The Political Consequences of Media Consolidation

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Abstract

Recent decades have seen major disruptions to the local media environment in the United States. The changing economics in local news media has resulted in the purchase of many previously independent local newspaper and television outlets by conglomerates as well as the consolidation of existing ownership groups. The economic incentives of media conglomerates leads to cutting costs through the nationalization of news and disinvestment in local reporting, with implications for voters' ability to obtain information about local politics. We examine the political implications of media ownership consolidation, exploiting the purchase of media outlets by conglomerate owners. Using local elections and political participation data, we show an increase in incumbency advantage, decreases in election competitiveness, and decrease in the rate of contested elections associated with the acquisition of a local media outlet by a conglomerate owner. These results hold important implications for the ability of voters to hold elected officials accountable and how this relates to the regulation of media ownership.

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The past few decades have seen fundamental changes in the economics of local news in the United States. Readership of newspapers is declining, leading to drastic cuts in journalist resources and the closures of centuries old papers (Hayes and Lawless 2017; Peterson 2017; Pew Research Center 2016). Concurrent with these trends is a growing consolidation of media ownership, spurred by changes to FCC regulations, with large ownership groups acquiring smaller ownership groups and remaining independent outlets (Kang 2017). The consolidation of ownership is especially pronounced in local television media, with over $23 billion in transactions since 2014 (Nicolaou 2019). Large conglomerate owners now control at least one TV station in over 90% of media markets in 2019.

The economic incentives of large, national conglomerate owners suggest a need to increase readership while decreasing costs. Research has found that occurring simultaneously with these shifts in media ownership is an increased demand among news consumers for national political coverage coinciding with a greater focus of news outlets on national politics (Hopkins 2018). One method for increasing readership, then, is to respond to reader demand (Mullainathan and Shleifer 2005; Gentzkow and Shapiro 2010). However, as an additional cost saving method, national ownership groups induce their media outlets to produce more national politics and less local politics since local coverage requires more journalistic resources (Martin and McCrain 2019). Some groups produce national content centrally and force local stations to carry it (e.g., Farhi 2014; Stetler 2018). In other words, news outlets acquired by conglomerate owners are altering content for both supply- and demand-driven motivations, but it remains unclear which motivation dominates.

The downstream effects of changes to the political informational environment are worrying. With less information about local politicians, voters have difficulty holding politicians accountable (Hayes and Lawless 2015; Hopkins and Pettingill 2018; Shaker 2014; Snyder and Strömberg 2010). These effects may be even more pronounced in already low-salience elections, such as for state legislative offices or city leadership positions. Research has found evidence that when newspapers close, for instance, municipal borrowing costs increase (Gao,

Lee and Murphy 2019) and voters are more likely to cast ballots along partisan lines (Darr, Hitt and Dunaway 2018).

This paper investigates the effects of media ownership consolidation on political behavior and participation. Exploiting within-market differences in consumption of local media, we show that when local television stations and newspapers are acquired by a conglomerate owner there is a substantially large increase in incumbency advantage in state legislative elections. This increase occurs relative to other voters in the same legislative district, alleviating a number of concerns about unobserved confounders that can also lead to changes in voting behavior. We find larger results when stations are acquired by Sinclair, a national conglomerate owner that prior research has found shifts its content ideologically rightward and cuts local content in favor of national news (Martin and McCrain 2019). We also find that when a newspaper is acquired or merged into a large ownership group, incumbents see a greater advantage. There is some additional evidence that ownership consolidation affects the probability an election is contested and the margin of victory of the winning candidate.

These results speak to the literature on supply-side changes in media content, which research has previously demonstrated can affect campaigns, the political content of news, and the outcome of elections (Branton and Dunaway 2009; Dunaway and Lawrence 2015; Archer and Clinton 2018; Durante and Knight 2012). Previous research has established that ownership changes can alter the editorial content produced by outlets, catering it towards the preferences of owners (Bailard 2016; Gilens and Hertzman 2000); here we suggest that especially in a struggling media industry, the trade off may be the gradual decline of media outlets or an industry controlled by a hand full of powerful owners with preferences for less local content.

Our findings also hold important implications for the regulation of media ownership. While these results are not able to delineate supply- versus demand-driven changes to content, in the aggregate they show that ownership itself does impact political behavior. While the changes may be demand-driven as consumers prefer national news (Hamilton 2004), there

are likely cost efficiencies gained by national conglomerate owners cutting local content beyond what consumers may prefer. As the FCC facilitates media conglomeration through the removal of long-standing rules such as the "main studio rule,"[1] these trends will continue with normatively troubling implications for representative democracy.

Data and Institutional Background

Media Data Description

This paper uses data on the ownership of local broadcast television stations and newspapers. We use several sources to identify whether media outlets were purchased (or sold) by a conglomerate owner, and the reach of those outlets across geographic areas. We now outline specific data sources and procedures for cleaning data within each medium.

Television Data   Television ownership data were collected from the FCC's Public Inspection Files, which we scraped from the FCC website.[2] FCC regulations require buyers to file an Ownership Sale statement within 60 days of the transaction date. Even if there are no changes of ownership, owners must still file a statement of ownership at least once every two years. From this source, we collected transaction dates when stations were sold or acquired along with the identity of the acquirer, for every station in country from 2002-2019. Television stations are often held by (and ownership reports filed on behalf of) complicated chains of holding companies and subsidiaries: for example, the Sinclair conglomerate used about 40 different FCC Registration Numbers (FRNs) in filings for its stations. We used the FCC FRN database, which lists a registrant's address and contact officer, along with secondary sources to consolidate these to the level of the parent company.

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[1]https://www.fcc.gov/document/fcc-eliminates-main-studio-rule-0.

[2]Example: `https://publicfiles.fcc.gov/tv-profile/wala-tv/applications-and-related-materials/#toc`

After consolidating the ownership reports in this way, we we determined whether a particular owner controlled 20 or more stations at a single point in time, in which case we designated the group a "large conglomerate." We identify 22 total "large" groups according to this definition. Due to mergers between the large groups, about half of these are defunct today, having been subsumed into even larger conglomerates.

Table 1: Television Acquisitions by Owner

Purchaser	Number of Acquisitions
Sinclair	53
Gray TV	40
Media General	28
Lin TV	13
Nexstar	13
Raycom	11
Tribune	7
NBC Universal	4
Belo	2
Gannett / Tegna	2
Viacom	2
FOX TV Holdings	1
Liberty Corporation	1
Local TV	1
Standard General	1
Young Broadcast	1

This table lists the number of ABC, CBS, FOX, or NBC affiliated stations acquired by large conglomerate television owners from 2002-2019. We define a large conglomerate as one that owned at least 20 stations at some point in the sample period. We restrict to stations that were not previously owned by another large conglomerate.

Table 1 shows the counts of acquisitions in our dataset by acquiring firm. We restrict here to stations that are affiliated with ABC, CBS, FOX, or NBC, and which were not previously owned by another large conglomerate; e.g. the seller could be either a smaller group or an independent single-station owner but not another of the 22 large groups. There are a total of 180 acquisitions in the dataset. Figure 1 shows the distribution of these acquisitions by year. Figure 2 shows the geographic expansion of the large conglomerates over time.

We determine which zip codes have access to each station based on the Designated Market Area (DMA) to which the station is assigned. We also collected data on the strength
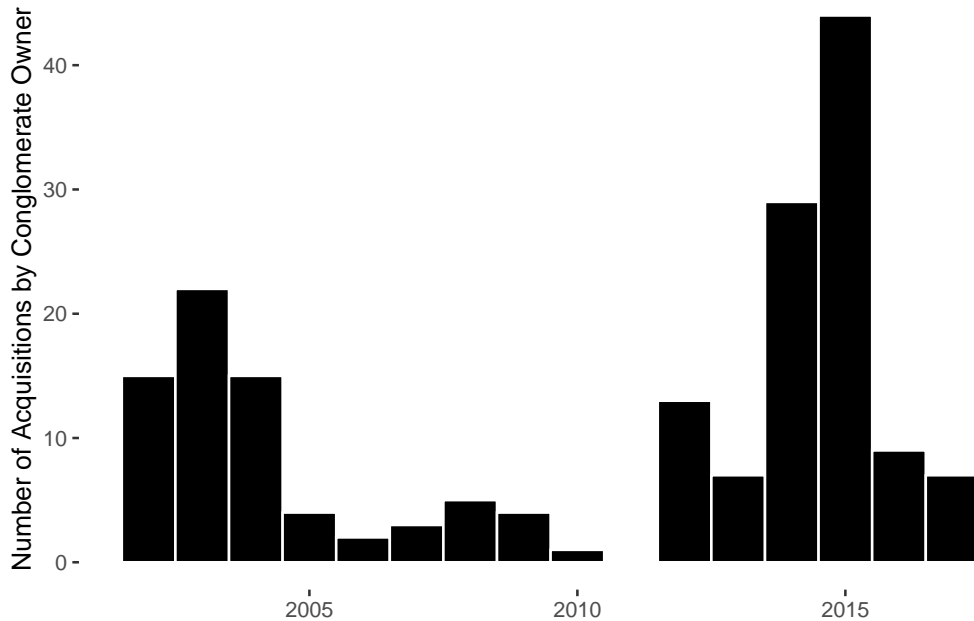
Figure 1: Number of Acquisitions by Conglomerate Owners by Year

of signal for every station in every zip code in the country.[3] While signal strength is only directly relevant for viewers who watch the station over the air, it is predictive of both station viewership and the geographic focus of a station's news coverage. On the first point, signal strength is likely to correlate with viewership even among non-over-the-air viewers because of both viewer habituation from the pre-cable era and the channel placement decisions of cable system operators. On the second point, signal strength is correlated with (though, due to terrain variation, not identical to) distance to the station headquarters and the home base of its journalists. Signal strength has been used as an instrument for viewer- or listener-ship in a number of studies (DellaVigna et al. 2014; Enikolopov, Petrova and Zhuravskaya 2011; Adena et al. 2015).

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[3]These data were downloaded from `https://www.fcc.gov/media/engineering/dtvmaps`. Note that we were only able to acquire these data for 2019. Signal strength is determined by the FCC through a "terrain-sensitive propagation model."
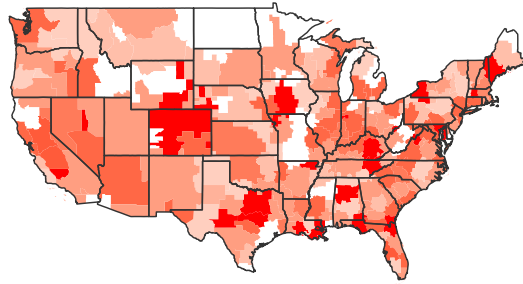
(a) 2004
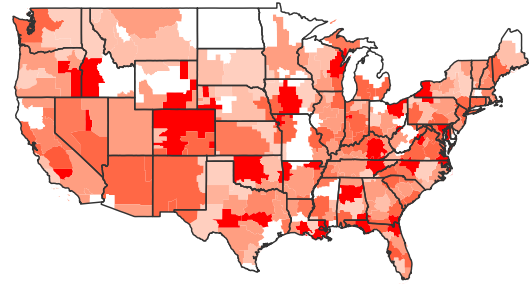
(b) 2009
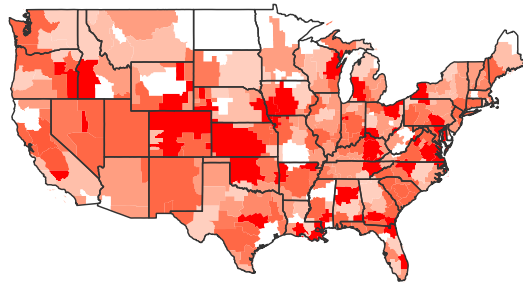
(c) 2014

(d) 2019

Figure 2: Conglomerate Station Ownership by DMA

The darkest shading represents all stations within a DMA owned by a conglomerate owner. White represents no stations within a DMA owned by a conglomerate owner. Shading is determined by proportion of total stations in the DMA owned by a conglomerate owner.

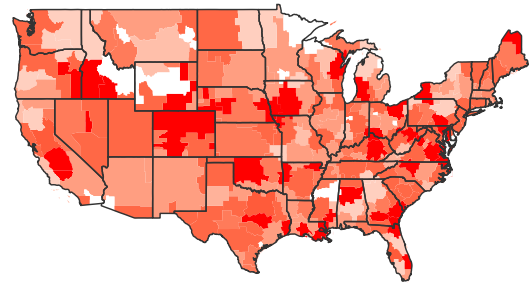We then divide signal strength into a low and high category based on the FCC's designation: we compare areas with "Strong" signal with all other categories ("Moderate," "Weak" and "No Signal"). The "strong" designation occurs in a little under half of the zip code × channel observations in the data set; "moderate" and "weak" about 20% each, with the remainder designated "no signal".

Newspaper Data   Newspaper ownership data were acquired from a combination of the Editor & Publisher yearbooks and UNC's Center for Innovation and Sustainability in Local Media's Database of Newspapers.[4] Editor & Publisher compiles lists of papers owned by newspaper ownership groups in the United States each year. We digitized physical copies of the yearbooks from 2004-2016 and rectified name discrepancies in ownership groups. The UNC database contains ownership information for most newspapers in the US, for the years 2004, 2014, 2016, and 2019. We used year-to-year changes in ownership listed in E&P and the UNC database to identify possible acquisitions, and then located media accounts and press releases to determine the actual date of sale. The E&P data in particular is highly irregular in its naming conventions and inconsistent in identifying the ultimate corporate parent versus holding companies or regional subsidiaries, which are very common in the newspaper industry. As a result, it produces a number of false positive "acquisitions." We are in the process of cleaning and verifying this data, and specifications reported below focus on a small sample of manually verified acquisitions.

Additionally, we use newspaper circulation data from the Alliance for Audited Media (AAM), a membership-based organization of publishers and newspapers. These data provide zip code level distribution for each newspaper in their data. Since the organization is membership based, there are many newspapers from the ownership dataset that are not present. We merged the two datasets together by newspaper name and state in which it is based. Since there are a variety of name discrepancies between the two datasets, we also

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[4]https://www.usnewsdeserts.com/

merged using string distance algorithms and manually checked matches for accuracy.

We focus on the seven largest ownership groups identified by the UNC Center.[5] Table 2 lists the total number of acquisitions by each group over the period 2005-2019.

Table 2: Newspaper Acquisitions by Owner

Purchaser	Number of Acquisitions
New Media/GateHouse	494
Civitas Media	90
Digital First Media	84
BH Media Group	81
tronc/Tribune	65
10/13 Communications	27
Community Newspaper Holdings Inc (CNHI)	16

This table lists the number of newspapers acquired by the seven largest conglomerate newspaper owners from 2005-2019.

Political Data

To analyze media effects on the political environment, we use two datasets on electoral competitiveness and contestation. First, we use state legislative data from Klarner (2018) from 2002-2018. Using relationship files provided by the the US Census Bureau, we matched state legislative districts to zip codes (which can be directly matched to television DMAs and newspaper circulation areas). We also collect local elections data at the mayoral level (or equivalent) for the 100 largest cities in the country across the same time period. We extend the data from Hopkins and Pettingill (2018) by manually collecting election information from Ballotpedia.[6] Cities are then also matched to zip codes using Census relationship files. From these data we created three measures: `Win Margin`, the margin of victory of the wining candidate; `Inc. Share`, the vote share of the incumbent candidate (when an incumbent is

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[5]http://newspaperownership.com/additional-material/investment-newspaper-owners-timeline/

[6]https://ballotpedia.org

running); and `Contested`, a variable coded to 1 if the election is contested and 0 otherwise.

The idea behind these outcomes resembles Snyder and Strömberg (2010), that the information environment within a given geography affects electoral outcomes through voters' ability to acquire information about candidates. In information-poor environments, voters may rely more heavily on shortcuts like incumbency status. Similarly, the intensity of media coverage of local elections may alter the number and/or quality of candidates who enter local races.

As a measure of political participation, we collect town, city, and county local government meeting minutes. The sample of cities for which we collected minutes are those that use the content management platform Legistar operated by private company Granicus. The minutes collection procedure was as follows: after identifying all cities using Legistar, we downloaded every minutes file (typically PDFs) available from that city. We then only kept minutes for full town council meetings or the analogue for the given locality. Next, we ran the minutes files through OCR software to extract plain text which we then ran through the Stanford Named Entity Recognition (NER) software.[7] This produced a dataset of names and the frequency of occurrence in each minutes file. From here we removed names associated with official job titles (e.g., mayor, councilor, etc) and names which occur in more than 5 minutes documents to keep names of citizens.[8] This resulted in an unbalanced panel of citizen counts with minutes information from 155 cities ranging from 2003-2019. Table 3 shows additional summary statistics on the number of cities, meetings and citizens covered, plus quantiles of the distribution of number of citizens commenting per meeting. Figure 3 displays the geographic dispersion of cities from which we collected comments (i.e., those that use Granicus' platform Legistar).

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[7]https://nlp.stanford.edu/software/CRF-NER.html

[8]Manual investigation revealed that almost all names occurring in more than five documents are names of city officials or professional staff.
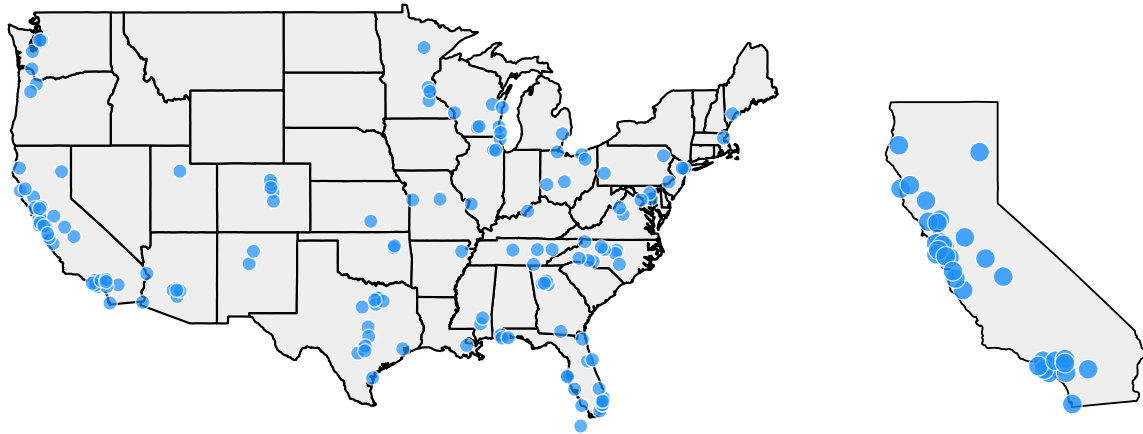
(a) Entire Country   (b) California

Figure 3: Geographic Dispersion of Comments Data

These maps plot the cities from which we collected comments from local government meetings. The right panel focuses on California which is the state with the highest number of cities with available comments.

Estimating the Effects of Ownership Consolidation

We measure the effects of ownership consolidation on participation and competitiveness at the state legislative and the city level. Our outcomes include measures of competitiveness of state legislative and mayoral elections as well as a measure of participation in city-level politics: the number of citizen commenters who showed up at city council meetings. An advantage of the state legislative data is that it affords a finer-grained analysis that allows us to exploit variation within media market, at the zip-code level. Within-market analyses are unfortunately not possible with the city-level data and thus we rely on over-time variation in ownership to identify ownership effects. We describe each set of analyses in turn.

Statistic	Value
# cities	155
# meetings	25,730
# citizens	394,351
5th Percentile Commenters	1
Median Commenters	10
95th Percentile Commenters	44

Table 3: Summary statistics, meeting minutes data.

State legislative election data

We estimate the effect of ownership consolidation on three outcomes: the margin of victory of the winning candidate in a state legislative election, the share of the vote going to the incumbent candidate (in cases where an incumbent is running), and an indicator for the election being contested (at least two candidates in the general election). The design is a differences-in-differences approach that takes advantage of within-market variation in citizens' "exposure" to the acquired outlet.

Specifically, we look within an outlet's market (the set of zip codes which have access to the outlet) and look for a differential trend in outcomes in areas with relatively high exposure to the outlet compared to areas with relatively low exposure. This within-market design is necessary to eliminate bias resulting from the fact that the acquisition of an outlet might be correlated with other trends in the outlet's market environment that are related to electoral competitiveness or political participation. For example, suppose that financially struggling outlets are more likely to be bought by conglomerates, and financial struggles are related to income or employment declines in the outlet's market. Then comparisons of trends in markets with acquired media outlets to those in markets without will mix together effects of the acquisition with direct political effects of income or employment decline. A cross-market diff-in-diff of this form would be susceptible to bias from any time-varying predictor of acquisition that correlates with political outcomes.

The within-market design that we adopt eliminates bias from market-level confounders,

including those that vary over time. Effectively, we construct the counterfactual for more-exposed areas of a market using less-exposed areas of the same market. We measure exposure in two ways: for television, we use signal strength at the zip code level, measured by a binary indicator for "Strong" signal as classified by the FCC. For newspapers, we use average circulation in the zip code in the three years prior to acquisition to construct a binary indicator for high (above-median) or low (below-median) subscriptions. The market is defined as all zip codes in the station's DMA (TV) or in the paper's circulation area (newspapers). Because newspaper subscription is a choice variable and correlates with income and education levels, in the newspaper case we further restrict the market definition to only those zip codes in the circulation area that have above-median subscription rates for *some* paper (either the acquired paper, or some other paper). This ensures that we are not simply picking up differential trends associated with an area's propensity to consume news. We estimate models of the form:

$$y_{i,z,t} = \alpha_z + \gamma_{i,t} + \beta \left(H_{i,z} \times Post_{i,t} \right) + \epsilon_{i,z,t} \qquad (1)$$

Where α_z are zip-code fixed effects, $\gamma_{i,t}$ are outlet-year fixed effects, $H_{i,z}$ is an indicator for zip code z being high-signal-strength (in the TV case) or high pre-acquisition readership (in the newspaper case) for outlet i, and $Post_{i,t}$ is an indicator for year t being after the acquisition year of outlet i. The coefficient of interest is β, the coefficient on the interaction term between H and $Post$, which captures the differential trend in the post-acquisition years in zip codes with relatively high readership / signal strength for the outlet, relative to other zip codes in the same outlet's market with relatively low readership / signal strength. Note that the main effect of H is subsumed by the zip code fixed effects, and the main effect of $Post$ is subsumed by the outlet-year fixed effects.

TV station acquisitions   Table 4 shows the results of this specification for TV station acquisitions. The diff-in-diff estimates of the effects of conglomerate acquisition are positive

on incumbent share, with point estimate of about 1.1 percentage points. For comparison purposes, Fowler and Hall (2014) estimate an 8.8 percentage point incumbency advantage in state legislative elections. Estimates of the effect on winning margin and likelihood of contestation are positive and negative, respectively, though both are statistically indistinguishable from zero. Confidence intervals are fairly wide, though, and do not rule out an effect of the same magnitude as that on incumbent share in either case.

Table 4: Diff-in-diff models of state legislative election competitiveness on TV station conglomerate ownership.

	Win Margin	Inc. Share	Contested
	(1)	(2)	(3)
High Strength x Post Acquisition	0.005	0.011***	−0.003
	(0.003)	(0.002)	(0.004)
Zip Fixed Effects:	Y	Y	Y
Station x Year Fixed Effects:	Y	Y	Y
Number of Acquisitions:	180	180	180
Number of Zips:	13047	12959	13047
N	159,288	103,586	159,288
R^2	0.537	0.638	0.483

*p < .1; **p < .05; ***p < .01
An observation is a zip code-election. The sample is all zip codes in the DMA of stations which were acquired by a conglomerate owner during the sample period. Standard errors (clustered by zip code) in parentheses.

Because Table 4 pools together many different acquirers, and there may be important heterogeneity in strategy across groups, Table 5 breaks out the acquisitions of the most frequent acquirer in our sample, the Sinclair Broadcast Group.[9] Point estimates are all in the same direction, but larger in magnitude, than in the pooled Table 4, suggesting that Sinclair is driving much of the effect in the pooled specifications. Magnitudes in the Sinclair-only sample are about a 2 percentage point increase in both winning margin and incumbent vote share.

Newspaper acquisitions   Table 6 shows the results of the same specification on newspaper rather than television station acquisitions. Again, the measure of "high exposure"

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[9]Existing evidence on Sinclair acquisitions (Martin and McCrain 2019) shows that Sinclair shifts content from local to national politics coverage following acquisitions.

Table 5: Diff-in-diff models of state legislative election competitiveness on TV station conglomerate ownership: Sinclair acquisitions only.

	Win Margin	Inc. Share	Contested
	(1)	(2)	(3)
High Strength x Post Acquisition	0.017**	0.022***	−0.009
	(0.007)	(0.005)	(0.008)
Zip Fixed Effects:	Y	Y	Y
Station x Year Fixed Effects:	Y	Y	Y
Number of Acquisitions:	53	53	53
Number of Zips:	6649	6614	6649
N	59,553	39,390	59,553
R^2	0.518	0.629	0.457

*p < .1; **p < .05; ***p < .01
An observation is a zip code-election. The sample is all zip codes in the
DMA of stations which were acquired by Sinclair during the sample period.
Standard errors (clustered by zip code) in parentheses.

here switches from signal strength to pre-acquisition subscription rates in the zip code. Because subscription is a choice variable and correlates with income and education levels, we restrict to zips that are both in the circulation area of an acquired paper and have relatively high subscription for *some* paper. Hence, the comparisons we make are between zip codes that, prior to acquisition, had similar levels of overall interest in newspapers but differing preferences over *which* paper to subscribe to.

Because of the unreliability of the ownership data described previously, we focus on a small sample of manually verified acquisitions. Hence, sample sizes are much smaller for that in the TV case. Nonetheless, estimates are directionally the same as in the TV case. Magnitudes are larger across the board: about 2 points on win margin, 5 points on incumbent share, and -3 points on the contestation indicator.

Finally, for comparison we look at a sample of newspapers that were shut down or merged, as opposed to simply acquired.[10] We use the identical specification and sample selection described above, but replace the indicator for acquisition with an indicator for closure. Results in Table 7 are directionally the same as Tables 4-6 but with smaller magnitude, perhaps reflecting the fact that the closed newspapers are generally smaller in circulation

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[10]The closures data comes from `http://newspaperownership.com/additional-material/closed-merged-newspapers-map/`.

Table 6: Diff-in-diff models of state legislative election competitiveness on newspaper conglomerate ownership.

	Win Margin	Inc. Share	Contested
	(1)	(2)	(3)
High Circulation x Post Acquisition	0.019	0.053***	−0.030
	(0.024)	(0.017)	(0.027)
Zip Fixed Effects:	Y	Y	Y
Newspaper x Year Fixed Effects:	Y	Y	Y
Number of Acquisitions:	8	8	8
Number of Zips:	693	687	693
N	6,356	3,922	6,356
R^2	0.488	0.557	0.459

*p < .1; **p < .05; ***p < .01
An observation is a zip code-election. The sample is all zip codes in the circulation area of newspapers which were acquired by a conglomerate owner during the sample period, AND which have above-median circulation for some newspaper. "High Circulation" indicates that the zip code had above-median circulation for the acquired paper in the three years prior to acquisition. Standard errors (clustered by zip code) in parentheses.

and readership than those papers viable enough to be acquired rather than closed.

Table 7: Diff-in-diff models of state legislative election competitiveness on newspaper closure.

	Win Margin	Inc. Share	Contested
	(1)	(2)	(3)
High Circulation x Post Closure	0.004	0.005	−0.026
	(0.014)	(0.012)	(0.017)
Zip Fixed Effects:	Y	Y	Y
Newspaper x Year Fixed Effects:	Y	Y	Y
Number of Closures:	56	56	56
Number of Zips:	566	556	566
N	5,662	2,641	5,662
R^2	0.557	0.642	0.369

*p < .1; **p < .05; ***p < .01
An observation is a zip code-election. The sample is all zip codes in the circulation area of newspapers which were closed or merged during the sample period, AND which have above-median circulation for some newspaper. "High Circulation" indicates that the zip code had above-median circulation for the closed paper in the three years prior to closure. Standard errors (clustered by zip code) in parentheses.

City election and participation data

At the city level, our preferred within-market specification is unavailable. Instead, we estimate a more standard two-way fixed effects design of the form:

$$y_{ct} = \alpha_c + \gamma_t + \beta CongOwn_{ct} + \epsilon_{ct} \tag{2}$$

Where c indexes cities, t indexes years, α are city fixed effects, γ are year fixed effects, and $CongOwn_{ct}$ is the percentage of outlets in city c owned by a large conglomerate in year t. The coefficient of interest is β, which measures the change in the outcome y associated with a 0-1 change in conglomerate ownership. We estimate this specification using television data only because we lack a complete accounting of newspaper ownership across the 100 largest cities.[11]

The major threat to this specification, as discussed above, is the possibility of differential time trends in cities where a station was acquired compared to trends in cities where no acquisitions took place. City and time fixed effects eliminate the possibility that time-invariant confounders or aggregate time trends bias the estimate but do nothing to deal with time varying confounders.

Nonetheless, for the three outcomes included in Tables 4-7, we find effects in the same direction and of comparable magnitude in this specification. Confidence intervals are very wide, however, a second reason for caution in interpreting these estimates. We find positive effects on the number of citizens commenting at council meetings, though again the confidence intervals are quite wide.

Table 8: Panel models of local political outcomes on TV station conglomerate ownership.

	Win Margin	Inc. Share	Contested	Citizen Commenters
	(1)	(2)	(3)	(4)
Pct. Conglomerate Owned	0.012	0.067	−0.009	2.773
	(0.361)	(0.416)	(0.153)	(2.712)
City Fixed Effects:	Y	Y	Y	Y
Year Fixed Effects:	Y	Y	Y	Y
Number of Cities:	96	87	96	117
N	246	156	247	20,224
R^2	0.589	0.755	0.654	0.451

*p < .1; **p < .05; ***p < .01
An observation is a city-election (columns 1-3) or a city-meeting date (column 4). The sample for mayoral election outcomes is the 100 largest cities in the US; for comments it is the set of cities which use Granicus software to publish city council minutes. "Pct. Conglomerate Owned" is the fraction of a city's ABC, CBS, FOX and NBC affiliates that are owned by a large conglomerate. Model 4 also contains dummies for month and day of the week. Standard errors (clustered by city) in parentheses.

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[11]Conglomerate ownership is measured as a fraction of the ABC, CBS, FOX, and NBC affiliates serving a city that are conglomerate owned, and thus ranges from zero to one.

Discussion

Over the past few decades, the United States has experienced a long-lasting wave of consolidation in media ownership. In the fifteen years from 2004 to 2018, we identify 180 full-power, major-network affiliated television stations previously owned independently or by small ownership groups that were acquired by large multi-market conglomerates. On the print side, nearly 900 local newspapers met the same fate, in addition to the hundreds more that shut down entirely.

Existing scholarship has noted a trend of declining volume and depth of political coverage in local outlets, and linked this decline to reductions in citizens' knowledge of and participation in politics (Hayes and Lawless 2015, 2017; Shaker 2014). Another strand of research has shown that ownership consolidation can have measurable effects on the political content of news (Martin and McCrain 2019; Dunaway and Lawrence 2015; Bailard 2016).

We connect these two strands of the literature by directly evaluating the effects of media consolidation on political outcomes. Consolidation changes the economics of political news production, favoring national political coverage that can be broadly distributed over content tailored to local races and focusing on local elected officials. This can, in turn, be expected to weaken the accountability relationship between voters and their elected representatives at the local level.

We find evidence that consolidation matters not just for news content but also for the performance of the electoral mechanism at the local level. Our within-market differences-in-differences design reveals that areas within an outlet's market that were relatively more exposed to the outlet's coverage see declines in electoral competitiveness and increases in the incumbency advantage, compared to areas that were relatively less exposed.

Further research will examine the effect of news consolidation at an even more granular level, exploiting our database of city and county council meeting minutes. We have thus far used this data to measure the aggregate participatory effect of news consolidation, in terms of the number of citizens showing up to comment at city council meetings. Meeting attendance

is more costly but otherwise conceptually similar to voting as a measure of political partici-pation. But this data offers the opportunity to learn something qualitatively different: how media reports shape the issues and agenda items on which citizens engage in politics. Future work will probe the connection between changes in the focus of media coverage induced by consolidation and the focus of citizen engagement with their local governments.

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Online Appendix

Table A1: Comments Data

City	Total Meetings	Total Comments
Alameda, CA	254	5, 131
Albermarle County, VA	155	3, 666
Albuquerque, NM	143	1, 161
Allegheny County, PA	232	3, 129
Annapolis, MD	117	2, 024
Appleton, WI	160	2, 189
Ashe County, NC	139	892
Aurora, IL	148	1, 445
Baldwin County, AL	27	789
Baltimore, MD	423	28, 517
Bellevue, WA	285	2, 603
Blaine, MN	186	1, 778
Broken Arrow, OK	98	1, 383
Carrboro, NC	199	1, 858
Carrolton, TX	160	1, 538
Castle Rock, CO	248	2, 156
Cathedral City, CA	143	990
Charlotte, NC	73	6, 259
Chatham County, NC	130	2, 543
Chattanooga, TN	809	13, 712
Cherokee Nation, OK	235	3, 351
Chula Vista, CA	210	2, 406
Clearwater, FL	1	28
Cleveland, OH	13	225
Collinsville, IL	71	725
Colorado Springs, CO	129	2, 454
Columbia, MO	150	2, 978
Columbus, OH	550	6, 190
Commerce City, CO	143	1, 049
Coppell, TX	160	1, 415
Coral Gables, FL	284	6, 171
Corona, CA	54	1, 054
Corpus Christi, TX	260	5, 191
Crossville, TN	84	1, 406
Cupertino, CA	353	4, 784
Cutler Bay, FL	69	642
Dane County, WI	108	781
Deer Park, TX	118	1, 354
Deerfield Beach, FL	85	2, 282
DeKalb County, GA	54	615
Delray Beach, FL	129	2, 310
Deltona, FL	118	1, 391
Edgewater, FL	42	438
Erie, CO	82	754
Fayetteville, NC	47	610
Foley, AL	239	2, 157
Fort Bragg, CA	194	1, 771
Franklin, TN	98	750
Fresno, CA	179	3, 388
Fullerton, CA	35	869
Gaston County, NC	54	1, 180
Glendale, AZ	128	921
Goodyear, AZ	24	194
Grand Rapids, MN	416	1, 759
Hallandale, FL	1	12
Harrisonburg, VA	87	1, 309
Hattiesburg, MS	711	5, 396
Hayward, CA	137	1, 534
High Point, NC	154	2, 179
Hollywood, FL	168	2, 854
Hudson, OH	263	1, 506
Humboldt County, CA	313	1, 873
Huntington Beach, CA	24	984
Jacksonville, FL	4	36
Jonesboro, AR	307	3, 162
Key West, FL	198	992
Killeen, TX	126	1, 039
Knoxville, TN	91	1, 636
LA Metropolitan Transportation Authority, CA	18	190
Lackawanna County, PA	52	85
Lacrosse, WI	88	966
Lake County, CA	211	2, 971
Lake County, IL	138	2, 300
Lake Elsinore, CA	124	1, 211
Lake Havasu City, AZ	166	1, 528
Lassen County, CA	163	1, 749
Laurel, MS	133	2, 206
Lees Summit, MO	95	980
Littleton, CO	27	76
Long Beach, CA	538	12, 203
Longview, WA	410	4, 080
Los Alamos County, NM	101	642
Louisville, KY	304	6, 805
Madison, WI	330	10, 438

Table A2: Comments Data (continued)

City	Total Meetings	Total Comments
Malden, MA	132	752
Manhattan Beach, CA	97	1,300
Manitowoc, WI	52	124
Mansfield, TX	307	3,643
Marco Island, FL	149	1,305
Margate, FL	197	2,284
Maricopa, AZ	142	2,037
Martin County, FL	28	608
Maui County, HI	103	11,814
Mendocino County, CA	104	1,885
Merced, CA	120	1,514
Mesa, AZ	261	2,649
Mesquite, TX	84	1,404
Milwaukee County, WI	78	706
Monterey County, CA	214	4,883
Morgan Hill, TX	46	570
Mountain View, CA	252	2,337
Napa, CA	68	1,072
Naperville, IL	244	3,658
New Braunfels, TX	110	1,204
New York, NY	392	2,969
Newark, NJ	87	2,081
North Port, FL	276	1,871
North Richland Hills, TX	83	1,483
Northfield, MN	128	1,009
Oakland, CA	16	386
Olympia, WA	377	2,797
Oregon City, OR	385	2,347
Pensacola, FL	60	675
Philadelphia, PA	273	2,975
Phoenix, AZ	51	4,036
Pinellas County, FL	131	2,664
Pomona, CA	58	1,394
Pompano Beach, FL	73	3,309
Powder Springs, GA	8	105
Racine, WI	343	6,610
Rialto, CA	93	1,273
Riverside, CA	196	2,269
Rochester Hills, MI	409	7,445
Roswell, GA	173	2,709
Round Rock, TX	172	994
Rutherford County, NC	61	691
Saint Paul, MN	404	8,827
Salem, OR	96	1,431
Salinas, CA	80	646
San Antonio, TX	322	6,595
San Francisco, CA	605	18,775
San Jose, CA	62	1,081
San Leandro, CA	145	1,136
San Marcos, TX	125	1,149
San Mateo County, CA	179	3,761
San Mateo, CA	160	1,685
Sandy, UT	165	1,907
Santa Rosa, CA	268	3,923
Seattle, WA	275	4,373
Sedgwick County, KS	272	5,905
Seguin, TX	154	914
Smyrna, GA	162	2,327
St. Charles Parish, LA	20	70
Stockton, CA	2	44
Sunnyvale, CA	156	1,866
Toledo, OH	21	110
Trotwood, OH	110	1,204
Valdosta, GA	42	693
Vienna, VA	165	1,419
Watsonville, CA	45	634
Windham, ME	139	1,407
Winston-Salem, NC	88	1,912
Yountville, CA	89	662
Yuma, AZ	155	1,232