A Generalized Model of Legislative Committees

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Topics Covered

Introduction

Legislative Committees

Proposed Model

Committee Necessity

Committee Reliability
Presentation Goal

- Formalize and present the formal model
- Apply and discuss application of EITM framework
- Propose variables for model factors
- ...

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Presentation Goal

- Formalize and present the formal model
- Apply and discuss application of EITM framework
- Propose variables for model factors
- ...  
- Impress audience with pretty network graphs
Project Goal

- Formulate a generalized model of legislative committees
- Specific emphasis on understanding and predicting committee membership

The observable committee composition is the result of a decision-making process that a decider completes within a given context.
Research Questions

- Committee assignments are delegated to an individual by formal rule.
- **How can committees be understood simply as a byproduct of human decision making under structural constraint?**
  - What factors influence the output?
  - How can the inputs be observed?
  - How can distinct ends be differentiated?
Realized committees follows from an evaluation of three factors:

- Ability
- Necessity
- Reliability

Such that:

\[ C = f(A, N, R) \] (1)
Legislative Committees in the USA

- Standing committees are subsets of legislators tasked with all work related to a specified subfield
- Started with the House of Representatives and Senate though recent progress has incorporated state legislatures
  - ‘Outlier committees’
- ‘101 Chambers’ with a wide variety of committees covering various jurisdictions within different legislative contexts
  - ‘Squire 2005’
Committee Functions in Legislatures

- **Procedural function**
  - Bills must be sent to committees before they can be voted on as a whole
  - The committee decides whether or not to send bills to the chamber for a vote
  - Can be leveraged for gatekeeping ability

- **Policy function**
  - Committees specialize in their assigned jurisdiction and become policy experts
  - Amendments are offered and language is clarified to fit the jurisdiction
What role do committees play in an institution largely defined by the party or individual members?

- Committees fulfilling an information goal (Krehbiel 1991)
- Distributive theory of committee assignments (Shepsle and Weingast 1987)
- Party stacking of committees (Battista 2006)
A committee’s composition depends on the context that it operates within through three primary factors:

- The decider’s ability to control appointments to that committee
- The necessity of committee for achieving goals within the institutional context
- The reliability of the formed committee

\[ C = f(A, N, R) \]
The decider’s ability is dependent on formal and informal rules:

- Formal rules as declared in a state constitution
- Informal rules defined by chamber norms

\[
A = \beta_{A_1} A_I + \beta_{A_2} A_F
\]
The decider’s ability is dependent on formal and informal rules:
- Formal rules as declared in a state constitution
- Informal rules defined by chamber norms

\[ A = \beta_{A1} A_I + \beta_{A2} A_F \]  \hspace{1cm} (2)

- Undeveloped portion of project
- Empirical testing will require reading and identifying restrictions placed on deciders by constitutions and rules
The necessity of a committee depends on the primary role that committees fill in the institution.

A committee’s necessity is interpreted as the extent to which the committee aids in the execution of that role.

\[ N = \beta_N(C_I + C_D + C_P) \]
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Committee Necessity
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Necessity

- The previous equation fails to capture the context in which the committee operates.
- A legislative chamber as a whole includes some cumulative level of the three committee roles.
- The new equation better captures this notion, introducing several constraints.

\[
N = \beta_N [(L_i - C_{li}) + (L_D - C_{Di}) + (L_P - C_{Pi})] \quad (4)
\]
\[
\sum_{i \in L} C_{Xi} = L_X \forall X \in I, D, P \quad (5)
\]

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The reliability of a committee indicates how certain the decider feels they can predict the committee’s behavior.

A committee’s reliability is dependent on characteristics of its members.

\[ R = f(r_i) \forall i \in C \] (6)
The reliability of a committee indicates how certain the decider feels they can predict the committee’s behavior.

A committee’s reliability is dependent on characteristics of its members:

\[ R = f(r_i) \forall i \in C \]  

How should the function be operationalized?

- As a count of number of ‘reliable’ committee members?
- As a function of the entire committee characteristics?
Combining these factors, the decider aims to maximize

\[ C_i = A \cdot (N \cdot R) \]

\[ C_i = \beta_A (A_I + A_F) \cdot (\beta_N (L_I - C_{II}) + (L_D - C_{Di}) + (L_P - C_{Pi})) \cdot R_i \]

\[ C_i = \beta_P N \cdot R_i \cdot (A_I(N_D) + A_F(N_D)) \]

Through this process committee membership is assigned in an efficient way to serve the goals of the decider.

The only factor in which the decider has control is \( R \), the reliability of each committee.
EITM Framework?

- Theoretical concept: decision making, (social interaction and expectations)
- Statistical concept: choice model and network structure
- Theoretical analogue: utility maximization, (group overlap and conditional expectations)
- Statistical analogue: regression and network models
The necessity of committees within a chambers varies as the theory best describing the actual practice differs.

I introduce membership overlap networks as an observable implication of the theories.

Each theory has derived predictions for the expected overlap between legislative committees.

Expectations dependent on three committee characteristics: specialization, distributive ability, and importance.
Examples from Theories

- Take a set of 6 committees in a particular chamber:
  - 2 are of high importance (e.g. Rules or Ways and Means)
  - 2 are specializing committees (e.g. Education or Agriculture)
  - 2 are miscellaneous

- What might the overlap look like in each of the 3 theories of committee structure?
Hypothetical Committees

Partisan

Informative

Distributive

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Observing the Networks: Formation

- **Nodes**: the unique committees in a chamber
  - For the most part this is just standing committees, disregarding special, joint, and subcommittees
- **Directed relationship**: $A \rightarrow B$ if $|A \cap B| > 0.3 \cdot |A|$
  - If $3/10$ of the members on the Commerce committee are also on the Judiciary committee, the Commerce committee sends a tie to the Judiciary committee
- **Note**: $A \rightarrow B \not\Rightarrow B \rightarrow A$ for committees of different sizes
Washington
**Idaho**

- **Ag**
- **App**
- **Bus**
- **Com**
- **Ed**
- **Env**
- **Health**
- **J.and.Rules**
- **Local**
- **Resource**
- **Tax**
- **State.Affairs**
- **Trans.and.Def**
- **WaM**
- **Trans**
- **Fin**
- **Local.and.Tax**
- **State.Affairs**
- **J.and.Rules**
California House

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Maine Senate
North Dakota House

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The trend toward party domination of legislatures maintains that committees are an important tool of the majority party. But they can only be used as such when reliable legislators hold most positions. More reliable members are strongly embedded in an ideological network. An initial look at 10 Congresses starts the analysis.
Ideological Network

- Organize each chamber-session of Congress into an ideological network
- Members in the same chamber-session are ‘tied’ if they share an ideology
- For NOMINATE scores, a pair of members \((i, j)\) in the same chamber-session are ‘tied’ if:
  \[ D_{ij} > T; D_{ij}^2 = (x_i - x_j)^2 + (y_i - y_j)^2 \]
- For \(D_{ij}\) the NOMINATE difference and \(T\) a threshold value
- A tied pair of MC are those who consistently voted together
Important Committee Statistics

- The mean and standard deviation in the number of member’s ties on a committee
- Reliable committees have many highly connected individuals
- Observations are compared to Bayesian sampled distributions for the mean and variation in the number of committee member’s ties
House Samples

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House: Size 50

density.default(x = com_m)

N = 50   Bandwidth = 1.424

density.default(x = com_sd)

N = 50   Bandwidth = 1.788
House Observations
House Observations

House Committee SD

103

104

105

106

107

108

109

110

111

112

sqrt(v_h103)

sqrt(v_h104)

sqrt(v_h105)

sqrt(v_h106)

sqrt(v_h107)

sqrt(v_h108)

sqrt(v_h109)

sqrt(v_h110)

sqrt(v_h111)

sqrt(v_h112)

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency

Frequency
Senate Samples

Senate: Size 20

density.default(x = com_m)

density.default(x = com_sd)
Senate Observations

Senate Committee Mean

103

104

105

106

107

108

109

110

111

112

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Senate Observations

Senate Committee SD

103
104
105
106
107
108
109
110
111
112

sqrt(v_{s103})

sqrt(v_{s104})

sqrt(v_{s105})

sqrt(v_{s106})

sqrt(v_{s107})

sqrt(v_{s108})

sqrt(v_{s109})

sqrt(v_{s110})

sqrt(v_{s111})

sqrt(v_{s112})

Frequency

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