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MARKET AFFECTED BY POLITICAL
BIAS?**

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MUCH ADO ABOUT NOTHING: IS THE MARKET AFFECTED BY POLITICAL BIAS?

Abstract

We study whether investor behavior is affected by a political bias. We exploit an exogenous change in the market's perception of political bias in the media: the 2007 acquisition of Dow Jones Newswires (DJNW) by News Corp. We find that investors react to a perceived pro-Republican bias of DJNW: after the acquisition, the prices of "Republican" stocks (stocks of firms making political contributions to the Republican Party) become less sensitive to sentiment in the DJNW. The effect is restricted to DJNW news, and cannot be detected in information channels unaffected by the News Corp. acquisition, such as corporate press releases and earnings surprises. It also appears driven by stocks traded by more profitable investors, short-term investors, and investors more likely to have a Democrat leaning. Finally, we show that in fact the New Corp. acquisition unlikely introduced a political bias in DJNW: there is no significant change in DJNW sentiment for the average Republican (or Democrat) stock after 2007. This suggests that the market tends to counteract a perceived media political bias, and is not always capable to distinguish between real and perceived biases.

JEL Classification: G00, G14

Keywords: Media and financial markets; political bias

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Much Ado About Nothing: Is the Market Affected by Political Bias?

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Abstract

We study whether investor behavior is affected by a political bias. We exploit an exogenous change in the market's perception of political bias in the media: the 2007 acquisition of Dow Jones Newswires (DJNW) by News Corp. We find that investors react to a perceived pro-Republican bias of DJNW: after the acquisition, the prices of "Republican" stocks (stocks of firms making political contributions to the Republican Party) become less sensitive to sentiment in the DJNW. The effect is restricted to DJNW news, and cannot be detected in information channels unaffected by the News Corp. acquisition, such as corporate press releases and earnings surprises. It also appears driven by stocks traded by more profitable investors, short-term investors, and investors more likely to have a Democrat leaning. Finally, we show that in fact the News Corp. acquisition unlikely introduced a political bias in DJNW: there is no significant change in DJNW sentiment for the average Republican (or Democrat) stock after 2007. This suggests that the market tends to counteract a *perceived* media political bias, and is not always capable to distinguish between real and perceived biases.

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Introduction

Political views have a pervasive effect on our lives. Political lenses color the choice of the charities we support, the school our kids attend, the car we drive (and whether or not we drive one). From a normative perspective, they ought not to influence our investment decisions. Or at least, they shouldn't for the marginal investor; and indeed, a central tenet of the finance literature since at least Fama's (1970) seminal paper has been that the market mechanism, by aggregating information from multiple sources, eliminates biases – including political ones.

But empirically, it is far from clear that financial markets are free from political biases. Stylized facts such as the emergence of “socially responsible” investment (Krueger (2015)), or large pension funds' aversion to “sin stocks” (Hong and Kacperczyk (2009)), suggest that the portfolio choices of at least some investors are informed by social norms and political considerations. However, while it is well known that a company's political affiliation can affect its cash flows and risk (Claessens, Feijen, and Laeven (2008), Faccio (2006), Faccio, Masulis, and McConnell (2006)), much less known is the extent to which it can *directly* affect portfolio choices. Our paper aims to fill this gap, by studying investor reaction to news about politically affiliated stocks. Do investors respond to corporate political affiliation? Does this have an impact of stock prices?

In the United States, many listed companies routinely make donations to mainstream political parties. These donations are publicly disclosed, so that the market is well aware of a firm's political leaning (Figures 1 and 2). They are also substantial: over our sample period (2000-2012), companies that make political contributions account for 58% of total market capitalization, and the corporate donations to the Democrat and Republican parties add up to \$623 million. We use data on corporate political donations, combined with a unique experiment affecting the perceived political orientation of a major financial newswire, to provide novel, and comparatively clean, evidence on the impact of political bias in financial markets.

Identification is the main challenge for any study of political bias, because the bias itself is unobservable. In general, it is difficult to distinguish whether investors hold a given stock due to their own political bias, or because they expect cash flows/risk management benefits. Furthermore, the stock's political affiliation itself can give rise to benefits in terms of cash flows and/or risk exposure (Claessens, Feijen, and Laeven (2008), Faccio (2006),

Faccio, Masulis, and McConnell (2006)), which investors might want to capture, regardless of their own political orientation. In other words, if the stock's political affiliation is related to financial benefits, increased investor demand for it need not be due to a bias, but simply reflect rational expectations.

We address these challenges with a novel approach, building on two main ideas. First, rather than relying on coarse proxies for investor political orientation such as electoral results, we center our analysis around the market's reaction to a perceived political bias in the media reporting on individual stocks. Second, we exploit a unique experiment that exogenously affects the (perceived) media bias: the acquisition of Dow Jones by News Corporation.

On December 13th, 2007, News Corp. sealed a \$5 billion agreement to purchase the publisher of The Wall Street Journal and Dow Jones Newswires, after three months of drama in the controlling family and public debate about journalistic values. In particular, a concern emerged that Rupert Murdoch, News Corp.'s controlling shareholder, would meddle in the editorial affairs, tilting the company's outlets towards the right of the political spectrum (Kapur and Mussio (2008)). Leslie Hill, a member of the Bancroft controlling family who opposed the deal, resigned as a Dow Jones director arguing that the deal implied "the loss of an independent global news organization with unmatched credibility and integrity" (Sutel (2007)). In a letter to readers, Wall Street Journal publisher L. Gordon Crovitz felt compelled to insist that "the same standards of accuracy, fairness and authority will apply to this publication, regardless of ownership" (Crovitz (2007)).

Two key features of the News Corp.-Dow Jones deal make it an ideal experiment to test for investor response to corporate political affiliation. First, there is a perception among a wide section of the public, and potentially stock market investors too, that the acquisition will introduce a political bias in the traditionally unbiased Dow Jones outlets. Second, the acquisition itself is not related to specific companies covered by Dow Jones, or to their characteristics, including political affiliation. It is therefore orthogonal to fundamental information that might be directly reflected in their stock prices. We rely on these features to study investor political bias, looking at changes, around the News Corp-Dow Jones acquisition, in the stock price sensitivity to sentiment in the news reported by the Dow Jones Newswires (DJNW).

How can the perceived DJNW bias affect investors? One possibility, the least interesting, is that it simply doesn't matter. Political bias, if at all present, will likely manifest itself in editorials and op-ed columns on the Wall Street Journal, which are broader in scope and may lag by several days the corporate events that are relevant for trading. The Dow Jones Newswires (DJNW) service, more timely and specific, will stick to the bare facts, so that we should not be able to detect any effects associated with political affiliation.

A second possibility is that investors and newswire audiences segment along political lines, reinforcing any underlying media bias. That is, the perceived political affiliation reinforces the credibility of the news in the eyes of investors of similar affiliation, and this further increases the impact of the bias. There is evidence that right-leaning audiences tend to tune in to right-wing newswires and left-leaning investors to left-wing ones. This could be due, for instance, to audiences suffering from confirmatory bias, which induces a preference for news that confirm their priors (Gentzkow and Shapiro (2005), Groseclose and Milyo (2005)). The implication is that, after the News Corp. acquisition, the following of DJNW becomes more right-leaning and therefore more sensitive or attentive to "Republican" stocks. As a result, the price of these stocks should become more sensitive to the news sentiment associated with DJNW. The price of "Democrat" stocks, by the same argument, becomes less sensitive to DJNW sentiment. We term this the "reinforcement" hypothesis.

A third possibility is that investors respond to a perceived bias in DJNW by attaching less credibility to its news, and neutralize its effect on stock prices. Assuming that DJNW is favorably biased towards Republican stocks, as a result, the sensitivity of the Republican stock prices to DJNW sentiment will decrease in the aftermath of the News Corp. acquisition, yielding predictions opposite to the reinforcement hypothesis. We term this the "sterilization" hypothesis. We find strong support for this hypothesis in the data.

Using information on corporate political contributions to the Democrat and Republican parties, we characterize stocks as "Democrat" or "Republican" depending on which party receives the majority of their contributions. We document a greatly weakened DJNW sentiment impact for Republican stocks following the News Corp. acquisition. After December 2007, the sensitivity of returns in response to news sentiment decreases

by 73% for Republican stocks. We also find a reduced sensitivity to DJNW sentiment for Democrat stocks, but the effect in this case is much smaller – only 29%.

In addition, the effect appears circumscribed to DJNW. We consider two placebo checks based on the sentiment extracted from (a) the tone of corporate press releases, and (b) analyst forecast surprises around earnings announcements from I/B/E/S. These sources of information are independent of DJNW, and thus not “tainted” by a relationship with News Corp. Consistent with the “sterilization” hypothesis, we detect no significant change in the market impact of either source’s sentiment following the December 2007. This suggests that our baseline result is not spurious.

Thus: investors in general are less responsive to DJNW news, and particularly to news containing a negative tone about Democrat firms. No comparable effects are detectable in other news outlets. What class(es) of investors drive this effect? We restrict the attention to three key investor features: information, investment horizon, and political affiliation. Using trading performance as a proxy for investor information, we find that these effects are driven by the stocks traded by more informed investors. Indeed, the drop in price sensitivity to DJNW sentiment we document is concentrated on the stocks where the majority of trades are done by investors with a superior trading performance. We also find evidence that the “sterilization” effect is stronger for stocks mainly traded by long-term investors, as well as stocks traded by Democrat investors.

As a final step, we confirm these results by directly focusing on investor trading behavior. Using institutional investors’ daily trading data from Ancerno, we show that after the News Corp. acquisition, investors underreact to positive sentiment on Republican stocks. In particular, the sensitivity of investor trading to news sentiment on average drops by 92% for Republican stocks. This supports the “sterilization” hypothesis, and shows that on average the market reacts less to media sentiment, when the sentiment is communicated by a channel (DJNW) that is perceived as biased.

Overall, these findings show that a *perceived* media bias is on average neutralized by the behavior of the investors in the market. The question is, however, whether the market reacts to a real bias, or rather *overreacts* to a perceived one. We therefore investigate whether the acquisition by News Corp. introduces a material bias in

DJNW. We find evidence to the contrary: in fact, not only do we find very little evidence of a political bias in DJNW prior to December 2007, but we also fail to detect any meaningful change in the average sentiment attached to news about Republican or Democrat stocks following the News Corp. acquisition, either taken in isolation, or compared to alternative news sources such as the Financial Times, Reuters Newswire, or analysts (I/B/E/S). The fact that there is no change in the relative sentiment about Republican and Democrat stocks following the News Corp. acquisition suggests an overreaction.

These findings have important normative and positive implications. At the same time, they provide a mixed message. On the one hand, they show that market forces can counteract a political bias in the media, and thus provide support for a notion of market efficiency. However, this efficiency result is obfuscated by the fact that the market does not seem to be capable to distinguish between real and perceived political bias. In fact, one could argue that the very reaction to a perceived, but non-existent, bias, is itself a political bias.

Our results contribute to different strands of literature. The first is the literature on the role of political affiliation in financial markets. The focus has mainly be on the link between political affiliation and better ability to improve the cash flows/reduce the risk of the firm (e.g. Fisman (2001), Claessens, Feijen, and Laeven (2008), Faccio (2006), Faccio, Masulis, and McConnell (2006)) We contribute by investigating the link between political affiliation and investor's perception and interpretation of the news about the company.

We also contribute to the literature on the impact of media in financial markets. This literature has mostly focused on the potential market impact of such providers in terms of shaping/distorting market expectations (e.g. Fang and Peress (2009), Engelberg and Parsons (2011), Tetlock (2010), Gurun and Butler (2012)). We show that in fact the market is aware of the potential for manipulation and reacts to perceived biases, up to the point of over-reacting even to perceived ones.

II. Data and Main Variables

We merge data from a number of sources: the RavenPack news analytics database; data on corporate political contributions from the Federal Elections Committee (FEC) website (www.fec.gov); institutional investor trading

data from Ancerno; daily stock prices and returns from CRSP; balance sheet data from Compustat; analyst forecasts from I/B/E/S; and institutional investor holdings from Thomason Reuters 13F filings. A description of the main data sources and variable construction follows. We provide detailed definitions of all variables in the Appendix.

A. Dow Jones Newswires

We obtain data on Dow Jones Newswires from RavenPack. RavenPack is a leading provider of real-time news analytics based on the Dow Jones Newswire on more than 30,000 companies worldwide, widely used by hedge funds, mutual funds, and large banks to systematically incorporate the effect of news in their investment process. RavenPack identifies the news event discussed in each news article (e.g. earnings announcement, mergers and acquisitions etc.), the companies that are mentioned, and how relevant the article is for them. It analyzes DJNW article contents and generates an *Event Sentiment Score* (ESS), indicating the positive or negative tone of firm-specific news.

We construct our Dow Jones news sentiment *DJ_Sentiment* variable by taking the decile value of an average ESS value across all news pieces associated with a given firm on a given day, and scale it to vary between 0 and 1. As described in Table 1, the average level of the *DJ_Sentiment* score in our sample is 0.54 (standard deviation: 0.30). For example, when Amazon Inc. increased its jewelry and watches sales by more than 120% at the end of the third quarter in 2006, the sentiment score is 0.90; when in September 2006, Google Inc. was reported as losing 8% - 12% market share in the search engine market in China, the sentiment score is 0.2.

Our initial sample starts with 17,378,816 firm-day observations, or distinct 9,958 U.S. firms with non-missing daily returns in CRSP between 2000 and 2012. Requiring availability of RavenPack *DJ_Sentiment* value filters the number of observations down to 1,524,148, or 6,871 distinct firms.

B. Political Affiliation

Next, we retrieve data on firm political affiliation from the Federal Election Commission (FEC) detailed files for the period from 2000 to 2012. The FEC database contains detailed committee (and individual) federal contributions starting from 1980. In the committee contribution files, it identifies six groups that contribute to candidates: 1) Corporation (C), 2) Labor organization (L), 3) Membership organization (M), 4) Trade association (T), 5) Cooperative (V), and 6) Corporation without capital stock (W).

We restrict our analysis to all contributions classified as made by “Corporation”. For each contributing firm, we obtain data on the date and the amount of contributions, and the party of the receiving candidate. We aggregate all contributions made by a given contributing firm to Democrat party or Republican party candidates each year, and categorize the firm in Republican or Democrats as a function of its donations.

We create the *Republican* variable, defined as $(Rep - Dem)/(Rep + Dem)$, where *Rep* is the dollar value of the firm’s contributions to the Republican party, and *Dem* to the Democrat party. The higher the value of *Republican*, the more “Republican-leaning” the firm. While this variable is continuous, for ease of exposition throughout the paper we describe a firm as “Republican” (“Democrat”) if *Republican* is larger than 0 – i.e., if it makes larger contributions to the Republican party. Figure 1 summarizes this information over the sample period. The typical firm in our sample is slightly “Republican”, with an average *Republican* equal to 0.18 (standard deviation: 0.43, Table 1). The most “Democrat” firm (*Republican* = -1) in our sample is Prologis Inc. in 2008, making a total contribution to the Democrat party of \$25,000 that year. The most “Republican” firm (*Republican* = +1) is Salem Communications Corporation, which contributes to Republican party nearly every year from 2000 to 2012 (except 2009), with a total amount of \$382,300.

Further, we require information on corporate political contribution data. This brings down the number of observations to 369,968 (or 838 distinct firms). Requiring the availability of firm characteristics data in Compustat ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$) brings the number down to 368,211 (or 821 distinct firms).

C. Trading Data

We obtain the institutional trading data from Ancerno (formerly Abel Noser Solutions Corporation) and examine the trading patterns of short-term and long-term investors. Ancerno collects the complete transaction records of its institutional clients that include pension plan sponsors (e.g. CalPERS) and mutual funds (e.g. Fidelity).¹

Every observation in Ancerno corresponds to an executed trade. For each trade,² Ancerno reports a client identifier code, a manager identifier code, the date of the trade, the CUSIP and the ticker for the stock, the number of shares traded, the execution price of the trade, and the direction of the execution, i.e. “buy” or “sell”. Following Goldstein, Irvine, and Puckett (2011) and Puckett and Yan (2011), we include only trades on common stocks by plan sponsors and mutual funds.

Within our sample, there are 591 institutions reported in Ancerno, trading 807 stocks. We are able to track 633 funds within these institutions, trading on average 198 stocks over the period from year 2000 to 2010,³ with an average dollar trading volume of \$11.70 million per fund per day. It is estimated that these institutions account for 8% of the CRSP trading volume and 10% of all institutional trading volume (Puckett and Yan (2011)). We then aggregate all of the trades at the same direction (buy or sell) on a given stock in our sample in a given day with nonmissing news *DJ_Sentiment* variable. We run separate tests on this subsample, which has 312,789 firm-day observations, or 764 distinct firms.

D. Other Data

Finally, we supplement our sample with several other datasets: analyst earnings forecasts from I/B/E/S, institutional investor holdings data from Thomson Reuters 13F filings, and state-level electoral voting results from the US Election Atlas website.⁴

¹ Other studies that have used Ancerno data: Chemmanur, He, and Hu (2009), Goldstein, Irvine, and Puckett (2011), Puckett and Yan (2011), Anand, Puckett and Venkataraman (2012).

² For trade records after 2010, Ancerno does not report the client identifier codes or the manager identifier codes any more. Hence, it does not allow us to identify who are the traders.

³ Due to restrictions on the Ancerno database, we are only able to identify the trader over the period 2000-2010.

⁴ The data are available at the URL: <http://uselectionatlas.org/RESULTS>.

In a set of robustness checks, we supplement this information with an alternative news sentiment index, built using textual analysis from Factiva data following Tetlock (2007). We provide descriptive statistics in Table 1. Panel A presents the summary statistics of the main variables in our sample. Panel B presents the summary statistics for the Compustat universe.

Compared to the Compustat universe, firms in our sample tend to be larger, with an average market capitalization of \$24.89 billion (the average for the Compustat universe is \$3.02 billion). They have an average leverage of 26% (average Compustat firm: 21%) and an average book-to-market ratio of 0.63 (average Compustat firm: 0.78). These estimates are consistent with Cooper, Gulen and Ovtchinnikov (2010), who use the full merged FEC/CRSP/Compustat dataset in a similar manner.

III. Changes in sensitivity to DJNW sentiment around the News Corp. acquisition

In our first test, described in this section, we establish our baseline result: the sensitivity of the market price of “Republican” stocks to DJNW news drops dramatically, following its acquisition by News Corp. Our baseline specification is:

$$\begin{aligned}
 CAR_{-1,1} = & \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times \\
 & Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \\
 & \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it},
 \end{aligned} \tag{1}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date (on a given day, the abnormal return is defined as the difference between the stock’s return and the market index return). *Republican* is the proxy for the firm’s political orientation, defined above. *Post_takeover* is an indicator variable equal to 1 starting from the completion day of the News Corporation takeover in December 14, 2007, and 0 otherwise. The control variables include firm characteristics $\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$, as well as firm and date fixed effects. Following Peress (2014), the standard errors are clustered around dates. *Sentiment* is a measure of whether a given piece of news is good or bad for a given stock. In our baseline

test, we focus on *DJ_Sentiment*, the standardized sentiment score derived from RavenPack’s ESS for DJNW news pieces, defined above.

Equation (1) examines whether, following the News Corp. acquisition, the sensitivity of the market to the sentiment of news reported by DJNW changes, and for what kinds of stocks (Republican vs. Democrat). The main coefficient of interest is thus γ , measuring any differences in the post-News Corp. acquisition stock price sensitivity to sentiment between “Republican” and “Democrat” stocks.

The results are reported in Table 2. They indicate two major points: 1) following the takeover, the market reacts less to the sentiment content in Dow Jones Newswire, with a general drop in the sensitivity of returns; 2) the effect is stronger, the more a given stock has a “Republican” orientation. Prior to the News Corp. acquisition, the sensitivity to DJNW sentiment for a fully “Republican” firm (*Republican* = 1) is $0.0176 + 0.0007 \times 1 = 0.0183$ (column (4)); following the acquisition, it is equal to $0.0176 + 0.0007 \times 1 - 0.0091 - 0.0042 \times 1 = 0.0050$, i.e. a 73% drop. In contrast, while the sensitivity to DJNW sentiment decreases also for a fully “Democrat” firm (*Republican* = -1), it only drops by 28%.

Put differently: after News Corp. takes over DJNW, the stock price of firms more aligned with the Republican party is less sensitive to DJNW news. This is consistent with the market discounting the sentiment content of DJNW news as biased, and thus less reliable information.

One potential difficulty in interpreting these findings could be faulty omission. “Republican” firms, for instance, might experience changes in their fundamentals, accurately captured by DJNW. However, this unlikely explains our results. In fact, any alternative story of this sort needs to explain a drop in the *sensitivity* to sentiment (positive or negative), as opposed to a change in sentiment itself. It should also explain why the change in fundamentals concentrates on “Republican” firms, leaving the “Democrat” ones less affected. Indeed, as shown in Table 1 Panel C, the two groups of firms do not significantly differ in terms of observable characteristics such as size, book-to-market, or leverage.

Another way to address this concern is comparing DJNW to alternative sources of news. We therefore re-

estimate the same specification as equation (1) by focusing on the way the market reacts to two alternative sentiment measures, based on the company's press releases (*PR_Sentiment*), and on earnings surprises relative to analyst forecasts (standardized unexpected earnings, or *SUE*). Intuitively, press releases come directly from the firm, and are thus less subject to any (political) bias DJNW might introduce; they will, however, reflect any changes in fundamentals. Similarly, consensus analyst forecasts aggregate a variety of sources and are thus less likely biased; furthermore, they and actual earnings figures are numerical in nature, so that they cannot convey a bias via, say, tone, as a news piece might. We thus construct *PR_Sentiment* as *DJ_Sentiment*, using all press release articles in DJNW from RavenPack, and define *SUE* as the difference between actual earnings and the median analyst forecast, provided by I/B/E/S, scaled by the quarterly stock price, and re-estimate equation (1) replacing *DJ_Sentiment* by these variables.

We report the results in Table 3. The dependent variable is the 3-day cumulative abnormal return around the news release date (in Column (1)) or around the earnings announcement date (in Columns (2) – (4)). In Column (1), *Sentiment* is the *PR_Sentiment* variable, and in Columns (2) – (4), *Sentiment* is the *SUE*. The results show no change around the News Corp. acquisition in the sensitivity of the stock price to *PR_Sentiment* and *SUE*, regardless of the firm's political affiliation. In other words, the market appears to consider press releases and earnings surprises just as reliable after the News Corp. acquisition as before it. Thus, an alternative explanation of our baseline finding of Table 2 should also account for the fact that the change in sensitivity to news is restricted to DJNW news.

In sum, the results presented in this section show that, following the News Corp. acquisition, the market is less responsive to the sentiment of news as reported by DJNW – but not to the sentiment embedded in other information sources. The question is, what class(es) of investors are responsible for this effect? This is the topic of the next section.

IV. Investor characteristics driving the effect

In this section, we study what classes of investors are behind the change in stock price sensitivity to DJNW sentiment after the News Corp. acquisition. We consider three defining investor characteristics: information, investment horizon, and political affiliation. We sort stocks into sub-samples based on the characteristics of their investor base, re-running our baseline test separately on each sub-sample.

A. Informed Investors

We first study if the drop in sensitivity to sentiment is driven by more informed investors. If there is any bias in DJNW reporting, more informed traders are more likely aware of it and should compensate for it in their trading and pricing decisions.

As a proxy for investor information, we consider the transactions-based portfolio performance of the institutional traders in Ancerno. Following Seasholes and Zhu (2010), we estimate a given investor's performance with a calendar-time portfolio approach as follows. Whenever an investor buys (sells) a stock, we place the same number of shares in our calendar-time "Buy" ("Sell") portfolio. Hence, we generate a time-series of daily buy and sell portfolio returns. Each calendar day, we then calculate a value-weighted average return of the buy and sell portfolios, as well as the difference between the two portfolios. For each investor, we regress the "Buy-minus-Sells" portfolio return on the market and Fama-French factors over a 24 months trailing window, obtaining a time series of portfolio excess returns (henceforth, "alphas"), estimated with one- and three-factor models. We then compute a weighted-average alpha across all investors trading a given stock, or stock-level "alpha", with weights proportional to each trader's daily trading volume (number of shares bought plus shares sold).

We then re-estimate equation (1), splitting the sample based on the information proxy. We report the results in Table 4. The sample is split on the basis of *CAPM_alpha* (in Columns (1) – (2)) and on the basis of *FF3F_alpha* (in Columns (3) – (4)).

The results show that the effects are concentrated among the more informed investors. Indeed, the effect of 73% return sensitivity drop of Republican stocks mainly concentrates on the cases in which the stocks are traded

by investors with higher one-factor (3-factor) alpha. In contrast, there is no effect when the stocks are traded by less informed and shorter-term investors. These results are consistent with our expectations and suggest that the perceived bias mostly affects the informed investors in the market, while it does not impact the less informed ones.

B. Long-term Investors

Next, we focus on investment horizon. As we argued, we expect that long-term investors should be less affected by biases in executing their long-term portfolio strategies, and should thus more likely compensate for any political bias in DJNW reporting in their trading and pricing decisions. We define investor horizon as a function of trading frequency using the trades reported in Ancerno: the variable *Stock_Trading_Frequency* measures the frequency at which the typical investor trades a given stock. It is the weighted average of the number of times that the institutional investors trade on a given stock, over the entire period preceding the News Corp. acquisition (*Post_Takeover* = 0). We also define *Industry_Trading_Frequency* in similar terms, aggregating at the industry (Fama-French 12 Industry classification) level.

We then re-estimate equation (1), splitting the sample based on the investor horizon proxy. We report the results in Table 5. We split the sample on the basis of *Stock_Trading_Frequency* (in Columns (1) – (2)), and on the basis of the *Industry_Trading_Frequency* (in Columns (3) – (4)). The results show that the effects are concentrated among the long-term investors. There is no effect when the stocks are traded by shorter-term investors. Again, these results are consistent with our expectations and suggest that the perceived bias mostly affects short-term investors.

C. Politically Affiliated Investors

Finally, we directly focus on the type of political affiliation of the traders. We ask whether the effect comes from just Democrats becoming less responsive to DJNW reporting, which they perceive as biased (and therefore offsetting “Republican” trades), or rather both Republicans and Democrats react in the same way. We therefore use the same approach as in the previous regressions, and we sort investors as a function of their political

orientation. However, given the limited subsample of Ancerno traders for which we are able to find information on their political contribution, we use a different approach quantify the color of the political affiliation of the investors. To proxy for political affiliation of the investors, we condition the nature of the majority of the firm's shareholder base: institutional investors or retail investors.

For firms with institutional ownership larger than 50%, the sample is split on the basis of the tilt in political contributions of the institutional investors from Thomson Reuters 13F filings. We define a variable *Ins_Republican* as the share-weighted average difference between the political contributions to the Republican Party and to the Democrat Party (scaled by the total contributions to both) of the firm's institutional investors.

For firms with institutional ownership less than 50%, the sample is split on the basis of tilt in political voting of the retail investors in the area. We define a variable *State_Republican*, as the difference between the vote percentage to the Republican Party and to the Democrat Party in the firm's headquartered state in each Presidential Election Cycle. Then, we re-estimate the previous specification by splitting the sample as a function of the orientation of the main investors.

We report the results in Table 6. The sample is restricted to firms with institutional ownership less than 50% in Columns (1) – (2) and firms with institutional ownership larger than 50% in Columns (3) – (4). The results show that, if we focus on the firms with institutional ownership above median, the effect is stronger for the case of Democrat investors. In contrast, for the case of firms with institutional ownership below median, there is some evidence that the effect is concentrated among the Republican investors. However, the effect is not statistically significant. We attribute such a lack of significance to the fact that for such firms our proxy is very coarse.

It is important to mention that, as a robustness check, we have repeated the analysis of this section by replacing returns with investor trades as a dependent variable. The (unreported) results are similar in the sense that the effect comes from Democrat institutional investors counteracting the perceived bias of the channel.

V. Investor Behavior

We now directly investigate whether the perceived political bias affects investor behavior, focusing on the institutional investor trading reported in Ancerno. More specifically, we estimate:

$$\begin{aligned}
 Trade_{-1,1} = & \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times \\
 & Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \\
 & \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it}, \quad (2)
 \end{aligned}$$

where the dependent variable is a proxy for the trading of the institutional investors. We consider several alternative proxies for it: *Net_Buyer*, i.e., a net buyer indicator defined as 1 if 3-day cumulative value of shares purchased by investors is larger than 3-day cumulative value of shares sold, and *Trading_Imbalance*, i.e., a 3-day cumulative value of shares purchased by investors minus the 3-day cumulative value of shares sold, scaled by the sum of 3-day cumulative value of shares bought and sold. 3-day cumulative value of shares bought (sold) is computed as the sum of daily dollar amount of shares bought (sold) over 1 day before to 1 day after the news release date. *Sentiment* is the DJNW sentiment *DJ_Sentiment*, with all the other variables defined as before.

The results are reported in Table 7. In Columns (1) – (2), the dependent variable is *Net_Buyer*, and in Columns (3) – (4), the dependent variable is *Trading_Imbalance*. The results show that after the event, the sensitivity of investors trading (i.e. trading imbalance) to news sentiment on average drops by 60% less for Republican than for Democrat stocks (i.e. the sensitivity drop is 92% for Republican stocks and 33% for Democrat stocks). This supports the sterilization hypothesis as it shows that on average the market reacts less to positive sentiment news on Republican stocks when they are intermediated by a perceived biased channel.

VI. Is There a Political Bias in DJNW?

Overall, the previous findings show that the market reacts to the perceived bias induced by Murdoch’s acquisition in the direction of offsetting it. To be able to pass a judgment of what this implies for the financial markets, we need to know whether the bias was real or just a perceived bias. Indeed, we can think of market efficiency only if the market neutralizes an existing, material bias. In contrast, if the market overreacts to a *perceived* bias, it would

in fact be inefficient. More specifically, if the bias is just perceived and not real, our results would suggest that media analytics and media providers alter investor behavior not because of what they do, but because of what the market thinks they do. This has potentially distortionary effects.

To investigate this question, we test whether the event changed the bias of the media channel. We therefore regress the difference between Dow Jones Newswire sentiment, $DJ_Sentiment$, and other sentiment measures on the event indicator $Post_Takeover$, the firm political orientation variable, $Republican$, and their interaction term. More specifically, we estimate:

$$Sentiment = \alpha + \beta_1 Post_Takeover + \beta_2 Republican_{it} + \beta_3 Post_Takeover \times Republican_{it} + \delta Controls_{it} + \varepsilon_{it}, \quad (3)$$

The dependent variable is either the DJNW, $DJ_Sentiment$, or the difference between it and some other sentiment indicators. We consider as alternative indicators, the sentiment based on analysts' earnings forecasts (SUE), the sentiment based on Financial Times, the sentiment based on Reuters News. The Financial Times (or the Reuters News) $Sentiment$ is FT_Score (or RN_Score), defined as the decile value of the $(P - N)/(P + N)$, where P and N are the fraction of positive (negative) words in the Financial Times (or the Reuters News) news pieces on firm i on date t , as retrieved from Factiva. All the regressions include the same set of firm controls and fixed effects.

We report the results in Table 8. In Column (1), the dependent variable is Dow Jones Newswire Sentiment, $DJ_Sentiment$. In Columns (2) – (4), the dependent variable is the difference between Dow Jones Newswire $Sentiment$ and SUE (Column (2)), the Financial Times Sentiment FT_Score (Column (3)), the Reuters News Sentiment RN_Score (Column (4)). We find that the coefficient of the interaction term is not significant. That is, the evidence rejects the notion that that the change in ownership in the Dow Jones affected its political orientation. This suggests that the change in political tilt of Dow Jones was not in fact real, but just a change in perceived political bias.

Conclusions

We study the stock market's reaction to a perceived political bias in the media. We exploit a unique experiment, shifting the market's perception of media bias: the December 2007 acquisition of Dow Jones Newswires by News Corporation. The public, and potentially the market, perceived the acquisition as introducing a political bias in the traditionally unbiased Dow Jones. At the same time, the acquisition is unrelated to the companies Dow Jones covers, or their characteristics, providing us with a relatively clean testing environment.

Our findings show that investors respond to the acquisition as if it introduced a bias. The stock price's sensitivity to the sentiment of news reported by Dow Jones Newswire (DJNW) drops by 73% following December 2007, for "Republican" firms (making larger contributions to the Republican party). This effect is restricted to DJNW news, and is not detectable in alternative sources of news for the market, such as Reuters or earnings surprises. Furthermore, the effect is stronger for stocks traded by more profitable institutional investors, as well as when the investors themselves more likely have a Democrat political orientation. Evidence from daily mutual fund trading data confirm these findings, suggesting that institutional investors incorporate the perceived media bias in their trading decisions. Surprisingly, however, we find no evidence that the News Corp. acquisition introduced any material bias in DJNW reporting.

These findings have important normative and positive implications. On the one hand, they show that the market on average tends to counteract a political bias in the media channel. On the other hand, they also show that the reaction is related to a *perceived*, as opposed to an *actual*, bias.

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Appendix: Variable Description

Variables	Definitions
Political Orientation Variable	
<i>Republican</i>	Firm's political orientation. It is defined as: $(Rep - Dem)/(Rep + Dem)$, the difference between the firm's dollar value contribution to the Republican and the Democrat parties divided by the total contribution to both parties. Data on firms' political contributions are retrieved from the Federal Election Commission (FEC) detailed files (http://www.fec.gov/finance/-disclosure/ftpdet.shtml).
<i>Ins_Republican</i>	Political orientation of the firm's representative investor, proxied by: $\sum[w_i(Rep_i - Dem_i)/(Rep_i + Dem_i)]$, where w_i is a weight proportional to investor i 's holding of the firm. Data on institutional investor share holdings are retrieved from the Thomson Reuters 13f database. Data on institutional investors' political contributions are retrieved from the Federal Election Commission (FEC) detailed files (http://www.fec.gov/finance/disclosure/ftpdet.shtml).
<i>State_Republican</i>	Political orientation of the firm's representative investor, proxied by: $(VoteRep\% - VoteDem\%)/(VoteRep\% + VoteDem\%)$, the difference between the vote percentage to the Republican and to the Democrats in the firm's headquarter state in each Presidential Election Cycle. The firm's headquarter state is retrieved from Compustat. Data on state-level electoral outcomes are retrieved from http://uselectionatlas.org/RESULTS/data.php?year=2012&-datatype=national&def=1&f=0&off=0&elect=0
Sentiment Variable	
<i>DJ_Sentiment</i>	The decile value of an average <i>Event Sentiment Score (ESS)</i> provided by RavenPack of non-press release articles in Dow Jones Newswire about a firm in a given day.
<i>PR_Sentiment</i>	The decile value of an average <i>Event Sentiment Score (ESS)</i> provided by RavenPack of press release articles in Dow Jones Newswire about a firm in a given day.
<i>SUE</i>	The Standardized Unexpected Earnings. It is computed as the difference between actual earnings and the median analyst forecast in the 90 days before the earnings announcement date, scaled by the stock price in the previous quarter.
<i>FT_Score</i>	It is computed as $(P - N)/(P + N)$, where P and N are the fraction of positive (negative) words in the Financial Times news pieces on firm i on date t , as retrieved from Factiva.
<i>RN_Score</i>	It is computed as $(P - N)/(P + N)$, where P and N are the fraction of positive (negative) words in the Reuters Newswire news pieces on firm i on date t , as retrieved from Factiva.
Firm Control Variable	
<i>Firm_Size</i>	The market value of equity (defined as the product between the stock price – Compustat item <i>prcc_f</i> and common shares outstanding – Compustat item <i>csho</i>). It is trimmed at its 1% and 99% levels.
<i>Book_Equity</i>	Defined as: stockholder's equity (Compustat item <i>seq</i>) – Preferred Stock (Compustat item <i>pstkl</i>) + Balance Sheet Deferred Taxes and Investment Tax Credit (Compustat item <i>txditc</i>) – Post Retirement Asset (Compustat item <i>prba</i>). It is trimmed at its 1% and 99% levels.
<i>Book_to_Market</i>	The book value of equity over the market value of equity. It is trimmed at its 1% and 99% levels.

<i>Leverage</i>	The sum of the short-term debt (Compustat item <i>dlc</i>) and the long-term debt (Compustat item <i>dltt</i>) divided by the book value of total assets (Compustat item <i>at</i>). It is trimmed at its 1% and 99% levels.
<i>ROA</i>	The ratio of net income (Compustat item <i>ni</i>) over total assets (Compustat item <i>at</i>). It is trimmed at its 1% and 99% levels.
<i>CAR_{-11,-2}</i>	The 10-day cumulative abnormal return from 11 days before to 1 day before the news release date. On a given day, the abnormal return is defined as the difference between the stock's return and the market index return.
<i>CAR_{-1,1}</i>	The 3-day cumulative abnormal return around the news release date. On a given day, the abnormal return is defined as the difference between the stock's return and the market index return.

Trading Measures

<i>Net_Buyer</i>	The net buyer indicator. It is defined as 1 if 3-day cumulative value of shares purchased by investors is larger than 3-day cumulative value of shares sold, zero otherwise. Data on institutional investor trading is retrieved from Ancerno.
<i>Trading_Imbalance</i>	It is defined as 3-day cumulative value of shares purchased by investors minus the 3-day cumulative value of shares sold, scaled by the sum of 3-day cumulative value of shares bought and sold. Data on institutional investor trading is retrieved from Ancerno.

Other Variables

<i>CAPM_Alpha</i>	A weighted average of all investors' CAPM alphas over the trailing 24 months. The weight is in proportion to investors' daily trading volume (shares bought + shares sold) on a given stock. The CAPM alpha is the intercept from a CAPM regression of the transaction-based "Buy-minus-Sells" calendar time portfolio returns on market's excess returns.
<i>FF3F_Alpha</i>	A weighted average of all investors' Fama-French three-factor alphas over the trailing 24 months. The weight is in proportion to investors' daily trading volume (shares bought + shares sold) on a given stock. The Fama-French three-factor alpha is the intercept from a regression of the transaction-based "Buy-minus-Sells" calendar time portfolio returns on market's excess returns, <i>SMB</i> and <i>HML</i> .
<i>Stock_Trading_Frequency</i>	A weighted average of the number of times that the institutional investors trade on the given stock over the News Corporation pre-merger period. The weight is in proportion to investors' daily trading volume (shares bought + shares sold) on a given stock.
<i>Industry_Trading_Frequency</i>	A weighted average of the number of times that the institutional investors trade on the given stock's industry (Fama-French 12 Industry classification) over the News Corporation pre-merger period. The weight is in proportion to investors' daily trading volume (shares bought + shares sold) on a given stock.

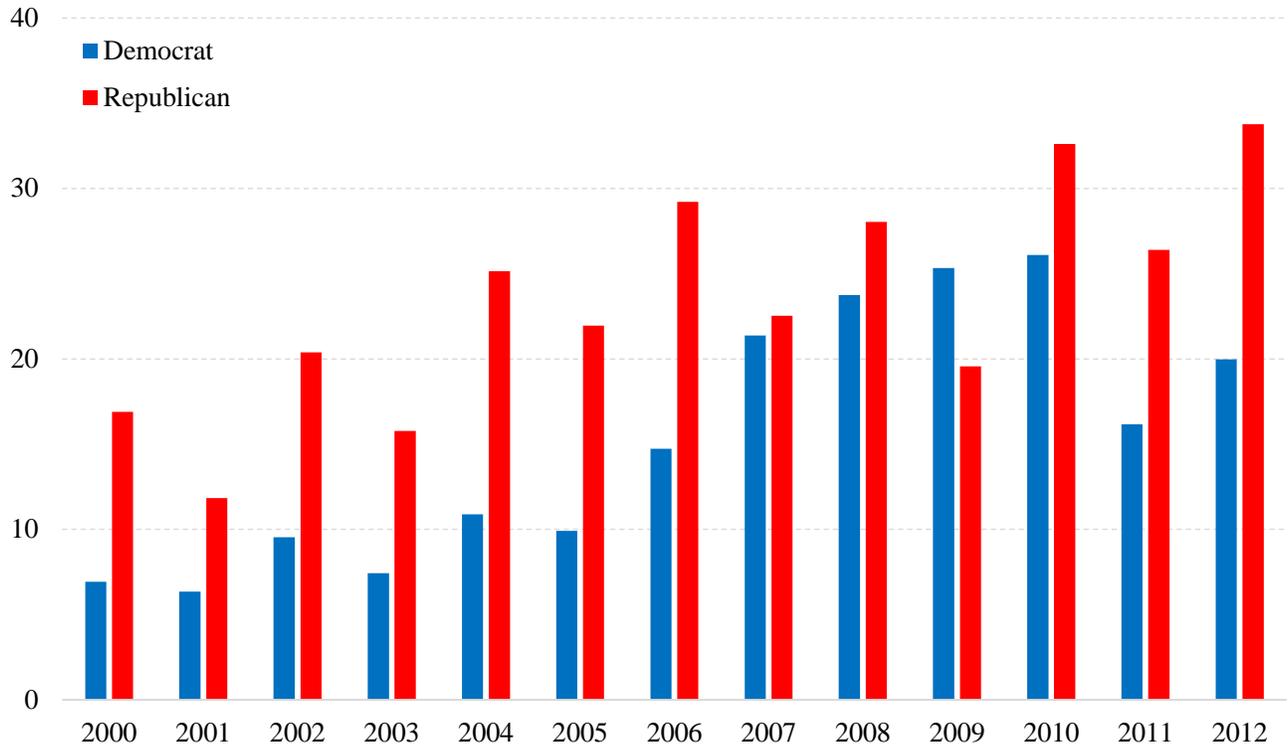


Figure 1 Corporate Contributions to the Democrat and Republican Parties, 2000-2012

The graph reports the yearly total corporate contributions (\$ millions) to the Democrat and Republican parties over our sample period. Corporate contribution data are retrieved from the Federal Election Commission (FEC) detailed files.

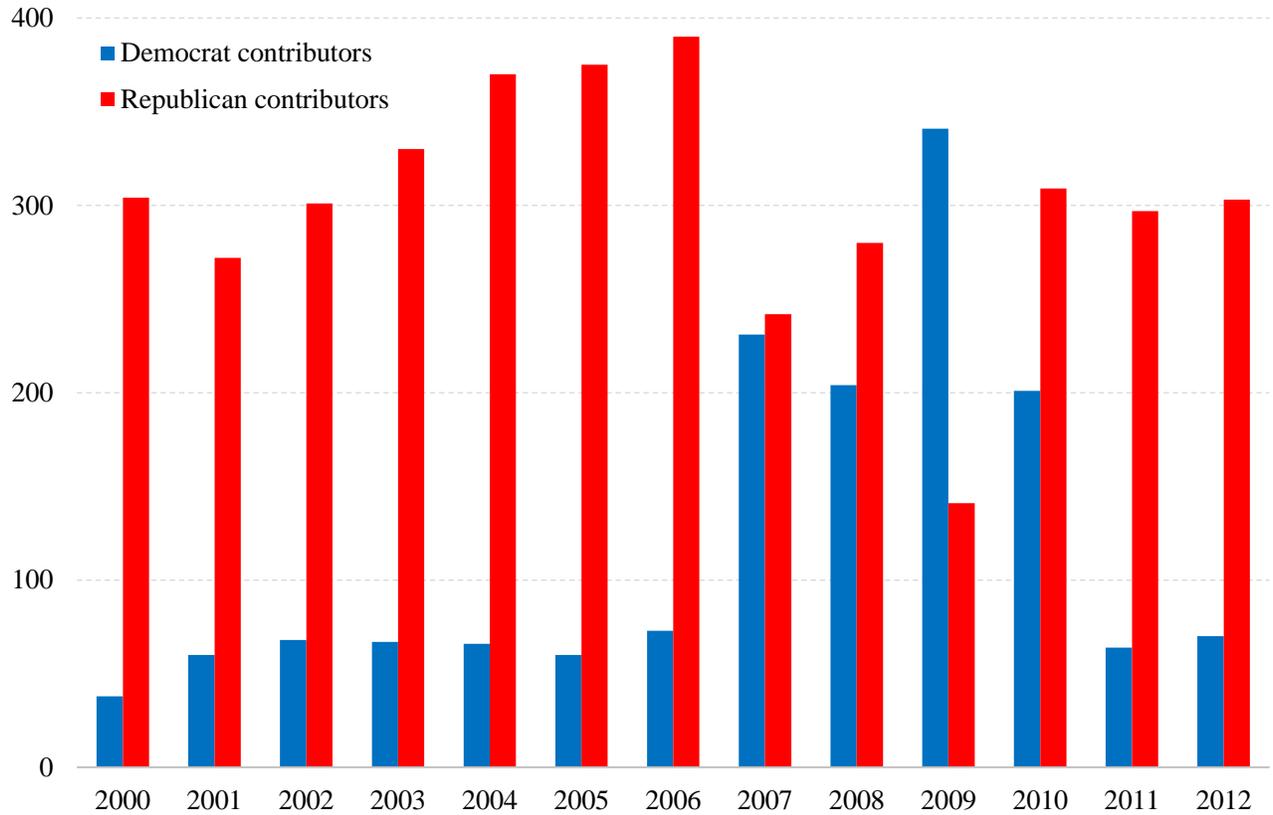


Figure 2 Number of Democrat and Republican Corporate Contributors, 2000-2012

The graph reports the yearly total number of corporate contributors to the Democrat and Republican parties over our sample period. Corporate contribution data are retrieved from the Federal Election Commission (FEC) detailed files. We define a corporation as a Democrat contributor if its total contributions to the Democrat party are larger than its contributions to the Republican party, and vice versa for Republican contributors.

Table 1. Summary Statistics

Panel A presents the summary statistics of main variables in our sample. Panel B presents the summary statistics for the Compustat universe. Panel C presents the summary statistics for Republican stocks and Democrat stocks, as well as a t-test of the difference in the characteristics between the two groups. All variables are defined in the Appendix.

A: Summary statistics for main variables in sample

Variable	Mean	Std.	Min	25th Pct.	Median	75th Pct.	Max
Political Orientation Variables							
<i>Republican</i>	0.1787	0.4347	-1.0000	-0.0691	0.1823	0.4568	1.0000
<i>Institutional_Republican</i>	0.0010	0.2235	-1.0000	-0.1590	-0.0168	0.1942	1.0000
<i>State_Republican</i>	-0.0512	0.1636	-0.8592	-0.1829	-0.0668	0.0820	0.4788
Sentiment Variables							
<i>DJ_Sentiment</i>	0.5380	0.2924	0.1000	0.3000	0.5000	0.8000	1.0000
<i>SUE (%)</i>	-0.0018	0.1094	-10.8070	-0.0001	0.0005	0.0020	1.0129
Firm Characteristics							
<i>Leverage</i>	0.2600	0.1770	0.0000	0.1299	0.2385	0.3561	0.8767
<i>Firm_size</i> (\$billions)	24.8917	26.1534	0.0041	4.1201	14.3133	40.7524	98.2219
<i>Book_to_market</i>	0.6323	0.5525	0.0367	0.2895	0.4875	0.8130	8.5657
<i>ROA</i>	0.0440	0.0844	-1.9855	0.0107	0.0408	0.0842	0.3653
<i>CAR_{-11,-2}</i>	0.0029	0.0721	-1.2624	-0.0281	0.0018	0.0335	1.2761
<i>CAR_{-1,1}</i>	0.0007	0.0448	-0.8632	-0.0163	0.0001	0.0174	1.3534
Trading Measures							
<i>Trading_imbalance</i>	0.0216	0.6226	-1.0000	-0.5305	0.0261	0.5789	1.0000

B: Summary statistics of main variables in Compustat universe

Variable	Mean	Std.	Min	25th Pct.	Median	75th Pct.	Max
<i>Leverage</i>	0.2087	0.2069	0.0000	0.0207	0.1576	0.3316	0.8767
<i>Firm_size</i> (\$billions)	3.0231	9.7736	0.0016	0.0742	0.3017	1.3243	98.1318
<i>Book_to_market</i>	0.7842	0.7811	0.0367	0.3406	0.5892	0.9525	8.5657
<i>ROA</i>	-0.0555	0.3026	-3.1634	-0.0350	0.0156	0.0614	0.3653

C: Summary statistics of main variables for Republican and Democrat stocks

Variable	Republican stock	Democrat stocks	t-statistic
<i>Leverage</i>	0.2579	0.2647	-0.7351
<i>Firm_size</i> (\$billions)	25.5547	23.4424	1.6273
<i>Book_to_market</i>	0.6303	0.6368	-0.2526
<i>ROA</i>	0.0472	0.0370	2.2408

Table 2. Stock returns reaction to Dow Jones Newswire non-press release sentiment around the takeover

The table reports the estimates of:

$$CAR_{-1,1} = \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date, computed by summing the daily abnormal returns (stock return minus the market index return) over 1 day before to 1 day after the news release date. *Sentiment* is the Dow Jones Newswire sentiment *DJ_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. The set of controls includes, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$, including date fixed effects or firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0163*** (31.24)	0.0163*** (31.11)	0.0171*** (31.44)	0.0176*** (31.46)
<i>Republican</i>	-0.0005 (-0.93)	-0.0007 (-1.31)	-0.0007 (-1.33)	-0.0013** (-2.10)
<i>Post_Takeover</i>	0.0041*** (7.70)	0.0038*** (7.31)		
<i>Post_Takeover</i> × <i>Sentiment</i>	-0.0065*** (-8.06)	-0.0064*** (-8.01)	-0.0089*** (-11.92)	-0.0091*** (-11.97)
<i>Republican</i> × <i>Sentiment</i>	0.0009 (1.01)	0.0009 (1.00)	0.001 (1.08)	0.0007 (0.76)
<i>Republican</i> × <i>Post_Takeover</i>	0.0032*** (3.86)	0.0033*** (3.97)	0.0031*** (3.83)	0.0042*** (4.88)
<i>Post_Takeover</i> × <i>Sentiment</i> × <i>Republican</i>	-0.0056*** (-4.11)	-0.0055*** (-4.05)	-0.0042*** (-3.14)	-0.0042*** (-3.09)
Controls	No	Yes	Yes	Yes
Date fixed effects	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes
R^2	0.007	0.008	0.039	0.047
N	368,124	368,124	368,124	368,124

Table 3. Stock returns reaction to Dow Jones Newswire press release sentiment and SUE around the takeover

The table reports the estimates of:

$$CAR_{-1,1} = \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date (in Column (1)) or around the earnings announcement date (in Columns (2) – (4)), computed by summing the daily abnormal returns (stock return minus the market index return) over 1 day before to 1 day after the event date. In Column (1), *Sentiment* is the press release sentiment *PR_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. In Columns (2) – (4), *Sentiment* is the *Standardized Unexpected Earnings (SUE)*, defined as the difference between actual earnings and the median analyst forecast, scaled by the stock price, provided by IBES. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. All regressions include the set of firm controls ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$), date fixed effects and firm fixed effects. The sample consists of the intersection between the CRSP/Compustat merged database and Ravenpack (Columns (1)) or IBES (Columns (2)-(4)) and the set of firms with available political contribution data, over the period 2000-2012. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

	Press Release	Standardized Unexpected Earnings(SUE)		
	Sentiment	Full	Negative	Positive
	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0059*** (6.37)	0.0266*** (10.76)	0.0148** (2.54)	0.0350*** (6.91)
<i>Republican</i>	0.0013 (1.12)	0.0015 (0.69)	0.0023 (0.32)	0.0018 (0.65)
<i>Post_Takeover</i> × <i>Sentiment</i>	0.0004 (0.30)	-0.0047 (-1.53)	-0.0103 (-1.63)	0.0023 (0.39)
<i>Republican</i> × <i>Sentiment</i>	-0.0005 (-0.28)	0.0006 (0.16)	-0.0003 (-0.06)	-0.0011 (-0.15)
<i>Republican</i> × <i>Post_Takeover</i>	0.0018 (0.91)	0.0039 (1.12)	0.0134 (1.36)	-0.0011 (-0.26)
<i>Post_Takeover</i> × <i>Sentiment</i> × <i>Republican</i>	-0.0006 (-0.18)	0.0044 (0.84)	0.0076 (0.94)	0.0113 (1.12)
Controls	Yes	Yes	Yes	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
R^2	0.081	0.228	0.429	0.264
N	83,108	17,515	3,847	12,912

Table 4: Sorts by institutional investor alphas

The table reports the estimates of:

$$\begin{aligned} CAR_{-1,1} = & \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \\ & \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \\ & \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} \\ & + \varepsilon_{it} \end{aligned}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date, computed by summing the daily abnormal returns (stock return minus the market index return) over 1 day before to 1 day after the news release date. *Sentiment* is the Dow Jones Newswire sentiment *DJ_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. In Columns (1) – (2), the sample is splitted based on *CAPM_alpha*, defined as a weighted average of all institutional investors' CAPM alphas over the trailing 24 months. The CAPM alpha is the intercept from a CAPM regression of the transactions-based “Buy-minus-Sells” calendar time portfolio returns on market's excess returns. In Columns (3) – (4), the sample is splitted based on *FF3F_alpha*, defined as a weighted average of all investors' Fama-French three-factor alphas over the same period. The Fama-French three-factor alpha is the intercept from a regression of the transaction-based “Buy-minus-Sells” calendar time portfolio returns on market's excess returns, *SMB* and *HML*. In all cases, the weight is in proportion to investors' daily trading volume (shares bought + shares sold) on the given stock. All regressions include the set of firm controls ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$), date fixed effects and firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

Table 4. continued: Sorts by institutional investor alphas

Investor alphas	CAPM alpha		FF3F alpha	
	below median	above median	below median	above median
	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0165*** (21.78)	0.0189*** (23.02)	0.0170*** (22.74)	0.0186*** (22.58)
<i>Republican</i>	-0.0020** (-2.12)	0.0001 (0.06)	-0.001 (-1.12)	-0.0003 (-0.33)
<i>Post_Takeover</i> × <i>Sentiment</i>	-0.0088*** (-7.23)	-0.0087*** (-7.08)	-0.0093*** (-7.62)	-0.0086*** (-7.02)
<i>Republican</i> × <i>Sentiment</i>	0.0011 (0.80)	-0.0007 (-0.49)	0.0004 (0.29)	-0.0005 (-0.36)
<i>Republican</i> × <i>Post_Takeover</i>	0.0027* (1.71)	0.0049*** (3.32)	0.0025 (1.57)	0.0047*** (3.12)
<i>Post_Takeover</i> × <i>Sentiment</i> × <i>Republican</i>	-0.0008 (-0.33)	-0.0053** (-2.22)	-0.0008 (-0.33)	-0.0049** (-2.02)
Controls	Yes	Yes	Yes	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
R^2	0.066	0.065	0.067	0.063
N	134,308	134,982	134,379	134,911

Table 5. Sorts by institutional investor trading frequency

The table reports the estimates of:

$$CAR_{-1,1} = \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date, computed by summing the daily abnormal returns (stock return minus the market index return) over 1 day before to 1 day after the news release date. *Sentiment* is the Dow Jones Newswire sentiment *DJ_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. In Columns (1) – (2), the sample is splitted based on *Stock_Trading_Frequency*, defined as a weighted average of the number of times that the institutional investors trade on the given stock over the News Corporation pre-merger period (*Post_Takeover* = 0). In Columns (3) – (4), the sample is splitted based on *Industry_Ttrading_Frequency*, defined as a weighted average of the number of times that the institutional investors trade on the given stock's industry (Fama-French 12 Industry classification) over the same period. In all cases, the weight is in proportion to the investor's daily trading volume (shares bought + shares sold) on the given stock. All regressions include the set of firm controls ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$), date fixed effects and firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

Investor alphas	Stock trading frequency		Industry trading frequency	
	below median	above median	below median	above median
	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0241*** (23.36)	0.0145*** (21.71)	0.0203*** (20.16)	0.0166*** (23.96)
<i>Republican</i>	-0.0026** (-2.33)	-0.0001 (-0.13)	-0.0019 (-1.63)	-0.0001 (-0.14)
<i>Post_Takeover</i> × <i>Sentiment</i>	-0.0141*** (-10.84)	-0.0111*** (-7.53)	-0.0115*** (-9.20)	-0.0077*** (-4.80)
<i>Republican</i> × <i>Sentiment</i>	0.0026 (1.52)	-0.0008 (-0.62)	0.0012 (0.68)	-0.0003 (-0.27)
<i>Republican</i> × <i>Post_Takeover</i>	0.0050*** (3.45)	0.0029 (1.24)	0.0045*** (3.00)	0.0032 (1.37)
<i>Post_Takeover</i> × <i>Sentiment</i> × <i>Republican</i>	-0.0051** (-2.15)	-0.0012 (-0.35)	-0.0048** (-2.02)	-0.0005 (-0.13)
Controls	Yes	Yes	Yes	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
R^2	0.075	0.055	0.066	0.080
N	131,765	132,992	135,165	133,705

Table 6. Sorts by investor political orientation

The table reports the estimates of:

$$\begin{aligned} CAR_{-1,1} = & \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \\ & \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \\ & \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} \\ & + \varepsilon_{it} \end{aligned}$$

The dependent variable is the 3-day cumulative abnormal return around the news release date, computed by summing the daily abnormal returns (stock return minus the market index return) over 1 day before to 1 day after the news release date. *Sentiment* is the Dow Jones Newswire sentiment *DJ_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. The sample is restricted to firms with institutional ownership less than 50% in Columns (1) – (2) and firms with institutional ownership larger than 50% in Columns (3) – (4). For firms with institutional ownership larger than 50%, the sample is splitted based on *Ins_Republican*, defined as the share-weighted average difference between the political contributions to the Republican Party and to the Democrat Party (scaled by the total contributions to both) of the firm's institutional investors. For firms with institutional ownership less than 50%, the sample is splitted based on *State_Republican*, defined as the difference between the vote percentage to the Republican Party and to the Democrat Party in the firm's headquartered state in each Presidential Election Cycle. All regressions include the set of firm controls ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$), date fixed effects and firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

Table 6. continued: Sorts by investor political orientation

Investors' Political Orientation based on	Firms with institutional ownership ≤ 50%		Firms with institutional ownership > 50%	
	Election Voting Results in Firms' State below median	Election Voting Results in Firms' State above median	Institutional Investors' Contribution below median	Institutional Investors' Contribution above median
	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0289*** (12.36)	0.0193*** (8.10)	0.0134*** (17.37)	0.0175*** (22.50)
<i>Republican</i>	-0.0013 (-0.39)	0.004 (1.60)	-0.0021** (-2.14)	-0.0006 (-0.68)
<i>Post_Takeover × Sentiment</i>	-0.0186*** (-5.67)	-0.0092** (-2.52)	-0.0040*** (-3.83)	-0.0130*** (-13.70)
<i>Republican × Sentiment</i>	-0.0037 (-0.80)	-0.0055* (-1.65)	0.001 (0.69)	0.0004 (0.28)
<i>Republican × Post_Takeover</i>	0.0032 (0.70)	-0.0057 (-1.56)	0.0064*** (4.85)	-0.0001 (-0.04)
<i>Post_Takeover × Sentiment × Republican</i>	-0.0046 (-0.72)	0.0110* (1.89)	-0.0068*** (-3.29)	0.0029 (1.47)
Controls	Yes	Yes	Yes	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
R^2	0.208	0.233	0.061	0.073
N	21,656	22,312	161,695	158,039

Table 7. Institutional investor trading around the News Corp. acquisition

The table reports the estimates of:

$$Trade_{-1,1} = \alpha + \beta_1 Post_Takeover + \beta_2 Sentiment_{it} + \beta_3 Republican_{it} + \beta_4 Post_Takeover \times Sentiment_{it} + \beta_5 Post_Takeover \times Republican_{it} + \beta_6 Republican_{it} \times Sentiment_{it} + \gamma Post_Takeover \times Republican_{it} \times Sentiment_{it} + \delta Controls_{it} + \varepsilon_{it}$$

In Columns (1) – (2), the dependent variable is *Net_Buyer*, a net buyer indicator defined as 1 if 3-day cumulative value of shares purchased by investors is larger than 3-day cumulative value of shares sold. In Columns (3) – (4), the dependent variable is *Trading_Imbalance*. It is defined as 3-day cumulative value of shares purchased by investors minus the 3-day cumulative value of shares sold, scaled by the sum of 3-day cumulative value of shares bought and sold. 3-day cumulative value of shares bought (sold) is computed as the sum of daily dollar amount of shares bought (sold) over 1 day before to 1 day after the news release date. *Sentiment* is the Dow Jones Newswire sentiment *DJ_Sentiment*, the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. The set of controls includes $\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and *CAR_{-11,-2}*, including date fixed effects or firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

	Net Buyer		Trading Imbalance	
	(1)	(2)	(3)	(4)
<i>Sentiment</i>	0.0118*	0.0119**	0.0250***	0.0252***
	(1.94)	(1.96)	(3.01)	(3.04)
<i>Republican</i>	-0.0065	-0.0069	-0.0043	-0.005
	(-0.90)	(-0.96)	(-0.43)	(-0.50)
<i>Post_Takeover</i> × <i>Sentiment</i>	-0.0068	-0.0067	-0.0178*	-0.0176*
	(-0.88)	(-0.87)	(-1.75)	(-1.74)
<i>Republican</i> × <i>Sentiment</i>	0.0281**	0.0277**	0.0290*	0.0284*
	(2.47)	(2.43)	(1.84)	(1.81)
<i>Republican</i> × <i>Post_Takeover</i>	0.0025	0.0032	-0.0022	-0.0009
	(0.25)	(0.33)	(-0.18)	(-0.07)
<i>Post_Takeover</i> × <i>Sentiment</i> × <i>Republican</i>	-0.0416***	-0.0403***	-0.0423**	-0.0405**
	(-2.71)	(-2.63)	(-2.07)	(-1.98)
Controls	No	Yes	No	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
<i>R</i> ²	0.035	0.036	0.046	0.047
N	312,789	312,789	312,789	312,789

Table 8. Sentiment change around the News Corp. acquisition

The table reports the estimates of:

$$sentiment = \alpha + \beta_1 Post_Takeover + \beta_2 Republican_{it} + \beta_3 Post_Takeover \times Republican_{it} + \delta Controls_{it} + \varepsilon_{it}$$

In Column (1), the dependent variable is Dow Jones Newswire Sentiment *DJ_Sentiment*. In Columns (2) – (4), the dependent variable is the difference between *DJ_Sentiment* and IBES *SUE* (Column (2)), the Financial Times Sentiment *FT_Score* (Column (3)), the Reuters News Sentiment *RN_Score* (Column (4)). Dow Jones Newswire Sentiment *DJ_Sentiment* is the decile value of an average *Event Sentiment Score (ESS)* of all non-press release articles in Dow Jones Newswire on firm *i* on date *t*, provided by RavenPack. *SUE (Standardized Unexpected Earnings)* is the decile value of the difference between actual earnings and the median analyst forecast, scaled by the stock price, provided by IBES. The Financial Times (or the Reuters News) Sentiment is *FT_Score* (or *RN_Score*), defined as the decile value of the $(P - N)/(P + N)$, where *P* and *N* are the fraction of positive (negative) words in the Financial Times (or the Reuters News) news pieces on firm *i* on date *t*, as retrieved from Factiva. *Republican* is a proxy for the firm's political orientation, equal to the firm's contributions to the Republican party minus its contributions to the Democrat party, divided by the total contributions to both parties. *Post_Takeover* is an indicator variable equal to one starting from the completion day of the News Corporation takeover in December 14, 2007, and zero otherwise. All regressions include the set of firm controls ($\log(Firm_Size)$, $\log(Book_to_Market)$, *Leverage*, *ROA*, and $CAR_{-11,-2}$), date fixed effects and firm fixed effects. In all specifications the t-statistics are based on standard errors clustered by date. The symbols *, **, and *** denote statistical significance at 10%, 5%, and 1% level.

	Dow Jones Newswire	Dow Jones Newswire – IBES	DJ Newswire – Financial Times	DJ Newswire – Reuters News
	(1)	(2)	(3)	(4)
<i>Republican</i>	-0.0039* (-1.94)	-0.0022 (-0.22)	-0.0153 (-0.32)	0.0030 (0.16)
<i>Republican</i> × <i>Post_Takeover</i>	-0.0028 (-1.04)	-0.0098 (-0.69)	0.0372 (0.58)	0.0005 (0.02)
Controls	Yes	Yes	Yes	Yes
Date and firm fixed effects	Yes	Yes	Yes	Yes
<i>R</i> ²	0.131	0.282	0.423	0.288
N	368,123	16,501	5,058	14,890