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Can you bury ideology? An empirical analysis of the ideal points of the ministers of Brazil's Supremo Tribunal Federal

Pode-se enterrar a ideologia? Uma análise empírica dos pontos ideais dos ministros do Supremo Tribunal Federal do Brasil

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Abstract: Brazil's Supremo Tribunal Federal (STF) is an especially interesting case for scholars with an interest in judicial behavior. The justices of the STF rule in tens of thousands of cases per year, in a great variety of legal disputes. The ideological breakdown of the STF remains puzzling. Observers of the STF find that a single left-right dimension is entirely inadequate to describe the voting coalitions that form in the

court. In this paper, we utilize a new dataset covering a representative sample of all cases decided by the STF between 1992 and 2013. The first important finding is that the voting patterns of the STF show that at least four dimensions are necessary to describe the justices' ideal points. We then estimate ideal points for 23 justices on each of four dimensions, and associate these dimensions with the dominant areas of law with which the STF deals. Finally, we seek to use these ideal point estimates to compare the votes of the justices in key cases with their broader voting pattern.

Keywords: Brazilian Supreme Federal Court. Ideology. Judicial Behavior.

Resumo: O Supremo Tribunal Federal é um caso especialmente interessante para pesquisadores com interesse em comportamento judicial. Os ministros do STF decidem dezenas de milhares de casos por ano, com temas os mais variados. A classificação do alinhamento ideológico do Supremo permanece duvidosa. Estudiosos do STF entendem que uma única dimensão esquerda-direita é inadequada para descrever as coalizões de votação que se formam no Tribunal. Neste artigo, nós utilizamos um novo *dataset* amostral representativo de todos os casos decididos pelo STF entre 1992 e 2013. O primeiro importante achado é que os padrões de votação mostram a necessidade de ao menos quatro dimensões para descrever os pontos ideias dos ministros. Nós então estimamos pontos ideais para 23 ministros em cada uma das quatro dimensões e associamos essas dimensões a quatro áreas dominantes do direto nas quais o STF atua. Por fim, procuramos utilizar essas estimativas de pontos ideais para comparar os votos dos ministros em casos decisivos, de um lado, com seu padrão geral de votação, de outro.

Palavras-chave: Supremo Tribunal Federal. Ideologia. Comportamento judicial.

Summary: **1** Introduction – **2** Theory – **3** Ideal point estimation – **4** Salient cases – **5** Alternative computational approaches – **6** Conclusions – References

1   Introduction

While the ideological predilections of the justices of the Supreme Court of the United States of America have long been the subject of research and have been reduced with some regularity to a single left-right dimension,[1] a similar analysis of the Supremo Tribunal Federal (STF) of Brazil has proved elusive. A few scholars have used the votes of the justices of the STF to estimate their ideal points in a two dimensional policy space.[2] These works have provided interesting insights into the nature of voting on the STF, and we hope to build on their findings here.

There are two major reasons for the relative scarcity of attempts to calculate ideal points for how STF justices (called "ministers" in Brazil) vote. The first goes to convenience. The ideological positions of the justices are hard to reduce to just a

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[1]   MARTIN, Andrew D.; QUINN, Kevin M. dynamic ideal point estimation via Markov Chain Monte Carlo for the U.S. Supreme Court, 1953-1999. *Political Analysis*, v. 10, n. 2, p. 134-53, May 1, 2002. DOI: 10.1093/pan/10.2.134.

[2]   LEONI, Eduardo L.; RAMOS, Antonio P. *Judicial preferences and judicial independence in new democracies*: the case of the Brazilian Supreme Court. 2006. Available in: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.180.1470&rep=rep1&type=pdf>; FERREIRA, Pedro Fernando Almeida Nery; MUELLER, Bernardo. How judges think in the Brazilian Supreme Court: estimating ideal points and identifying dimensions. *EconomiA*, v. 15, n. 3, p. 275-93, September 2014. DOI: 10.1016/j.econ.2014.07.004; DESPOSATO, Scott W.; INGRAM, Matthew C.; LANNES, Osmar P. Power, composition, and decision making: the behavioral consequences of institutional reform on Brazil's Supremo Tribunal Federal. *Journal of Law, Economics, and Organization*, v. 31, n. 3, p. 534-67, August 1, 2015. DOI: 10.1093/jleo/ewu018.

couple of dimensions. The Court tries an extremely large and heterogeneous group of cases – from abstract and concrete constitutional review, to administrative law writs, to criminal trials of federal politicians. Furthermore, the Brazilian political party system has been ideologically scattered in the last three decades, especially when compared to the USA's Republican-Democrat dichotomy, making it unrealistic to predict ideology on the basis of the party of the president who nominated the minister. Also, the absurdly high workload (60 to 70 thousand cases in recent years) has caused justices to almost always agree unanimously with the reporter for the case. This means that actual individual opinions rare.

The second goes to feasibility. The downside of such a high workload for the STF for researchers is the difficulty of coding hundreds of thousands of rulings for even a decade-long time frame. The votes of the ministers are not made available in a user-friendly format, and have to be manually located within the court's publication of its ruling. Generating a random sample is not simple either, since the Court does not disclose a list of all its rulings – ruling information is freely available, but on the website page for each case. We use a new dataset[3] that is the first ever to sample from all STF collegiate merit and injunction rulings between 1992 and 2013 on all types of cases. Earlier articles have all used data from cases of Ação Direta de Inconstitucionalidade (ADI) (direct actions of unconstitutionality) and Ação Declaratória de Constitucionalidade (ADC) (declaratory action of unconstitutionality) – both forms of abstract constitutional review. This is certainly a vital area of activity for the STF, but actually accounts for only 3.3% of the collegiate merit and injunction rulings that the court has issued between 1992 and 2013. One significant advance that this research project makes on previous work is its comprehensive sample.

2   Theory

Previous research on the STF has done little to establish the true number of ideological dimensions among the justices. Some scholars have estimated the ideal points of the justices along two dimensions–without providing theoretical or statistical justifications for this model of the court's ideological breakdown.[4] Others, using a relatively limited dataset (in terms of the kinds of cases considered) have determined that most of the variation in voting behavior can be reduced to just one dimension.[5]

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[3]   ROSEVEAR, Evan; HARTMANN, Ivar A.; ARGUELHES, Diego Werneck. Disagreement on the Brazilian Supreme Court: an exploratory analysis. SSRN Scholarly Paper, Rochester, NY, October 31, 2015. Available in: <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2629329>.

[4]   FERREIRA, Pedro Fernando Almeida Nery; MUELLER, Bernardo. How judges think in the Brazilian Supreme Court: estimating ideal points and identifying dimensions. *EconomiA*, v. 15, n. 3, p. 275-93, September 2014. DOI: 10.1016/j.econ.2014.07.004.

[5]   DESPOSATO, Scott W.; INGRAM, Matthew C.; LANNES, Osmar P. Power, composition, and decision making: the behavioral consequences of institutional reform on Brazil's Supremo Tribunal Federal. *Journal of Law, Economics, and Organization*, v. 31, n. 3, p. 534-67, August 1, 2015. DOI: 10.1093/jleo/ewu018.

Our preliminary analysis of the voting behavior of the justices of the STF suggests that the court is much more complex, and probably requires four dimensions to accurately map the justices' policy ideal points. There is certainly a lot of information to be gained through just one dimension, but our analysis of the eigenvalues of the voting matrix do not begin to significantly tail off until after the fourth dimension. This is quite different from the canonical uses of statistical software for ideal point estimation, which has its roots in the study of the US Congress.

There are a few ways to think about mapping the variation in voting behavior between the ministers. The first, is to think of the ministers as having ideal points in a policy space, where they each vote in such a way as to give rulings that move policy closest to their preferred outcome. The second, is to distinguish between ministers that are most concerned about the legal rigor of the ruling, and those who are most concerned about the potential effects of the ruling. Kapsizewski[6] conceptualized this distinction as being between the "legalistas" and the "consequencialistas". However, if this is the main difference between the justices, this is difficult to map, as the two kinds of ministers may agree and disagree on various rulings in a stochastic manner.

Beyond uncovering a more complete picture of the complexity of voting behavior of the justices of the STF, we hope to make a theoretical contribution in terms of the difference between the vast bulk of cases that the STF decides, and the few critical judgements it makes each year. Our theory holds that in cases that are in some way vital to the interests of the central government, justices are inclined to deviate from their broader voting record, and vote to uphold the government's policy agenda. In the case of Brazil's STF, this is particularly interesting, since the court decides such a high number of cases each year. There is evidence individual justices use their prerogatives in non-orthodox ways to "bury" politically important decisions among the thousands of cases each year.[7] Futhermore, we expect that in cases of high salience, the ideological structure of the court will show fewer dimensions–highlighting clearer divisions within the court.

3   Ideal point estimation

Ideal point estimation and judicial behavior

Since the work of Poole and Rosenthal[8] popularized the estimation of the policy ideal points of legislators, the approach has been taken up by a number of scholars

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6   KAPISZEWSKI, Diana. How Courts work: institutions, culture, and the Brazilian Supremo Tribunal Federal. In: COUSO, Javier; HUNEEUS, Alexandra; SIEDER, Rachel (Eds.). *Cultures of legality*: judicialization and political activism in Latin America. Cambridge: Cambridge University Press, 2010. p. 51-77.

7   ARGUELHES, Diego Werneck; HARTMANN, Ivar A. Timing control without docket control: how individual Justices shape the Brazilian Supreme Court's agenda. *Journal of Law and Courts*, v. 5, n. 1, 2017.

8   POOLE, Keith T.; ROSENTHAL, Howard. A spatial model for legislative roll call analysis. *American Journal of Political Science*, v. 29, n. 2, p. 357, May 1985. DOI: 10.2307/2111172; POOLE, Keith T.; ROSENTHAL, Howard. Patterns of congressional voting. *American Journal of Political Science*, v. 35, n. 1, p. 228-78, 1991. DOI: 10.2307/2111445; POOLE, Keith T.; ROSENTHAL, Howard. *Congress*: a political-economic history of roll call voting. New York: Oxford University Press, 1997.

who study courts.[9] Concurrently, advances in statistical software have "democratized" the approach, making it far easier to implement these analyses. Estimating the ideal points of judges relies on a few assumptions which are important to stipulate here. First, the estimation of the policy ideal points of judges implicitly assumes that judges may be treated as legislators of a sort.[10] Second, that these judge-legislators have opinions about ideal government policies.[11] Third, that they derive differential levels of utility from different realizations of policy.[12] Fourth, that these utility functions can be mapped to a particular functional form.[13] Fifth, that every ruling presents the judge with a choice between two alternatives that move policy either closer to, or farther from, their ideal point. Our approach to estimating the ideal points of the justices of Brazil's STF in this paper uses the W-NOMINATE (Weighted Nominal Three-step Estimation) program, written by Keith Poole and Howard Rosenthal, and thus follows the assumptions on which that software relies.[14]

The key theoretical underpinning of the W-NOMINATE program (and other procedures for estimating ideal points), is a spatial theory of voting.[15] As noted above, we must stipulate that the legislator has an ideal policy in mind, and that we can plot this ideal point in a multi-dimensional Euclidean space. In each vote, the legislator seeks to maximize their utility by voting such that policy moves closer to their ideal point. This is certainly an incomplete picture of the way that judges behave, but it can be a useful simplification for the purposes of the kind of analysis that we undertake here.

9   MARTIN, Andrew D.; QUINN, Kevin M. dynamic ideal point estimation via Markov Chain Monte Carlo for the U.S. Supreme Court, 1953-1999. *Political Analysis*, v. 10, n. 2, p. 134-53, May 1, 2002. DOI: 10.1093/pan/10.2.134; LEONI, Eduardo L.; RAMOS, Antonio P. *Judicial preferences and judicial independence in new democracies*: the case of the Brazilian Supreme Court. 2006. Available in: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.180.1470&rep=rep1&type=pdf>; EPSTEIN, Lee et al. The judicial common space. *Journal of Law, Economics, and Organization*, v. 23, n. 2, p. 303-25, June 2007. DOI: 10.1093/jleo/ewm024; PERESS, Michael. Small chamber ideal point estimation. *Political Analysis*, January 1, 2009. DOI: 10.1093/pan/mpp010; FERREIRA, Pedro Fernando Almeida Nery; MUELLER, Bernardo. How judges think in the Brazilian Supreme Court: estimating ideal points and identifying dimensions. *EconomiA*, v. 15, n. 3, p. 275-93, September 2014. DOI: 10.1016/j.econ.2014.07.004; DESPOSATO, Scott W.; INGRAM, Matthew C.; LANNES, Osmar P. Power, composition, and decision making: the behavioral consequences of institutional reform on Brazil's Supremo Tribunal Federal. *Journal of Law, Economics, and Organization*, v. 31, n. 3, p. 534-67, August 1, 2015. DOI: 10.1093/jleo/ewu018.
10 POSNER, Richard A. *How judges think*. Cambridge: Harvard University Press, 2010.
11 SEGAL, Jeffrey Allan; SPAETH, Harold J. *The Supreme Court and the attitudinal model revisited*. Cambridge, UK; New York: Cambridge University Press, 2002.
12 POSNER, Richard A. What do judges and justices maximize? (The same thing everybody else does). *Supreme Court Economic Review*, p. 1-41, 1993.
13 This functional form varies among different statistical approaches to ideal point estimation.
14 For a more detailed explanation of how W-NOMINATE works, see POOLE, Keith T. et al. Scaling roll call votes with W-Nominate in R. *Journal of Statistical Software*, v. 42, n. 14, 2011. Available in: <http://www.jstatsoft.org/article/view/v042i14>.
15 ENELOW, James M.; HINICH, Melvin J. *The spatial theory of voting*: an introduction. Cambridge [Cambridgeshire]; New York: Cambridge University Press, 1984; ENELOW, James M.; HINICH, Melvin J. (Eds.) *Advances in the spatial theory of voting*. Cambridge [England]; New York: Cambridge University Press, 1990.

Using roll call votes as inputs, W-NOMINATE proceeds by repeating a three step process until the estimated parameters correlate at 0.99 or better.[16] The three steps are:

1. Estimate the midpoint for each given dimension, and the distance that the proposed policy is from this midpoint, conditional on the ideal point of each legislator, the signal to noise ratio, and the weight for the dimension.
2. Estimate each legislator's ideal point, conditional on the midpoint for each given dimension, the distance of the proposed policy from the midpoint, the signal to noise ratio, and the weight for the dimension.
3. Estimate the signal to noise ratio (if the number of dimensions = 1), and the weight of the dimensions (if there is more than one dimension), conditional on the midpoint for each given dimension, the distance of the proposed policy from the midpoint, the signal to noise ratio, and the weight for the dimension.

Voting sample

Our data comes from a dataset created by the *Supremo em Números* research project at the Fundação Getulio Vargas in Rio de Janeiro.[17] Covering the period 1992-2013, this dataset includes 2,213 randomly selected STF collegiate rulings, roughly half unanimous and half non-unanimous. The STF has three collegiate bodies: the plenary and two 5 justice chambers. As mentioned earlier, what makes this dataset particularly interesting and novel is that it includes the more than 40 types of cases in the STF jurisdiction. They are divided into basically three types: concrete constitutional review, abstract constitutional review (appeals) and cases where the STF plays a trial court role.[18] The *Supremo em Números* research project hosts a unique database of all the STF cases since 1988. This allowed Rosevear, Hartmann and Arguelhes to obtain a random sample of collegiate rulings drawing from all types of cases. Previous individual voting pattern studies of the STF have only covered concrete constitutional review cases for predominantly logistical reasons.

From the original dataset with 2,213 observations, we pulled all non-unanimous rulings issued by the full court (as opposed to one of the two chambers), leaving us with a useful sample of 541 rulings. The full Rosevear, Hartmann and Arguelhes sample includes up to 33 justices. However, if we include the full complement of justices, we run into problems with insufficient overlap, or too few votes, for some of

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[16] POOLE, Keith T. et al. Scaling roll call votes with W-Nominate in R. *Journal of Statistical Software*, v. 42, n. 14, 2011. Available in: <http://www.jstatsoft.org/article/view/v042i14>.

[17] ROSEVEAR, Evan; HARTMANN, Ivar A.; ARGUELHES, Diego Werneck. Disagreement on the Brazilian Supreme Court: an exploratory analysis. SSRN Scholarly Paper, Rochester, NY, October 31, 2015. Available in: <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2629329>.

[18] FALCÃO, Joaquim; CERDEIRA, Pablo; ARGUELHES, Diego Werneck. *I Relatório Supremo em números*. O múltiplo Supremo. Rio de Janeiro: FGV Direito Rio, 2011.

the justices. Thus, we have to trim the sample to overcome these issues of insufficient data. Our final useful sample thus includes 23 justices who served between 1992 and 2013. The sample is sufficiently large to allow comparisons between justices who did not serve together, as there is sufficient inter-cohort overlap to facilitate valid comparison.[19]

Table 1: Justices included in our sample

Justice	Tenure	Num. Cases[20]	Justice	Tenure	Num. Cases
Ayres Britto	2003-2012	152	Marco Aurélio	1990-	569
Carlos Velloso	1990-2006	386	Maurício Corrêa	1994-2004	336
Cármen Lúcia	2006-	101	Menezes Direito	2007-2009	48
Celso de Mello	1989-	459	Moreira Alves	1975-2003	282
Cezar Peluso	2006-2012	153	Nelson Jobim	1997-2006	262
Dias Toffoli	2009-	26	Néri da Silveira	1981-2002	239
Ellen Gracie	2000-2011	291	Octavio Gallotti	1984-2000	210
Eros Grau	2004-2010	112	Paulo Brossard	1989-1994	61
Francisco Rezek	1983-1990, 1992-1997	85	Ricardo Lewandowski	2006-	113
Gilmar Mendes	2002-	310	Sepúlveda Pertence	1989-2007	469
Ilmar Galvão	1991-2003	329	Sydney Sanches	1984-2003	347
Joaquim Barbosa	2003-2014	127			

To facilitate using these vote data in W-NOMINATE, we analyzed the votes of the justices in six areas of law that we determined to be of considerable importance in the Brazilian political system. These areas are: administrative and tax law, cases dealing with benefits for civil servants, cases where businesses are a party, controversies between the federal government and the states and/or municipalities, criminal cases, and cases dealing with pensions and social benefits. We coded the votes of each justice in our dataset as being for or against the nominal interests of federal government,

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[19] POOLE, Keith T.; ROSENTHAL, Howard. *Congress*: a political-economic history of roll call voting. New York: Oxford University Press, 1997.

[20] This is the number of cases decided by this justice found in our sample, not the total number of cases decided by a given justice.

businesses, or the defendant, depending on the area of the law. These tables are interesting on their own, as they do show significant variation in the propensities of various justices to vote for particular government interests. We then use these vote proportions to specify the most "conservative" justice on each dimension in order to run the ideal point estimation.

How many relevant dimensions?

In ideal point estimation, one of the most important questions is how many relevant dimensions there are within the population of interest. In many groups of legislators or jurists, the analyst is able to see that there is one major dimension that explains the majority of the variation in votes (cf. works on the US Congress).[21] In our case, the breakdown of the eigenvalues within the vote matrix show that there are at least four dimensions on which the votes of the justices of the STF differ. This in itself is an interesting finding, and demands that we seek to determine the thematic content of these dimensions.

Figure 1: Scree plot showing the eigenvalues of the vote matrix
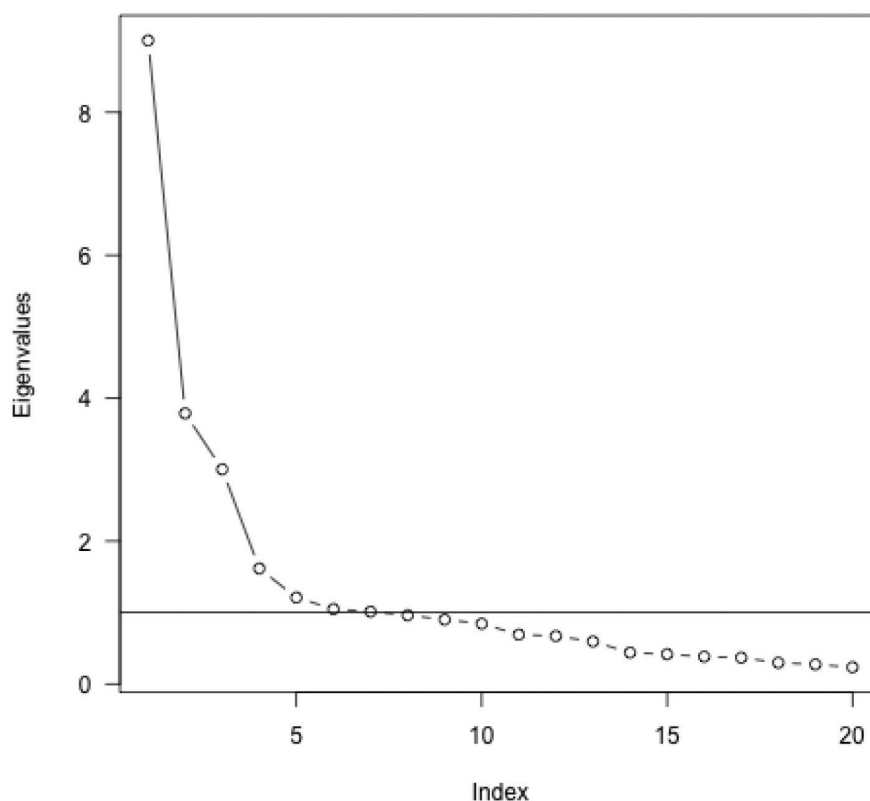
21 POOLE, Keith T.; ROSENTHAL, Howard. *Congress*: a political-economic history of roll call voting. New York: Oxford University Press, 1997; POOLE, Keith T.; ROSENTHAL, Howard. D-Nominate after 10 years: a comparative update to Congress: a political-economic history of roll-call voting. *Legislative Studies Quarterly*, v. 26, n. 1, p. 5-29, 2001. DOI: 10.2307/440401.

In Figure 1, the scree plot indicates that there are at least four dimensions of substantive interest. We have five factors with eigenvalues larger than 1 (sometimes used as the break point), but there seems to be a fairly clear "elbow" at the fourth factor (another common break point). For this reason, we included four dimensions in our estimations of the ideal points of the STF justices. In contrast, the same analysis for the current US Congress (114th) shows only one significant dimension. It is, however, to some degree up to the researcher to decide how many dimensions add to the analysis. In similar work, Nery Ferreira and Mueller[22] determined that only two dimensions were useful in analyzing the ideal points of the justices of the STF. Their scree plot does not look substantially different from ours, but they determined that the addition of a third dimension would not add sufficient "marginal explanatory power to warrant its consideration"[23]. We sympathize with this conclusion, but find that by most standard metrics for determining the number of significant dimensions, we should include at least four.

Substantive meaning of the dimensions

Our finding of such complexity in the voting patterns of the justices of Brazil's STF creates an analytical difficulty – how does one know what these dimensions substantively represent? One approach might be to conceptualize aspects of judicial behavior that may vary between justices. This was the approach used by Peress[24] in explaining the varying ideal points of the justices of the Supreme Court of the United States. Peress suggested that the justices of the US Court may be placed in a two-dimensional space according to a basic left-right dimension, and also according to their degree of judicial activism.[25] We do not believe that the Brazilian court breaks down quite that neatly, but this could be a starting point for one approach to understanding the dimensions.

Instead, we suggest that the justices of the STF have different policy areas where they may hold more or less conservative views. We have therefore sought to link these apparent dimensions in the voting data to the substantive issue areas in which the STF has been active. The four substantive issue areas that we believe are the relevant dimensions represented in these data, are (1) criminal law, (2) administration and

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[22] FERREIRA, Pedro Fernando Almeida Nery; MUELLER, Bernardo. How judges think in the Brazilian Supreme Court: estimating ideal points and identifying dimensions. *EconomiA*, v. 15, n. 3, p. 275-93, September 2014. DOI: 10.1016/j.econ.2014.07.004.

[23] FERREIRA, Pedro Fernando Almeida Nery; MUELLER, Bernardo. How judges think in the Brazilian Supreme Court: estimating ideal points and identifying dimensions. *EconomiA*, v. 15, n. 3, p. 275-93, September 2014. DOI: 10.1016/j.econ.2014.07.004. p. 287.

[24] PERESS, Michael. Small chamber ideal point estimation. *Political Analysis*, January 1, 2009. DOI: 10.1093/pan/mpp010.

[25] PERESS, Michael. Small chamber ideal point estimation. *Political Analysis*, January 1, 2009. DOI: 10.1093/pan/mpp010. p. 3.

taxation, (3) federalism, and (4) public pensions. We take votes in these substantive areas to be representative of the justices' broader policy ideal points. That is to say, a justice's vote in a case concerning pensions should be indicative of their ideal point for other areas where the central government provides material benefits to citizens. We will explain the broader significance of these issue areas as we go on.

It is important to note that we cannot capture these dimensions directly through WNOMINATE. Rather, we have selected the "anchor" voters (justices) to try to capture these dimensions. WNOMINATE requires the analyst to specify the most conservative voter for each dimension.[26] Therefore, for our analysis here we have selected anchor justices with an eye to capturing the dimensions we think are important. For each dimension, we selected a justice whose voting pattern is conservative (defined here as voting for the nominal interests of the central government in a very high proportion of the cases) in the relevant issue area, and who has also voted conservatively at a low rate in the other issue areas. This gives us some assurance that we are actually capturing the dimensions that we are looking for, but it is still not guaranteed. The framing of the rest of the paper depends on our success in capturing what we are looking for here. If this isn't successful, we will need to think of new ways to conceptualize the significant dimensions we have found in the voting data.

Reliability of estimates and other data issues

As one might expect, we can more reliably estimate the ideal points for justices for whom we have more data (i.e. those who have been on the court longer). However, we are still reasonably confident of the ideal points of most of the justices. In this case, the data limitations are compounded by our decision to look at four dimensions. The statistical package we are using (WNOMINATE) does not automatically generate measures of uncertainty for the estimates of the ideal points. With WNOMINATE, standard errors may be estimated through parametric bootstrapping.[27] In our case, the matrix of votes is too small to simulate a sufficiently large number of votes to reliably estimate the standard errors of the ideal points. Nonetheless, in the figures showing ideal points in each of the dimensions, we have included error bars that show an approximation of the 95% confidence interval, usually generated using only five simulated samples.

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[26] Note that the analysis of votes may actually determine that other voters are in fact more conservative than the selected anchor. This anchor merely establishes a domain in which to arrange the votes.

[27] LEWIS, Jeffrey B.; POOLE, Keith T. Measuring bias and uncertainty in ideal point estimates via the parametric bootstrap. *Political Analysis*, v. 12, n. 2, p. 105-27, May 1, 2004. DOI: 10.1093/pan/mph015.

Ideal point estimates

Our ideal point estimates show that on some dimensions there are substantively interesting clusters of justices, suggesting that, for example, the party of the appointing president does predict the behavior of the justices in certain kinds of cases. Other dimensions display an apparently random scattering of votes–perhaps suggesting that the narrative of a professional and semi-bureaucratic judiciary is true in at least some areas of law,[28] or at least that the justices of the STF do not consistently vote on the basis of their policy preferences.[29]

Figure 2: Estimates of the ideal points of STF justices in each of four dimensions[30]

Pairwise Comparisons

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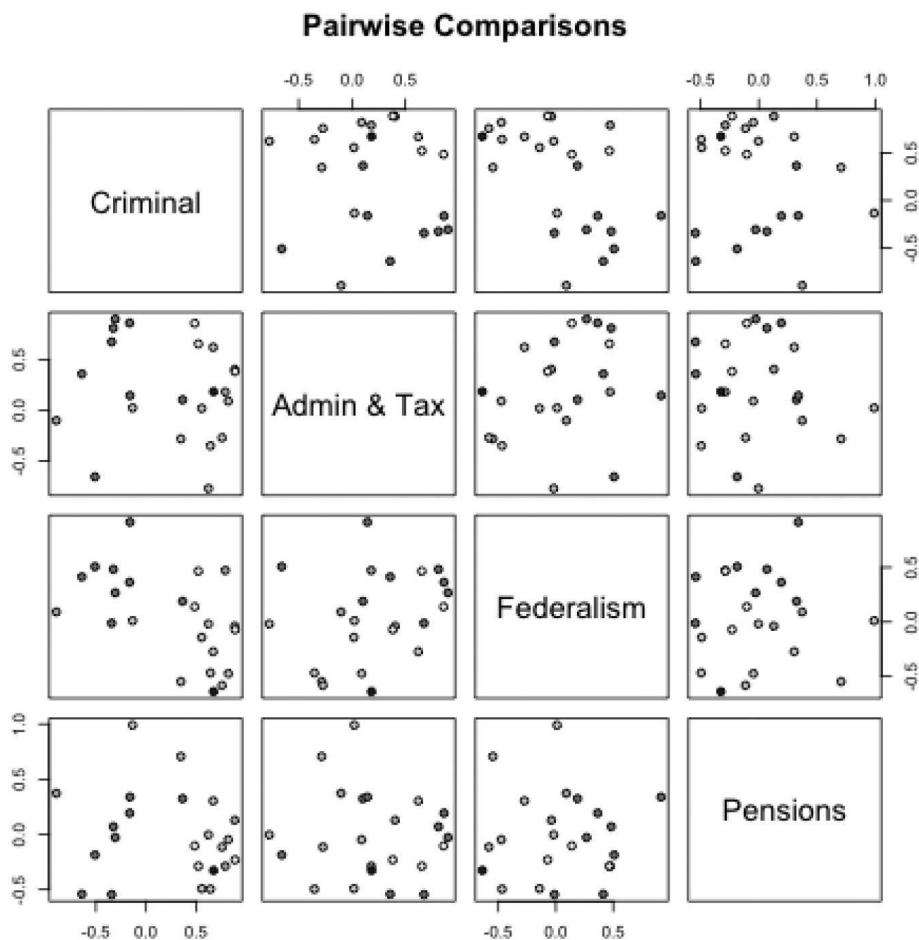
[28] OLIVEIRA, Fabiana Luci. Justice, professionalism, and politics in the exercise of judicial review by Brazil's Supreme Court. *Brazilian Political Science Review*, v. 3, n. SE, 2008; LANNES, O.; DESPOSATO, S.; INGRAM, M. Judicial behavior in civil law systems: changing patterns on the Brazilian Supremo Tribunal Federal. In: CICLO 2012 DO PROGRAMA DE SEMINÁRIOS CIEF-CERME-LAPCIPP-MESP, 2. 2012.

[29] ARLOTA, Carolina; GAROUPA, Nuno. Addressing federal conflicts: an empirical analysis of the Brazilian Supreme Court, 1988-2010. *Review of Law & Economics*, v. 10, n. 2, p. 137-68, 2014. DOI: 10.1515/rle-2013-0037.

[30] The colors of the dots correspond to the party of the appointing president: ARENA – dark blue, PT – red, PMDB – green, PRN – yellow, PDS – light blue.

One intuitive way to see if we've actually captured something of interest here is to see if the justices are plotted where we expect to see them. To facilitate this, we have plotted the first two dimensions together in Figure 3. Students of the Brazilian courts will not be surprised to see Marco Aurélio and Nelson Jobim at opposite ends of the first dimension, one we see as linked to issues of law and order. In the dimension we believe captures the ministers' ideal points with regard to the ability of the state to control its fiscal affairs, we see that Cezar Pelluso and Néri da Silveira occupy opposite polar positions.

Figure 3: First Two Dimensions

First Two Dimensions (of Four)
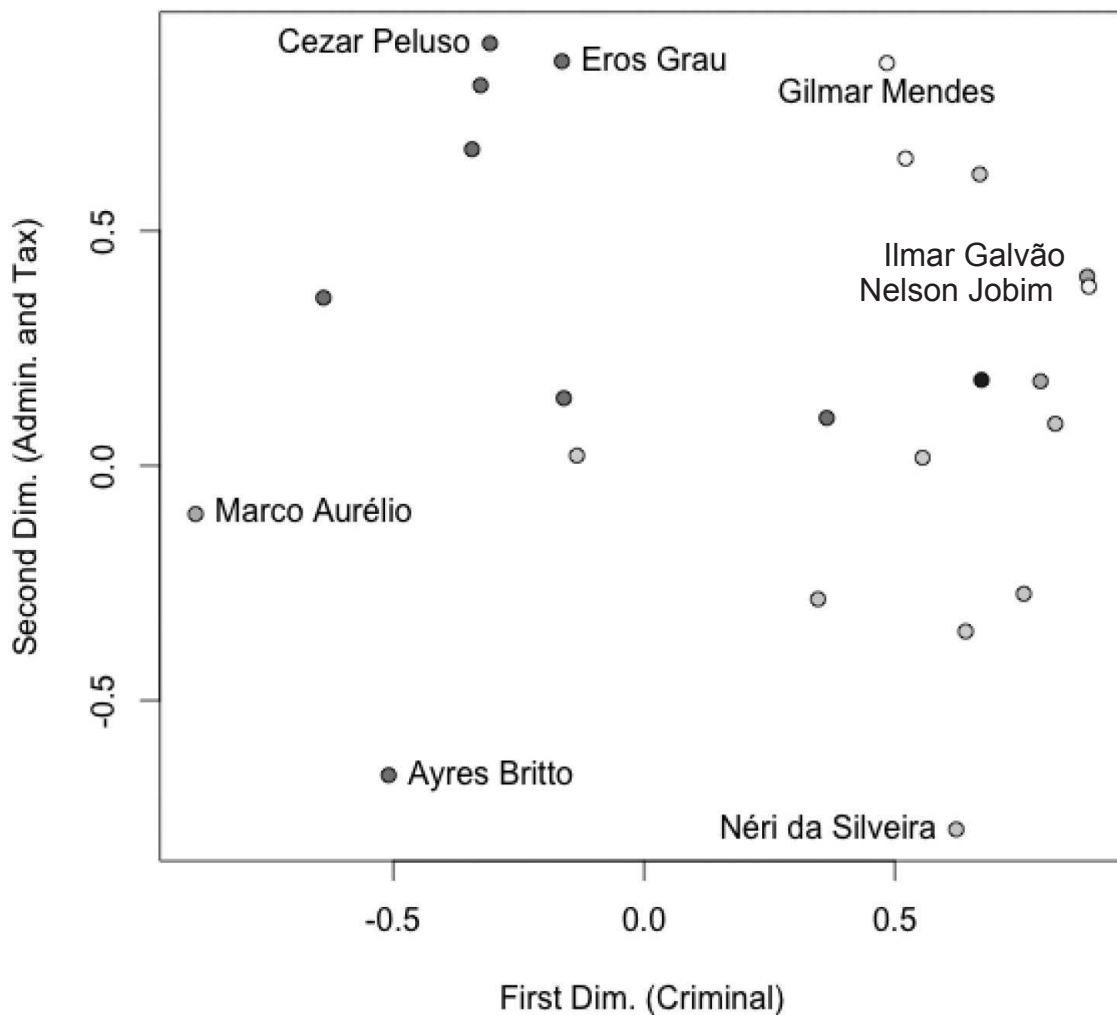
4   Salient cases

Our analysis is at odds with previous research on the ideological structure of the STF. One theory that could harmonize these findings would suggest that the multidimensional and complex structure we find in our fully representative sample of *en banc* rulings is different from what is found in highly salient cases, such as the cases of abstract constitutional review that made up the samples used by earlier scholars. It is clear in most jurisdictions that some cases matter far more than others. This is especially important in the STF due to to the very high caseload for the justices as individuals and as a group. One method of selecting the "crucial cases" is to examine the cases that have been of the greatest interest to the Brazilian legal academic community. To select these, we have queried the Google API to identify the cases that return the most hits on a search that includes only specialized Brazilian legal news outlets (JOTA, Consultor Jurídico, Migalhas, Justificando). Following this method, we are able to identify 302 cases that returned at least one hit. We re-ran the analysis of the Eigenvalues of the voting matrix, expecting to find that these cases reduced to one dominant ideological dimension.

Figure 4: Eigenvalues of the salient cases vote matrix (>1 Google Link)
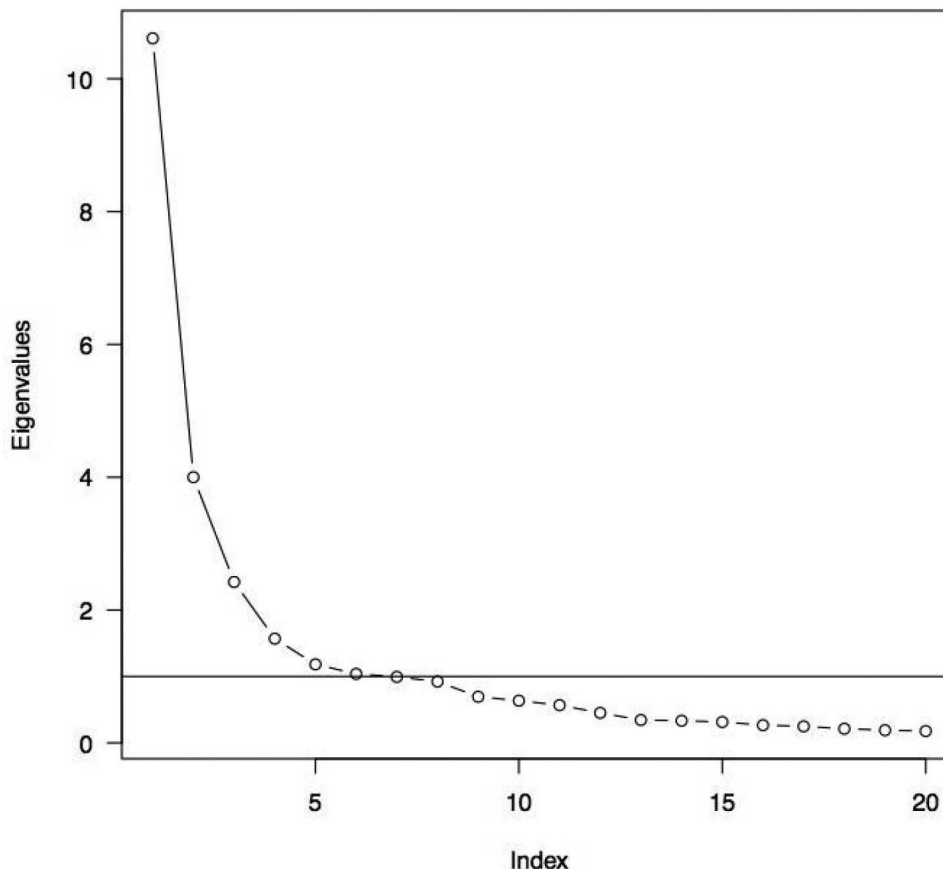
As Figure 4 demonstrates, the vote matrix still has at least four dimensions with an eigenvalue greater than 1. The decomposition of these values is smoother than in the full sample of cases, but does not show that the ideological structure of the STF is substantially simpler for what we have termed salient cases than for the full sample. We ran WNOMINATE again with this 302 case sample, and produced ideal point estimates that vary somewhat from those we get from the full sample, but do not tell a significantly different story.

As a further test, we subset the cases again, including only those cases for which there were more than ten links from legal blogs. This reduces the number of cases in the sample to 35. This is too few cases for WNOMINATE to produce ideal point estimates. Nevertheless, we can estimate the eigenvalues of this vote matrix, which are shown in Figure 5. Here we again see no indication that the ideological structure of the STF reduces to one dimension for highly salient cases.

Figure 5: Eigenvalues of the salient cases vote matrix (>1 Google Link)
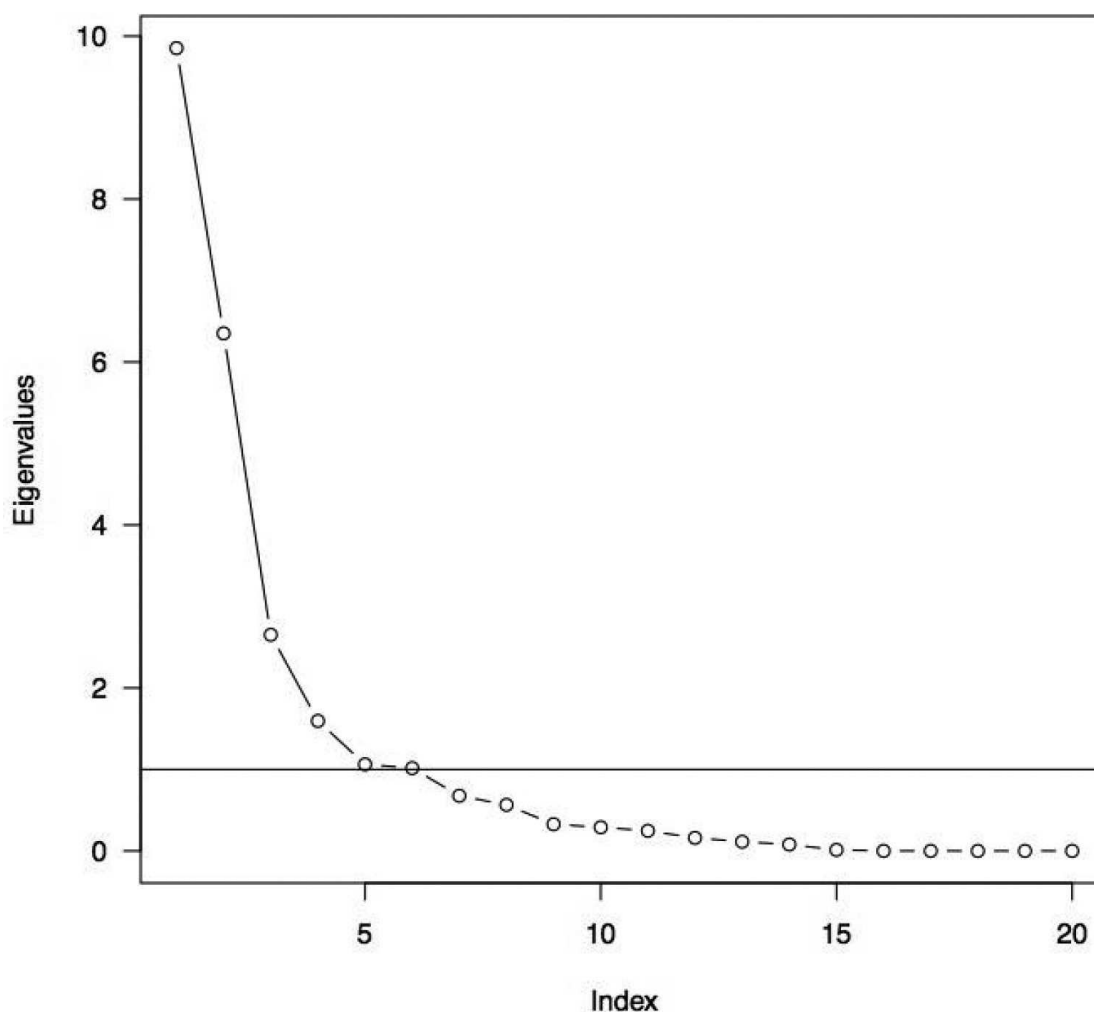
5 Alternative computational approaches

In this paper, we are primarily using WNOMINATE, which allows us to attempt to isolate the axes of interest. However, we have some doubt about the possibility of understanding the substantive meaning of the axes we've created by specifying the most conservative justices. An alternative approach, using the Bayesian estimation method (IDEAL) develops different arrangements of ideal points. This method may produce more reliable estimates of each minister's ideal point, but it is even more difficult to place the substantive meaning of the dimensions constructed with that method. As we continue our work on this project, we may shift to using the IDEAL process, written by Simon Jackman.[31]

6 Conclusions

These findings suggest to us that the court's ideological structure remains complex, even among the subgroup of highly salient cases. The salient cases we've considered here are those that were of great interest to the Brazilian legal community, but the result is likely to hold for cases that were important to the government's policy agenda. Some evidence suggests that the STF acts differently depending on how balanced the party coalitions are in Congress,[32] and that could explain some of the variation in voting we see here. Furthermore, if there is any systematic way in which ideology is buried under the vast number of rulings issued by the court, this underlying ideological structure is still complex enough to suggest that no party has managed to dominate the court.

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