**Appendix 1**

Appendix Table 1. Predicting Agreement on Votes Among Council Member Dyads

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** |
| Same Party | 0.13\*  (0.06) | 0.14\*  (0.06) | 0.09\*  (0.05) |
| Land Use/Permits |  | 0.35\*\*  (0.07) | 0.37\*\*  (0.08) |
| Appointments |  | -0.04  (0.15) | 0.09  (0.17) |
| Budget/Fiscal Policy |  | 0.26\*\*  (0.08) | 0.30\*\*  (0.10) |
| Contracts |  | 0.06  (0.08) | 0.18†  (0.11) |
| Lightner |  |  | -0.88\*\*  (0.15) |
| Peters |  |  | 0.10  (0.07) |
| Faulconer |  |  | 0.06  (0.07) |
| Gloria |  |  | 0.34\*\*  (0.07) |
| Atkins |  |  | 0.04  (0.87) |
| Young |  |  | -0.17\*  (0.09) |
| DeMaio |  |  | -1.18\*\*  (0.16) |
| Maienshein |  |  | -0.52\*\*  (0.13) |
| Frye |  |  | -1.42\*\*  (0.13) |
| Emerald |  |  | 0.12  (0.11) |
| Madaffer |  |  | -0.21†  (0.11) |
| Constant | 0.50  (0.04) | 0.30  (0.06) | 1.01  (0.15) |
| N | 8939 | 8939 | 8939 |
| Clusters | 346 | 346 | 346 |
| Nagelkerke Pseudo-*R2* | 0.00 | 0.00 | 0.09 |

\*General Municipal Code changes and other policies are the omitted category in the bill types; Hueso is the omitted category for the Council members

\*\*All tests are two-tailed (†p.1, \*p.05, \*\*p.01)

**Appendix 2**

While there are several algorithms that implement scaling procedures to recover latent preferences from observed voting behavior, all of these methods are motivated by the traditional spatial model of legislative voting. In the spatial model, the key assumption is that individual legislators are rational actors who choose behavioral strategies to maximize their expected utility. In the context of voting, there are two strategies to choose from — voting “yes” in favor of adopting some policy and voting “no” against the policy to preserve the status quo.[[1]](#footnote-1) The degree to which a legislator prefers a proposed policy to the status quo will determine their final vote choice.

In the statistical applications, decisions have both deterministic and stochastic components. The deterministic portion depends on the distance between a legislator’s most preferred policy — their *ideal point* — and the location of a proposed policy. The degree to which a legislator’s utility from a proposed policy declines as the policy moves further away from her ideal point depends on the assumed utility function (e.g., a normal utility function). In addition, each decision may also have some random component, in the form of an idiosyncratic utility shock — analogous to a random error — that represents other considerations that may enter a legislator’s voting calculus but are not captured by the spatial model. These utility shocks are assumed to be independent across legislators for a given vote and across votes for a given legislator.

Ideal differs from other scaling procedures in the algorithm’s implied assumptions about individual utility functions and the distribution of the unobserved utility shocks (see Carroll et al. 2009). Ideal assumes that legislator utilities are quadratic — as a bill moves away from a legislator’s ideal point, her expected utility declines at an increasing rate. In addition, the algorithm assumes that the random errors are normally distributed. Given these assumptions, I can represent any legislators utility from voting either yes or no on any policy proposal as a function of legislator preferences (**X**), the location of the policy (**P**), and the location of the status quo (**Q**) with two equations:[[2]](#footnote-2)



Individual voting behavior then becomes a function of the *difference* in utility between the two options:



Setting and and assuming normally distributed utility shocks (with  representing a normal cumulative density function), the probability of voting in favor of proposal **P** is:



Given observed voting behavior on each proposal, I can estimate each parameter and related uncertainty by sampling from the joint posterior density using Markov chain Monte Carlo, the procedure implemented in Ideal.

1. Individuals can also not register a choice or may abstain from voting. Since both absences and abstentions do not reveal anything about an individual’s preference, IRT models do not incorporate these events when estimating ideal points. [↑](#footnote-ref-1)
2. I focus on a case in which policies and preferences are single-dimensional. This assumption does not result in a loss of generality. [↑](#footnote-ref-2)