

THE DECLINE OF LOCAL MEDIA AND ITS IMPACTS ON
BUSINESS NEWS COVERAGE IN OREGON

by

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This thesis seeks to answer whether local media layoffs have impacted the amount of business news coverage of Oregon's largest companies. Business journalism is an important way for both the public and investors to get information about companies. It can also act as an independent check on the information companies put out about themselves. At the same time, the number of professional news reporters is rapidly shrinking, especially at the local level, as traditional newspapers struggle to remain profitable. This paper uses a database of news articles to determine if the decreasing number of journalists is having an effect on the number of articles written about some of Oregon's largest companies, and if changes are consistent between local and national news sources. The paper also examines changes in the type and tone of articles. The resulting analyses found that the number of local business articles has dropped off significantly since 2014, while the number of national news articles about large Oregon companies has remained steady or risen. The drop off in number of articles written coincides with a period where *The Oregonian*, the state's largest news organization, conducted significant layoffs of news staff.

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Chapter 1: Introduction

Changes in the News Industry

Financial journalism has an important effect on public companies and markets. News articles help spread earnings information and allow investors to trade on it. Negative articles or scandals revealed in the news can lead to sell-offs. Influential publications such as the *Wall Street Journal* or *Bloomberg News* often affect the stock price of a company simply by publishing an article about it. At the same time, macro factors in the media industry have led to widespread change in how news works. Local newsrooms across the country are much smaller than they once were. Large national outlets have also laid off reporters, but the change has been most drastic at the local level. *The Oregonian*, Oregon's largest news organization, had a peak newsroom size of 450 journalists in 2007. After repeated rounds of buyouts and layoffs, it now has less than 60.¹

Several factors have led to the decline of the local news industry. Most news organizations relied on print advertising revenue to fund their operations in the past. As more Americans purchased smartphones and began reading news online, they cancelled their print subscriptions in mass.² This change in news consumption coincided with the 2008 recession, and newspapers quickly began layoffs, making their product worse and leading to the loss of even more subscribers. Many newspapers still generate significant

¹ Jaquiss, Nigel. "The Oregonian Conducts Another Round of Layoffs. This Time, 11 Newsroom Staffers Are Gone." *Willamette Week*. Accessed June 07, 2019. <https://www.wweek.com/news/2018/01/31/the-oregonian-conducts-another-round-of-layoffs-this-time-11-staffers-are-gone/>.

² "Trends and Facts on Newspapers | State of the News Media." Pew Research Center's Journalism Project. June 13, 2018. Accessed June 07, 2019. <https://www.journalism.org/fact-sheet/newspapers/>.

traffic on their websites, but online content is harder to monetize.³ The internet has allowed many competing publications to pop up, of varying quality.

Importance of the Business Press

Media coverage is highly influential in the formation of a company's stock price.⁴ If a company such as Nike badly misses its earnings target, the first place a majority of people are going to hear about it is in the news. For earnings and other information public companies are required to disclose, this information is typically released by the company in a press release and subsequently republished by financial news outlets. This has been coined the "information dissemination" role of the media.⁵ Articles that fall under the category of information dissemination take publicly available information about a company, often released by the company itself, and spread it to a wider audience, allowing more investors to trade on the information.

In contrast to articles that disseminate already public information, original content produced by journalists, not previously available or released by the company, are known as "information creation" articles. This category could include an in-depth story about a CEO, an investigation into a company's labor practices, a report that a company is about to close the deal on an acquisition, etc. These articles also provide critical information for investors to trade on. For example, mergers and acquisitions,

³ Willens, Max. "'No Silver Bullet': Publishing's 'incremental' Revenue Often Doesn't Replace Lost Ad Dollars." Digiday. March 01, 2018. Accessed June 07, 2019. <https://digiday.com/media/publishers-promises-incremental-revenue-dont-add-replace-lost-ad-dollars/>.

⁴ Dougal, Casey et al. "Journalists and the Stock Market *."

⁵ Drake, Michael, Nicholas Guest, and Brady Twedt. "The Media and Mispricing: The Role of the Business Press in the Pricing of Accounting Information." *The Accounting Review* 89, no. 5: 1673-1701.

which can have a huge effect on a company's stock price, are often reported in the media before they are officially announced.

Project Description

Prior research has documented that the business press and the stock market have a clear relationship. But recently, the media industry has changed significantly. This paper will seek to examine the impact of these changes at a local level. In this study, I will examine whether levels of coverage of Oregon's largest public companies have changed with the changing media industry, along with whether the tone and kind of coverage (dissemination vs. creation) has changed. The paper will also break down levels of local vs national coverage of these companies and see if coverage levels have changed at the same rate.

Through an analysis of an online database of articles from several outlets, I plan to study five companies: Nike, Columbia Sportswear, Precision Castparts, Intel, and Umpqua Bank. These are some of the largest companies based in Oregon and cover a range of industries and sizes. I examined the level of coverage of these companies pre- and post-recession, by looking at the number of articles published about them in both local and national outlets year by year. I will also look at the kind of coverage, looking to see if there has been a change or any clear trends. It is well known that the media industry is in decline—I want to see if there are clear effects of this decline on the coverage of local companies, and if those effects are different between local and national media outlets. If it turns out there has been significant changes in the media

coverage of these companies, further research could seek to address what impact this is having on stock prices.

Research Question

Has the shrinking news industry led to a change in the amount of media coverage of Oregon's largest public companies in the past decade? Has the kind or tone of coverage changed, and is this consistent between local and national outlets?

Hypothesis

I predict Oregon's largest companies have received less media coverage in recent years due to smaller newsroom staff sizes. This change is likely more dramatic for lesser known companies like Precision Castparts. In addition, I predict the ratio of information creation articles to dissemination articles has gone down, due to less original content being produced by newspapers. I also expect that levels of local coverage (from *The Oregonian*) have gone down more than national coverage, because local newsrooms have shrunk at a much faster rate.

I also think it is possible that the gross number of articles about each company has trended up over time, due to the platform change of print to online. The internet has allowed more, shorter posts to go up in one day than the newspaper format. However, with shrinking newsroom sizes, I do not think this necessarily means there has been more, or better content written about Oregon's largest companies. Future research might consider controlling for this possible change of having more, shorter articles by examining word count vs. simply the number of articles or perhaps stock price reactions.

Existing Literature Review

Several studies address the relationship between financial journalism and public companies. “Financial Journalism in Today’s High Frequency News and Information Era,” (Straub, 2018) is an interview and survey-based study that gives a broad overview of the current financial journalism environment. The study addresses the changing media landscape, which is an important part of what my paper plans to cover. It finds that, “it is well known the newspaper industry is undergoing a crisis. Tremendous declines in advertisement and subscriber revenues in the past came along with the dismissal of many journalists and editors.” (Straub, 2018) The Straub study also examines the type of coverage financial journalism outlets produce, specifically looking at the media’s role as a “watchdog,” meaning its power to publish potentially negative coverage of scandals or other information uncovered. The paper concludes that there is a general concern among journalists that there is a loss of quality and journalistic values as the industry continues to shrink and move online. It also finds a discrepancy between the media’s ideal watchdog role and where it is actually at.

Research about the decline in local news coverage has found that with less local news coverage of politics comes less political engagement. “The Decline of Local News and its Effects: New Evidence from Longitudinal Data,” (Hayes, 2017) found that between 2010 and 2014 “local newspapers published less, and less substantive, political news,” and that as a result voters were less informed and less engaged.

Other research has looked directly at the relationship between the business press and stock prices of companies. My advisor, Brady Twedt, has co-authored several papers in this field. “The Media and Mispricing: The Role of the Business Press in the

Pricing of Accounting Information,” (Drake, 2014) looks at the role of business press articles, dividing them into two categories, “information creation” and “information dissemination.” This refers to the difference between articles that present original news uncovered by a journalist and articles that simply distribute information, such as the results of an earnings report, from a company. This is an important distinction that I plan to examine in my project. Within the scope of the companies I study, I plan to examine the proportion of articles that fall into each category in order to look at potential changes in the types of coverage pre- and post-recession, when media organizations first started mass layoffs.

Another paper, “The Internet as an Information Intermediary,” (Drake, 2017) looks at how news articles directly affect the stock prices of companies. This paper uses formulas and computer code to examine how articles from different types of news outlets affect a stock price in real time and examines if companies’ stock prices have been mispriced due to information coming through the media. This paper illustrates an important cause and effect relationship between the media and stock markets.

Several other papers address the relationship between markets and the press and the decline of the newspaper industry (Bordonaro, 2017; Capps, 2018; Dougal, 2011; Greico, 2018). The general inference from this literature is that there is indeed a relationship between news articles and stock prices (though the exact impact is hard to measure) and that the number of journalists covering companies has dramatically decreased in the past decade.

Contribution

Most of the research in this field has been broad, looking at markets as a whole and the media as a whole. Also, because the dramatic changes in the media industry have happened so recently, there are gaps in what has been studied, and many different areas to look at. My paper will contribute by taking a narrow focus and looking at how the level and kind of media coverage of Oregon's largest companies have changed in the past two decades. My research indicates that no papers have looked at these factors on a more micro scale like this. In addition, there aren't any papers looking specifically at how levels of coverage have changed with the recession. It is widely acknowledged that newspapers have gotten smaller, but whether or not this has led to reduced coverage or a change in the type of coverage has not been studied. By looking at these changes in how Oregon's companies have been covered specifically, I hope to make a valuable contribution to current literature and advance our understanding of the impact of a changing news industry.

Methods

I am going to be using a news database called RavenPack to look at how coverage levels have changed over time. RavenPack archives every news article from a variety of sources and attaches data to each article, such as its event category and tone. Using RavenPack, I will pull data for articles mentioning the five companies I plan to study: Nike, Columbia Sportswear, Precision Castparts, Intel, and Umpqua bank. For each company, I searched for any articles with a relevancy score of 50 or higher (meaning the article is most likely about that company and does not just mention it) for

the years 2000 to 2018. The sources I will be searching in the database are the Dow Jones Newswires, *The Wall Street Journal*, and *The Oregonian* which provide a fairly comprehensive view of national and local Oregon business news coverage.

These searches will produce data that I can move into Microsoft Excel and begin analyzing in tables. The first thing I am interested in is simply the number of articles about each company by year. I want to see if there are any discernible trends. Has the number of articles from these sources about a company such as Nike gone down post-recession when newsrooms have shrunk? Or is it possible the internet led to an increase in the number of articles, despite smaller staffs? These are the kind of questions I want to probe by looking at the levels of coverage over time.

The following is an example of search results for my companies of interest in RavenPack:

Figure 1: RavenPack Data

1	TIMESTAMP_UTC	ENTITY_NAME	EVENT_SENTIMENT_SCORE	GROUP	CATEGORY	NEWS_TYPE	RP_SOURCE_ID	SOURCE_NAME
2	2000-01-04 16:08:05.000	Intel Corp.	0.52	products-services	product-release	NEWS-FLASH	B5569E	Dow Jones Newswires
3	2000-01-04 16:34:04.000	Intel Corp.	0.52	products-services	product-release	NEWS-FLASH	B5569E	Dow Jones Newswires
4	2000-01-06 07:00:00.000	Intel Corp.	0.52	products-services	product-release	FULL-ARTICLE	B5569E	Dow Jones Newswires
5	2000-01-10 14:19:01.000	Intel Corp.	0.94	analyst-ratings	analyst-ratings-change-positive	FULL-ARTICLE	B5569E	Dow Jones Newswires
6	2000-01-10 15:20:01.000	Intel Corp.	0.94	analyst-ratings	analyst-ratings-change-positive	FULL-ARTICLE	B5569E	Dow Jones Newswires
7	2000-01-11 14:37:30.000	Intel Corp.	0.94	analyst-ratings	analyst-ratings-change-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
8	2000-01-11 15:40:44.000	Intel Corp.	0.94	analyst-ratings	analyst-ratings-change-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
9	2000-01-11 16:38:12.000	Intel Corp.	0.23	stock-prices	stock-gain	NEWS-FLASH	B5569E	Dow Jones Newswires
10	2000-01-11 17:41:18.000	Intel Corp.	0.23	stock-prices	stock-gain	NEWS-FLASH	B5569E	Dow Jones Newswires
11	2000-01-12 07:00:00.000	Intel Corp.	0.47	stock-prices	stock-gain	FULL-ARTICLE	B5569E	Dow Jones Newswires
12	2000-01-12 14:17:28.000	Intel Corp.	0.39	products-services	business-contract	NEWS-FLASH	B5569E	Dow Jones Newswires
13	2000-01-12 20:40:00.000	NIKE Inc.	0.5	order-imbalances	mkt-close-sell-imbalance	NEWS-FLASH	B5569E	Dow Jones Newswires
14	2000-01-12 20:51:00.000	NIKE Inc.	0.5	order-imbalances	mkt-close-sell-imbalance	NEWS-FLASH	B5569E	Dow Jones Newswires
15	2000-01-13 00:42:32.000	Umpqua Holdings Corp.	0.4	earnings	earnings-per-share-up	NEWS-FLASH	B5569E	Dow Jones Newswires
16	2000-01-13 00:44:21.000	Umpqua Holdings Corp.	-0.23	earnings	earnings-down	NEWS-FLASH	B5569E	Dow Jones Newswires
17	2000-01-13 01:22:24.000	Intel Corp.	0	dividends	dividend	NEWS-FLASH	B5569E	Dow Jones Newswires
18	2000-01-13 13:37:43.000	Precision Castparts Corp.	0.6	earnings	operating-earnings-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
19	2000-01-13 18:06:11.000	NIKE Inc.	0.53	labor-issues	executive-appointment	NEWS-FLASH	B5569E	Dow Jones Newswires
20	2000-01-13 18:06:33.000	NIKE Inc.	0.53	labor-issues	executive-appointment	NEWS-FLASH	B5569E	Dow Jones Newswires
21	2000-01-13 21:28:15.000	Intel Corp.	0.38	earnings	operating-earnings-up	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
22	2000-01-13 21:29:04.000	Intel Corp.	0.61	earnings	earnings-positive	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
23	2000-01-13 21:29:22.000	Intel Corp.	0.61	earnings	earnings-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
24	2000-01-13 21:29:54.000	Intel Corp.	0.41	revenues	revenue-up	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
25	2000-01-13 21:29:55.000	Intel Corp.	0.38	earnings	operating-earnings-up	NEWS-FLASH	B5569E	Dow Jones Newswires
26	2000-01-13 21:30:21.000	Intel Corp.	0.61	earnings	earnings-positive	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
27	2000-01-13 21:30:38.000	Intel Corp.	0.41	revenues	revenue-up	NEWS-FLASH	B5569E	Dow Jones Newswires
28	2000-01-13 21:30:42.000	Intel Corp.	0.61	earnings	earnings-positive	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
29	2000-01-13 21:30:52.000	Intel Corp.	0.61	earnings	earnings-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
30	2000-01-13 21:31:04.000	Intel Corp.	0.4	earnings	earnings-up	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
31	2000-01-13 21:31:08.000	Intel Corp.	0.61	earnings	earnings-positive	NEWS-FLASH	B5569E	Dow Jones Newswires
32	2000-01-13 21:32:01.000	Intel Corp.	0.4	earnings	earnings-up	NEWS-FLASH	B5569E	Dow Jones Newswires
33	2000-01-13 21:32:12.000	Intel Corp.	0.61	earnings	earnings-positive	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires
34	2000-01-13 21:33:00.000	Intel Corp.	-0.75	revenues	revenue-guidance-down	NEWS-FLASH	B5569E	Dow Jones Newswires
35	2000-01-13 21:36:56.000	Intel Corp.	0	revenues	revenue-guidance	HOT-NEWS-FLASH	B5569E	Dow Jones Newswires

Each article in the results has a time stamp, tone score, group, category, news type, and additional information. For example, the first article in the dataset was published January 4, 2000 at 4:08 pm. It has a positive tone score, is under the “product release”

category, and was published by the Dow Jones Newswires. I can sort by each variable to study different aspects and look for results. An initial search for articles about the companies I am studying published since 2000 produced more than 53,000 results. Excel is an efficient way to sort and manage this data.

Beyond levels of national coverage, I examined the category of articles (information creation vs information dissemination) over time. I can use Excel tables to look for trends in the ratio of one category of articles to the other year by year. Level of coverage and category of coverage are the main factors I plan to focus on, but there are other variables such as tone that I looked for trends in.

Another factor examined was whether levels of coverage changed at different rates for different sized companies. Nike is much more well-known than Precision Castparts, even though both are publicly traded. I am interested to see if changes in levels of coverage seems consistent among the five companies I am looking at, or if it is different for larger versus smaller companies.

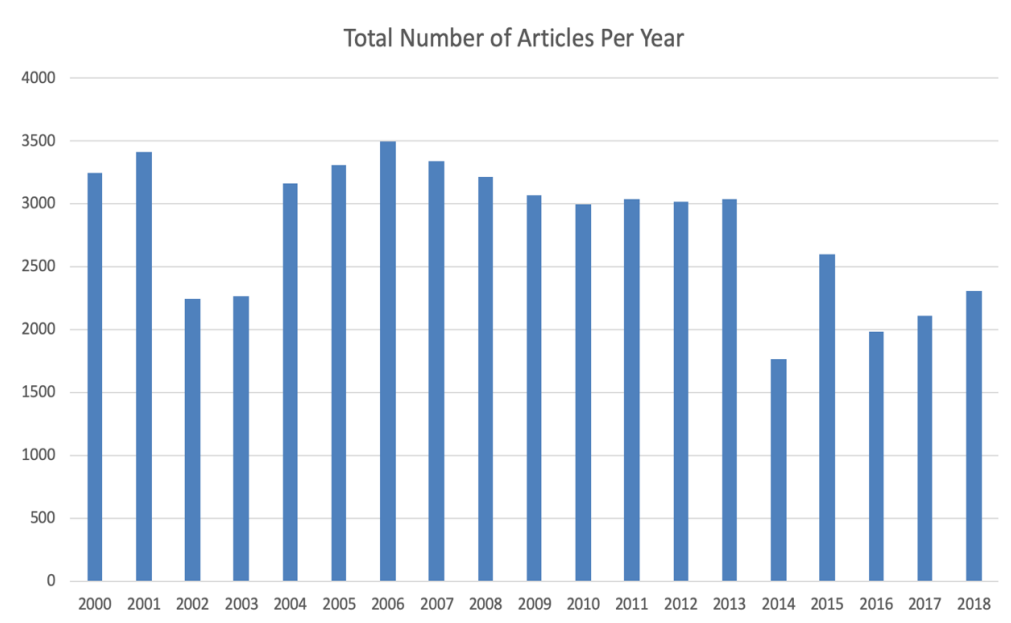
The final section of my thesis will examine whether coverage rates have changed for local vs. national outlets. The local outlet I'm examining has experienced a more dramatic decrease in staff size recently, and the elimination of its daily business section in the print newspaper. I am interested to see if its coverage of these companies has changed more rapidly than the coverage from national outlets.

Chapter 2: Findings and Analysis

Total Levels of Coverage

A query for articles in the Dow Jones Newswires, *Wall Street Journal*, and *The Oregonian* about the five companies of interest between 2000 to 2018 returned 53,624 results. I searched for articles with a relevance score of 50 or above, meaning the results are articles that are most likely about the company, rather than articles that just mention it. The results show that total number of articles about these companies (shown in Figure 2) peaked in 2006 and slightly tapered off in recent years.

Figure 2: Number of Articles per Year, All News Sources, All Five Companies



Total news coverage of the five Oregon companies studied peaked in 2006 and generally tapered from there, reaching a low in 2014.

For comparison sake, this project will often split the companies researched into two categories: Large (Intel and Nike) and Small (Columbia Sportswear, Umpqua Bank, and Precision Castparts). Intel, with a 2019 market capitalization of \$250 billion,

and Nike, market capitalization \$112 billion, received the vast majority of news coverage.⁶ The three smaller companies have a combined market capitalization of about \$40 billion. Intel, the largest company studied by far, received the highest number of national media articles, as one might expect.⁷ Nike, however, was the most covered local company by a wide margin.⁸ I expect this has to do with Nike being a consumer-facing company, founded locally, with high local interest in Oregon. While Intel has more national importance, Nike may have more local news interest because of factors such as its involvement with popular local sports teams. Umpqua Bank, the smallest of the companies I'm studying by market cap, had the least number of national articles. Precision Castparts, a larger company than Umpqua Bank but one that does not often interact with consumers, had the smallest number of local articles.

The change in the number of articles compared between the large and small companies was somewhat proportional, although smaller companies saw more volatility in how much coverage they received year-to-year. The total number of articles for large companies peaked in 2006, while small companies received the most coverage in 2013 and 2016. This finding seems consistent with the idea that larger companies will consistently make news, while smaller companies may be in and out of the spotlight year to year.⁹

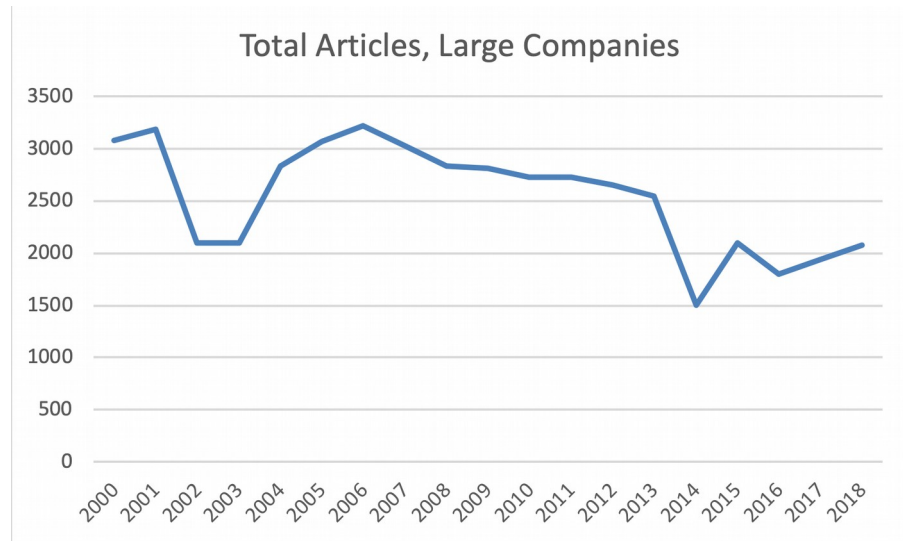
⁶ Market cap numbers taken from Yahoo Finance.

⁷ Intel had 34,908 national articles, compared to 12,202 for Nike.

⁸ Nike had 1,131 local articles, compared to 320 for Intel.

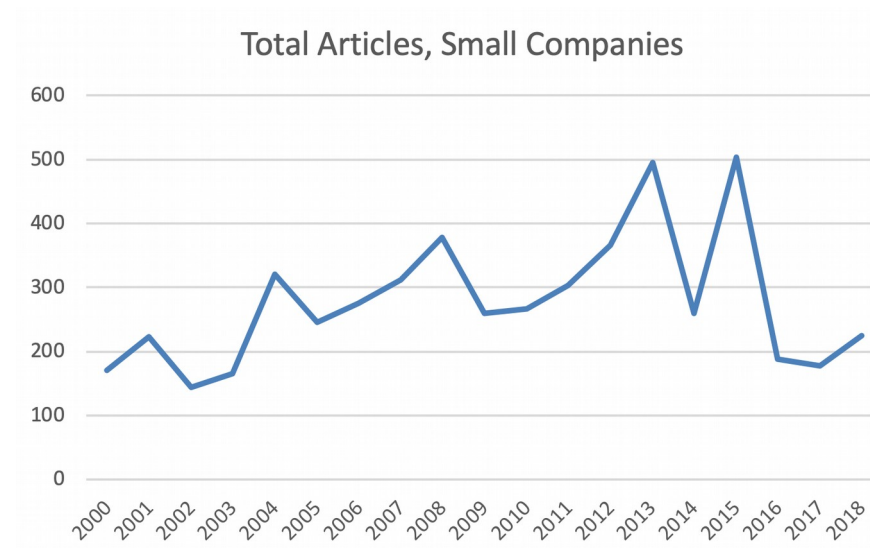
⁹ The Straub, 2015 paper finds that financial journalists are more likely to do news stories about larger companies.

Figure 3: Total Number of Articles, Large Companies



The number of articles about Nike and Intel peaked in 2006 and have dropped most years since.

Figure 4: Total Number of Articles, Small Companies



Smaller companies received generally increased coverage in recent years, after the recession.

By looking at total number of articles from the local and national sources, my hypothesis that as media organizations cut staff, smaller companies would be the first to receive less coverage as larger ones are prioritized, does not hold up. In general, the

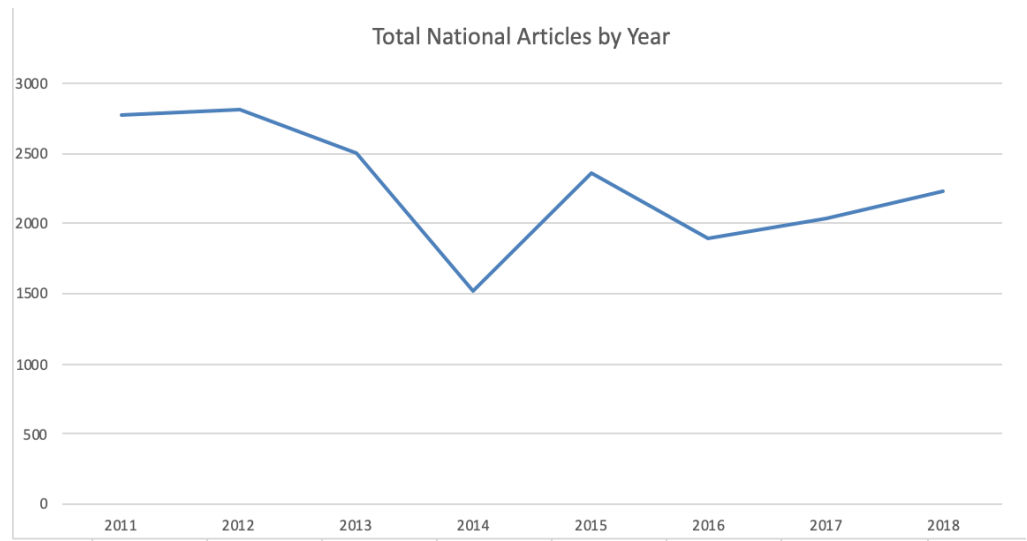
number of articles went down after the recession as I was expecting, and small companies did receive significantly less coverage in 2017 and 2018. But the increase in articles about small companies after 2009 does not match up with my hypothesis, and differs from the larger companies, which did see a drop in level of coverage during that period.

The total number of articles data above is included mainly as a point of reference. From here, differences between local and national coverage will be analyzed, getting into my main research questions.

Local vs. National Coverage

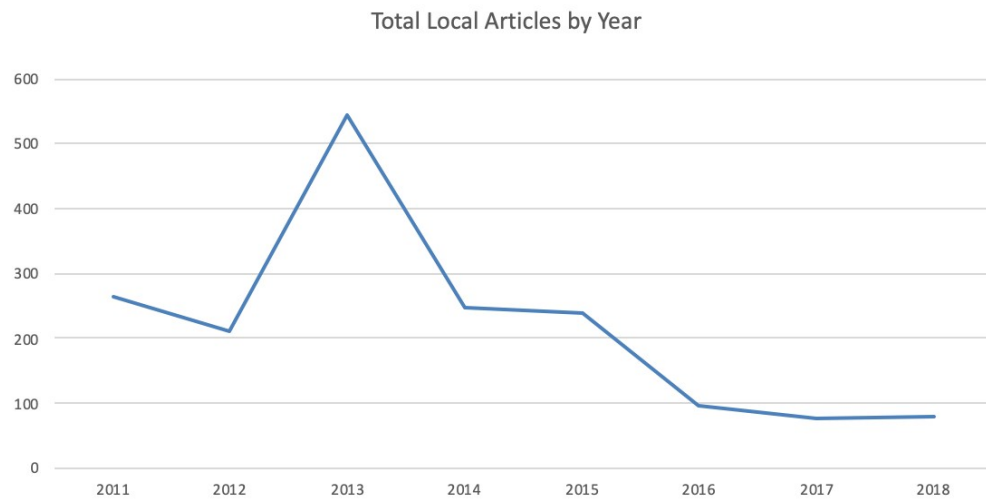
There are significant differences in the changes between local and national coverage. The biggest takeaway is that the amount of local news coverage about the companies of interest has dropped off significantly in recent years, while national coverage has not. This appears to support my hypothesis that there would be less local coverage due to bigger cuts to newsroom staff. *The Oregonian* was first added to the RavenPack database in 2011, so local vs. national comparisons are only available from 2011 onward. The difference in levels of coverage during this period, illustrated in Figures 5 and 6, is stark.

Figure 5: Total Number of Articles from National Outlets



After a dip from 2012 to 2014, the total number of national media articles about Oregon's largest companies has risen for several consecutive years.

Figure 6: Total Number of Articles from Local Media



The amount of news articles about Oregon's largest companies in *The Oregonian* has dropped dramatically since 2013.

The drop in local coverage of Oregon's big companies has been dramatic in recent years. The number of articles varied from 2011 to 2015 but stayed above 200

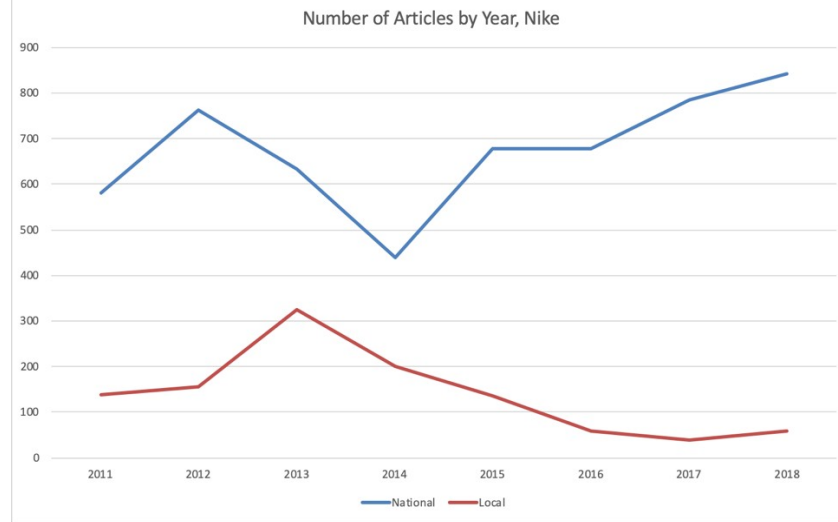
articles per year. Then, starting in 2016 there are three consecutive years with less than 100 articles. Each of the last three years have seen less than one-fifth the total number of local articles from the 2013 peak. This is in comparison to national media, where the number of articles has risen over that span.

This drop in local coverage does not match up with Oregon's large companies becoming less nationally or locally relevant. Nike, the largest company headquartered in Oregon and arguably most relevant to local news, is an interesting case study in this. Nike's market cap has risen from \$42 billion in 2010 to \$112 billion in 2019.¹⁰ Since 2014, when local coverage levels first dropped a significant amount, Nike has added more than 5,000 local jobs, announced an expansion of its world headquarters in Beaverton, and was in the national spotlight for signing controversial athlete Colin Kaepernick.¹¹ Intuitively one might think these events meant more local news coverage, but the data indicates that this has not been the case. Figure 7 shows the number of articles about Nike in the selected national and local sources since 2011.

¹⁰ Data from Yahoo Finance.

¹¹ Draper, Kevin, and Ken Belson. "Colin Kaepernick's Nike Campaign Keeps N.F.L. Anthem Kneeling in Spotlight." *The New York Times*. The New York Times, September 3, 2018. <https://www.nytimes.com/2018/09/03/sports/kaepernick-nike.html>.

Figure 7: Number of national and local articles about Nike, 2011-2018



The number of local vs. national articles about Nike since 2014 has diverged significantly.

Consistent newsworthy events at Nike after 2014 coincide with a spike in national coverage, yet a decreasing amount of local coverage. The next section addresses the potential connection between layoffs at *The Oregonian* and this drop in local business coverage.

Possible Effect of Layoffs on Local Coverage

This paper theorizes that local news layoffs are likely the most important contributing factor to the dramatic drop in local news coverage of Oregon’s largest companies. Layoffs and buyouts at *The Oregonian* began slowly in 2008. After several small rounds of layoffs over the following years, the newsroom was at 175 journalists in early 2013, according to news reports.¹² While this number is a far-cry from the pre-recession peak in newsroom size, it is still nearly triple the size of the current 60-person

¹² Mesh, Aaron. “More Than 35 Newsroom Staff Laid Off at *The Oregonian*.” Willamette Week. Accessed November 7, 2019.

newsroom. In 2013, the newspaper laid off 25% of its remaining journalists¹³ and repeated rounds of layoffs since then have taken it to its current size. It appears possible the large scale 2013 layoff had a significant impact on the number of business news articles published by *The Oregonian*. Figure 6 shows that the number of articles about the 5 companies being studied dropped from more than 500 in 2013 to 250 the next year. As layoffs continued, so did the drop in number of local business articles, which has declined every year since.

National media has in general been impacted by layoffs much less than *The Oregonian*. The Dow Jones Newswires and *Wall Street Journal* employed a combined 2,000 journalists globally in 2012, according to a Dow Jones financial statement.¹⁴ A news report from 2016 indicates that the Wall Street Journal still employed 1,500 journalists, and there are no major news reports of layoffs since then.¹⁵ A 25% workforce reduction during this stretch is significant, but pales in comparison to *The Oregonian*'s 65% decrease over that stretch.

Differences in Local and National Coverage of Large vs. Small Companies

I hypothesized that as newsrooms face layoffs, there could be a bigger drop in the number of articles about smaller companies, with larger companies being prioritized by remaining staff. Nationally, the evidence suggests this is possible. The number of national articles per year about the two “large” companies is compared with the number

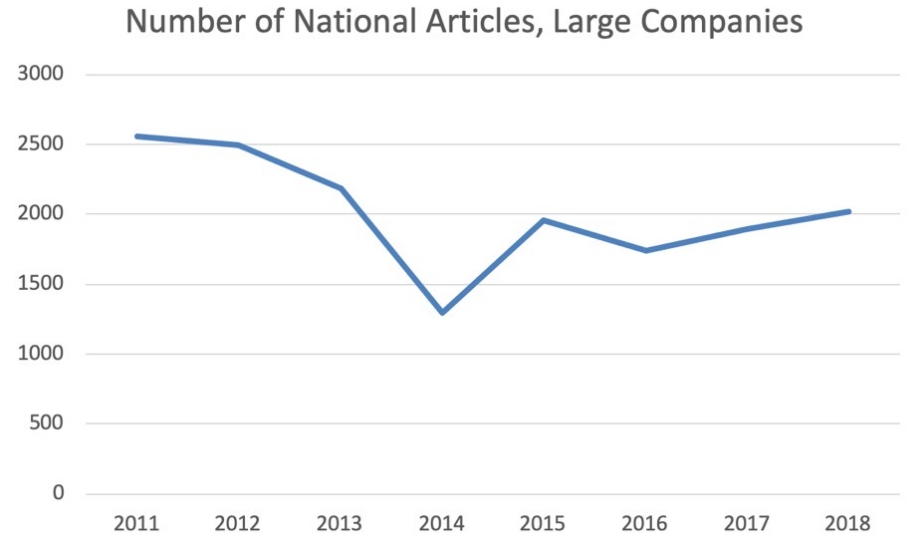
¹³ Ibid.

¹⁴ <https://web.archive.org/web/20130227131559/http://dowjones.com/djcom/FactSheets/WallStreetJournalFactSheet.pdf>

¹⁵ Sutton, Kelsey. “Wall Street Journal to Cut Staff as It Consolidates Print Edition.” POLITICO Media, November 2, 2016. <https://www.politico.com/media/story/2016/11/wall-street-journal-to-consolidate-print-edition-004843>.

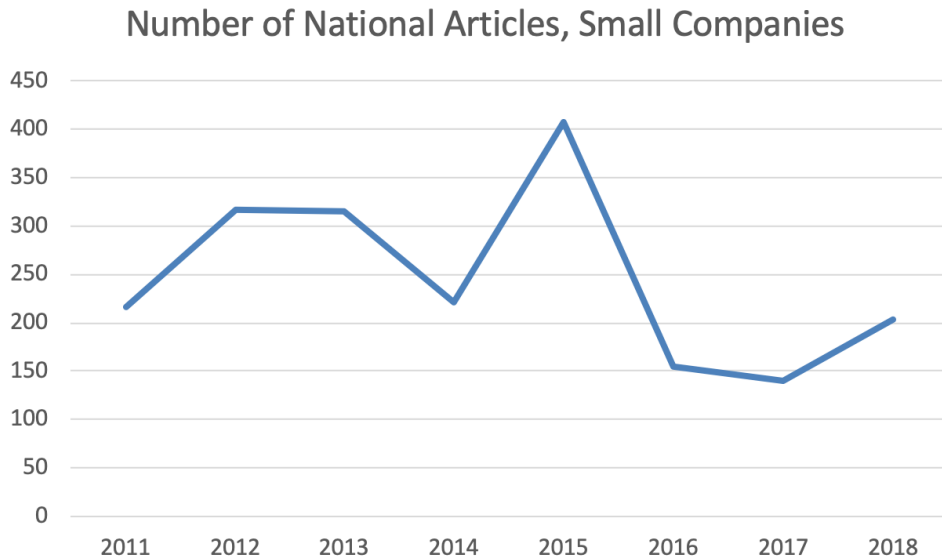
of articles about the three “small companies” in Figures 8 and 9 (shown on separate axes to better illustrate the differences).

Figure 8: Number of National Articles About “Large” Companies (Nike and Intel)



After a dip from 2013 to 2014, the number of national media articles about Oregon’s large companies generally rose.

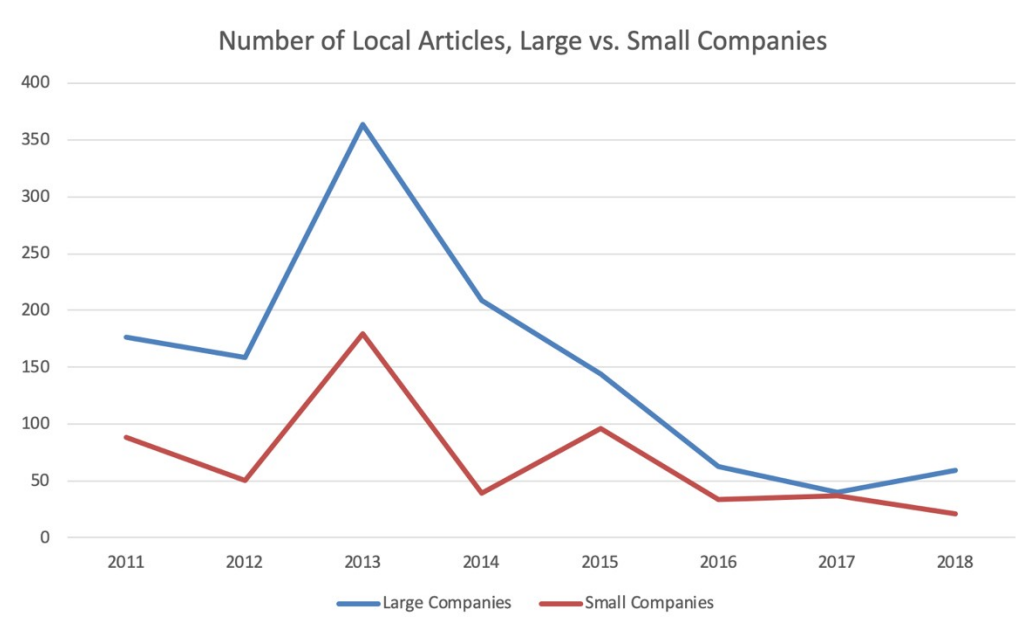
Figure 9: Number of National Articles About “Small” Companies (Columbia, Umpqua Bank, Precision Castparts)



After a spike from 2014-2015, the number of national articles about Oregon’s small companies has dropped.

From 2015 to 2018, national articles about small companies dropped while the number of articles about large companies rose. This supports the idea that national media articles about smaller companies might be the first to be cut out if news staff is laid off. However, the number of articles about small companies is fairly volatile year to year over the entire stretch, making it difficult to draw definitive conclusions. I predicted that at the local level, there would be an especially large drop off in the coverage of small companies compared to large. This is not supported by the evidence. Instead, the number of local articles about companies of any size has dropped dramatically, as Figure 10 illustrates.

Figure 10: Number of Local Articles, Large vs. Small Companies



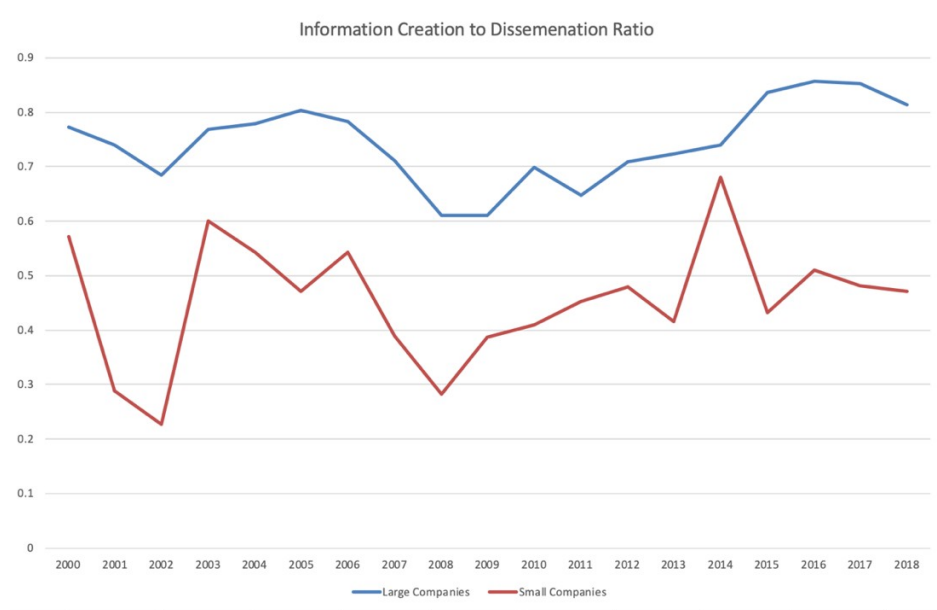
The Oregonian's annual number of articles about large and small companies has dropped at similar rates.

The drop in local coverage of companies regardless of size further supports the idea that *The Oregonian's* coverage has suffered from its comparatively larger layoffs.

Information Creation vs. Information Dissemination

A secondary research question is whether there has been a change in the kind of news coverage companies receive over time. Specifically, whether there have been more or less articles that fit into the “information creation” category of original news reporting and article ideas, or the “information dissemination” category of articles that simply distribute information like earnings announcements or press releases for a company. This section will only analyze national media stories, because data on these categories was not available for *The Oregonian*. My hypothesis, that as time passed and layoffs increased the percentage of information creation articles would go down, is not supported by the data. Figure 11 shows the number of information creation articles divided by the number of total articles (creation and dissemination) for the large and small category companies over time. A larger number on the chart means there was a higher ratio of information creation articles to dissemination articles that year.

Figure 11: Ratio of Information Creation to Dissemination Articles, Large vs. Small Companies



Large companies saw a fairly steady ratio of information creation to dissemination articles. The ratio was more volatile for smaller companies.

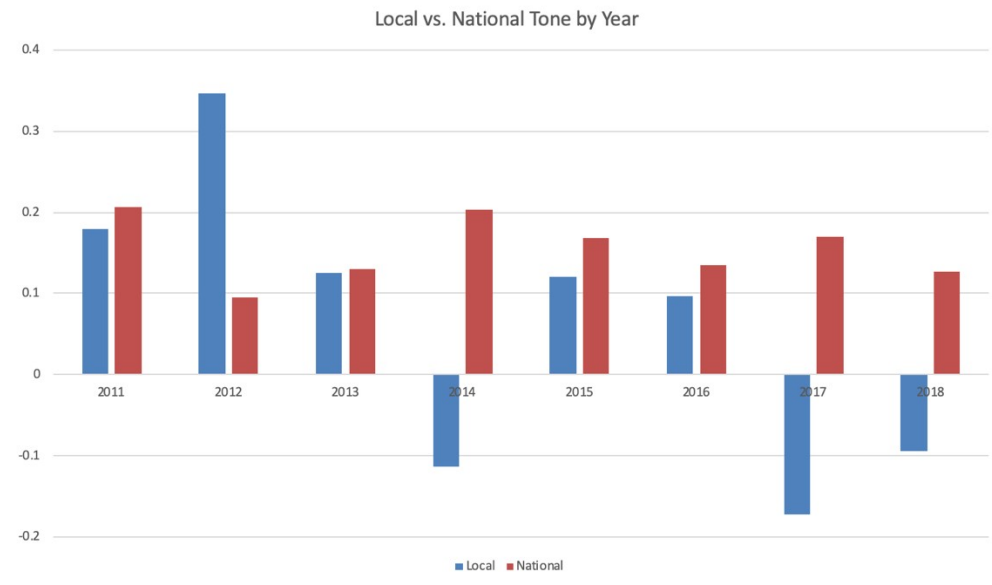
There is no clear drop in the creation to dissemination ratio over the years, disproving my hypothesis that there would be fewer creation articles as time passed. A notable observation, however, is the significant gap in the ratio between the large and small companies. Figure 11 indicates that the large companies do receive more in-depth, original stories from financial journalists, whereas the smaller companies have a higher percentage of articles that are simply disseminating information from the company without adding original reporting or information.

Tone of Articles

RavenPack includes a tone rating for each article in its database. The rating is a number between -1 and 1, with -1 being the most negative tone and 1 being the most positive tone. The score is determined by an algorithm search of key words generally

associated with positive or negative tone. This paper seeks to answer what, if any, difference there is in tone between local and national coverage over the years, and how tone has changed. Figure 12 shows the average tone score for all five companies for local vs. national sources.

Figure 12: Local vs. National Tone, All Five Companies



Number pictured is the average tone score for all articles about all five companies for local and national sources.

National news articles have steady average tone scores over the period, with a minimum score just under 0.1 in 2012 and a maximum score just above 0.2 in 2011. These scores mean the RavenPack algorithms think the articles are close to neutral in tone. Local news, on the other hand, has volatile changes in tone over the years, with a much higher top end tone rating of 0.35 in 2012, and a much lower low end, with tone dipping into negative scores in 2014, 2017, and 2018. One final interesting observation: Tone is highly correlated with the information creation to dissemination ratio. The correlation between tone and information creation to dissemination ratio is 0.23, meaning a higher ratio of creation articles is correlated with more positive tone. This may suggest that when journalists produce their own content, the tone is more positive. This runs

contrary to my hypothesis that original content not released by companies would be more negative in tone.

Chapter 3: Summary of Findings and Conclusions

This paper set out to answer whether a shrinking media industry has written fewer articles about Oregon’s major companies in recent years, if the kind or tone of coverage has changed, and whether these differences are consistent between local and national media outlets and large and small companies. Three major themes emerge from the evidence. First, there is a clear divergence between the amount of news coverage of these companies in national and local sources, starting around 2013. While the number of national articles slightly increased, the number of local articles dramatically decreased, which is illustrated in Figures 5 and 6. This decrease coincided with major staff reductions at *The Oregonian*, Oregon’s largest local news source, and comparatively smaller staff reductions at Dow Jones and *The Wall Street Journal*.

Second, the evidence suggests that during a period of layoffs, national media produced more articles about Oregon’s larger companies studied than the three smaller ones, suggesting the possibility that larger companies were prioritized for coverage in the face of cuts. This is illustrated in Figures 8 and 9. Conversely, size of company did not seem to matter for the number of articles produced by local media. Figure 10 shows that *The Oregonian*’s coverage of companies fell at similar rates across the board.

Third, there has been no clear change in the ratio of information creation to dissemination articles over the period, contrary to my hypothesis. It was clear, however, that larger companies received a significantly higher ratio of information creation articles, indicated that they receive more attention and original coverage from national media. Tone of articles was steadily neutral from national sources, while local tone was much more volatile over the period—sometimes positive, sometimes negative. For

unclear reasons, it appears that a higher information creation to dissemination ratio is correlated with a more positive tone score.

Independent journalism is an important check on major companies. Without outside coverage or scrutiny, companies could paint a rosy picture of their operations at all times, potentially misleading investors or covering up wrongdoing. This is why a decrease in local news coverage of the largest companies in Oregon is so significant. Previous research¹⁶ has found that less local political coverage means less informed citizens and less political involvement. There is no reason to believe that less local business coverage will not lead to similarly detrimental effects. It is no secret that the local news industry has struggled financially after the recession and in the digital era. This paper quantifies that impact on coverage of Oregon's largest companies.

Research Limitations and Future Questions

To tie local news layoffs with a decrease in number of articles produced, this project relies on observing the number of articles over the period layoffs occurred. Further research would need to be done to prove definitively that the outcome is related to layoffs. A second major limitation was the lack of available local news data before 2011. There are certainly valuable observations and comparisons to make for changes in national versus local media since 2011, but if data from earlier was available, it would be easier to make more detailed inferences about the effect of the recession. There currently is no baseline available for how many business news articles *The Oregonian* was publishing each year before it first started laying off reporters. There are also many factors potentially influencing the number of articles written about each company that

¹⁶ Hayes, 2017.

this project could not control for. These include editorial decisions, or the newsworthiness of the companies studied each year. However, the value of this project lies in comparing how major national outlets and a major local outlet covered the same set of companies for a long period.

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