Book Bans in American Libraries: Impact of Politics on Inclusive Content Consumption *

Uttara M. Ananthakrishnan, Naveen Basavaraj, Sabari Rajan Karmegam, Ananya Sen and Michael D. Smith*

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*The authors contributed equally to this work, and authorship is ordered alphabetically by last names.

Abstract

Banning of books has become increasingly prevalent and politically polarizing in the United States. While the primary goal of these bans is to restrict access to books, conversations about the bans have garnered attention on a wider scale. This increased attention to bans can either have a chilling effect or can influence consumers to read the banned books. In this study, we use a novel, large-scale dataset of US library book circulations and evaluate the impact of book bans on the consumption of banned books. Using a staggered difference-in-differences design, we find that the circulations of banned books increased by 12% on average compared to comparable non-banned titles after the ban. We also find that banning a book in a state leads to increased circulation in states without bans. We show that the increase in consumption is driven by books from lesser-known authors suggesting that new and unknown authors stand to gain from the increasing consumer support. Additionally, our results demonstrate that books with higher visibility on social media following the ban see an increase in consumption, suggesting a link between social media and political consumerism. We also find that book bans have a tangible political impact through campaign donations - Republican Party candidates attract significantly more campaign donations than Democratic candidates, following the ban events but only in Republican-leaning states.

1 Introduction

Book bans or challenges in US public schools and libraries have been recurring events over the past several decades (Foerstel 2002). However, since 2021 there has been a significant push from state officials, elected representatives, individual parents, community members, and advocacy groups to remove books construed to deal with sensitive topics such as race and gender from public and school libraries. While such challenges are not new, the number of book bans in a short period has made these events a subject of national debate due to their politically polarizing nature. For example, the American Library Association (ALA) released a statement indicating an "alarming" increase in book ban campaigns around the US.[1] PEN America finds that over 1648 books have been challenged or banned just between 2021 and 2022 in 138 school districts. Critics of book bans argue that they are an attempt to censor information and ideas and violate the First Amendment rights of students and library patrons. On the other hand, proponents of these bans refer to the broad discretion afforded to school boards by the Supreme Court and the rights of parents to voice concerns about the suitability of themes dealing with race and gender identity for children under a certain age.

However, little is known about the impact of contentious rules and legislation designed to restrict access to goods at the local level on the consumption of these goods on a larger scale. We study this phenomenon in the context of book bans instituted by local schools and state bodies. Although the decision to ban books is made at the local level, these events receive extensive media coverage at the national level and on social media. A priori, the impact of these book bans on the consumption of such (inclusive) content is ambiguous. On the one hand, books banned in select locations garner national attention, which can increase the readership of these books (a phenomenon popularly known as the "Streisand effect"). On the other hand, the sensitive nature of these book bans could have a chilling effect on

[1] https://www.ala.org/news/ALA-opposes-book-bans-House-Oversight-hearing#:~:text=ALA\%20is\%20alarmed\%20by\%20an,our\%20legal\%20and\%20professional\%20responsibilities.

the consumption of these books for parents or teachers to limit controversy in a polarized environment.

In this paper, using novel large-scale data on US library circulation, we investigate the impact of these book bans on the circulation of these titles at public school libraries and public libraries, which is our key measure of book demand. To identify the causal effect of book bans, we use the large variation in the timing of book bans across different states in a difference-in-differences event study design. We focus on the 25 most banned books in the US based on the ALA and PEN America lists for our empirical analysis. Furthermore, given the national nature of such ban events, we study the spillovers of these bans across several dimensions. We also use data from Goodreads.com reviews to validate our key baseline result.

Across a series of specifications, using different sources of identifying variation, we find that book ban events increase the circulation of banned books by 12% compared to a set of control books. We also find spillovers of the impact of bans with an increase in readership in non-focal states. More specifically, even in states without bans, the circulations of banned books increase by 11.2% compared to control books. Interestingly, social media plays a significant role in amplifying this impact. Books that attract high visibility on Twitter enjoy significantly higher circulation after the event than books that do not. Our effects are driven entirely by books written by less famous authors, suggesting that these events shine a light on the works of lesser-known writers. Moreover, we find that this increase in consumption is prevalent in both Blue and Red states.

In general, this increase in content consumption is related to inclusion themes, as the topics of these books often deal with issues of race, gender, and LGBTQIA. The critical question here, however, is why politicians bring such issues to the forefront, inadvertently increasing these books' consumption. To further analyze this paradox, we explore the potential political gains for Republican and Democratic politicians. Our findings suggest that transforming book bans into a political issue or debate — what we specifically define here as

'politicization' — tends to increase the amount of donations received by Republican House candidates relative to Democratic House candidates. This effect is only confined to the Red States as proxied by those that went for Donald Trump in the 2020 US Presidential Elections. This evidence provides suggestive evidence for why Republican politicians might raise these issues in electoral campaigns.

Finally, we validate our baseline results using data from Goodreads. In particular, we use the number of reviews as an alternative measure of demand to find a significant increase in reviews/ratings for banned books relative to control books. Moreover, we see an increase in the mentions of ban-related keywords in the text of the review, suggesting that the increase in readership resulted from the book bans' coverage. We also find a statistically significant increase in the overall rating of the banned books on Goodreads.

We contribute to several strands of literature. First, we contribute to the broad literature around "political consumerism" which is the act of consumers attempting to influence business practices using their purchasing power or "voting with their wallets" (Stolle et al. 2005, Stolle and Micheletti 2013). Schoenmueller et al. (2023) show how brand preferences can predict political preferences and how increasingly polarized brand preferences are correlated with the trend in political polarization. Studies that aim to identify the causal impact of political polarization driving consumption are relatively new. In this emerging stream, Liaukonytė et al. (2023) studies the effect of the CEO of a brand (Goya) taking a political stance by praising President Donald Trump to find a (temporary) increase in sales by 22%. Wang and Lu (2020) shows that when it was accidentally disclosed that a company donated to a Republican politician, sales of that good increased in the Republican counties. Bursztyn et al. (2022) demonstrates how the politically polarized debates around the Affordable Care Act ("ObamaCare") lead to lower take-up in more Republican counties.[2] Mumma (2022), similar to us, provides descriptive evidence on the role of politics in determining the availability of children's books in school libraries. We complement this literature by providing

[2]There are related papers which show how political preferences can shape decisions in different settings credit ratings and online lending behavior Kempf and Tsoutsoura 2021, Wang and Overby 2022.

causal evidence while focusing on a context where formal restrictions exist on access to certain products at the local level or legislation proposed around sensitive social issues. Such conditions, in turn, create a polarized environment that could impact the consumption of the good on a broader scale. Moreover, we highlight a feedback loop identifying the impact on political donations due to such contentious restrictions.

Next, we contribute to the marketing literature that studies how the decision to censor a particular product leads to more scrutiny and an explosion of publicity for this product. This effect, popularly dubbed the "Streisand Effect", has been exacerbated in the age of social media (Jansen and Martin 2015, Mach 2022). Studies in this literature have looked at the impact of publicity, both positive and negative, as a form of advertising. For example, (Berger et al. 2010) studies online reviews for books and concludes that any publicity is good for relatively lesser-known products as reviews, including the negative ones, increase product awareness and lead to increased readership. Similarly, Ahluwalia et al. (2000), Ackerberg (2001) study the different mechanisms behind the potential role of negative publicity in informing the consumers' purchase decisions. More recently, Shipilov et al. (2019) found that both positive and negative coverage from the media influences firms' adoption of practices. In our paper, we find strong evidence to suggest that banning books provides informational value about these books on a national stage. In particular, we find that book bans lead to higher coverage of these books on social media. This informational effect leads to increased consumption not just in the focal states where some public or school libraries banned these books but also in states where these books were not banned. Our results shed light on the fact that censorship in a politically polarized environment provides informational value on the books being banned, leading to higher consumption of the restricted product. These results come with an important caveat. Our results do not speak to how consumption would be impacted if such bans took place at a more aggregate level, for example, if there was a federal ban on any particular book.

Finally, our paper relates to the studies examining the effectiveness of political marketing and campaigns. Political advertising has reached unprecedented levels in the past few election cycles. For example, the spending for the 2022 midterm election reached over $8 Billion.[3] Political advertising and branding have been of particular interest in the marketing literature. For example, Gordon and Hartmann (2013, 2016) study the different factors that influence the level of advertising in political campaigns. Studies have also analyzed how political parties leverage media and creative elements to communicate with the electorate (Soberman and Sadoulet 2007). More recently, Petrova et al. (2021) studies how social media aids new politicians to communicate with their constituency effectively and helps mitigate the incumbency gap with their competitors. Further, Fujiwara et al. (2021) quantifies the role of Twitter in the 2016 US Presidential Elections, highlighting that Twitter lowered the Republican vote share. However, the impact of using contentious policies, rules, or legislation as a potential tool for raising funds, with social media playing a moderating role, is relatively understudied. We find that the more conservative stance, which leads to such book bans, seems to lose out on the focal dimension of readership of those books more generally, at least in the short run. On the other hand, we demonstrate that (some) Republican politicians gain donations, which could provide them with an electoral advantage.

2 Background and Data

2.1 Background: Libraries and Book Bans in the United States

Public and school libraries play an important role in disseminating information for a large majority of adults and children in the United States. Recent research documents the positive effects of public libraries on educational outcomes (Karger 2021, Gilpin et al. 2021). Public libraries in the United States originated in the 19th century, financed by Andrew Carnegie

[3] https://www.opensecrets.org/news/2023/02/midterms-spending-spree-cost-of-2022-federal-elections-tops-8-9-billion-a-new-midterm-record/

(Berkes and Nencka 2021). By 2019, the US had 16,548 public libraries and accounted for a large majority of book consumption in the country (Reimers and Waldfogel 2022). More than half the public schools in the US have a full-time librarian, and often, schoolchildren have to make a trip to the school library once a week as part of their regular schedule (Gavigan et al. 2010). These institutional details highlight public and school libraries' key role in allowing adults and children to access books.[4]

The concept of banning books in classrooms and schools, and public libraries dates back several decades in the U.S. history.[5] While proponents of book bans propose limiting the circulation of certain books to protect children from potentially "inappropriate" content or "abusive" language,[6] opponents usually see them as censorship events that violate students' First Amendment rights.[7] Attempts to restrict access to books have faced several legal challenges with the Supreme Court weighing in on several occasions.[8]

More recently, the calls to ban books have increased significantly across the United States. According to a recent American Library Association (ALA) report, there were 729 unique attempts to ban books in public and school libraries in 2021 and 1,269 attempts to ban books in 2022.[9] Book bans have become part of the national conversation and cultural debates, fueled by increasing concern about parental rights.[10] Private individuals, government officials, or organizations can initiate the Book Ban process. During this process, the book is removed from the shelves. The result of the process can lead to the book being retained,

[4]Mumma (2022) also provides some initial descriptive evidence about the availability of different types of books, including those dealing with topics of diversity, across different libraries.

[5]https://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/classics

[6]https://www.ala.org/advocacy/bbooks/banned-books-qa

[7]https://njsbf.org/2023/02/15/does-banning-books-violate-the-first-amendment/

[8]In Island Trees School District v. Pico (457 U.S. 853, 1982), the Supreme Court ruled that school boards cannot remove books from their libraries simply because they are considered offensive. However, in Hazelwood School District v. Kuhlmeier (484 U.S. 260, 1988) and Morse v. Frederick (551 U.S. 393, 2007), the Court ruled that the First Amendment does not protect obscene materials in schools. These two sets of rulings provide significant challenges in interpreting the appropriateness of book bans in schools and public libraries.

[9]https://www.ala.org/news/press-releases/2023/03/record-book-bans-2022

[10]https://www.washingtonpost.com/education/2021/10/28/parental-rights-in-schools-untenable/

restricted to a subset of patrons, or removed from collections completely. In our dataset, it is often the case that a book is removed from a library completely.

Book bans in our dataset, and more generally, happen at a small geographic level, such as a public library or a school district. Since book bans happen at the public library or school district level, states that are both Republican (e.g., Texas) and Democratic (e.g., New York) experience book bans. Our circulation data is aggregated at the title-state-month, implying that we cannot identify what happens at the library level. We will be able to identify overall effects at more aggregated levels. The titles that get banned often deal with diversity and inclusive topics related to Race, Gender, and Sexuality. Some examples include Out of Darkness, This Book is Gay, Gender Queer, etc. The complete list of banned titles in our data is available in Table A1 in the Appendix.

Book bans have also become politically polarizing and play a central role in discussions on social media, attracting arguments for both parental rights and free speech. Book bans have also received endorsements from politicians and are often used in electoral campaigns.[11] Hence, a priori, the impact of book bans on wider readership could go either way. Given the polarizing nature of these issues, it could have a chilling where parents, teachers, and librarians refrain from advocating for such books. With potentially controversial topics, there might be an unwillingness to encourage reading and discussions around it, as shown in the case of internet search and potential Government intervention (Marthews and Tucker 2017). On the other hand, attention to these bans can create awareness and increase readership more broadly. Theoretically, this is in line with the Streisand Effect. The Streisand Effect is named after an attempt by singer Barbara Streisand to limit the viewership of a picture of her house that paradoxically led to an increase in views due to the attention on the issue.

[11] https://www.politico.com/news/2022/09/22/house-and-senate-democrats-prepare-resolutions-to-oppose-local-book-bans-00058200

2.2 Data

2.2.1 Book Circulation Data

We obtain book circulation data from a large library content and services supplier to major public and academic libraries in the U.S. The supplier provides physical and digital books, library maintenance software, and analytics solutions to libraries. The data consists of a sample of 49,163 International Standard Book Numbers (ISBNs) across 16,768 titles[12] from January 2021 to June 2022 across 38 states in the U.S. The data is aggregated at the Title-ISBN-Month-State level and contains information on total circulations. We aggregate the data to create a balanced panel of circulation data at the Title-Month-State level. Given the Non-Disclosure Agreement with our partner vendor, we cannot report absolute levels of book circulations.

Our analysis considers the book titles PEN America and ALA identified as the most commonly banned books in the US between July 2021 and June 2022. The PEN list overlaps significantly with the ALA's list of banned books in public libraries.[13] For each book title, we obtain the month of the ban event and the state where the ban originated based on these lists. It is important to note that all the book bans we observed in the data were restricted to a particular school district or public library.

To limit the role of confounders and unobservables, we do not consider banned books published before 1 January 2010, as many were banned multiple times before our study period. In addition, these books tend to be popular and have been made into movies or TV shows. We also remove banned books whose circulations were impacted by other social movements unrelated to the book bans - for example, following the murder of George Floyd, circulations of "How to Be an Antiracist" book surged, and the book eventually became a top seller on Amazon.com.

[12] A title can have multiple ISBNs depending on the format and the published edition.

[13] See here for the ALA list `https://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/top10` and here `https://pen.org/index-of-school-book-bans-2022/` for the PEN list.

After removing the books, we consider the top 25 banned books in public and school libraries as identified by the combined PEN America and ALA list of banned books. These books were mostly in the fiction and non-fiction genre, covering topics or themes such as LGBTQ, Race, Diversity, etc., as identified by our data partner. Next, for each of these titles, we identify the months when the title was banned in a particular school district or public library using our banned book lists.[14]

Next, we identify books that might serve as a relevant control group. We attempt to construct a control group that would not be affected by the treatment to limit contamination bias. Titles in the control group do not contain the same themes or topics as the banned book. We also do not include any books in the control group with the same BISAC codes as banned books.[15] We ensure that the circulations of the control books are comparable by using control books whose circulation trends are similar to that of the banned books in the pre-ban period. This exercise leaves us with 25 banned and 349 control book titles.

2.2.2 Goodreads Reviews Data

As an alternative data source, we use Goodreads, a popular cataloging website owned by Amazon with over 90 million members. We use this popular book review platform to identify reviews and numerical ratings for each book in our sample. We also extract the review text, the date when the review was written, and reviewer details for the period between January 2021 and June 2022. Finally, we also obtained the total number of books each author wrote in our sample.

2.2.3 Political Contributions Data

We identify individual-level contributions to all Republican and Democratic parties from the Federal Election Commission's political donation data. We focus on all donations to

[14] `https://pen.org/report/banned-usa-growing-movement-to-censor-books-in-schools/`

[15] The BISAC Subject Codes are standard categories by publishing companies, booksellers, and libraries

candidates during the 2021-2022 election cycle.[16] The data contain information on each donor's home state, donation amount, and the party (also referred to as committee) the candidate is affiliated with. We also use FEC committee candidate links to match a unique candidate with contributions to their committee.

2.2.4 Twitter Data

In our analysis, we also need social media data, focusing on Twitter. We use Brandwatch, a popular social media analytics platform,[17] to fetch all the geotagged tweets from the US between January 2021 and July 2022 that contain the name of the banned or control titles and their respective author names in the tweet text. For each tweet, we fetch the text, URL, Twitter user id, follower count, location, and total impressions for each tweet.[18]

We construct two measures used in our analysis with this information. First, we count all the tweets that mention the banned book authors' names between January 2012 and December 2020. We then split the sample of authors into popular and non-popular authors based on the median count of tweets. Second, we identify tweets that mention the titles and their respective authors and classify the titles with greater than total median impressions on Twitter as " High Visibility".

3 Empirical Framework

We observe that although different books are banned at different times, bans for each title keep cascading after the first time a title gets banned in any state, as shown in Figure 1 with the five most banned book titles.

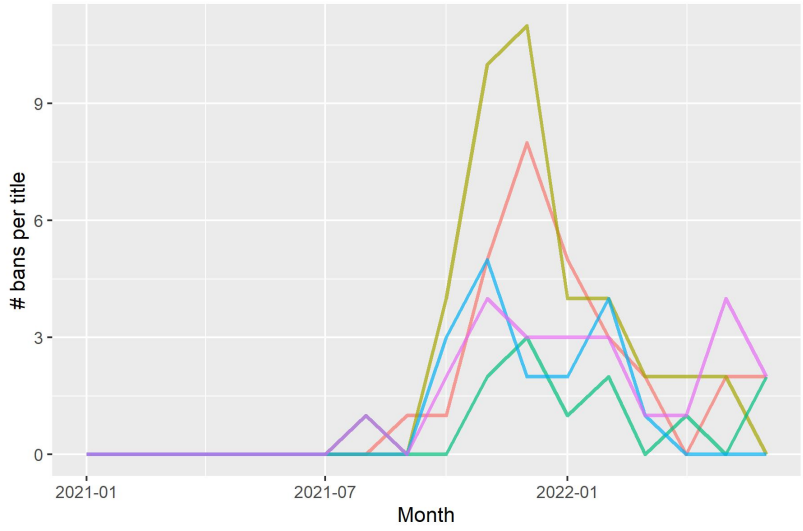
Moreover, once a title gets banned in one state, local news media and social networks highlight ban events across all states, which can affect the demand for these titles in other

[16]The FEC tracks donations to political candidate committees if the total election cycle-to-date contribution amount is above $200 - `https://www.fec.gov/data/browse-data/?tab=bulk-data`

[17]`https://www.gartner.com/reviews/market/social-monitoring-and-analytics`

[18]Impressions correspond to the sum of views, likes, and retweets for the tweet.

Figure 1: Number of Bans per Title



Note: The figure shows the total number of ban events per title per calendar month for the five most banned books in our sample. Each line represents a title.

states. Hence, we define our treatment at the title level, and once a title gets treated (banned in the first state), it remains treated for the rest of our analysis.[19] Our identification relies on different titles being banned at different times, providing us with a staggered Difference in Differences (DiD) framework.

We estimate the DiD model using our main specification shown in the following Equation:

$$y_{ijt} = \alpha_i + \gamma_j + \tau_t + \beta * PostBan_{it} * Treat_i + \epsilon_{ijt} \tag{1}$$

where $PostBan_{it}$ is the event variable which takes a value of 1 if the month t is following the first time title i is banned in any state and 0 otherwise.[20] For all control titles, the variable takes a value of 0 during all months. $Treat_i$ indicates whether title i is among the list of eventually banned books or not. α_i, γ_j, and τ_t capture fixed effects for title, state, and month, respectively. The coefficient of interest β captures the average impact of banning a

[19] We test alternative event definitions to ensure the robustness of our results.

[20] Similar to Agarwal and Sen (2022), there is generally a lag between when a ban is initiated and when it becomes known to the broader public. Moreover, many ban events happen towards the second half of the month. We test the robustness of our results to this definition later in the paper.

title in any state on circulations. We use a four-month pre-period before the ban event and a six-month post-period window.[21] The standard errors are clustered at the state level.

We verify the parallel trends assumption using the event study specification.

$$y_{ijt} = \alpha_i + \gamma_j + \tau_t + \sum_{m=-4}^{m=6} \beta_m * 1[t - e_i = m] * Treat_i + \epsilon_{ijt} \tag{2}$$

The indicator variable $1[t - e_i = m]$ takes a value of 1 if the calendar month t is m months apart from the ban event e_i. The baseline period is -1, which means that the average change in circulations of banned titles compared to the circulations of control titles is measured relative to the difference in circulations one month before the ban. We use an array of estimators suggested in recent literature to account for potentially heterogeneous treatment effects in staggered DiD settings to verify the robustness of the Two Way Fixed Effects (TWFE) estimates (Callaway and Sant'Anna 2021, Sun and Abraham 2021, Borusyak et al. 2021)

4 Baseline Results and Heterogeneity

4.1 Baseline Results

First, we provide some model-free evidence of the impact of book bans on the circulation of treated and the control group books. When we compare the normalized average monthly circulation during the pre-ban and the post-ban period between control and banned books, we observe that the average circulation of banned books has increased by 14.9% after bans compared to an increase in average circulation by just 0.8% for control books. However, the average effect might be confounded due to seasonality or state-specific factors, among others. Therefore, we employ a Difference-in-Difference (DiD) model to provide a causal estimate of the impact of book ban events on circulations.

[21] We also test the robustness of the results to a different time window.

We present the TWFE estimates in Table 1. Column (1) shows the average impact of book bans on circulation across all states in our sample. We see a positive and significant impact of bans on book circulations. On average, the circulation of banned books increases by about 12% (1 - exp(0.113)) compared to the circulation of control books during the 6-month window following the first ban. Column (2) shows a positive and significant average effect only in the banned states (i.e., states with at least one title being banned between July 2021 and June 2022 - 23 states). Interestingly, we see a significant increase in readership for states that never experienced a ban (column (3)). Overall, we believe that this is a lower bound on the impact of book bans on readership since there are likely to be significant peer effects and spillovers (e.g., word of mouth, use for group readings, and reuse across cohorts) that we can't measure (Agarwal and Sen 2022, Belo et al. 2016).

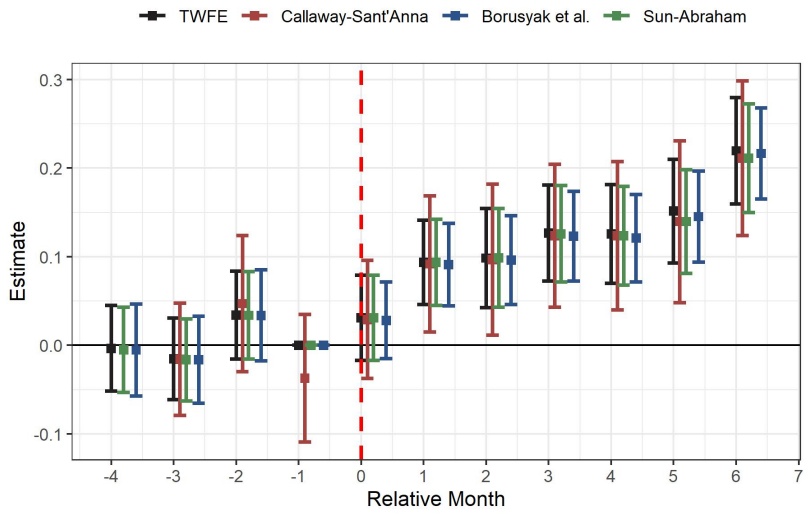
Table 1: Baseline Estimates: Impact of Ban Events on Circulation

Dependent Variable:	Log(Circulation)						
	All States	Banned States	Non-banned States	Author Popularity	Twitter Visibility	Blue States	Red States
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables							
PostBan	0.113***	0.118***	0.106***	-0.005	0.015	0.119***	0.107***
	(0.017)	(0.022)	(0.029)	(0.020)	(0.021)	(0.023)	(0.026)
PostBan × Non-popular Author				0.229***			
				(0.031)			
PostBan × High Visibility					0.206***		
					(0.036)		
State Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Title Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.57637	0.55644	0.61870	0.57647	0.57645	0.52521	0.64069
Observations	249,660	151,110	98,550	249,660	249,660	131,400	118,260

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is title-state-month. The dependent variable is log of circulation.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

Figure 2 shows the event study estimates using the TWFE estimator and the three recently developed estimators by Borusyak et al. (2021), Sun and Abraham (2021), and Callaway and Sant'Anna (2021). There are a few clear takeaways. First, we find no significant

Figure 2: Event Study Estimates



Note: The figure shows event study estimates using four different estimation methods. The dependent variable is the log of circulation. The unit of observation is at the title-state-month level. 95% confidence intervals are shown.

changes between the treated and control groups in the pre-period, verifying the parallel trends assumption. This holds for not only the TWFE estimator but also three other popular estimators that explicitly account for the staggered nature of the treatment. Second, there is a statistically significant jump in the circulation numbers of banned titles relative to control books after banning a title in any state. Overall, these results give us confidence in the credibility of our results. We present the average estimates for these three alternative methods in columns (1)-(3) of Table A2 in the Appendix.[22]

Overall, these results imply that these book bans targeted at individual public libraries or school districts lead to a Streisand effect more generally rather than having the intended chilling effect. A caveat is that we do not observe circulation at the school or public library level. Hence, we can't shed light on the reading behavior in the locations that felt the direct consequences of the ban.

[22]Using the definition of an event as the same month when the book ban was initiated leads to qualitatively and quantitatively similar results as seen in column (1) of Table A3 in the Appendix.

4.2 Robustness Checks

In this section, we explore whether our results are robust on several different dimensions.

First, our main specification considers a title to be treated as soon as it is banned in any state. However, it is possible that the first significant ban event in our data had spillovers across all eventually banned book titles and states. Therefore, we use October 2021 as the month of treatment for this specification when the first large wave of book bans occurred.[23] In other words, we consider that all the books in our treated category were banned in October 2021, regardless of the state-level bans on individual effects. In column 4 of Table A2 in the Appendix, we compare the monthly circulations of all the 25 banned titles before and after October 2021 relative to the monthly circulations of control titles to find qualitatively similar results as our baseline specification. Next, on the other hand, it is also possible that each state's ban event of each title is truly independent. This assumes that there are no spillovers across states, i.e., banning a title in State A would not affect readership in State B, where the title is not yet banned. For each state, a book acts as a control book for other banned books until it gets banned in that particular state, and we also use books that never get banned in any state as part of the control group. In column 5 of Table A2 in the Appendix, we find that the results are qualitatively similar to our baseline results.

As discussed above, spillovers could be from one banned book to another. In a different setting, Borah and Tellis (2016) show that negative chatter about a product can have a spillover effect and impact the consumption of related products. We use two different measures to test the spillover of book bans on the circulation of related books. First, we test whether there are spillovers to books of similar genres as defined by the same BISAC codes of the banned books. Next, we look at spillovers onto other books written by the same author who wrote the banned book. Surprisingly, as can be seen from Table A4 in the Appendix,

[23] Figure A2 in the Appendix shows that the number of ban events increased substantially after October 2021.

we do not observe spillover effects of book bans on circulations of books with similar genres or other books authored by authors of banned books.

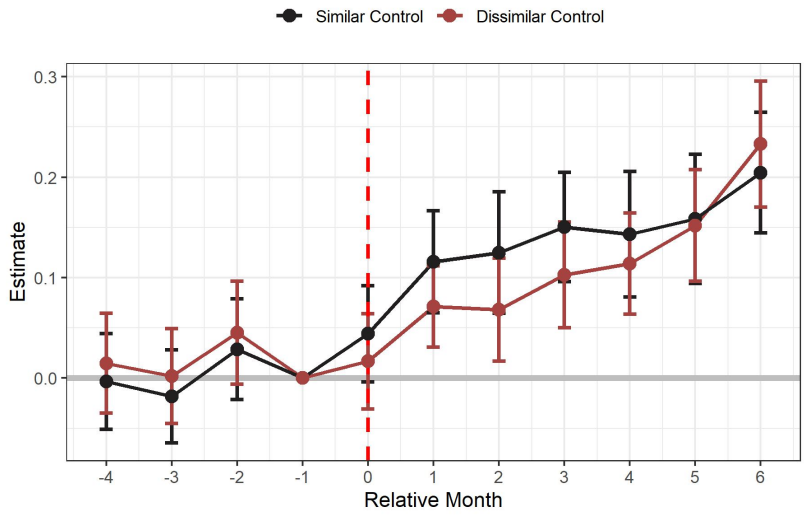
We perform several additional robustness checks to verify the validity of our results. To ensure that our results are robust to alternative functional forms of the dependent variable, we re-estimate the model using inverse hyperbolic sine transformation of circulations as the dependent variable to find the results qualitatively similar, as seen in column (1) of Table 2. In column (2), we find similar results when using a negative binomial model specification instead. To verify that the choice of control category books does not influence our results, we use two alternative control groups for robustness. We first restrict our original control group books to only those genres (such as fiction and non-fiction) that banned books appear in.[24] Next, we limit the original control group books to only those genres in which banned books do not appear (such as Business and Economics, Self-help). This exercise ensures that our results are not influenced by similarity or dissimilarity to the control group books. Figure 3 shows that the event study estimates are similar to the estimates that use the original control group. We also repeat the analysis using quarter and quarter-state fixed effects to account for the potential increase in state-level reading trends driven by organic growth of interest in reading banned books to find no change in our estimates (column (5)). To ensure no selection into treatment, we conduct a falsification analysis where we randomly assign the treatment date to each banned title between January and June 2021 to find null results (column (6)). Finally, to verify that the choice of pre-period length does not influence our results, we repeat the analysis using a pre-period of 6 months instead of 4 months to find qualitatively similar results (column (7)).

4.3 Heterogeneous Impact of Book Bans

We look at several dimensions of heterogeneity to understand the potential mechanisms driving the baseline results above.

[24] We exclude books with the same 'themes' or topics from this list.

Figure 3: Impact of Book Bans on Circulation - Alternate Control Books



Note: The figure shows event study estimates using the TWFE estimator with the log of circulation as the dependent variable. It plots the estimates along with the 95% confidence intervals using control group books similar to banned books (in black) and control group books dissimilar (in red) to banned books separately.

4.3.1 Author Popularity

First, we try to understand whether the average effects vary with the author's popularity. Studies in the literature (Petrova et al. 2021) suggest that media coverage could have an information or persuasive effect. In particular, Petrova et al. (2021) show that (social) media helps new players on the market because of the information effect. To construct a measure of experience or popularity, we use the total number of books the author wrote before the book ban, excluding the banned book. We categorize the authors in our sample as popular and non-popular authors based on the median count of books and estimate Equation 1 with author popularity as an interaction variable. The results, shown in Column (4) of Table 1, show that titles from non-popular authors drive the impact of book bans on circulation completely. Figure 4a) shows the event study estimates using subsample analyses. We see no impact of book bans on books written by popular authors, whereas there is a significant increase in the circulation of books by non-popular authors following bans. We also use social media popularity as an alternate measure of author popularity. We count all the

Table 2: Robustness of Baseline Estimates

Dependent Variable:	Circulation						
	IHS	Negative Binomial	Similar Controls	Dissimilar controls	Organic Growth	False Treatment	Alternate Pre-period
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables							
PostBan	0.139***	0.211***	0.128***	0.082***	0.127***	0.023	0.123***
	(0.020)	(0.067)	(0.018)	(0.014)	(0.029)	(0.019)	(0.018)
State Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes	Yes		Yes	Yes
Title Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed Effect					Yes		
Quarter-State Fixed Effect					Yes		
R^2	0.57200		0.61063	0.64579	0.58110	0.53950	0.57821
Observations	249,660	243,090	101,232	41,724	249,660	249,850	251,560

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is title-state-month. The dependent variable is log of circulation. Columns (1) and (2) test for alternate model specification using inverse hyperbolic sine transformation and negative binomial models respectively. Columns (3) and (4) test for alternate control groups. Column (5) tests for organic growth assumption. Column (6) tests for falsification of treatment timing. Column (7) tests for the alternate pre-period window.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

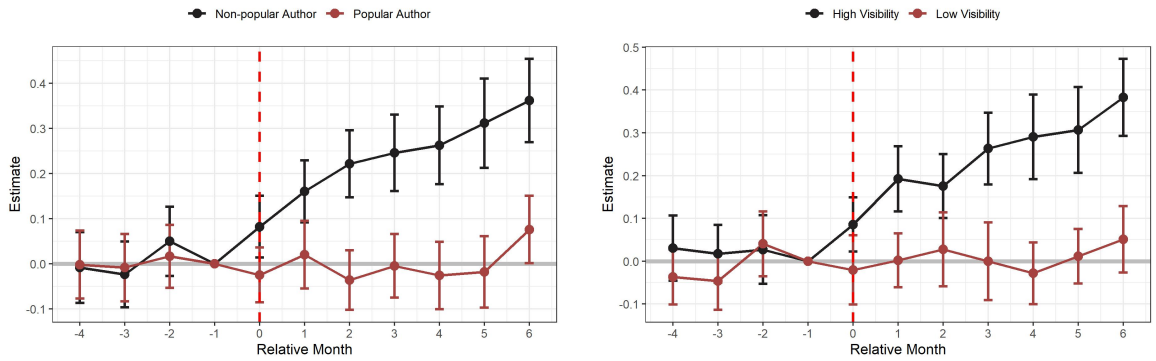
tweets that mention the banned book authors' names between January 2012 and December 2020. We then split the sample of authors into popular and non-popular authors based on the tweet counts. Our results, shown in Column (2) in Table A3 in the Appendix, are consistent with the measure of the author's popularity from Goodreads data. Together, our results are consistent with the findings from the literature that media coverage might provide information to readers about lesser-known authors.

4.3.2 Social Media Visibility

Social media has played a key role in cultural debates and driving national conversations around book bans. To understand the potential role of Twitter in explaining our findings, we repeat the main analyses using visibility on Twitter as an interaction variable. Results in column (5) of Table 1 show that the effect of book bans is driven significantly by titles with high visibility (titles with more than the median number of impressions) on Twitter. Figure

4b) shows the event study estimates using subsample analyses. Books with low Twitter visibility saw no impact of ban events, whereas books with high Twitter visibility saw a significant increase in circulation following bans. This provides suggestive evidence that social media chatter on such politically polarizing issues can significantly impact consumer behavior.

Figure 4: Heterogeneous Impact of Book Bans on Circulation



a) By Author Popularity b) By Twitter Visibility

Note: The figure in panel a) shows event study estimates using the TWFE estimator. It plots the estimates along with the 95% confidence intervals for banned book titles by non-popular (in black) and popular authors (in red) separately. The figure in panel b) plots the estimates along with the 95% confidence intervals for banned book titles with high (in black) and low Twitter visibility (in red) separately.

4.3.3 Blue vs. Red States

Books bans have become a prominent part of politically polarizing 'culture wars'. Politicians have actively used these issues as part of election campaigns. Hence, there could be a political dimension to who reacts to these book bans. Using the electoral outcomes of the 2020 presidential election, we classify each of the 38 states as blue (if the majority vote in the state was for Joe Biden) or red (if the majority vote in the state was for Donald Trump). Overall, our data has 20 blue states and 18 red states. Given that our circulation data is at the title-state-month level, we use state-level measures of political preferences for this analysis. Columns (6) and (7) in Table 1 show that the impact of book bans can be seen in both the blue and the red states, respectively. The average effect is 11% higher in Blue

states. In Columns (3) and (4) in Table A3 in the Appendix, we show that for red states, circulations of banned books have increased only in states with book bans. However, among blue states, circulations of banned books have increased in states with and without bans. This is consistent with findings in the political science literature that Republicans are less likely to engage in political consumerism than Democrats (Endres and Panagopoulos 2017).

4.4 Alternate Measure of Consumption: Goodreads Data

We use a few alternate book consumption measures based on Goodreads data to add credence to our results. We run the regression from Equation 1, but since the Goodreads data does not have state-level information, subscript j would not apply for this analysis. We use the total number of monthly reviews as an alternative measure of demand.[25]. As shown in column (1) of Table 3, there is a positive and statistically significant increase in the number of reviews written for banned books. Next, we analyze the total number of reviews that refer to words related to book bans [26] to find that there is a positive and statistically significant (in column (2)) suggesting that readers were influenced by news related to the book ban. Finally, we look at the monthly average monthly rating for each banned book on Goodreads relative to the control group. In column (3), we find an increase in the ratings for the book post the ban. Based on an alternative dataset, these results increase confidence in the paper's overall takeaways.

5 Impact of Book Bans on Political Donations

The above analysis shows that book bans targeted at micro-geographic levels can lead to media attention on those particular books and, in turn, increase readership. We also find

[25]There is an established relationship between the number of reviews and book demand (Chevalier and Mayzlin 2006, Archak et al. 2011))

[26]We perform a keyword search on the reviews for the terms related to book bans such as "ban", "banned", "bans", "censorship", "censor", "library", "libraries", "profanity", "sexual", "classroom", "challenge", "challenges", "porn", "pornography" to identify reviews related to book bans.

Table 3: Impact of Ban Events on Goodreads Reviews

	Reviews	Reviews with Bans	Ratings
	(1)	(2)	(3)
Variables			
PostBan	0.131**	0.183**	0.298**
	(0.054)	(0.073)	(0.116)
Year Month Fixed Effect	Yes	Yes	Yes
Title Fixed Effect	Yes	Yes	Yes
R^2	0.87292	0.79331	0.32797
Observations	2,738	2,738	2,738

Note: Heteroskedasticity-robust standard errors in parentheses. The unit of observation is title-month. Columns (1) and (2) use log count of reviews as the dependent variable. Column (1) includes all the reviews, and Column (2) includes only those reviews with reference to book bans. Column (3) uses numerical rating as the dependent variable and includes all the reviews.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

that this readership can increase in both Democratic and Republican States. As mentioned previously, politicians have used the recent surge in book ban attempts to gain an electoral advantage over their competitors.[27] In this Section, we attempt to dig deeper into the political dimension of these bans and quantify whether politicians gain in any way from these issues. In particular, similar to Petrova et al. (2021), we analyze the impact of these book bans on political donations received by politicians.

To identify the impact of book ban events on political donations, we compare political contributions to Democratic and Republican House candidates before and after the first book ban in each state to which the candidate belongs. We estimate a staggered entry TWFE model specification:

[27] https://www.washingtonpost.com/education/2022/02/10/book-bans-maus-bluest-eye/

$$y_{ijt} = \alpha_i + \gamma_j + \tau_t + \beta * PostBan_{jt} * Republican_i + \epsilon_{ijt} \quad (3)$$

where y_{ijt} is the logarithm of the total dollar amount of contributions to a candidate i from state j during month t, the indicator variable $PostBan_{jt}$ takes a value of 1 if month t is after any book gets banned in state j to which the candidate i belongs. For states that do not observe any bans, $PostBan_{jt}$ is 0. $Republican_i$ takes a value of 1 if candidate i belongs to the Republican party and 0 if the candidate belongs to the Democratic party.

The results shown in Table 4 provide a nuanced picture. In essence, we want to understand whether politicians enjoy any political benefit as a result of these book bans. In particular, we want to examine whether such events benefit Democrats or Republicans, if at all. We estimate Equation 3 to look at donations for Republican candidates relative to Democrats. In column (1), we see no differential impact on donations received by Republican politicians relative to Democrats. In column (2), focusing on the Blue States based on their vote for Joe Biden, we find that this null effect in the difference between Republican and Democrat donations persists. Column (3) provides suggestive evidence in line with a concerted political strategy. In particular, in the Red States, we find that Republican candidates get a significant increase in political donations relative to their Democrat counterparts.

Overall, this analysis explains why some Republican politicians might favor book bans. While such book bans increase circulation, Republican politicians in the Red States that see any ban seem to gain donations relative to Democratic candidates.

6 Discussion and Conclusions

Although book bans have been occurring at increased frequencies in the past couple of years, there is limited causal evidence of their impact. In this study, we present the first evidence of book ban events on book circulations, as well as their political implications. Using novel

Table 4: Impact of Ban Events on Political Donations

Dependent Variable:	Log(Donations)		
	All States	Blue States	Red States
	(1)	(2)	(3)
Variables			
PostBan	0.419	0.433	-0.285
	(0.311)	(0.298)	(0.227)
PostBan × Republican	0.221	0.003	0.554***
	(0.249)	(0.439)	(0.157)
State Fixed Effect	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes
Candidate Fixed Effect	Yes	Yes	Yes
R^2	0.63601	0.64004	0.63562
Observations	17,428	8,452	8,976

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is candidate-month. The dependent variable is log of the donation amount. Column (1) uses all the banned states, Columns (2) and (3) use only Blue and Red banned states respectively.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

data on book circulations, we show that book bans increase the circulation of banned books by 12% compared to other books. This effect is persistent in states with bans and states without bans. Author popularity and social media visibility play a significant role in driving this impact - titles by non-popular authors and titles with high visibility on Twitter see significantly higher circulations following bans. Finally, in the Red States, Republican Party candidates see significantly more donations following ban events than Democratic Party candidates.

Our results have significant practical implications. Firstly, we highlight the pitfalls of politically motivated censorship on consumers' consumption behavior. Despite the growing incidences of banning books from schools and public libraries, the bans create a "Streisand" effect on consumption, where politically motivated consumers increase the consumption of

banned books. We also highlight the importance of social media visibility in driving political conversations around sensitive issues. Stakeholders should be aware of social networks' ability to magnify political beliefs and thereby influence consumption decisions on a large scale. Finally, stakeholders should also be mindful of the feedback loop where pursuing contentious policies can lead to significant financial support to politicians, which can further incentivize pursuing contentious policies.

Our research has certain constraints that can open up avenues for further research. First, while we observe an increase in circulations following bans in the short term, the long-term implications remain uncertain. With increased political polarization, there's a possibility that educators and librarians, anticipating potential future bans, might choose not to stock or assign such books.[28] Moreover, we don't measure impact on beliefs and attitudes of adults and children that might evolve slowly and see a change in the longer term. Second, the book bans in our sample happen at the public library or school district level, and our circulation data is more aggregated. Policymakers could establish legal measures to institute more widespread book bans, consequently restricting the availability of contentious titles at a broader scale. We hope that future research can use our results as a foundation to explore these open issues further.

[28] https://www.technologyreview.com/2022/07/15/1055959/book-bans-social-media-harassment/

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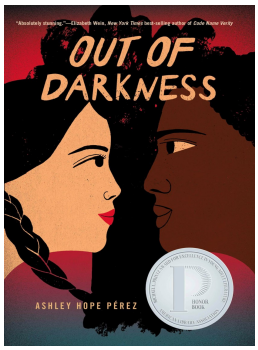
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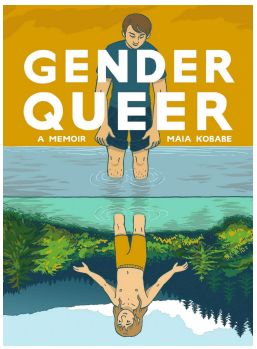
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Appendix

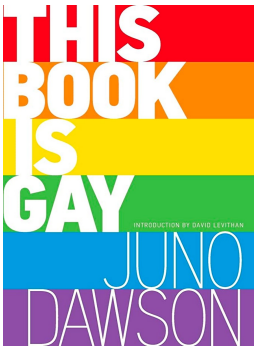
Figure A1: Sample of Banned Books



a) Dealing with Race



b) Dealing with Gender



c) Dealing with Sexuality

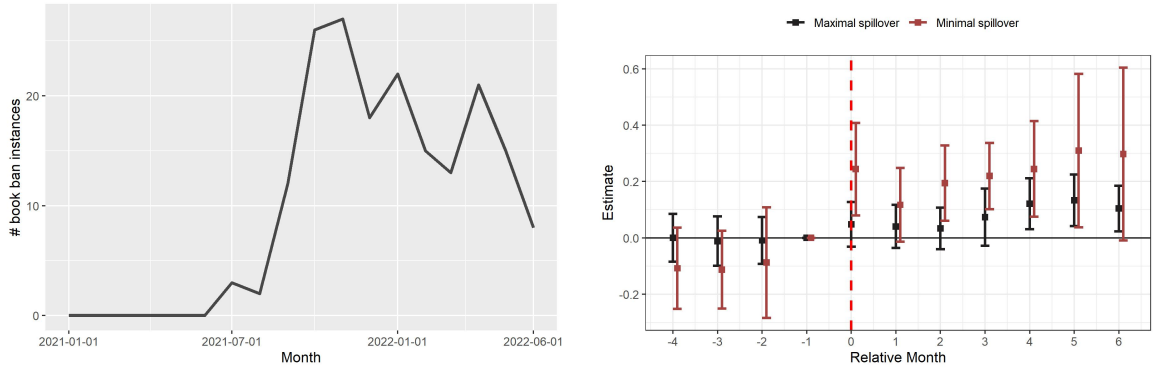
Note: The figure shows examples of banned books dealing with Race, Gender, and Sexuality respectively.

Table A1: List of Banned Book Titles

All American Boys	All Boys aren't Blue	Almost Perfect
Being Jazz	Beyond Magenta	Dear Martin
Drama	Flamer	Gender Queer
I Am Jazz	l8r, g8r	Lawn Boy
Melissa	Monday's Not Coming	More Happy Than Not
Out of Darkness	Real Live Boyfriends	The 57 Bus
The Breakaways	The Infinite Moment of Us	The Truth About Alice
This Book is Gay	This One Summer	Two Boys Kissing
We Are the Ants		

Note: List of all the 25 banned book titles included in our study.

Figure A2: Event Study Estimates using Alternate Event Definitions



a) Number of Unique Bans

b) Event Study Estimates

Note: The figure in panel a) shows the total number of unique bans per calendar month. The figure in panel b) shows event study estimates using the TWFE estimator with the log of circulation as the dependent variable. It plots the estimates along with the 95% confidence intervals using two alternate ban event definitions - a single ban event for all the banned books occurring during October 2021 and a separate ban event for each title in each state the title gets banned.

Table A2: Alternative Assumptions: Impact of Ban Events on Circulation

Dependent Variable:	Log(Circulation)				
	Callaway Sant'Anna	Sun & Abraham	Borusyak et al.	Complete Spillover TWFE	No Spillover TWFE
	(1)	(2)	(3)	(4)	(5)
Variables					
PostBan	0.114***	0.115***	0.115***	0.084***	0.300***
	(0.024)	(0.020)	(0.017)	(0.020)	(0.069)
Title Fixed Effect	Yes	Yes	Yes	Yes	Yes
State Fixed Effect	Yes	Yes	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes	Yes	Yes
R^2		0.57673		0.59632	0.54692
Observations	249,660	249,660	249,660	156,750	146,133

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is title-state-month. The dependent variable is the log of circulation. Column (1) uses Callaway Sant'Anna, column (2) uses Sun and Abraham, and column (3) uses Borusyak et al. instead of the TWFE estimator. Columns (4) and (5) show average estimates for alternate event identification assumptions.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

Table A3: Additional Robustness: Impact of Ban Events on Circulation

Dependent Variable:	Log(Circulation)			
	Alternate First Ban Month	Alternate Author Popularity	Banned Red States	Non-banned Red States
	(1)	(2)	(3)	(4)
Variables				
PostBan	0.088***	0.037	0.121***	0.071
	(0.018)	(0.028)	(0.029)	(0.060)
PostBan × Non-popular Author		0.098***		
		(0.033)		
State Fixed Effect	Yes	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes	Yes
Title Fixed Effect	Yes	Yes	Yes	Yes

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is title-state-month. The dependent variable is the log of circulation. Column (1) uses the month of first ban as the event instead of the month following the first ban. Column (2) includes alternate measure of author popularity as an interaction variable. Columns (3) - (4) show the average treatment effect in Red states with at least one ban event and no ban events respectively.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.

Table A4: Average Impact of Ban Events on Circulation of Other Books

Dependent Variable:	Log(Circulation)		
	Genre	BISAC	Author
	(1)	(2)	(3)
Variables			
PostBan	-0.024	-0.0005	-0.056
	(0.060)	(0.091)	(0.035)
PostBan × SameGenre	-0.028		
	(0.089)		
PostBan × SameBISAC		-0.034	
		(0.110)	
PostBan × SameAuthor			0.021
			(0.055)
State Fixed Effect	Yes	Yes	Yes
Year Month Fixed Effect	Yes	Yes	Yes
Title Fixed Effect	Yes	Yes	Yes
R^2	0.60122	0.54188	0.60145
Observations	481,418	1,046,670	200,298

Note: Robust standard errors clustered at the level of the state in parentheses. The unit of observation is title-state-month. The dependent variable is the log of circulation. All the banned books are excluded from the sample. SameGenre indicates if a book is of the same genre as banned books. SameBISAC indicates if a book has the same BISAC as the banned book BISACs. SameAuthor indicates if a book is authored by an author of banned books.
$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$.