans when Δx is low. It screens out neutrals when Δx is relatively high.



- As political polarization increases, $N \rightarrow PP \rightarrow P$
- As $N \rightarrow PP \rightarrow P$, output Q falls (for $w > 0$).
 - Intuition: the different technologies have different sensitivity to $w > 0$
- When $p_L \neq p_R$, we have changes in output Q (as well as policy x) depending on who gets elected. As $N \rightarrow PP \rightarrow P$, these changes become larger.
 - Intuition: Under N , Q is constant. With $p_L > p_R$, partisanship leads to $Q_L > Q_R$
 - cf. Bostashvili and Ujhelyi (2019) on political budget cycles attenuated by civil service
- In this model, partisanship in the bureaucracy is associated with political polarization, lower output, and larger output swings.
 - True without political patronage or other direct political interference
 - True without assuming that partisan bureaucrats are somehow worse

- An increase in political competition (lower p_L) is conducive to N over PP.
 - Intuition: Because $p_L > p_R$, the first partisan to enter is L 's, and a lower p_L reduces incentive to enter
- This suggests that creating this kind of environment (i.e., civil service reform) is more beneficial when political competition is high.
 - Complements previous arguments based on strategic considerations (e.g., Hanssen, 2004; Ting et al., 2012).
- However, political competition is also conducive to P over PP.
 - Intuition: Because $p_L > p_R$, the first neutral to enter is biased towards L , and a lower p_L reduces incentive to enter

Analyzing equilibrium administrations

- Depending on the parameters, the equilibrium can have N, PP, or P bureaucracies.
- We saw that polarization leads to partisanship.
- In equilibrium, fully partisan bureaucracies must have maximum polarization ($x_R = 1, x_L = -1$)
 - With $w > 0$, bureaucrats entering to work for L only must strictly prefer to work than shirk
 - But then for any $x_L > -1$, L can choose a more extreme policy without sacrificing output.

- We saw that competition was conducive to neutrality.
- In equilibrium, N bureaucracies must have $p_L = 1/2$. P and PP bureaucracies may have $p_L > 1/2$.
 - Intuition: If $p_L > 1/2$, rightmost bureaucrat to enter still strictly prefers working over shirking for x_L . But then L could lower x_L without reducing Q_L .
 - Since N implies $Q_L = Q_R$, $p_L = 1/2$ means $x_L = -x_R$.
 - But there is a lower bound on polarization.

- Holding χ fixed, higher public service motivation ϕ increases output.
- However, higher ϕ can also lead to more political polarization
 - More entering bureaucrats willing to work for relatively extreme policies: politicians will exploit this.
 - cf. historical accounts of “efficient” bureaucracies’ contribution to dictatorships (e.g., Heldring, 2019)

- To our knowledge, the first model to endogenize the formation of government administrations:
 - endogenous bureaucracy and government output
 - endogenous policy ideologies
 - endogenous election outcomes
- Results:
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 - Political polarization \Leftrightarrow partisanship in the bureaucracy
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