microdata on "number of newspapers purchased by the household" for a sample of "families of wage earners or salaried workers in industrial locales scattered throughout the United States." Though the data are not nationally representative and do not include detail on specific newspapers, they provide the earliest microdata we are aware of on the number of newspapers read by US families. We match the geographic codes in the data to those in our cross-section of newspaper markets, and we select the subsample of the data consisting of newspaper-reading families who live in a city in our cross-section.

E. *Cost and Revenue Data*

To calibrate features of newspaper cost and revenue structure, we obtained income statements for 94 anonymous newspapers in 1927 from the Inland Daily Press Association (Yewdall 1928). Since the data do not identify individual newspapers, we match each record in the US Newspaper Panel to the record in the Inland Press data with the closest circulation value.

We compute the variable cost of each newspaper as the annual per-copy cost of printing and distribution, including paper and ink costs and mailing and delivery costs. We compute fixed costs per copy as the difference between annual total costs per copy and annual variable costs per copy. We also compute the annual per-copy advertising revenue of each newspaper. Finally, we compute the annual per-copy circulation revenue of each newspaper (revenue from subscriptions and single-copy sales).

II. Historical Background on Newspaper Affiliations

The median newspaper in our 1924 cross-section entered its market prior to 1896. During the 1890s, newspapers devoted 20–40 percent of their coverage to politics (Baldasty 1992). It was common for newspapers to choose an explicit affiliation with either the Democratic or the Republican party. The practice faded over time: by the mid-twentieth century it was rare for newly formed newspapers to declare an explicit affiliation (Gentzkow, Glaeser, and Goldin 2006; Hamilton 2006).

A newspaper's political affiliation was strongly related to the political orientation of its content (Summers 1994; Kaplan 2002; Gentzkow, Glaeser, and Goldin 2006; Hamilton 2006; Gentzkow, Shapiro, and Sinkinson 2011), and newspaper owners understood that affiliations were a potential dimension of product differentiation.[14] Political affiliations may also have served political aims, but at the time of our study commercial considerations were likely dominant (Baldasty 1992).[15]

[14] James E. Scripps declared in 1879 that "As a rule, there is never a field for a second paper of precisely the same characteristics as one already in existence. A Democratic paper may be established where there is already a Republican; or vice versa; an afternoon paper where there is only a morning; a cheap paper where there is only a high-priced one; but I think I can safely affirm that an attempt to supplant an existing newspaper … of exactly the same character has never succeeded" (quoted in Hamilton 2006, p. 47). Through the early twentieth century, James' brother, E.W. Scripps, exploited the nominal independence of his newspaper chain to adapt editorial content to market conditions, emphasizing Republican ideas in markets with established Democratic newspapers, and Democratic ideas when Republicans were entrenched (Baldasty 1999, p. 139).

[15] In related work, we show that newspapers' affiliations exerted, on average, at most a small effect on electoral outcomes (Gentzkow, Shapiro, and Sinkinson 2011), and that in most times and places incumbent parties exerted

We model a newspaper's political affiliation as a static, binary characteristic. We treat affiliation as binary because qualitative and quantitative evidence suggests that papers of a given affiliation hewed closely to the party line.[16] We treat affiliation as static because, although newspapers often switched from declaring a Republican or Democratic affiliation to declaring themselves as Independent, Gentzkow, Shapiro, and Sinkinson (2011) find that such declared changes do not correlate with changes in content.[17]

Although the assumption of fixed, binary affiliations is reasonable in context, it is still an approximation. The historical record provides examples of content differences among papers of the same affiliation, particularly on issues where disagreements between factions within the party were significant (Summers 1994, pp. 43–58). To the extent that binary affiliations are a coarse summary of a more continuous space of political content, caution is needed in linking our results to effects on underlying content. Our results capture diversity at the level of party affiliations, not intraparty factions or shadings.

III. Descriptive Evidence

A. *Partisanship and Newspaper Circulation*

In our model, a household's utility from reading a newspaper will depend on the match between the newspaper's ideology and the household's ideology and on the presence of substitute newspapers in the household's consumption bundle.

Table 3 shows that both factors play a significant role in driving observed demand. The table presents OLS regressions of the Republican-Democrat difference in mean log circulation (i.e., the average of log circulation among Republican papers minus the average log circulation among Democratic papers) on measures of household ideology and/or the presence of substitutes. Specification (1) includes only household ideology, specification (2) includes only counts of substitute newspapers, and specification (3) includes both. Given the construction of the dependent measure, coefficients can be interpreted as the marginal effect of a given variable on the circulation of Republican papers relative to Democratic papers.

The greater is the Republican share of households in a town, the greater will be the relative circulation of Republican newspapers. However, having more Republican newspapers available will tend to depress the circulation of the average Republican paper due to substitution effects. Because Republican newspapers are more likely

at most a limited influence on newspapers' political affiliations (Gentzkow et al. forthcoming). We note, however, that Petrova (2011) provides evidence that political patronage influenced newspaper affiliations in the late 1800s.

[16] Newspaper proprietor Horace Greeley writes in his autobiography: "A Democratic, Whig, or Republican journal is generally expected to praise or blame, like or dislike, eulogize or condemn, in precise accordance with the views and interest of its party" (Greeley 1872, p. 137). According to Kaplan (2002, p. 23), "In professing allegiance to a party, the Detroit press assumed specific obligations. The individual journal was the organ of the political community, and commissioned with the task of expressing the group's ideas and its interests." Consistent with this narrative evidence, Gentzkow, Shapiro, and Sinkinson (2011) show that the political orientation of voters strongly predicts the affiliations of local papers, but is only weakly correlated with their content conditional on affiliation.

[17] In the online Appendix, we present evidence on the extent to which newspapers of a given affiliation adjust their content in response to changes in consumer preferences or the competitive landscape. There is qualitative evidence consistent with such adjustment, but the precision of the exercise is limited so we cannot say confidently that such adjustment took place.

Table 3—Demand for Partisanship

Dependent variable: Average log(circulation) of R papers − average log(circulation) of D papers	(1)	(2)	(3)
Republican vote share	0.8517		0.9510
	(0.1910)		(0.1980)
Number of Republican papers		−0.0187	−0.0360
		(0.0134)	(0.0136)
Number of Democratic papers		0.0066	0.0174
		(0.0152)	(0.0154)
R^2	0.0101	0.0007	0.0127
Number of counties	1,219	1,219	1,219
Number of towns	4,294	4,294	4,294

Notes: Data are from the cross-section of news-reading towns in 1924 defined in Section IC. The dependent variable is the difference in mean log circulation of Republican and Democrat newspapers. Republican vote share is the average Republican share of the two-party vote in the county in presidential elections from 1868 to 1928. Sample is all towns with at least one paper of each affiliation. Standard errors in parentheses are clustered at the county level.

to be available in towns with more Republican households, these two effects tend to work in opposite directions. Therefore, we expect that specification (1) understates the effect of household ideology and specification (2) understates the importance of substitutes. Specification (3) shows that, as expected, both effects are estimated to be larger when the regression includes measures of both household ideology and the presence of substitutes.

In the online Appendix, we show that the two effects illustrated by specification (3) are robust to a number of alternative specifications. We show that both the effect of household ideology and the effect of substitutes are robust to a specification with both newspaper and town fixed effects, and to controlling for nonpolitical attributes of both newspapers and towns. We also show that the key qualitative patterns in the data are present in both large and small towns, and that qualitatively similar patterns emerge when we study changes in circulation over time rather than in the cross-section.

The estimated relationships in specification (3) are economically significant. Increasing the fraction Republican among voters by 10 percentage points increases the relative circulation of Republican papers by 10 percent. Adding a second Republican paper to a market with one Republican and one Democratic newspaper reduces the relative circulation of the existing Republican paper by 4 percent.

B. *Determinants of Newspapers' Affiliation Choices*

Given that households demand own-type newspapers and that same-type papers are more substitutable, we would expect that newspaper affiliation would respond both to household ideology and to market structure.

Table 4 shows that these expectations are borne out in our data. The table presents OLS regressions of a dummy for whether a newspaper chooses a Republican affiliation on measures of household ideology and incumbent affiliations. Specification (1) includes only household ideology, specification (2) includes only incumbent affiliations, and specification (3) includes both.

Table 4—Determinants of Newspaper Affiliation

Dependent variable: Dummy for newspaper choosing R affiliation	(1)	(2)	(3)
Republican vote share	2.1824		2.3356
	(0.0557)		(0.0611)
Number of Republican incumbents		−0.0168	−0.1525
		(0.0318)	(0.0342)
Number of Democratic incumbents		−0.0190	0.1260
		(0.0377)	(0.0297)
R^2	0.3561	0.0004	0.3819
Number of markets	950	950	950
Number of newspapers	1,338	1,338	1,338

Notes: Data are from the cross-section of daily newspaper markets in 1924 defined in Section IB. The unit of analysis is the newspaper. Republican vote share is the average Republican share of the two-party vote in presidential elections from 1868 to 1928. The number of Republican/Democratic incumbents is the number of sample newspapers of the given affiliation that entered prior to the newspaper in question. Sample is all markets with at least one paper. Standard errors in parentheses are clustered at the market level.

The more Republican are the households in a market, the more likely is an entering paper to choose a Republican affiliation. However, facing a Republican incumbent reduces the likelihood that an entering paper affiliates with the Republican party. Because Republican incumbents are more likely in markets with more Republican households, these two effects tend to work in opposite directions. Therefore, we expect that specification (1) understates the effect of household ideology, and specification (2) understates the effect of incumbent affiliation. Specification (3) shows that, as expected, both effects are estimated to be larger when the regression includes measures of both household ideology and incumbent affiliations.

In the online Appendix we exploit panel structure to show that the correlation between household ideology and newspaper affiliation decisions is not driven by reverse causality from newspaper content to voter behavior.

The effects we estimate in specification (3) are economically significant. A 10 percentage point increase in the fraction Republican among households increases the likelihood of a Republican affiliation by 23 percentage points. Having a Republican incumbent instead of a Democratic incumbent reduces the likelihood of a Republican affiliation by 28 percentage points.

Figure 1 illustrates the key patterns in specification (3) of Table 4 graphically. Panel A shows that the probability of the first entrant choosing a Republican affiliation is increasing in the Republican vote share in the market. Panel B shows that the probability of the second entrant choosing a Republican affiliation is increasing in the Republican vote share and is lower when the first entrant's affiliation is Republican.

C. *Controlling for Unobserved Ideology*

Controlling for the Republican vote share greatly affects the strength of the substitution and differentiation effects we estimate in Tables 3 and 4. It remains possible that variation in consumer ideology not captured by our observable proxy is a source of bias. In this section, we outline an identification strategy that exploits spatial correlation in consumer ideology to identify the role of unobserved heterogeneity