Research Statement

From Economic Crisis to Culture Wars: How National Polarization Reshapes Local Politics in Brazil

INTRODUCTION

The overarching research question is how local electoral incentives interact with polarized national politics in multiparty democracies, drawing on the Brazilian case. In doing so, I will also advance the methods for measurement of policy positions and political ideology from text. Recent research documents increasing polarization in Brazil (Samuels et al., 2024; Zucco and Power, 2024), but its causes and consequences for local politics remain underexplored. This phenomenon is particularly puzzling because, unlike in the US and Western European countries, polarization in Brazil grew despite voters' historically weak partisan attachment (Areal, 2022). One explanation emphasizes affective polarization, whereby hostility toward other political groups grows independently of disagreements on policy positions (Iyengar et al., 2012; Zucco and Power, 2024). In this proposal, I focus on polarization on policy platforms, and research on the US case offers some clues on how national and local politics interact: politicians become more responsive to local district preferences (Case and Porter, 2026; Meisels, 2026) even as partisan policy agendas become more nationalized (Hopkins et al., 2022).

In my dissertation, I develop Fasti,[1] a measurement pipeline combining deep learning with a statistical item response model to estimate ideology and policy positions from text (Leal, 2026). Fasti solves two challenges. First, it produces ideology scores that are interpretable in terms of policy issues that divide the political spectrum, both in terms of which issues different candidates emphasize and which positions they take on those issues. Second, it performs well in contexts where candidates use non-polarized language, a scenario ubiquitous in the Global South and in US local politics where most candidates, regardless of their party, tend to campaign on the expansion or distribution of public services (Bleck and van de Walle, 2012; Bucchianeri, 2020; Kitschelt, 2007).[2] Substantively, this approach makes it possible to distinguish two different channels of ideological polarization that conventional left–right scales conflate: emphasis on certain issues or issue-specific positions.

Research agenda and deliverables. During the postdoctoral fellowship, I will advance a research program on how national polarization influences local politics using a corpus of over 68,000 campaign platforms in 2012–2024. Brazil provides an ideal case to study these research questions due to a series of critical events in this period: a deep recession, a presidential impeachment, and the rise and defeat of the far-right president Jair Bolsonaro. I will examine three related questions: whether local campaigns have become increasingly aligned with national ideological divisions; whether economic shocks intensify this process by encouraging candidates to emphasize culture-war issues; and whether the national rise and defeat of the far right change local policy agendas and, ultimately, municipal policy. I plan to produce three article manuscripts, each corresponding to one study of the research program. At Princeton, I would benefit from the mentorship of Professors Arthur Spirling in Data and Intelligent Systems (DaIS) and John Londregan in Politics, who agreed to co-advise my work.

I will also release a user-friendly, open-source package for R and Python that enables researchers to integrate Fasti with LLMs. This addresses a major problem for social scientists studying developing multiparty democracies or local politics, who often struggle to measure candidate ideology from text under non-polarized language. For instance, in Brazil, several attempts to scale mayoral ideology misplace leftist parties on the right (Pereira, 2021; Salles, 2019; Salles and Guarnieri, 2019). Since alternative data sources such as expert-based surveys are rarely available at the local level, the main alternatives are training deep learning models from scratch, which demands extensive human classification for training data, or proxying candidate ideology with party affiliation (Power and

[1] Fasti stands for From Attention, Stance, and Topics to Ideal Points.

[2] In contrast, Fasti's estimates correlate strongly with independent benchmarks in the US (0.85) and Brazil (0.86), recovering substantive divisions over economic redistribution and cultural issues. These results suggest that apparent ideological convergence may reflect measurement limitations rather than the absence of ideological competition.

Rodrigues-Silveira, 2019), which is prone to error under weak party discipline and when candidates frequently switch parties (Klašnja and Titiunik, 2017). LLMs accurately measure policy positions and ideology from text at relatively low cost and at large scale (Benoit et al., 2026; Le Mens and Gallego, 2025), but the features that drive such scores are unclear. Political scientists have advocated for text-based ideology scores to be interpretable in terms of policy positions and issue salience (Budge, 2001; Laver, 2001; Lowe et al., 2011), but no other off-the-shelf tool automates this process. Fasti then provides a modular step to improve interpretability. Therefore, this project will make a great methodological contribution for those studying policy positions, ideology, and polarization: a tool that is highly interpretable, that can keep up with advances in LLMs, that works under non-polarized language, and that performs well beyond the overstudied English-speaking cases (Majid and Levinson, 2010; Mihalcea et al., 2025). There are potential applications for this tool in political science, public policy, economics, sociology, data science, communication, and digital humanities.

DATA AND METHODS

The studies build on a corpus I already collected: over 68,000 Brazilian municipal, state, and national campaign platforms from 2012 to 2024.[3] I will combine these texts with six additional datasets:

- **Electoral data** from the Superior Electoral Court (TSE);
- **Socioeconomic data** and municipal gross domestic product (GDP) by sector from the Brazilian Institute of Geography and Statistics (IBGE);
- **Fiscal data** from the Brazilian National Treasury Secretariat (STN);
- **Demographic data** from the Institute for Health Policy Studies (IEPS);
- **Municipal laws** from the web portal Leis Municipais (Portal Leis, 2026); and
- **Exposure to corruption** from audits by the Office of the Comptroller General (CGU) and investigations by the states' Public Prosecutor's Offices (MPs) following Avis et al. (2018), Ferraz and Finan (2008), and Toral (2024).

AI and Text-as-Data Methods. LLMs provide a scalable approach to measure ideology and policy positions from political text (Benoit et al., 2026; Le Mens and Gallego, 2025). However, this approach has suffered two main critiques. First, LLM outputs are not clearly interpretable since it is unclear which text features drive the model's outputs. Second, the best-performing LLMs, which are proprietary, have replicability issues (Barrie et al., 2024). Recent work advocates for the combination of multiple open-source LLMs to improve replicability and produce honest uncertainty measures for the estimates (Barrie et al., 2026; Bouyamourn and Spirling, 2026; Spirling, 2023). Fasti is particularly useful for producing highly interpretable LLM-assisted ideological scaling. It combines labels produced by LLM or machine learning models that capture the relative emphasis political texts place on different issues and the left–right positions expressed on those issues (Leal, 2026).[4] I would particularly benefit from proximity with Professor Spirling for advice on how to best incorporate multiple open-source LLMs into Fasti to improve replicability and uncertainty quantification.

Methods for Causal Inference. Two of the studies will use shift-share instruments, a state-of-the-art approach for estimating causal effects of economic and social shocks on political outcomes using observational data (Colantone and Stanig, 2018; Guiso et al., 2024; Guriev and Papaioannou, 2022; Levi et al., 2021). This approach combines national changes with pre-shock local characteristics (such as national import shocks and pre-shock local industry composition) to predict local exposure to shocks (Autor et al., 2013). Because the predicted

[3] Brazilian electoral law requires every candidate for executive office to file a campaign platform with the electoral courts at the time of candidacy registration.

[4] In the working paper, I use embedding-based topic modeling to identify relevant issues (Angelov, 2020; Grootendorst, 2022). Then, I classify sentence stance by fine-tuning a multilingual natural language inference transformer on data from the Manifesto Project (Lehmann et al., 2025). The final step is an item response theory (IRT) model that estimates candidate-specific ideal points from inputs on issue salience and mean stance per issue.

exposure depends partly on pre-shock conditions, it can help separate causal effects from other correlated local changes occurring at the same time.

STUDY 1: POLARIZATION AND THE NATIONALIZATION OF LOCAL POLITICAL COMPETITION

The first study will systematically trace the evolution of issue salience, policy positions, and elite polarization across regions and levels of government in Brazil from 2012 to 2024. I expect that as national polarization grows, local candidate platforms will become increasingly aligned with national ideological divisions, similarly to the US case (Hopkins et al., 2022). This study will produce a novel dataset of high-quality measures of ideology and policy positions for all candidates in the corpus, which will be useful for other Brazilian politics scholars.

The Brazilian far right opposes social assistance and minority rights and proposes tough-on-crime approaches to public safety, the adoption of civic-military hybrid administration systems in public schools, and gag orders on any discussion of gender and sexuality in schools with the so-called "school-without-party" laws (Cravo, 2019; Rennó, 2020). Therefore, I am particularly interested in the evolution of policy polarization in four municipal policy domains: education and public safety, which far-right politicians emphasize, and social assistance and health, which they de-emphasize (Leal, 2026).

STUDY 2: ECONOMIC SHOCKS AND CULTURAL POLARIZATION

The second study will investigate whether Brazil's post-2014 economic recession increased platform polarization in mayoral elections. Using municipal variation in pre-recession sectoral composition and national sector-specific economic shocks, I will build a shift-share instrument to estimate how economic hardship affects candidates' ideological positioning. Following Hacker and Pierson (2020), I hypothesize that, in contexts of economic dissatisfaction and tight public budgets, parties emphasize polarizing cultural issues as a low-cost electoral strategy (Rodrik, 2021). This study will help explain the increase in affective polarization in multiparty democracies with low partisan attachment, especially under high levels of economic inequality.

In Latin America, voters' distrust of traditional center-left and center-right parties is often attributed to perceptions of rampant corruption (Montero, 2024). Following that idea, I am also interested in whether exposure to corruption allegations or findings moderates the relationship between economic shocks and polarization, i.e., whether municipalities with greater exposure to such information are more likely to polarize in response to economic shocks.

STUDY 3: THE FAR RIGHT AND MUNICIPAL POLICY

The third study will analyze whether the national rise of the far right changed ideological positioning in local elections, extending findings of Desai et al. (2026) and Power and Rodrigues-Silveira (2019). Leveraging pre-shock local party vote shares and national party-level vote swings to build a shift-share instrument, I will test whether exposure to the national rise of the far right induced strategic platform repositioning among mayoral candidates, especially among those in the center and the right.[5] I will also examine whether such shifts persisted or reversed after Bolsonaro's failed reelection attempt. Since Fasti reports positions by issue, I can distinguish repositioning on economic issues from the adoption of the far right's cultural agenda. The literature has not extensively examined the far right's influence on local policymaking, particularly in developing multiparty democracies. For this reason, I will test whether these platform shifts translated into policy using data from municipal laws on education, public safety, and social assistance and LLM-based text classification.

GOALS AND TIMELINE

Before the fellowship begins, I will submit the paper introducing Fasti (Leal, 2026) for publication and release open-source software packages for R and Python. Given the publication cycle in political science, I anticipate

[5] Results from my previous work show that candidates from center and right-wing parties respond more, on average, to district right-wing leaning than those from leftist parties (Leal, 2026).

continuing to revise and resubmit this paper in 2027–2028. During the fellowship, I will produce three new working papers, each corresponding to one of the studies, and release a second version of the Fasti software package with LLM integration. The table below summarizes the planned sequence of outputs. The deadlines for the articles indicate their initial journal submissions.

Output	**Outlet**[6]	**Deadline**
Which Issues Divide? (Paper introducing Fasti)	Methods or general journal (PA, AJPS, APSR)	Spring 2027
Fasti software package	Public release	Spring 2027
Nationalization of local politics	Latin America area journal (LARR, LAPS, JPLA)	Fall 2027
Fasti software, 2nd version with LLM integration	Public release	Spring 2028
Rise of national far right and local policy	Top political science journal (AJPS, APSR, JOP)	Fall 2028
Economic shocks and cultural polarization	Comparative politics journal (CPS, CP)	Spring 2029

[6] Full journal names and acronyms are listed before the references.

JOURNAL ACRONYMS

Acronym	Journal
AJPS	American Journal of Political Science
APSR	American Political Science Review
CP	Comparative Politics
CPS	Comparative Political Studies
JOP	The Journal of Politics
JPLA	Journal of Politics in Latin America
LAPS	Latin American Politics and Society
LARR	Latin American Research Review
PA	Political Analysis

References

Angelov, D. (2020). Top2Vec: Distributed representations of topics. arXiv preprint arXiv:2008.09470.

Areal, J. (2022). 'Them' without 'us': Negative identities and affective polarization in Brazil. *Political Research Exchange*, 4(1):2117635.

Autor, D. H., Dorn, D., and Hanson, G. H. (2013). The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review*, 103(6):2121–2168.

Avis, E., Ferraz, C., and Finan, F. (2018). Do government audits reduce corruption? Estimating the impacts of exposing corrupt politicians. *Journal of Political Economy*, 126(5):1912–1964.

Barrie, C., Argyle, L., Bisbee, J., Heseltine, M., Lucas, C., Mellon, J., Palmer, A., Roberts, M., and Spirling, A. (2026). AI and research methods. APSA Preprints. Report of the APSA Presidential Task Force on AI, Politics, and Political Science.

Barrie, C., Palmer, A., and Spirling, A. (2024). Replication for language models: Problems, principles, and best practice for political science. Working paper.

Benoit, K., De Marchi, S., Laver, C., Laver, M., and Ma, J. (2026). Using large language models to analyze political texts through natural language understanding. *American Journal of Political Science*. Advance online publication.

Bleck, J. and van de Walle, N. (2012). Valence issues in African elections: Navigating uncertainty and the weight of the past. *Comparative Political Studies*, 46(11):1394–1421.

Bouyamourn, A. and Spirling, A. (2026). Interpretable aggregation of correlated LLM annotations. Paper presented at PolMeth XLIII, 43rd Annual Meeting of the Society for Political Methodology, Michigan State University, East Lansing, MI, 15–18 July 2026.

Bucchianeri, P. (2020). Party competition and coalitional stability: Evidence from American local government. *American Political Science Review*, 114(4):1055–1070.

Budge, I. (2001). Theory and measurement of party policy positions. In Budge, I., Klingemann, H.-D., Volkens, A., Bara, J., and Tanenbaum, E., editors, *Mapping Policy Preferences: Estimates for Parties, Electors, and Governments 1945–1998*, pages 75–90. Oxford University Press, Oxford.

Case, C. R. and Porter, R. (2026). Strategic heterogeneity in issue positioning: Evidence from congressional campaigns. *American Journal of Political Science*. Forthcoming.

Colantone, I. and Stanig, P. (2018). The trade origins of economic nationalism: Import competition and voting behavior in Western Europe. *American Journal of Political Science*, 62(4):936–953.

Cravo, T. A. (2019). The 2018 Brazilian elections and the global challenge to democracy. *Global Affairs*, 5(1):1–4.

Desai, Z., Frey, A., and Tyson, S. A. (2026). Partisan leaning. *American Political Science Review*, 120(1):72–91.

Ferraz, C. and Finan, F. (2008). Exposing corrupt politicians: The effects of Brazil's publicly released audits on electoral outcomes. *The Quarterly Journal of Economics*, 123(2):703–745.

Grootendorst, M. (2022). BERTopic: Neural topic modeling with a class-based TF-IDF procedure. arXiv preprint arXiv:2203.05794.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2024). Economic insecurity and the demand for populism in Europe. *Economica*, 91(362):588–620.

Guriev, S. and Papaioannou, E. (2022). The political economy of populism. *Journal of Economic Literature*, 60(3):753–832.

Hacker, J. S. and Pierson, P. (2020). *Let them eat tweets: How the right rules in an age of extreme inequality*. Liveright Publishing, New York.

Hopkins, D. J., Schickler, E., and Azizi, D. L. (2022). From many divides, one? The polarization and nationalization of American state party platforms, 1918–2017. *Studies in American Political Development*, 36(1):1–20.

Iyengar, S., Sood, G., and Lelkes, Y. (2012). Affect, not ideology: A social identity perspective on polarization. *Public Opinion Quarterly*, 76(3):405–431.

Kitschelt, H. (2007). Party systems. In Boix, C. and Stokes, S. C., editors, *The Oxford Handbook of Comparative Politics*, pages 522–554. Oxford University Press, Oxford.

Klašnja, M. and Titiunik, R. (2017). The incumbency curse: Weak parties, term limits, and unfulfilled accountability. *American Political Science Review*, 111(1):129–148.

Laver, M. (2001). Position and salience in the policies of political actors. In Laver, M., editor, *Estimating the Policy Positions of Political Actors*, pages 66–75. Routledge, London.

Le Mens, G. and Gallego, A. (2025). Positioning political texts with large language models by asking and averaging. *Political Analysis*, 33:274–282.

Leal, J. L. (2026). Which issues divide? Interpretable ideal-point estimation from political text. Working paper, University of Rochester.

Lehmann, P., Franzmann, S., Al-Gaddooa, D., Burst, T., Ivanusch, C., Regel, S., Riethmüller, F., Volkens, A., Weßels, B., and Zehnter, L. (2025). The Manifesto Data Collection. Manifesto Project (MRG/CMP/MARPOR). Version 2025a.

Levi, E., Sin, I., and Stillman, S. (2021). Understanding the origins of populist political parties and the role of external shocks. CESifo Working Paper No. 9036.

Lowe, W., Benoit, K., Mikhaylov, S., and Laver, M. (2011). Scaling policy preferences from coded political texts. *Legislative Studies Quarterly*, 36(1):123–155.

Majid, A. and Levinson, S. C. (2010). WEIRD languages have misled us, too. *Behavioral and Brain Sciences*, 33(2–3):103.

Meisels, M. (2026). Candidate positions, responsiveness, and returns to extremism. *The Journal of Politics*, 88(2):681–697.

Mihalcea, R., Ignat, O., Bai, L., Borah, A., Chiruzzo, L., Jin, Z., Kwizera, C., Nwatu, J., Poria, S., and Solorio, T. (2025). Why AI is WEIRD and shouldn't be this way: Towards AI for everyone, with everyone, by everyone. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 39, pages 28657–28670.

Montero, A. P. (2024). Polarization and populism in Latin America. *Latin American Politics and Society*, 66(2):179–195.

Pereira, L. A. (2021). *Electoral competition and platform choice: A computational linguistics approach based on Brazilian data*. Ph.D. dissertation, Insper Instituto de Ensino e Pesquisa, São Paulo.

Portal Leis (2026). Leis Municipais: Brazilian municipal legislation database. Online repository. `https://leismunicipais.com.br/`.

Power, T. J. and Rodrigues-Silveira, R. (2019). Mapping ideological preferences in Brazilian elections, 1994–2018: A municipal-level study. *Brazilian Political Science Review*, 13(1):e0001.

Rennó, L. R. (2020). The Bolsonaro voter: Issue positions and vote choice in the 2018 Brazilian presidential elections. *Latin American Politics and Society*, 62(4):1–23.

Rodrik, D. (2021). Why does globalization fuel populism? Economics, culture, and the rise of right-wing populism. *Annual Review of Economics*, 13:133–170.

Salles, N. (2019). Programs and parties: Rethinking electoral competition through analysis of Brazilian 'grotões'. *Brazilian Political Science Review*, 13(2):e0004.

Salles, N. and Guarnieri, F. (2019). Estratégia eleitoral nos municípios brasileiros: Componente programático e alinhamento partidário. *Revista de Sociologia e Política*, 27(72):e001.

Samuels, D. J., Mello, F., and Zucco, C. (2024). Polarization and perceptions of status gain and loss: The case of Brazil. Working paper, SSRN.

Spirling, A. (2023). Why open-source generative AI models are an ethical way forward for science. *Nature*, 616(7957):413.

Toral, G. (2024). Turnover: How lame-duck governments disrupt the bureaucracy and service delivery before leaving office. *The Journal of Politics*, 86(4):1348–1367.

Zucco, C. and Power, T. J. (2024). The ideology of Brazilian parties and presidents: A research note on coalitional presidentialism under stress. *Latin American Politics and Society*, 66(1):178–188.