**Interference or Independence?  
The effect of Alibaba’s acquisition on media bias in the South China Morning Post**

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December 17, 2016

**Abstract**

In April 2016, Chinese e-commerce giant Alibaba Group completed its purchase of famed Hong Kong newspaper The South China Morning Post. In a city where press freedom has significantly declined in recent years due to pressure from the Mainland, the acquisition sparked concerns that the continued impartiality of the SCMP, widely considered Hong Kong’s newspaper of record, would be affected. I use a difference-in-differences approach to study whether acquisition by Alibaba affected SCMP media coverage bias in three dimensions. I find that anti-China media bias increases by an estimated 20.4% in just one dimension, coverage of events with collective action potential, but not in citations of establishment politicians or state news agency Xinhua. This effect, however, becomes small and statistically insignificant once the sample is restricted to domestic articles. Two potential causes of this phenomenon, actions by SCMP staff and actions by Alibaba, cannot be disentangled.

**Introduction**

A British colony until its handover to the People’s Republic of China in 1997 under the Sino-British Joint Declaration of 1984, Hong Kong today exists as part of “one country, two systems”, whereby the Special Administrative Region (SAR) maintains some degree of autonomy and is guaranteed certain freedoms – including that of the press. Despite this, Hong Kong’s ranking in the Press Freedom Index, published by international non-profit Reporters Without Borders, fell from 18th in 2002 to 68th in 2016; China ranked 138th and 176th, respectively. The acquisition of Hong Kong’s leading English-language newspaper, the South China Morning Post (SCMP), by China-based Alibaba Group – the largest e-commerce company in the world by transaction volume – thus raised a flurry of questions concerning its future editorial independence (Wall Street Journal 2014, Los Angeles Times 2015).

Often described as a “mix of Amazon, Ebay Inc., and Paypal, plus bits of Google Inc.”, Alibaba had a market capitalization of $233B as of December 10, 2016. Though the firm’s business is rooted in connecting vendors and customers via online platforms, it has expanded aggressively into other areas, including the media industry. In April 2016, Alibaba completed its acquisition of the South China Morning Post (SCMP), an English-language publication widely considered to be Hong Kong’s newspaper of record. As a publicly traded company with most its revenue coming from China, Alibaba would benefit from more favorable media coverage of the Mainland, especially from an influential publication that has historically reported on issues deemed sensitive by the central government. On the other hand, consumers may respond to changes in bias by moving to other outlets, decreasing the value of bias; Durante and Knight (2012) find that rightward shifts in Italian public television news content following changes in government control were offset by viewers switching to other channels. Further, the SCMP had already been owned by a Malaysian business tycoon with ties to the Chinese government, Robert Kuok (Reuters 2015). The following quote emphasizes this ambiguity:

*“Alibaba agreed on Friday to buy… one of Hong Kong’s most influential English language daily newspapers, The South China Morning Post… Alibaba said the deal was fueled by a desire to improve China’s image and offer an alternative to what it calls the biased lens of Western news outlets… The company’s position aligns closely with that of the Communist Party, which has grown increasingly critical of the way Western news organizations cover China… The company said its shares, which are listed in New York, were being affected by all the negative reports about China.*

*“Alibaba, however, said it had no intention of interfering with the day-to-day operations of the paper and would not censor articles. The company said it would ensure the paper’s journalistic independence.”*

Alibaba Buying South China Morning Post, Aiming to Influence Media   
New York Times  
12/11/2015

It is thus natural to ask: did the acquisition of the SCMP by Alibaba affect its media bias?

To frame the analysis, I first briefly survey the media bias literature. In a meta-analysis of 59 quantitative studies on partisan media bias in US presidential elections, D’Alessio and Allen (2000) categorize bias into gatekeeping bias, coverage bias, and statement bias. Gatekeeping bias, a preference for one party’s stories over the other’s, is studied in Groseclose and Milyo (2005), who compare citations of think tanks and policy groups by US media outlets to the citation patterns of US congressmen with exogeneous ideological scores to construct an index of media bias. Coverage bias, how often one party is covered versus the other, is studied in Durante and Knight (2012). Finally, statement bias is defined as the favorability of coverage; Gentzkow and Shapiro (2010) take a modified approach and compare newspaper language to that of Democrats and Republicans, assigning each outlet an ideological position.

These measures of media bias, however, rely on multi-party systems, and thus are unsuited for analyzing media from countries with authoritarian regimes. Qin, Strömberg, and Wu (2015) adapt some of the approaches above to Chinese media Instead of measuring media bias along a two-party spectrum, they create an index of media bias across nine categories of content differentiation, capturing the overall political-economic tension in Chinese media. The government allows limited commercialization of media outlets in order to disseminate the Party line to the most readers and to alleviate the distortions caused by heavy newspaper subsidies. This is, however, a delicate balance, as commercial newspapers are less willing to publish official propaganda and may in fact publish articles contrary to it. The idea of a political-economic spectrum is corroborated by Yuan (2016), who uses hierarchical clustering to ultimately divide Chinese newspapers into a central/political group and a local/economic group. Qin et al. find that coverage of political leaders, citations of primary Party mouthpiece Xinhua News Agency, and suppression of potentially damaging reports account for the most, 40%, variation in content. These measures resemble measures of media bias found in other literature above – the first two follow Durante and Knight (2009) and Groseclose and Milyo (2005), respectively, and the last is reminiscent of Larcinese et al. (2007), which studies the correlation between newspaper endorsement policy and positive/negative economic news coverage under Presidents of varying ideologies.

To get a better idea of what types of reports the Chinese government considers as potentially damaging, I turn to King, Pan, and Roberts (2013), who analyze censorship of long-form social media posts in China. They find that posts critical of the government do not have a higher probability of censorship, while posts with “collective action potential”, defined as posts that promote non-government-stimulated collective expression, are targeted by censors. Thus, suppression of collective action is shown by to be the primary aim of the Chinese government. These findings are corroborated by King, Pan, and Roberts (2014), who submit carefully written posts to various Chinese social media sites and record censorship outcomes.

In this study, I adapt the approach in Qin et al. to Hong Kong to study pro-China coverage bias in the SCMP. Instead of constructing a single measure of media bias, I examine different dimensions separately – the share of non-editorial articles citing major national and local establishment-party politicians, the share citing Xinhua, and the share covering events with collective action potential such as protests. I then analyze news articles from three newspapers over a 17-month period from July 1, 2015 to November 30, 2016 to construct various measures of pro-China media bias. Using a difference-in-difference approach on a cross-section of newspaper-months, I examine whether acquisition by Alibaba caused these measures to change. In doing so, I assume that the newspapers’ measures of media bias are being affected uniformly by exogeneous factors over time post-controls, and use the fact that only the SCMP experienced the acquisition treatment.

Though I find no statistically significant change in citations of establishment politicians and of state-owned Xinhua News Agency, I find a small, but statistically significant increase in the coverage of “collective action” events of 1.3%. Instead of such coverage being suppressed as expected, it increases, albeit by a small amount. However, once the sample is restricted to domestic articles, the effect disappears. I offer two possible explanations: 1. Alibaba is allowing editorial freedom and this change is a reaction by SCMP staff; 2. Alibaba is actively encouraging coverage of international protests and other events with collective action potential to boost the perception that the SCMP is an unbiased newspaper. One caveat is that bias may be primarily shifting in another dimension, perhaps in statement bias.

**Data**

My primary sources of data are the internet archives of two newspapers: the South China Morning Post, Hong Kong’s oldest English-language newspaper and the most influential; the Standard, the largest English-language newspaper by circulation and the SCMP’s primary competitor. I extract non-editorial news articles from July 1, 2015 to November 30, 2016 using the Python packages ‘BeautifulSoup’ and ‘Requests’, convert texts to lowercase, removing non-alphanumeric characters, and store them as text files, including author and dates of publication. I have a total of 29,046 articles from the SCMP and 27,100 articles from the Standard.

I use the set of related words and word tokens in Table 1 to capture collective action potential:

**Table 1: Collective action word tokens**

|  |  |
| --- | --- |
| **Word** | **Token** |
| rally, rallier, rallied | rall |
| march, marcher, marching, marched | march |
| gather, gathering, gathered | gather |
| assemble, assembly, assembled, assembling | assembl |
| protest, protestor, protesting, protested | protest |
| mass | mass |
| occupy | occupy |
| demonstrate, demonstration, demonstrator, demonstrating, demonstrated | demonstr |
| movement | movement |

Though these words were chosen subjectively, they appear to cover the theme of collective action quite well. The words ‘gatherer’ and ‘assembler’, which are related to the tokens ‘gather’ and ‘assembl’, respectively, are generally found in contexts unrelated to collective action (i.e. hunter-gatherer). They appear in a negligible number of articles and are removed. As a robustness check, I selected articles from the BBC concerning collective action in Hong Kong – covering the annual June 4th vigil, for example – and searched for the above words; I found multiple entries each time.

To construct a list of national-level and local-level politicians, I use two sources. The first is a Congressional Research Service report on China’s political structure containing names of prominent national politicians (Lawrence 2013). I use the official Hong Kong Legislative Council website, [www.legco.gov.hk](http://www.legco.gov.hk), to obtain the names and affiliations of local Hong Kong politicians, which I then match to a list of pro-establishment parties from Wikipedia and verified by locals. I also include the name of the current, pro-establishment Chief Executive, Leung Chun-ying.

I then iterate through the author and text of each article, counting: the number of articles that cite or mention a political figure in the list created above; the number of articles featuring ‘xinhua’ in the author string or in the text; and the number of articles containing any of the words in Table 1. In later analyses, I restrict the sample to articles containing the words ‘china’ or ‘hong kong’ to measure the effect of the acquisition on local news. The main data are summarized in Table 2:

**Table 2: Summary statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable[[1]](#footnote-1)** | **Outlet** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| Leader share | SCMP | .3470903 | .054637 | .2103354 | .4142599 |
| Pre-acquisition |  | .347031 | .0584015 | .2103354 | .4013605 |
| Post-acquisition |  | .347157 | .0540864 | .2735043 | .4142599 |
|  |  |  |  |  |  |
| Xinhua share | SCMP | .0590705 | .0133076 | .0423423 | .0970082 |
| Pre-acquisition |  | .0642185 | .0152747 | .0423423 | .0970082 |
| Post-acquisition |  | .0532789 | .008107 | .0435993 | .0654649 |
|  |  |  |  |  |  |
| Coll action share | SCMP | .0608794 | .0089788 | .0468468 | .0778388 |
| Pre-acquisition |  | .0614016 | .0112856 | .0468468 | .0778388 |
| Post-acquisition |  | .0602919 | .0061617 | .0505145 | .0673367 |
|  |  |  |  |  |  |
| Leader share | STD | .2119196 | .0513254 | .1177016 | .3136095 |
| Pre-acquisition |  | .2076085 | .041763 | .1285231 | .2614728 |
| Post-acquisition |  | .2167696 | .0630647 | .1177016 | .3136095 |
|  |  |  |  |  |  |
| Xinhua share | STD | .0250518 | .0087136 | .0090361 | .0416222 |
| Pre-acquisition |  | .0289858 | .008184 | .0165485 | .0416222 |
| Post-acquisition |  | .0206259 | .007397 | .0090361 | .0352113 |
|  |  |  |  |  |  |
| Coll action share | STD | .0370591 | .0098368 | .0213018 | .0605701 |
| Pre-acquisition |  | .0383594 | .0079035 | .0263158 | .0484262 |
| Post-acquisition |  | .0355963 | .0120485 | .0213018 | .0605701 |

Here, a higher leader share or Xinhua share correspond to more pronounced pro-China bias, while collective action share is inversely related to pro-China bias. The similarity of the monthly overall article counts is encouraging and supports the validity of comparing the SCMP and the Standard. Figure 1 shows the share of articles citing prominent establishment politicians. Note that the acquisition occurs at month 0:

**Figure 1: Share of articles citing establishment politicians by newspaper**

Two characteristics of Figure 1 are striking: first, the citation shares of both newspapers move more or less together, and the SCMP cites establishment leaders consistently more often than the Standard. This is somewhat expected; though the SCMP and the Standard are major competitors, the SCMP, as the most prestigious English-language newspaper in Hong Kong, likely enjoys better access to politicians. However, the difference is at times quite drastic, especially when considering the absolute count of mentions. In month 3, October 2015, the SCMP published 344 articles citing political leaders compared to the Standard’s 184.

**Figure 2: Share of articles citing Xinhua by newspaper**

For the most part, these Xinhua citations seem to move together as well; however, as it is unlikely the state-run Xinhua News Agency would selectively disseminate its press releases in Hong Kong, Figure 2 implies that the SCMP is more pro-China in coverage than the Standard.

**Figure 3: Share of articles containing collective action keywords by newspaper**

Per Figure 3, the SCMP overall has a distinctly higher coverage of events with collective action potential, as would be expected from Hong Kong’s newspaper of record.

In some specifications, I make use of the Alexa Traffic Rank – a measure of website popularity – for the homepage of a famous Chinese-language Hong Kong newspaper, the Hong Kong Economic Times (hket.com), in controls. Alexa collects data from a global panel of users with its toolbar installed. A website’s ranking is inversely proportional to the number of unique visitors and page views per unique visitor it receives in the last three months; the five highest-ranked websites in the world in December 2016 were google.com, youtube.com, facebook.com, baidu.com, and wikipedia.org. Though the paid service allows users to access Alexa ranking data over custom time ranges and within specific countries, the free service only provides ranking data from the past year in visual form. I thus use the website siterank.info, which aggregates website data from a variety of sources, including Alexa, to obtain these data over the period of interest. Though this does not apply to HKET, it is worth noting that Alexa is limited by lack of data with websites with rankings greater than 100,000 – such as thestandard.com.hk, the Standard’s homepage. These websites may experience large but statistically insignificant changes in ranking as a result.

**Methods**

On a cross-section of newspaper-months, I use a difference-in-differences approach using the following specification:

Where is either the Xinhua share or the collective action share. , the treatment period dummy, is equal to zero before the treatment and equal to one after; , the treatment group dummy, is equal to one if the newspaper-month belongs to the SCMP and is zero otherwise; is the interaction between treatment period and group; denotes controls, and denotes the residual. represents the difference-in-difference estimator, quantifying the effect of a treatment on a group relative to a control group.

Since the equation is being estimated with ordinary least squares, there may be issues with heteroscedasticity and serial correlation. Heteroscedasticity may arise from certain months being more eventful than others; I control for this using possibility using robust standard errors, with minimal loss of power. Serial correlation may result from the outcome variables depending on their lags. Editors, for example, may come under fire from management if the newspaper publishes too many articles encouraging collective action in one period, suppressing the next period’s collective action share; or, they may come under fire for publishing too few and losing business. Many difference-in-difference studies do not account for this autoregressive structure, despite studying highly autocorrelated variables such as unemployment; this tends to significantly bias t-statistics upwards (Bertrand, Duflo, and Mullainathan 2003). Fortunately, Wooldridge tests for serial correlation fail to reject the null hypothesis of no first-order serial correlation (see Appendix Table 1).

In addition, the difference-in-differences method assumes that the average change in the control group, the Standard newspaper-months, from the pre-treatment period to the post-treatment period is equivalent to the counterfactual change in the treatment group, the SCMP newspaper-months. If this parallel trends assumption is satisfied, the difference-in-differences estimator is unbiased. At first glance, it seems likely that the two most popular English-language newspapers in Hong Kong satisfy parallel trends. Both were owned by media conglomerates and so would be affected similarly by economic changes. Differential characteristics that are invariant to time – the relatively higher prestige, for example, of the SCMP – are eliminated by the differences-in-differences methodology. The trends in the figure above seem to be essentially parallel prior to the acquisition, implying that they would have counterfactually continued to be parallel after it.

However, some time-variant factors may be affecting both newspapers differently, biasing the difference-in-difference estimators. The first factor readership composition. Following its acquisition, the SCMP removed its online paywall, allowing anyone to access its articles on its website. Since the SCMP has historically had a wealthier readership with business ties to China – according to its 2016 rate card, 62% of its readers report “professional”, “manager”, “executive”, “trader”, or “proprietor” as their occupation – this removal would likely cause local readership to become poorer and more anti-China. To the extent that readers demand media slant similar to their own, there would be a demand-side pressure to publish more anti-China news. This is difficult to control for, as readership and circulation data are scarce. One counterargument to this, however, is that the SCMP says it is mainly aiming to expand globally to provide news to existing and potential shareholders, not poorer locals. According to Editor-in-Chief Tammy Tam, the paywall removal “paves the way for the SCMP to grow its readership globally. It is our firm belief that as China plays an increasingly critical role in world politics and the economy, a global community of China stakeholders will demand insightful and trusted news and commentaries from a within-the-region perspective” (SCMP 2016).

Secondly, though the prestige and resources of the SCMP and the Standard are likely time-invariant, the way those characteristics interact with eventfulness is not. In other words, shocks to indices of bias may have differential effects. To illustrate, assume that in a given period, the SCMP covers share of relevant news *C*, while the Standard covers share . The inequality holds and captures the differences in prestige and resources between the SCMP and the Standard. This is especially relevant in an international context. Since international news for these outlets is primarily sourced from foreign press releases, a naive estimate might be fundamentally driven the SCMP’s better access to international news. A survey of the unique authors featured in SCMP and The Standard news articles supports this claim, as the SCMP sources news from a variety of sources that the Standard does not, including, for example, the New York Times and the Washington Post. Assume further for simplicity that both firms publish the same number of news articles *T* per period. In this case, the SCMP’s overall share of relevant articles reported would be , compared to for the Standard. Now assume C increases (decreases) by in the next period. The SCMP’s share then increases (decreases) by , which is greater (less) than the Standard’s change in share . Thus, if the second period is more (less) eventful overall than the first, the parallel trends assumption is violated.

To control for this potential issue, I construct an index of period eventfulness using the Alexa Ranking of Chinese-language newspaper Hong Kong Economic Times (HKET), which surveys by the Center for Communication Research at the Chinese University of Hong Kong have found as the most credible Chinese-language newspaper. Thus, if a particular period is especially eventful, citizens would in theory visit this website more often to understand current events, causing HKET to move up the Alexa Rankings. I use the HKET instead of the SCMP – which has a higher credibility rating – because of the removal of the SCMP’s pre-acquisition paywall, which limited nonsubscribers to just four free articles per month. This limitation might have bounded the eventfulness elasticity of its pre-acquisition ranking, but not of its post-acquisition ranking; in this case, the relationship between eventfulness and ranking might change at month 0, biasing the difference-in-difference estimator. Further, the HKET’s focus on political and economic news insulate it from periods of increased sports, entertainment, and other soft news. To aid interpretation, I normalize the Alexa Ranking, calculating the monthly percent deviation from the overall mean. This measure of ‘interesting times’ is shown in Figure 4. As a naïve robustness check, the spikes at month -2 and month 6 are concurrent with the Causeway Bay bookseller disappearances and the Legislative Council oath-taking controversy, respectively, two major 2016 news events.

**Figure 4: Eventfulness index; percent deviation of HKET Alexa Ranking from period mean**

However, this is not a perfect measure by any means; because Alexa rankings are calculated over a three-month period, they dampen the impact of minor events. In addition, the HKET is subscriber-only, so the movement in its ranking is likely bounded – but uniformly over the entire period, in contrast to the SCMP. However, this measure is better than other alternatives such as Google Trends; it is highly unlikely that Hong Kong locals would be searching blanket terms like ‘Hong Kong news’ to become better informed, rather than searching for a specific issue or event or going directly to a news site.

**Results**

Running the regressions yields slightly negative but insignificant leader share and Xinhua share difference-in-difference estimators, but a somewhat large and positive collective action share estimator of 1.31%, significant at the 5% level. Though the magnitude of the estimated increase in collective action share is absolutely low, compared to a pre-acquisition mean collective action share for the SCMP of 6.14%, a 1.31% absolute increase translates to a substantial 21.3% relative increase in collective action share.

**Table 3: Main results[[2]](#footnote-2)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Leader share | Leader share | Xinhua share | Xinhua share | Collective action share | Collective action share |
| SCMP | 0.0360\* | 0.0394\* | 0.0238\*\*\* | 0.0238\*\*\* | 0.0239\*\*\* | 0.0241\*\*\* |
|  | (0.0149) | (0.0158) | (0.00405) | (0.00480) | (0.00308) | (0.00332) |
|  |  |  |  |  |  |  |
| Acquisition | -0.00388 | -0.00388 | -0.00818\*\*\* | -0.00818\*\*\* | -0.00587 | -0.00587 |
|  | (0.0158) | (0.0161) | (0.00209) | (0.00212) | (0.00345) | (0.00350) |
|  |  |  |  |  |  |  |
| Acquisition\*SCMP | -0.00263 | -0.00998 | -0.00162 | -0.00176 | 0.0131\* | 0.0125\* |
|  | (0.0232) | (0.0229) | (0.00475) | (0.00635) | (0.00478) | (0.00523) |
|  |  |  |  |  |  |  |
| SCMP\*HKET |  | 0.0813 |  | 0.00151 |  | 0.00594 |
| Alexa % deviation |  | (0.0916) |  | (0.0240) |  | (0.0195) |
| from mean |  |  |  |  |  |  |
| \_cons | 0.143\*\*\* | 0.143\*\*\* | 0.0209\*\*\* | 0.0209\*\*\* | 0.0352\*\*\* | 0.0352\*\*\* |
|  | (0.00919) | (0.00934) | (0.00172) | (0.00175) | (0.00214) | (0.00218) |
| *N* | 34 | 34 | 34 | 34 | 34 | 34 |
| *R*2 | 0.238 | 0.258 | 0.773 | 0.773 | 0.849 | 0.849 |

Standard errors in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

These results suggest that the SCMP is not suppressing coverage of controversial events at all – rather, it is increasing it. However, as stated in the previous section, one confounding factor that may affect these results is the interaction of eventfulness with the SCMP’s status as newspaper of record. Adding the controls reduces the magnitude of the effect to 1.25% – a relative increase of 26.37% – but increases the standard error from 0.00478 to 0.00523. The confidence interval thus remains bounded from above at around 2.3%, but the lower bound falls drastically; we can no longer reject at the 95% level the hypothesis that the difference-in-difference is less than 0.183%, compared to 0.331% without controls. Interestingly, the addition of controls also increases the magnitude of the leader share difference-in-difference point estimate from 0.00263 to 0.00998, though given the size of the standard errors, this increase is still not enough for statistical significance. The values of the naïve regressions are invariant to the addition of controls, apart from specifications (1) and (2), where the control slightly increases the to 0.258 from 0.238.

Though we cannot reject the null hypothesis of no change in leader share and Xinhua share, we also cannot reject changes within the confidence intervals in Table 4. These confidence intervals, compared to the pre-acquisition means, are very large.

**Table 4: Main results – 95 % confidence intervals**

|  |  |  |
| --- | --- | --- |
| **Measure** | **Confidence interval (without control)** | **Confidence interval  (with control)** |
| Leader share | [-0.0500, 0.0447] | [-0.0569, 0.0369] |
| Xinhua share | [-0.0113, 0.00809] | [-0.0147, 0.0112] |
| Collective action share | [0.00331, 0.0228] | [0.00183, 0.0232] |

One potential issue with this analysis is that foreign and domestic news coverage may be valued differently by the Chinese government. For example, a search on the Xinhua homepage for ‘Standing Rock’, a late 2016 protest over a proposed oil pipeline in North Dakota, returns several relatively neutral articles (subjectively), while searching for ‘Occupy Central’, a 2014 Hong Kong protest, returns strongly negative coverage. Searches for articles concerning the 1989 Tiananmen Square protests, a topic banned on the Mainland, return nothing. Thus, the nature of domestic news coverage may more accurately reflect pro-China media bias. If this is the case, the results above are misleading. If both international and domestic stories are counted as the same, but domestic news coverage and thus media bias changes, then these changes will be masked by noisy and irrelevant coverage of world affairs. Even if domestic and international news coverage are comparable, the acquisition’s effect on domestic coverage bias is still of interest. Alibaba’s intent is to change China’s international perception, which intuitively cannot change much from differential coverage of already well-covered world affairs.

I thus continue by restricting my sample to domestic news, i.e., articles containing the words ‘china’ or ‘hong kong’. After restricting the sample to domestic articles in Table 5, three major differences present themselves. First, the collective action share difference-in-difference estimators are no longer significant due to both a reduction in the magnitude of the point estimate and higher standard errors; second, standard errors across the board increase; third, adding the eventfulness control now has little effect on both point estimates and standard errors, as well as the of the model.

**Table 5: Domestic sample results**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
|  | Leader share | Leader share | Xinhua share | Xinhua share | Collective action share | Collective action share |
| SCMP | 0.139\*\*\* | 0.147\*\*\* | 0.0352\*\*\* | 0.0351\*\*\* | 0.0230\*\*\* | 0.0232\*\*\* |
|  | (0.0240) | (0.0265) | (0.00580) | (0.00669) | (0.00461) | (0.00503) |
|  |  |  |  |  |  |  |
| Acquisition | 0.00916 | 0.00916 | -0.00836\* | -0.00836\* | -0.00276 | -0.00276 |
|  | (0.0262) | (0.0267) | (0.00378) | (0.00384) | (0.00500) | (0.00508) |
|  |  |  |  |  |  |  |
| Acquisition\*SCMP | -0.00904 | -0.0254 | -0.00258 | -0.00230 | 0.00165 | 0.00142 |
|  | (0.0379) | (0.0399) | (0.00697) | (0.00875) | (0.00663) | (0.00742) |
|  |  |  |  |  |  |  |
| SCMP\*HKET |  | 0.181 |  | -0.00308 |  | 0.00263 |
| Alexa % deviation |  | (0.124) |  | (0.0317) |  | (0.0266) |
| from mean |  |  |  |  |  |  |
| Constant | 0.208\*\*\* | 0.208\*\*\* | 0.0290\*\*\* | 0.0290\*\*\* | 0.0384\*\*\* | 0.0384\*\*\* |
|  | (0.0140) | (0.0142) | (0.00274) | (0.00278) | (0.00264) | (0.00269) |
| *N* | 34 | 34 | 34 | 34 | 34 | 34 |
| *R*2 | 0.635 | 0.653 | 0.766 | 0.766 | 0.634 | 0.635 |

Standard errors in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

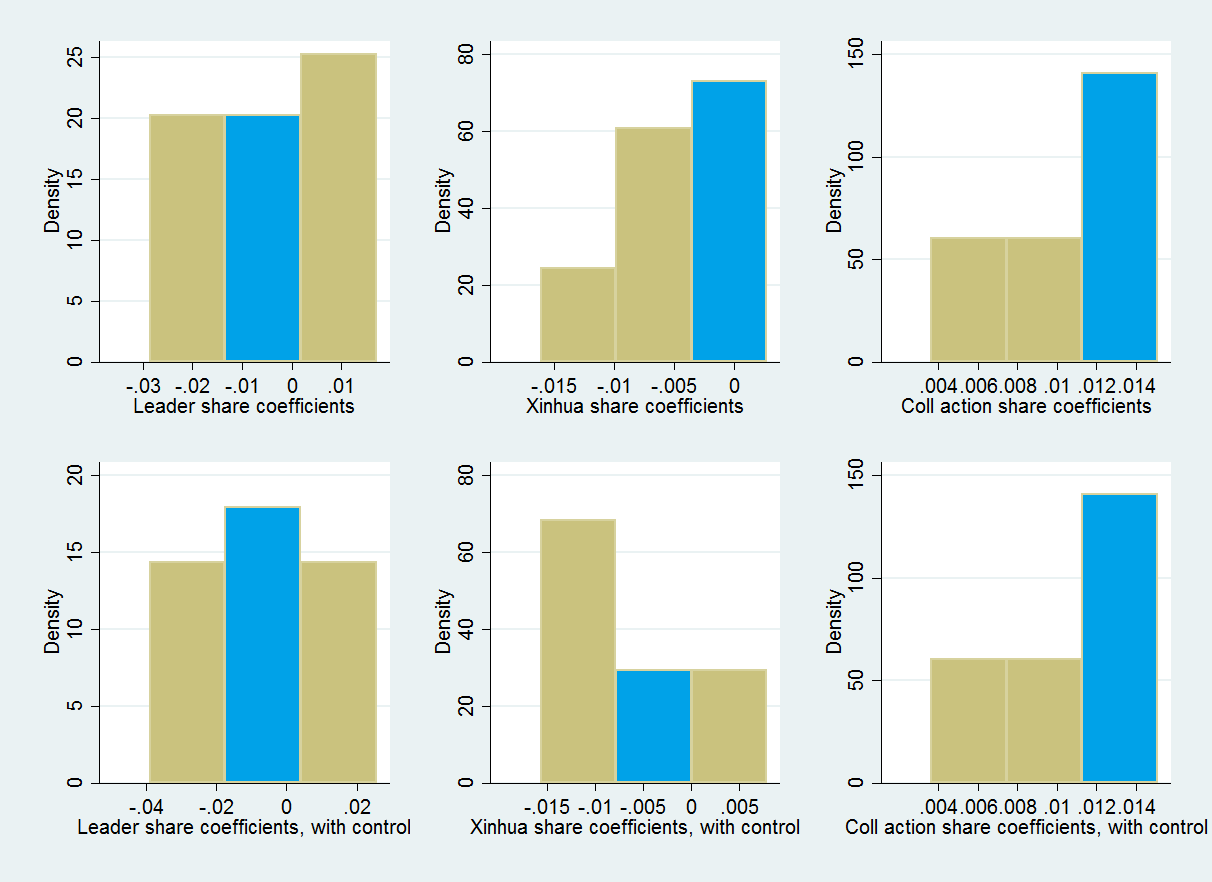
The point estimates and statistical insignificance of the collective action difference-in-difference estimators is striking when compared to their full-sample counterparts. In particular, the domestic point estimates are about a tenth of their full-sample magnitudes. This implies that the collective action difference-in-difference estimated in Table 3 was in fact driven by increased coverage of relevant international events, and that the eventfulness index controls mostly for differences in access to international press releases, not overall domestic coverage. As before, at the 95% confidence level, we cannot reject the values in Table 6. The loss of precision is quite clear.

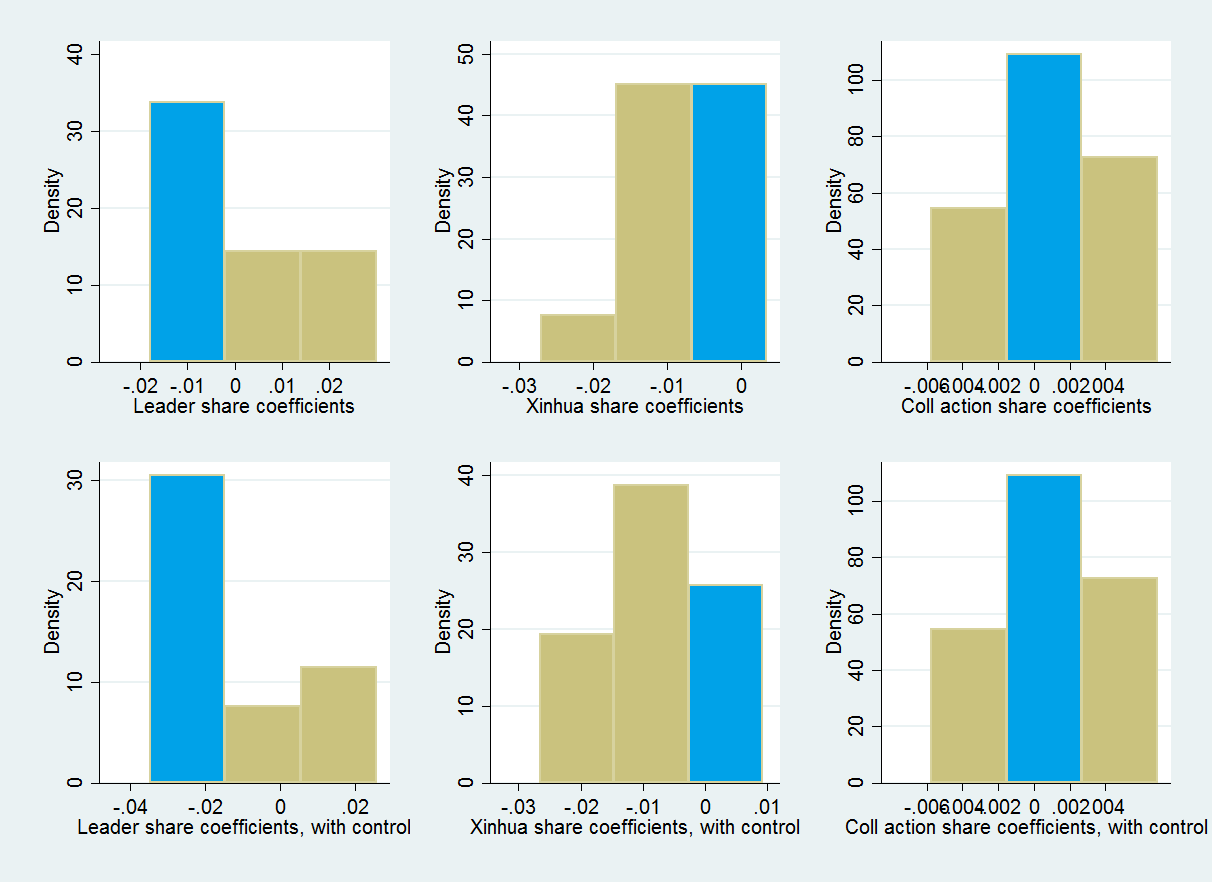
**Table 6: Domestic sample results – 95 % confidence intervals**

|  |  |  |
| --- | --- | --- |
| **Measure** | **Confidence interval (without control)** | **Confidence interval  (with control)** |
| Leader share | [-0.0863, 0.0683] | [-0.107, 0.0563] |
| Xinhua share | [-0.0168, 0.0116] | [-0.0202, 0.0156] |
| Collective action share | [-0.0119, 0.0152] | [-0.0138, 0.0166] |

As a robustness check, with both the full and domestic samples, I run the same regression 13 times, assuming the acquisition occurred in months -8 through 6. I then record the difference-in-difference estimators and create histograms of their magnitudes. The full-sample and domestic-sample histograms are shown in Figures 5 and 6, respectively; the bin in which the actual estimated coefficient falls is colored blue. From the figures, the effects of the acquisition are clearly nothing extraordinary. The coefficients in the regressions have magnitudes that would have been found had the acquisition taken place in a significant number of other months. This implies that, in a counterfactual world where Alibaba did not acquire the SCMP, the trends in leader, Xinhua, and collective action shares would likely have been similar. This exercise supports our lack of significant findings on the domestic level. However, it suggests that the full-sample Xinhua share estimator might be special after controlling for eventfulness. Its contribution to our understanding of the change in collective action share is a more difficult to interpret. The rightmost bin is composed of estimates from regression models with the counterfactual treatment defined as taking place from months -2 to 4; despite most of the coefficients in the bin coming from defining the counterfactual treatment as during or after it actually took place, there may also be some other factor at play – maybe a post-acquisition announcement but pre-acquisition-completion change or some unknown variable.

Thus, though we cannot reject the null hypothesis that the SCMP’s acquisition did not change the media bias of its domestic news, we can reject the null hypothesis that the acquisition changed the share of articles covering international events with collective action potential. This implies that, if coverage of international events with collective action potential is at all frowned upon by the Chinese government, the overall coverage bias of the SCMP actually became more anti-China.

  
**Figure 5: Falsification exercise, full sample**

  
**Figure 6: Falsification exercise, domestic sample**

**Discussion**

The SCMP’s relative increase in collective action share is surprising, as it implies an anti-China shift in coverage bias. These changes may reflect a reaction to the acquisition by SCMP staff; this assumes that Alibaba is allowing editorial freedom. Alternatively, these changes may reflect a desire on Alibaba’s part to promote an image of unbiasedness abroad. In this case, if the world believes coverage of foreign protests is undesirable to Chinese government, they may be more credulous of the SCMP in the future, which is valuable to Alibaba; if in addition the Chinese government in fact does not care too much about international coverage, then this strategy gives Alibaba a free lunch. In any case, though we have an answer to our research question, it is not a full one. It is difficult to disentangle the effect of the ownership change with the potentially offsetting reaction of SCMP staff. One possible solution to this is mentioned at the end of this section. Further, this study is limited by the availability of data; given that the SCMP’s acquisition occurred during the same calendar year as the time of writing, the post-acquisition newspaper-month sample size is small, resulting in wide confidence intervals and imprecise estimates. In addition, changes in the SCMP’s coverage bias may take a longer period to fully manifest themselves, whether due to characteristics of the outlet’s organizational structure or the need to appear objective to the outside world. As such, it would be ideal to revisit this study in, for instance, a year’s time, when more data are available.

Broadly speaking, potential criticisms of these results question either the validity of the parallel trends assumption, or the validity of the measures of coverage bias. This study’s results are contingent on the parallel trends assumption; the possible issues with a change in business model and the interaction between resources and eventfulness have been discussed above. Though I do control for eventfulness, as discussed earlier, the change in business model is much more difficult to control for. If the change in business model is in fact affecting results, we would expect to find increased anti-China bias as new, poorer readers gain access to the SCMP website. This would bias our difference-in-difference estimators for leader share and Xinhua share downwards, while biasing our estimators for collective action share upwards. Depending on the magnitude of the effect, the true value of the estimators of interest might be pro-China. At the domestic level, however, for this to challenge the insignificance of our findings and allow us to reject the null hypotheses of no differences-in-differences, the bias would have to have an effect of, on leader share, Xinhua share, and collective action share, respectively, -8.33% (-10.36% with control), -1.62% (-1.95%), and 1.46% (1.60%). Since the SCMP’s corresponding pre-acquisition means of these measures were, respectively, 34.70%, 6.42%, and 6.14%, these changes are quite large; it is unlikely that the removal of the paywall resulted in a relative 30% change in any of these measures. We can apply a similar line of reasoning to the full-sample results, except for the collective action share; a bias of 0.331% (0.183% with control) there would eliminate the statistical significance of the difference-in-difference estimator. I make the case that the SCMP is, instead of catering to new, less wealthy readers, is wooing shareholders abroad based on statements by Alibaba cited above.

The second type of issue is more fundamental. One may question why the share of articles citing or establishment politicians, the share citing or mentioning Xinhua, or the share covering events with collective action potential reflect pro-China coverage bias, even after reducing the sample to domestic articles. Though Qin et al. make a strong case for the political-economic spectrum as a Chinese alternative to the left-right spectrum found in many studies of western media, Hong Kong is unique, especially to the extent that it has multiple political parties and its economic performance is tightly intertwined with the Mainland. It is thus likely that there are better measures of media bias. However, though my measures of bias reflect those used in Qin et al., the underlying spectrum differs; I am not measuring economic orientation at all – only political. It would thus seem that these measures are appropriate.

Finally, to the extent that I only study the SCMP’s coverage bias with respect to establishment politicians and collective action events as well as its gatekeeping bias with respect to Xinhua citations, this is a relatively limited study. Though coverage of local events may be unaffected, it is plausible that media bias may take more a subtle form. In a July 2016 interview with The Guardian, one former SCMP editor said, “The owners and the top editors have to at least maintain the facade of editorial independence. They couldn’t turn overnight into a Hong Kong edition of China Daily. But the whole balance seems to be tipping… not overnight but gradually”. More specifically, biases may manifest themselves in the average sentiment of articles published in a given month; D’Alessio and Allen (2000) refer to this as statement bias. If coverage of political leaders and events with collective action potential in fact became more positive or negative, then the methodology above would fail to detect the true change in bias. That this type of shift is occurring is plausible. As the former editor continued, “there is a wider trend towards more control and a more positive line towards the Chinese government and that is hard to deny”; other current and former employees at the SCMP echoed these claims (The Guardian 2016).

However, whether the statement bias of the SCMP changed after its acquisition is a relatively more complex question than the one I study. It would require much more time to answer well; in particular, it is not immediately obvious what word tokens in general would contribute positively or negatively to pro-China bias. One possible approach is explored in Taddy (2013), who uses an automatically tagged database of Twitter posts to train a multinomial inverse regression model predicting the sentiment of out-of-sample tweets towards various US politicians. Unfortunately, to my knowledge, there is not a database of pre-tagged newspaper articles. Thus, taking an unsupervised learning approach similar to Taddy would require manual classification of training sets, which would be difficult to optimally select without going through too many articles.

Other extensions of this analysis could involve isolating political news coverage and calculating shares from that sample, eliminating noise from, for example, sports news. This was not implemented in the current study due to difficulties with extracting news subcategories from The Standard articles, as well as that outlet’s lack of a “politics” subcategory. In addition, further studies could examine the data at the article level, controlling for more granular characteristics. For instance, one could control for the political alignment of each article’s contributing reporters by calculating the share of their articles that, for example, contribute to collective action share. This might allow the researcher to fully isolate the effect of a change in management.

**Conclusion**

The analysis above shows that the SCMP’s acquisition by Alibaba Group did not have a statistically significant impact on two dimensions of media coverage bias – the share of articles citing establishment politicians, and the share of articles citing the Chinese Communist Party mouthpiece, Xinhua News Agency. In contrast, I find a surprising statistically significant 1.25% increase in the share of SCMP articles covering events with collective action potential – 20.4% of the pre-acquisition mean – after controlling for particularly eventful months. At the domestic level, this effect disappears, implying that the full-sample change was primarily driven by international news coverage. Falsification tests provide some support for this result. Potential causes for this are a reaction among SCMP staff to the acquisition, or a deliberate effort by Alibaba to increase its credibility abroad; these effects are not able to be disentangled at the current level of analysis. These findings are primarily limited by lack of data. Further studies would do well to make use of future data as it becomes available, conduct sentiment analysis to measure shifts in media bias orthogonal to coverage, and explore more granular features of the data.

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**Appendix**

**Appendix Table 1: Wooldridge tests for serial correlation**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Sample | F-statistic (df1 = 1, df2 = 2) | p-value |
| Leader share | Full | 0.103 | 0.8025 |
|  | Domestic | 0.310 | 0.6764 |
| Xinhua share | Full | 0.986 | 0.5023 |
|  | Domestic | 2.451 | 0.3619 |
| Coll action share | Full | 2.248 | 0.3745 |
|  | Domestic | 1.797 | 0.4080 |

**Appendix Table 2: Establishment politicians**

|  |  |
| --- | --- |
| **Central Government** | **HK Chief Executive & Legislative Council** |
| Cai Mingzhao | Abraham Shek Lai-him |
| Chang Wanquan | Alice Mak Mei-kuen |
| Cheng Guoping | Andrew Leung Kwan-yuen |
| Fan Changlong | Chan Hak-kan |
| Fang Fenghui | Chan Han-pan |
| Fu Ying | Chan Kam-lam |
| Gao Hucheng | Chan Yuen-han |
| Geng Huichang | Cheung Kwok-kwan |
| Guo Jinlong | Chiang Lai-wan |
| Guo Shengkun | Christopher Cheung Wah-fung |
| Han Zheng | Chung Kwok-pan |
| Hu Chunhua | Elizabeth Quat |
| Li Baodong | Frankie Yick Chi-ming |
| Li Jianguo | Ho Kai-ming |
| Li Keqiang | Holden Chow Ho-ding |
| Li Yuanchao | Ip Kwok-him |
| Liu Qibao | Jasper Tsang |
| Liu Yandong | Jeffrey Lam Kin-fung |
| Liu Yunshan | Kenneth Lau Ip-keung |
| Liu Zhanshu | Kwok Wai-keung |
| Liu Zhenmin | Lau Kwok-fan |
| Ma Kai | Lau Wong-fat |
| Ma Xiaotian | Leung Che-cheung |
| Meng Jianzhu | Leung Chun-ying |
| Qiu Yuanping | Lo Wai-kwok |
| Song Tao | Luk Chung-hung |
| Sun Chunlan | Priscilla Leung Mei-fun |
| Sun Jianguo | Regina Ip Lau Suk-yee |
| Sun Zhengcai | Shiu Ka-fai |
| Wang Guangya | Starry Lee Wai-king |
| Wang Guanzhong | Steven Ho Chun-yin |
| Wang Huning | Tam Yiu-chung |
| Wang Jiarui | Tommy Cheung Yu-yan |
| Wang Qishan | Vincent Fang |
| Wang Yang | Wilson Or Chong-shing |
| Wang Yi | Wong Kwok-kin |
| Wang Yong | Wong Ting-kwong |
| Wei Fenghe | Yung Hoi-yan |
| Wu Shengli | Abraham Shek Lai-him |
| Xi Jinping | Alice Mak Mei-kuen |
| Xie Hangsheng | Andrew Leung Kwan-yuen |
| Xu Qiliang | Chan Hak-kan |
| Yang Jiechi | Chan Han-pan |
| Yang Jing | Chan Kam-lam |
| Yu Zhengsheng | Chan Yuen-han |
| Zhai Jun | Cheung Kwok-kwan |
| Zhang Chunxian | Chiang Lai-wan |
| Zhang Dejiang | Christopher Cheung Wah-fung |
| Zhang Gaoli | Chung Kwok-pan |
| Zhang Kunsheng | Elizabeth Quat |
| Zhang Ming | Frankie Yick Chi-ming |
| Zhang Yang | Ho Kai-ming |
| Zhang Yesui | Holden Chow Ho-ding |
| Zhang Youxia | Ip Kwok-him |
| Zhang Zhijun | Jasper Tsang |
| Zhao Keshi | Jeffrey Lam Kin-fung |
| Zhao Leji | Kenneth Lau Ip-keung |
| Zheng Zeguang | Kwok Wai-keung |
|  | Lau Kwok-fan |
|  | Lau Wong-fat |
|  | Leung Che-cheung |
|  | Leung Chun-ying |
|  | Lo Wai-kwok |
|  | Luk Chung-hung |
|  | Priscilla Leung Mei-fun |
|  | Regina Ip Lau Suk-yee |
|  | Shiu Ka-fai |
|  | Starry Lee Wai-king |
|  | Steven Ho Chun-yin |
|  | Tam Yiu-chung |
|  | Tommy Cheung Yu-yan |
|  | Vincent Fang |
|  | Wilson Or Chong-shing |
|  | Wong Kwok-kin |
|  | Wong Ting-kwong |
|  | Yung Hoi-yan |

1. Shares of articles citing or mentioning establishment politicians, citing Xinhua News Agency, or covering events with collective action potential [↑](#footnote-ref-1)
2. Regression tables produced by estout (Jann 2005, 2007). [↑](#footnote-ref-2)