

# ESTIMATION OF IDEAL POINTS IN MEXICO'S *INSTITUTO FEDERAL ELECTORAL*: A BAYESIAN APPROACH

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ABSTRACT. I employ Markov Chain Monte Carlo (MCMC) simulation techniques (Martin & Quinn 2002) to infer the ideal positions of Councilors in Mexico's *Instituto Federal Electoral*. The analysis is based on votes cast by 21 members of IFE's Council General, including Legislative Councilors (from 1994 to 1996) and Citizen Councilors (from 1994 to 2003).

## 1. OVERVIEW

Mexico's *Instituto Federal Electoral* (IFE) was established in the early 1990's as a semi-autonomous agency in charge of overseeing federal elections. Though IFE's charter originally called for a preponderant presence of the Executive power in its board, successive reforms have led to the creation of a vigorous agency independent from Mexico's once omnipotent Presidents. Concurrent with its increasing autonomy, IFE took over the years an ever more important role in organizing all electoral aspects of Mexico's protracted transition to democracy. IFE's Council General decides on all organizational matters relating to elections, including the creation and upkeep of electoral lists, installation of electoral booths, vote counting, monitoring of campaign spending by parties, and overall regulation of political campaigns. Given IFE's political standing and relatively untarnished reputation as a professional, autonomous bureaucracy, scholars have shown extreme interest in studying all aspects of its organization and general conduct, including the voting behavior of individuals in its Council General.

Indeed, an important debate concerns the putative independence and objectivity of IFE's Councilors. In its earliest incarnation, IFE's

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Council General included ten Councilors. Four of these were Legislative Councilors—two representatives of the Senate and two representatives of Congress—that represented, respectively, the majority party and the largest minority party in each Chamber. In effect, these four seats granted the larger political parties (PRI, PAN, and PRD) direct representation in the Institute’s main executive body, fostering a situation presumably conducive to checks and balances. In Molina & Hernández’s parlance (1999), IFE’s original institutional setup could be seen as one of “party watchdogs” rabidly keeping tabs on each other’s behavior. Unfortunately, this incipient scheme of checks and balances was incomplete due to the preponderant presence of the Executive’s representative at IFE (the Interior Ministry), who acted as Chairman of the Council General, had the capacity to control agenda items, and could cast a vote in the Council (in practice, the Chairman voted only occasionally). IFE’s original charter created a second group of six Citizen Councilors to seat in the Council General. Citizen Councilors could in principle reduce political bickering, grant voice and representation to the electorate, and bring into IFE extensive legal and technical know-how. The six Citizen Councilors voted in all deliberations and were able to introduce new agenda items as long as these were recognized by the Council’s Chairman. Yet, because the first Council General (1994-1996) was still presided by the Interior Ministry, and because large parties were granted votes in all decisions through their Senate and Congressional representatives, questions arised early on concerning the “autonomous” capacity of the first set of Citizen Councilors.<sup>1</sup>

IFE was reformed in 1996, and this time legislators returned nine Citizen Councilors to fill the Council General with a group of individuals without formal partisan ties. Legislative Councilors were scrapped from IFE’s charter; more importantly, the Interior minister lost the faculty to act as Chairman of the Council, which in practice meant that the Executive lost control over electoral matters. The Legislative branch kept its ability to nominate an enlarged Council General, and new Councilors were voted in after extensive bargaining among the major political parties. The 1996 reform turned IFE into an agency autonomous from Executive interference, but the choice of simple majority voting to elect Citizen Councilors in Congress, meant that under

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<sup>1</sup>To my knowledge, Malo & Pastor’s (1996) account remains the most authoritative analysis of the voting behavior of Councilors from 1994 to 1995. They code information contained in the minutes of all sessions of the Council General between June 1994 and November 1995 and analyze the voting record of six Citizen Councilors and four Legislative Councilors in search of the determinants of the electoral behavior of these individuals.

certain circumstances one or two large parties could be shut off from the decision process.<sup>2</sup> Therefore, IFE has achieved procedural autonomy, but might be less “representative” of major political forces than it was during the 1994-1996 period.

Whether a country’s electoral authority should represent parties and thus generate checks and balances (the “party watchdog” model) or whether it should be controlled by presumably objective non-partisan experts (the “technocratic” model) is a moot point. Other Latin American countries have chosen varied institutional arrangements, and these might have all sorts of different effects on citizens’ behaviors and attitudes.<sup>3</sup> Be this as it may, I submit that an examination of the voting records of IFE Councilors could throw light on ideological and attitudinal differences that might be caused by different institutional configurations of the electoral authority. However, even if the analysis were exclusively focused on the 1996-2003 Council, we would still learn something about the preferences of individuals that are not officially tied to political parties, and are not elected by popular vote, yet carry out decisions that affect party politics in the country. In any case, I analyze the voting record of twenty-one IFE Councilors in two different Councils (1994-1996, 1996-2003) to estimate the spatial location of their “ideal” or “bliss points”.

I use Bayesian MCMC estimation algorithms developed by Quinn & Martin (2002, 2003) to inspect IFE’s voting record and describe the ideal points of its Councilors. In this research note, I limit the analysis to a thorough inspection of data, without injecting better information into the estimation process through thoughtful specification of priors. The paper is organized as follows: Section 2 renders explicit the construction of the statistical model from first principles about the voting calculus of IFE Councilors. Section 3 summarizes the data analysis, and Section 4 concludes by suggesting avenues for further research.

## 2. THE MODEL

The voting behavior of individuals in small committees conveys information about their policy preferences. Whether these preferences

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<sup>2</sup>Indeed, the Citizen Council inaugurated in 2003 was voted in with the support of PRI and PAN, and in the face of extreme opposition from the PRD.

<sup>3</sup>Molina & Hernández (1999) find, for example, an important association between institutional setup and citizens’ trust in the electoral process. A larger proportion of citizens considers that elections are fair and transparent where the electoral authority approaches the “technocratic” model, but this conclusion is based on the analysis of seven countries at a single point in time.

are sincerely revealed during the voting process or whether they reflect some contrived strategic calculus is subject of debate, but not a point that requires further discussion in the context of this paper.<sup>4</sup> Sincere or strategic motivations apart, it is incumbent upon the researcher to specify the mechanism that presumably links political preferences to vote choices. Though it is not the only modeling option, most political scientists rely on the Euclidean spatial model to build up their analysis from solid first principles (Ordeshook 1976, Hinich & Munger 1994). Put succinctly, spatial models assume that, when facing a binary YEA or NAY vote choice, rational committee members will vote for the alternative that will enact the policy closest to their own ideal position. I follow Martin & Quinn (2002) and Clinton, Jackman & Rivers (2004) in formalizing this utility calculation as follows: Let  $U_i(\zeta_j) = -\|\mathbf{x}_i - \zeta_j\|^2 + \eta_{i,j}$  represent the utility to committee member  $i \in I_n$  of voting in favor of proposal  $j \in J_m$  and  $U_i(\psi_j) = -\|\mathbf{x}_i - \psi_j\|^2 + \nu_{i,j}$  the utility of voting against it. In this formalization, the  $D$ -dimensional vectors  $\mathbf{x}_i$ ,  $\zeta_j$ , and  $\psi_j$  correspond, respectively, to the ideal position of the committee member in the policy space, the position that will result from a YEA vote, and the position that will result from a NAY vote. In many empirical applications—and in this research note—ideal points are estimated in one-dimensional space, though nothing in this model’s formulation precludes estimation of ideal points in multidimensional spaces.<sup>5</sup> The disturbances  $\eta_{i,j}$  and  $\nu_{i,j}$  are assumed to be distributed joint-normally with zero means and known variance (again, these assumptions can be relaxed to accommodate other error structures).

To turn this formal utility notation into a statistical model susceptible of estimation, note that a positive vote by member  $i$  on proposal  $j$  ( $y_{i,j} = 1$ ) reveals that  $U_i(\zeta_j) \geq U_i(\psi_j)$  (though, because of the stochastic components  $\eta_{i,j}$  and  $\nu_{i,j}$ , it is not necessarily true that  $\|\mathbf{x}_i - \zeta_j\| \leq \|\mathbf{x}_i - \psi_j\|$ ). Conversely, a negative vote by member  $i$  on

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<sup>4</sup>In any case, decisions in the Council General are reached by majority voting on binary outcomes—even if the bill under consideration is “modified” during the discussion prior to a vote. One could argue that preferences revealed by IFE’s Councilors are likely to be sincere, rather than strategic, because there are no incentives for strategic misrepresentation of preferences in an up-or-down vote. Obviously, a Councilor can still abstain from voting, which introduces an element of strategy in an otherwise straightforward voting decision.

<sup>5</sup>Poole & Rosenthal (2001) note that one and at most two ideological dimensions generally suffice to capture the policy preferences of members in large committees.

proposal  $j$  ( $y_{i,j} = 0$ ) suggests that  $U_i(\zeta_j) \leq U_i(\psi_j)$ . From these relations, it follows that a committee member will decide to vote YEA on any given proposal if  $U_i(\zeta_j) - U_i(\psi_j) > 0$ :

$$\begin{aligned}
 (1) \quad y_{i,j} &= U_i(\zeta_j) - U_i(\psi_j) \\
 &= -\|x_i - \zeta_j\|^2 + \eta_{i,j} + \|x_i - \psi_j\|^2 + \nu_{i,j} \\
 &= 2(\eta_j - \psi_j)x_i + \psi_j^2 - \zeta_j^2 + \eta_{i,j} + \nu_{i,j} \\
 &= \alpha_j + \beta_j x_i + \varepsilon_{i,j},
 \end{aligned}$$

where  $\alpha_j = \psi_j^2 - \zeta_j^2$ ,  $\beta_j = 2(\eta_j - \psi_j)$ , and  $\varepsilon_{i,j} = \eta_{i,j} + \nu_{i,j}$ . The last line in Equation (1) can be rearranged to represent each vote  $y_{i,j}$  as an independent draw from a normal probability distribution; thus  $p(y_{i,j} = 1) = \int_0^\infty \Phi(\alpha_j + \beta_j x_i)$ , where  $\Phi(\cdot)$  is the normal cumulative distribution function. If, for notational convenience, the parameters  $\alpha_j$ ,  $\beta_j$ , and  $x_i$  are stacked in vectors  $\boldsymbol{\alpha}$ ,  $\boldsymbol{\beta}$ , and  $\mathbf{x}$  (of lengths  $m$ ,  $m$ , and  $n$  respectively), the likelihood function can be constructed from the observed  $\mathbf{Y}$ :

$$(2) \quad \mathcal{L}(\boldsymbol{\alpha}, \boldsymbol{\beta}, \mathbf{x} | \mathbf{y}) = \prod_{j=1}^m \prod_{i=1}^n \Phi(\alpha_j + \beta_j x_i)^{y_{i,j}} (1 - \Phi(\alpha_j + \beta_j x_i))^{1-y_{i,j}}$$

The likelihood function in Equation (2) can be estimated statistically. Note however that we require estimates of  $\boldsymbol{\alpha}$  and  $\boldsymbol{\beta}$  (the case parameters), and  $\mathbf{x}$  (the ideal points of councilors, the only parameters of relevance for the purposes of this paper), and that we only have information collected in the matrix  $\mathbf{Y}$  of observed votes (0's and 1's) for all committee members on all proposals discussed by IFE's Council General. As it stands, thus, the model is not identified, because an infinite number of values of  $\boldsymbol{\alpha}$ ,  $\boldsymbol{\beta}$ , and  $\mathbf{x}$  are solutions to the system of  $j$  equations in (1).<sup>6</sup> Thus, in order to allow identification of the model parameters, it is necessary to add restrictions on their possible values. For example, factor analysis and principal component analysis restrict correlation among different dimensions to be orthogonal. In the methods devised by Martin & Quinn (2002) and Clinton, Jackman & Rivers (2004), one can alternatively fix  $\mathbf{x}_i$  for "known" holders of

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<sup>6</sup>There are two sources of under-identification in item response models: scale invariance and rotational invariance. See the discussion in Martin & Quinn (2002: 139) and Clinton, Jackman & Rivers (2004: 356-357). Note also that, in the context of Bayesian estimation, proper priors on the  $\boldsymbol{\alpha}$ ,  $\boldsymbol{\beta}$ , and  $\mathbf{x}$  parameters help solve the identification problem.

extreme views in the committee, or fix  $\alpha$  and  $\beta$  parameters for some bills or decisions. (See the discussion in Section 3).

Since the approach pursued here is Bayesian, rather than frequentist, I treat observed votes by IFE’s councilors as fixed quantities, and the  $\alpha$ ,  $\beta$ , and  $\mathbf{x}$  parameters as random variables from a joint posterior distribution in need of estimation. In the Bayesian approach, prior information about these parameters can be combined with the likelihood function (specified in (2)) to obtain posterior distributions of the parameters of interest. I start with similar priors for the parameters  $\alpha$ ,  $\beta$ , and  $\mathbf{x}$  in the model:

$$(3) \quad \begin{aligned} p(\alpha) &\sim \mathcal{N}_J(\mathbf{0}, \mathbf{1}) \\ p(\beta) &\sim \mathcal{N}_J(\mathbf{0}, \mathbf{1}) \\ p(\mathbf{x}) &\sim \mathcal{N}_I(\mathbf{0}, \mathbf{1}) \end{aligned}$$

The sole exception, required for identification purposes, is a constraint on the spatial position of one Councilor (see Section 3). The joint posterior distribution of  $\alpha$ ,  $\beta$ , and  $\mathbf{x}$  results from the product of the likelihood function in (2) and the set of prior distributions in (3), as expressed in (4):

$$(4) \quad \pi(\alpha, \beta, \mathbf{x} | \mathbf{y}) \propto \mathcal{L}(\alpha, \beta, \mathbf{x} | \mathbf{y}) p(\alpha) p(\beta) p(\mathbf{x})$$

I estimate the posterior distribution in Equation (4) through MCMC routines using Martin & Quinn’s (2002) *MCMCpack* for R.

### 3. BAYESIAN ESTIMATION OF IDEAL POINTS

At the time of Malo & Pastor’s (1996) analysis of IFE’s Council General, political scientists had not yet created methodological tools to infer the location of bliss points from the voting records of members of small committees. Since the mid-1990s, however, political methodologists have developed various techniques to circumvent what Londregan (2000) called “the microcommittee problem”. Among these, Bayesian estimation methods have recently challenged the dominance of more traditional tools of ideal point estimation (for example, Poole & Rosenthal’s NOMINATE) as the most appropriate methods to study the voting behavior of individuals in small committees (Martin & Quinn 2002; Clinton, Jackman & Rivers 2004). Since IFE’s Council General is in practice a very small decision body, and since most of the votes in the Council are on procedural—therefore mostly consensual—matters,

TABLE 1. Valid votes

	First Council	Second Council
Dates	June 3, 1994	Oct. 31, 1996
(first and last vote)	Oct. 10, 1996	Oct. 21, 2003
Number of Citizen Councilors	6	9 (+2)
Other Councilors	4 (+1)	—
Total votes	195	1,185
Unanimous votes	128	665
Non-unanimous (useful) votes	67	520

Bayesian Monte Carlo Markov Chain (MCMC) methods are ideal tools to infer the political preferences of its members.

I present here an analysis that combines information from IFE's first and second Councils General. Table 1 offers a summary of the number of usable votes generated by each Council. As mentioned before, a large proportion of votes in the Council were unanimous, which means that they convey absolutely no information about ideological differences among Councilors. Proportions of usable votes in the first and second Councils are, respectively, 35% and 44%. Thus, the most notable difference between the first and second Councils is that the proportion of consensual votes diminished drastically once party representatives were eliminated from the Council. Two obvious explanations for this apparent anomaly come readily to mind. First, these were after all representatives of the largest parties, which despite ideological disagreements held common interests against smaller parties that, by virtue of their size, could voice concerns in the Council but had no vote on practical matters. In this view, consensual votes would reflect the common interests of large parties. Second, the weight of the President's representative in the Council could have coerced Citizen Councilors and representatives of all parties into similar voting behaviors.

None of these explanations, however, might be correct. A closer inspection of the data reveals that abstentions were much higher during the first than during the second Council. Abstentions by the PRD's Senatorial representative, Porfirio Muñoz Ledo, were very frequent during his brief tenure at IFE. In general, abstentions can be interpreted as expressions of views contrarian to the majority, without incurring the negative publicity of an actual NAY vote on record. Be this as it may, the most immediate empirical result of this profusion of abstentions is that ideal points cannot really be estimated with much precision during the first Council.

Usable votes were recoded so that, in each case, a Councilor’s vote with the majority of the Council is coded as “1”.<sup>7</sup> The data are combined in a single array of 587 rows (corresponding to 67 plus 520 non-unanimous votes during the first and second Councils) by 21 columns. The reader may have noticed that the first and second Councils should in principle contain only 19 Councilor posts, rather than 21. In practice, the composition of both Councils changed over time. During the first Council, the identity of Legislative representatives changed, though not necessarily the party that they represented. Thus, for example, I have decided to count votes from the Senate majority representatives as emanating from the same individual, despite the fact that different individuals occupied this position. The reason is that all of them were PRI members representing their party in the Council. By the same token, votes from Congressional representatives for both the majority party (PRI) and the largest minority party (PAN) are counted as cast by the same individual. The only exception to this coding rule comes from the Senate minority representative post, which shifted from the PRD to the PAN in November 1994, after elections earlier that year returned a larger PAN presence in the Senate. Therefore, the first Council yielded 10+1 ideal points in need of estimation.<sup>8</sup> In the second Council, Councilors Molinar and Zebadúa were eventually replaced by Councilors Rivera and Luken. A different ideal point is estimated for each of these individuals, thus raising the number of Councilors from 1996 to 2003 to 9+2. Finally, Councilor Woldenberg was the only individual to serve in both Councils; given that I estimate a single ideal point from all votes during his double tenure, the tally comes down to 21 individuals whose ideal points require estimation.<sup>9</sup>

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<sup>7</sup>Abstentions are coded as missing values. In successive iterations of the Gibbs algorithm in *MCMCpack*, these missing values are imputed from the probability distribution of  $Y$  conditional on the distributions of  $\alpha$ ,  $\beta$ , and  $\mathbf{x}$ , then the distributions of these parameters are approximated conditional on the updated distribution of  $Y$ . Consequently, the posterior distributions of the parameters of interest will be less precise because of the incidence of missing values. The number of decisions arrived at by the second Council is much greater, and therefore allows more efficient inferences about ideal points.

<sup>8</sup>This is after excluding the Chairman from the 1994-1996 Council, who seldom exercised his voting rights.

<sup>9</sup>To finish the description of the data array, note that a very large number of cells are coded as “missing values”. These include not only those that correspond to abstentions but, more importantly, those that correspond to Councilors from the first Council that were not present in the second Council and Councilors of the second Council that were not represented in the first Council. As explained in fn. 7, missing values are imputed in each iteration of the Gibbs sampler. The most



TABLE 2. Posterior distribution of ideal points

Councilor	Votes	Mean	Mode	SD	HPD lo	HPD hi
Pozas	60	-2.28	-2.25	0.53	-3.28	-1.24
Creel	62	-2.18	-2.14	0.51	-3.20	-1.24
Zertuche	61	-2.15	-2.12	0.51	-3.16	-1.19
Ortiz Pinchetti	61	-2.05	-2.01	0.51	-3.10	-1.15
Granados	57	-1.98	-1.95	0.50	-2.97	-1.07
PRI Senator	55	-1.21	-1.17	0.38	-1.97	-0.48
PRI Diputado	56	-1.19	-1.16	0.37	-1.90	-0.49
PAN Diputado	50	-0.99	-0.97	0.35	-1.69	-0.35
PRD Senator	28	0.12	0.11	0.36	-0.61	0.82
PAN Senator	6	0.26	0.23	0.69	-1.06	1.63
Peschard	509	-4.45	-4.42	0.48	-5.45	-3.57
Merino	514	-4.01	-3.98	0.44	-4.87	-3.17
Rivera	263	-3.39	-3.36	0.45	-4.30	-2.57
Lujambio	508	-3.26	-3.24	0.34	-3.93	-2.61
Molinar	233	-2.78	-2.76	0.37	-3.51	-2.07
Luken	238	-1.92	-1.91	0.25	-2.43	-1.46
Cantú	494	-1.33	-1.33	0.14	-1.60	-1.07
Barragán	407	-0.82	-0.82	0.11	-1.04	-0.61
Zebadúa	237	-0.85	-0.84	0.15	-1.15	-0.55
Cárdenas	462	1.01	1.00	0.13	0.76	1.26
Woldenberg	576	-4.43	-4.40	0.48	-5.37	-3.50

Finally, I had suggested before that identification of the model in Equation (4) required a restriction on the spatial location of at least one Councilor. This restriction is not particular of Bayesian analysis, but rather affects all scaling methods (for example, factor analysis and principal components). By restricting the bliss point of a Councilor, one in fact establishes an “anchor” from which the Euclidean distances to the ideal positions of other Councilors will be measured. The fact that Councilor Woldenberg was a member of both the first and second Councils makes him an ideal candidate to serve as such an

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conspicuous effect of this procedure is that imputation uncertainty is reflected in a “wider” posterior distribution for the ideal point parameters.

anchor. Thus, Councilor Woldenberg’s ideal position was constrained to be negative.<sup>10</sup>

Tables 2 and 3 summarize results from runs of the model in Section 2. I comment first on Table 2. The first column in Table 2 displays the number of votes on which the estimation of ideal points is based for each Councilor. These are actual YEA/NAY votes; abstentions are not included in this count. Note that within each Council, point estimates of the ideal positions of Councilors (the mean of the posterior distribution of the 21 location parameters gathered in vector  $\mathbf{x}$ ) determine their rank in the list. Thus, for example, Citizen Councilors from 1994 to 1996 were arranged as follows: Woldenberg, Pozas, Creel, Zertuche, Ortiz Pinchetti, and Granados. Note also that Citizen Councilors appear to be arrayed on the left of the scale, whereas Legislative Councilors are located on the right of the scale. This result substantiates the view that whatever the ideological predispositions of Legislative and Citizen Councilors, the most important rift in the first Council was indeed whether Councilors were party representatives or not. The posterior distributions are in every case nearly symmetrical (note that mean and mode of each distribution are almost identical), and the data input was informative enough to narrow down the standard deviations of the posterior distributions, which had been assumed in the prior distributions to be equal to “1”. However, it is also noteworthy that the posterior distributions of ideal points in the first Council are still wide enough that they overlap in many instances. Thus, for example, the positions of Councilors Pozas, Creel, and Zertuche are nearly indistinguishable (consider in particular the low and high bounds of the 95% “highest posterior density” (HPD) interval in the last two columns of Table 2).

The amount of information contained in the 520 usable votes of the second Council allows a more precise inference about the ideal positions of Citizen Councilors. For starters, the spatial range covered by their positions is larger than that of the first set of Councilors. Whereas the mean positions of the first Councilors go from -2.28 to 0.26 (excluding Woldenberg), the second set of Councilors are arrayed from -4.45 (Peschard) to 1.01 (Cárdenas). Because both Councils are scaled in relation to Woldenberg’s spatial position, and because Woldenberg served in both Councils, the ideal points of all 21 Councilors are directly comparable. The obvious “outlier” in view of the eccentric posterior distribution of his ideal points is Councilor Cárdenas, who

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<sup>10</sup>This decision can be construed as reflecting Woldenberg’s former ties with parties of the Left, though he had resigned a leadership role in the PRD before joining the Council and was in fact sponsored by the PAN to seat in the Council General (Pastor & Malo 1996: 34-36).

TABLE 3. Probability of being the median voter

Councilor	Probability
Molinar	0.772
Rivera	0.107
Lujambio	0.098
Luken	0.016
Woldenberg	0.001

appears way out in the right of the spectrum. The nine Citizen Councilors that started their tenure at IFE in 1996 can be thus arranged: Peschard, Woldenberg, Merino, Lujambio, Molinar, Cantú, Barragán, Zebadúa, and Cárdenas.

Inferences about ideal positions are useful because of what they reveal about the political mechanics of voting in small committees. Given that decisions in IFE’s Council General are arrived at by simple majority, it is interesting to uncover the identity of the median voter, that is, the individual whose vote becomes decisive and whose preferences are thus likely to be enacted under majority rule. Again, since we have probability distributions regarding the location of ideal points in one-dimensional space, one cannot make deterministic claims about who the median voter would be. For example, the fact that Molinar occupies the median rank in the lineup of nine original Citizen Councilors thus not make him the median voter with absolute certainty. Note in particular that the 95% HPD that describes the probability distribution of Molinar’s ideal point overlaps with the HPDs of Merino and Lujambio to his left. Consequently, all that we can say is that Molinar was most likely to be the median voter in 1996.

How likely, though? The estimation of posterior densities for the ideal points of all Citizen Councilors allows a more precise answer. To close this research note, I follow Clinton, Jackman & Rivers’s (2004) analysis of the 106th US Senate. I drew a sample of 1,000 observations from the posterior distribution of ideal points of all eleven Citizen Councilors in the second Council. For each draw, the eleven resulting values were ranked from leftmost to rightmost. I then counted the number of times that each Citizen Councilor occupied the median rank, and report this number as an estimate of the probability that each Citizen Councilor was indeed the median voter. Results are presented in Table 3.

As can be seen in Table 3, Molinar indeed was most likely to be the median voter by a far cry. Results in Table 3 artificially compare

the positions of Molinar, Rivera, and Luken, as if all three had counterfactually been colleagues in the same Council. Be that as it may, these results suggest that once Molinar was out of the Council, Rivera and Lujambio had about an even chance of becoming the new median voters in the Council. Luken also makes an appearance in this list, but with a very small probability of being the median voter. Needless to say, Woldenberg’s appearance in the list is a statistical fluke, for only once in a 1,000 draws did his ideal position come in fifth place. None of the other six Citizen Councilors stands a chance of having been the median voter between 1996 and 2003.

#### 4. CONCLUSION

The purpose of this research note was to describe the spatial location of Citizen and Legislative Councilors in IFE’s Council General from 1994 to 2003. I did so within a Bayesian framework, using MCMC techniques to describe and analyze the posterior distribution of ideal points. In principle, this analysis can and should be extended in several directions.

First, I chose to anchor Councilor Woldenberg’s position as a matter of mere convenience. It would be more interesting to develop informative priors that codify the perceived ideological positions of IFE Councilors. For example, given the very high abstention rates of Senator Porfirio Muñoz Ledo during the first Council, and the fact that he was a representative of a leftist party, it would be convenient to use him as an anchor on the negative side of the spectrum (that is, the region usually associated with the Left). For the second Council, it might be more productive to anchor Councilor Cárdenas on the Left, though my impression is that his position was so eccentric that this expedient would only “flip” the results presented in Table 2.

More interestingly, one could estimate ideal positions in spaces of higher dimensionality. In practice, two dimensions should be more than enough to accommodate other potential issues that might reflect ideological cleavages among Councilors. In this case, it is impractical and undesirable to constrain the positions of Councilors, as defining a two-dimensional space would require fixing at least three such positions—already a third of the Council. Instead, the usual practice is to define a two-dimensional space by choosing bills or issues that might have cleaved the Council in recognizable ways, and using them to fix axes of competition (for example, an economic axis and a cultural axis orthogonal to the first).

Finally, the analysis could very profitably be extended to the voting behavior of electoral authorities in other countries (or even in subnational units within Mexico). Of particular relevance is the issue of the relative autonomy and objectivity of members of these bodies. Returning to Molina & Hernández's typology, would we expect to find more proficient yet accountable electoral authorities in "party watchdog" systems or in "technocratic" institutional setups? What trade-offs are posed by alternative ways of organizing the electoral authority? Will the process of *ciudadanización* of the Mexican electoral authority bring ideological conformity as the price of technical proficiency, or will this be achieved without sacrificing the representation of multiple points of view? In short, is IFE the best electoral authority that taxpayers' money can buy?

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