POLITICAL IDEOLOGIES & GOVERNMENTAL STRUCTURE

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CONCLUSIONS

The equilibrium size, scope, and number of governments are dependent on scale gains and the diversity of political ideologies.

Individual legal preferences and intensity for these preferences are critical determinants of laws and policies, and choice in government.

Based on assumptions concerning ideological groupings and procedural compatibility, the equilibrium allocation of the net gains from governmental formation are equal to the members' Shapley Values.

Ideological diversity leads to a wide variety of different types of governments.

ENVIRONMENTAL SET-UP: I

- Population of Ψ people in a Nash equilibrium in anarchy, *l* ∈ $\boldsymbol{\Psi}$ = {1, . . .,Ψ}.
- Government produces efficiency gains of *K* per person.
- Each government, G_x ∈ ***G***, is a mutual entity due to conflicts between owners/consumers.
- Because of bounded rationality, each person has a different "model" of the world, an "ideology," which they use to assess different potential governmental laws.
- Effective government requires one law out of the *m* potential laws in each of the ℵ categories of laws. ***D*** is the *m x* ℵ matrix of potential laws.
- Each person has a cardinal legal valuation matrix: $\boldsymbol{\mathcal{F}}^l$(***D***); where $v_{ij}^l \in \boldsymbol{\mathcal{F}}^l$(***D***) and v_{ij}^l ∈ [-∞, 0]. $\boldsymbol{\mathcal{F}}^l$(***D***) need not be logical to a third party.

ENVIRONMENTAL SET-UP: II

- Each person wants to live under the laws that they most prefer.
- Every person wants their government to have the highest gross gains.
- Let $\boldsymbol{R} \subseteq \boldsymbol{\Psi}$ be every possible coalition of people in the population and $\boldsymbol{S}$ be every possible coalition of members of a formed government, $\boldsymbol{S} \subseteq G_x$.
- By assumption: $\xi(\boldsymbol{S}) + \xi(\{l\}) < \xi(\boldsymbol{S} \cup \{l\}) \ \forall\, l \in G_x$

$$\xi(\boldsymbol{S}) + \xi(\{l\}) > \xi(\boldsymbol{S} \cup \{l\}) \ \forall\, l \notin G_x$$

OPTIMAL LAWS

- Gross coalitional value is: $(n(\boldsymbol{R}) - 1) * K$ where $n\ (\cdot)$ is the cardinality of the set $(\cdot)$.
- Net coalitional value is: $(n(\boldsymbol{R}) - 1) * K$ - $\sum_{l \in \boldsymbol{R}} \left| \sum_{j=1}^{\aleph} v_{\bar{\bar{i}}j}^{l} \right|$ where $\bar{\bar{i}} \in \boldsymbol{M}$ are the coalitional laws.
- Optimal laws are determined by: $\boldsymbol{d}(\boldsymbol{R})$ = $\frac{argmax}{i \in \boldsymbol{M}} \sum_{\boldsymbol{R} \subseteq \boldsymbol{\Psi}} v_{ij}^{l}$.
- These laws form the equilibrium potential constitution for each coalition or potential government and is a complete contract between members of any formed government.

MAXIMUM POLITICAL DIVERSITY

- Freedom Losses are defined as $\left|\sum_{\boldsymbol{R}\subseteq\Psi} f^{l}(\boldsymbol{R})\right| > 0$ where $f^{l}(\boldsymbol{R})=\sum_{j=1}^{\aleph} v^{l}_{*j}(\boldsymbol{R})$.
- There is a maximum amount of political diversity within a potential government equal to the difference between gross gains and aggregate freedom losses:

$$(n(\boldsymbol{R})-1) * K > \left|\sum_{\boldsymbol{R}\subseteq\boldsymbol{\Psi}} f^{l}(\boldsymbol{R})\right|$$

- This implies that, given a sufficiently ideologically diverse population, a global government is not in everyone's best interest.

CHOICE IN GOVERNMENTS

- Each person will either remain in anarchy or sort themselves into the government that has the highest net gains:

$(\boldsymbol{G}, \boldsymbol{\mathfrak{H}}) = \frac{argmax}{l}\, \xi(\boldsymbol{\gamma})$

Viable governments are: $\left(\boldsymbol{\gamma} \middle| (n(\boldsymbol{R}) - 1) * K > \left|\sum_{\boldsymbol{R} \subseteq \boldsymbol{\Psi}} f^{l}(\boldsymbol{R})\right| \right)$,

Individuals remaining in anarchy are part of the set: $\boldsymbol{\mathfrak{H}} \subset \boldsymbol{\Psi}$

- Preferences and intensities determine optimal laws and government membership.
- Deadweight losses occur from differing political ideologies:

$\theta(\boldsymbol{\Psi}) = (\mathrm{n}(\boldsymbol{G}) + \mathrm{n}(\boldsymbol{\mathfrak{H}}) - 1) * K + \sum_{\boldsymbol{G}} \left|\sum_{l \in G_x} f^{l}(G_x)\right|$

OUTCOME INCOMPATIBLE BUT PROCEDURALLY COMPATIBLE

- Members of a government are assumed to be either outcome or procedurally compatible.
- The assumed agreed characteristics of an unbiased procedure are:

a) everyone has perfect and complete information;

b) each person wants to reach an agreement;

c) everyone has the same model of the procedure and no one will make logical errors in utilizing it;

d) no one has a bargaining advantage, i.e. the procedure treats everyone symmetrically.

- The Hart and Mas-Colell procedure called the "proposer commitment procedure" satisfies this criteria.

ALLOCATION WITHIN A GOVERNMENT

- Under this procedure and utilizing the equilibrium standard of "stationary subgame perfect equilibria" each person will agree to receive their Shapley Value.
- $Sh^l(\xi(G_x)) = \frac{n(G_x)-1}{n(G_x)}K$ - $\sum_{\boldsymbol{S} \subseteq G_x \setminus \{l\}} \frac{n(\boldsymbol{S})!(n(G_x)-n(\boldsymbol{S})-1)!}{n(G_x)!}$ $(\sum_{\boldsymbol{z} \in \boldsymbol{S}} |f^z(\boldsymbol{S})|$ - $\sum_{\boldsymbol{z} \in \boldsymbol{S} \setminus \{\boldsymbol{l}\}} |f^z(\boldsymbol{S} \setminus \{l\})|)$
- It is equal to average gross gains minus average permutation weighted freedom losses from all coalitions in which they are a member plus average permutation weighted aggregate freedom losses from all those coalitions in which they are not a member.

ALLOCATION WITHIN A GOVERNMENT: EXAMPLES

- In a three-person government between *a, b and c*, the net gains to person *a* are:

  $\xi^{a}(\xi(G_x))= \frac{2}{3}K - \frac{1}{3}\left(\left|\sum_{z=1}^{3} f^{z}\right| - \left|\sum_{z=1}^{2} f^{z\backslash a}\right|\right) - \frac{1}{6}\left|\sum_{z=1}^{2} f^{z\backslash b}\right| - \frac{1}{6}\left|\sum_{z=1}^{2} f^{z\backslash c}\right|.$

- In a two person-government, the net gains are evenly divided: $\xi^{l}(\xi(G_x))= ½\left(K - \left|\sum_{z=1}^{2} f^{z}\right|\right)$
- For governments, larger than two, those members that add relatively less freedom losses will receive a larger allocation of the net gains.

LIMITED GOVERNMENTS

- Let's now assume that governmental responsibilities and powers can be partitioned into η disjoint, broad government activities such as external defense, public safety, and consumer protection.
- A *limited government*, $L_{ae} \in \boldsymbol{L_a} \subset \boldsymbol{L}$ is a mutual entity composed of members of more than one general government that has exclusive responsibilities to coercively enforce their members' unanimously agreed laws.
- Under assumptions, similar to those above, members of general governments will sort themselves into federalist and unitary governments: $(L_{a1} \ldots L_{a\varkappa}, \boldsymbol{U_a}) = \frac{argmax}{l}\, \xi_a(\boldsymbol{\sigma}_a)$, where

$\boldsymbol{\sigma}_a$ are viable governments over partition *a*.

GLOBAL GOVERNANCE STRUCTURE

- Members of limited governments that are not outcome compatible but procedurally compatible will allocate the net gains to each member based on their Shapley Values.
- The overall global governance structure, given the introduction of limited governments, consists of:

i. unitary governments,
ii. federalist governments,
iii. domestic governments that are part of a federalist government, some of which could also be federalist.