Ninety Years of Media Coverage and the Cross-Section of Stock Returns[a]

Alexander Hillert and Michael Ungeheuer[b]

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Abstract

Using a novel dataset on New York Times coverage of U.S. firms from 1924 to 2013, we re-examine the relation between media coverage and stock returns. The relation between *changes* in media coverage and returns is consistent with an attention-driven price pressure effect: Top-quintile outperform bottom-quintile coverage change stocks by 10.68% during the formation year. Over the next two years, these stocks underperform their counterparts by 5.04%. In contrast to previous findings, the *level* of media coverage positively predicts stock returns. Top-quintile outperform bottom-quintile coverage stocks by 2.76% per year (Sharpe Ratio of 0.48, Momentum: 0.49). This is consistent with the media having a positive effect on corporate governance and profitability, which is not adequately priced.

Keywords: Media Coverage, Investor Attention, Visibility, Returns, Corporate Governance

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[b]Alexander Hillert (corresponding author) and Michael Ungeheuer: Chair of International Finance at the University of Mannheim, Address: L9, 1-2, 68131 Mannheim, Germany, Telephone: +49-621-181-1640, E-mail: hillert@bwl.uni-mannheim.de and michael.ungeheuer@gess.uni-mannheim.de.

1 Introduction

We analyze the relation between media coverage and the cross-section of stocks returns. Our novel dataset on New York Times coverage of U.S. firms reaches back to 1924. This uniquely long panel of media coverage allows us to analyze how changes of visibility and the persistent level of visibility are related to stock returns. Until the 1950s, newspaper articles were the major channel of information dissemination to the general public. With the introduction of television to private homes in the 1960s, and internet in the 1990s, the dominance of newspapers in informing a broad audience has diminished. As an illustration, the circulation of daily newspapers, normalized by the U.S. population has declined steadily from 35% in 1950 to 13% in 2013, while the number of TVs per capita has increased from less than 3% to over 36% over this period.[1] Hence, the unique 90-year length of our dataset is valuable, not only because it increases the power of our statistical tests, but also because it covers the earlier, newspaper-dominated decades of the 20$^{\text{th}}$ century.

We contribute to the literature in two main ways. First, we analyze the relation between year-to-year changes in media coverage and the cross-section of stock returns. We test whether increases in media coverage go along with impact-reversal patterns in stock returns as suggested by Barber and Odean (2008). To the best of our knowledge, we are the first to analyze the relation between low frequency changes in media coverage and stock returns. We find that stocks with a strong increase in media coverage outperform stocks with a strong decrease by 10.68% in the formation year. Subsequently, these stocks underperform their coverage decrease counterparts by 5.04% over the next two years. Second, we exploit our unique and comprehensive media coverage panel, starting in the early 20$^{\text{th}}$ century, to re-analyze the relation between the level of media coverage and the cross-section of stock returns. This research question was previously analyzed by Fang and Peress (2009) for a subsample of mostly large cap U.S. stocks. They find that during the ten-year period from 1993 to 2002 higher levels of media coverage are associated with lower stock returns. Relying on the entire cross-section of U.S. stocks and adequately controlling for firm size we obtain the opposite result. Stocks with high size-adjusted media coverage outperform stocks with low size-adjusted media coverage by 2.76% per year.

The relation between media coverage and stock markets has become a popular topic in

[1] See Figure E1 in Appendix E for the development of newspapers and TVs per capita from 1950 to 2013.

empirical finance. Tetlock (2007) analyzes the relation between the tone of the Wall Street Journal's 'Abreast of the Market' column and daily stock market activity for 1984 to 1999. He finds that more pessimistic tone of this column predicts negative stock market returns on the next day, and a reversal over the following week. García (2013) extends Tetlock's study by analyzing the impact of the tone of two New York Times columns on daily stock market returns for 1905 to 2005.[2] He confirms the findings of Tetlock (2007) and additionally finds that return predictability is much stronger in recessions. Hillert, Jacobs, and Müller (2014) use a 1989 to 2010 panel of media coverage and article tone on the firm level to empirically test competing behavioral theories of momentum. To the best of our knowledge, theirs is the longest comprehensive dataset of newspaper coverage on the firm level used in empirical finance up to this study.

Does an increase in media coverage lead to temporary overvaluation? Barber and Odean (2008) hypothesize and find that increases in attention lead to more retail trading, and—due to short sale constraints of retail investors—more buying than selling. They argue that these order-imbalances should then lead to an impact-reversal pattern in stock prices. The idea that short sale constraints cause higher prices and lower expected returns goes back to Miller (1977), who models asset prices under short sale constraints with heterogenous beliefs. Empirical evidence of the impact of changes in visibility (or 'attention') on stock returns is generally in line with the Barber and Odean (2008) model. Da, Engelberg, and Gao (2011) use Google Search Volume to measure attention on the stock-level and find a short-term, intra-annual impact-reversal pattern. In a detailed case study of attention-driven overreaction, Huberman and Regev (2001) show that the price of EntreMed's stock sharply increased after a May 3, 1998 Times frontpage article whose content had been published months before, on November 27, 1997 in Nature. In the months subsequent to the initial increase from $12 to $85, the stock price reverted to a price level of approximately $25. Using a more general approach, Tetlock (2011) measures the textual similarity of firm-specific articles and finds an overreaction of prices to stale news. Other studies analyze product advertising as a stimulus for investor attention. Grullon, Kanatas, and Weston (2004) find that higher levels of advertising are associated with higher liquidity and a larger number of shareholders. Lou (2014) finds that advertising leads to temporarily higher price levels,

[2] He constructs this long time series by using scans from newspapers and optical character recognition software. The two columns are 'Financial Markets' and 'Topics in Wall Street'.

consistent with an attention-driven impact-reversal pattern. Focke, Ruenzi, and Ungeheuer (2014) shed doubt on the conclusions of Grullon, Kanatas, and Weston (2004) and Lou (2014). Using a high frequency dataset of advertising, they find evidence against strong liquidity and return effects of advertising.

To the best of our knowledge, we are the first to analyze the relation between changes in media coverage and stock returns. In contrast to most other studies on attention-effects, we analyze relatively low frequency returns (year-to-year) and a long panel, going back to 1924. Our findings are generally in line with an attention-driven impact-reversal effect. We find that stocks with a strong increase in attention significantly overperform stocks with a strong decrease in attention during the formation year. In the two years after portfolio formation, these stocks underperform their low-attention counterparts. In year three after portfolio formation, we find no significant return difference between the decrease and increase portfolios. A strategy aimed at exploiting the reversal effect attains a Sharpe Ratio of 0.63, which is close to 30% higher than that of momentum. This return effect cannot be explained by a large set of factor models. It is not driven by small or illiquid firms, and it is stronger for stocks with high idiosyncratic volatility and for winner stocks. It performs particularly well during 'bad times' (recessions and times of uncertainty). Article tone does not interact significantly with this coverage change effect. A back-of-the-envelope calculation suggests that, due to high portfolio turnover, transaction costs may be too high to profit from an implementation of the strategy.

Is a persistently higher level of media coverage related to returns? The most prominent model associated with this research question is Merton (1987)'s asset pricing model. In this model, a higher level of visibility (or 'recognition') of a firm leads to lower expected returns, since the average investor of such a firm is more broadly diversified and thus requires a lower return premium. This argument is in line with Lintner (1969)'s idea that restricted access to certain stocks should lead to higher stock returns, e.g. due to 'ignorance', but maybe also due to other constraints such as persistent limits to arbitrage. In contrast to Merton (1987), Lintner (1969)'s model also includes the argument that heterogenous investors with varying beliefs and preferences could play a role.[3] Empirical findings related to the level of visibility

[3] We present Miller (1977)'s dispersion of opinion model in the above paragraph on attention-driven price patterns. The literature seems to view this mechanism as more relevant for short-term changes in visibility, where due to slow-moving capital (Mitchell, Pedersen, and Pulvino (2007), Duffie (2010)) assets become temporarily overvalued. This is more consistent with Barber and Odean (2008)'s attention-driven

and stock returns generally support the Merton (1987) model. Foerster and Karolyi (1999) for instance show that non-U.S. firms cross-listing shares in the U.S. exhibit a price increase before and during listing, and lower average returns as well as increases in shareholder base in the year afterwards. They interpret this as evidence for Merton (1987). King and Segal (2009) analyze the effect of U.S. cross-listings by Canadian firms on returns. They find that prices of firms that do not manage to widen their U.S. shareholder base revert to their pre-listing levels within two years after the listing. Green and Jame (2013) find that companies with easier to pronounce names have higher breadth of ownership, turnover, liquidity and valuation ratios. This is again consistent with Merton (1987). Chen, Hong, and Stein (2002) develop a model with differences of opinion and short sale constraints, in which breadth of ownership and future returns are positively associated. They argue that reduced breadth indicates that short sales constraints are binding, which leads to overvaluation and subsequently lower returns. Using changes in mutual fund holdings they find evidence for this model. Nagel (2005) finds that the underperformance of growth stocks, stocks with high dispersion of opinion, turnover or volatility is amplified by short sale constraints, as measured by retail ownership.

Fang and Peress (2009) find that stocks with no newspaper coverage have higher returns than stocks with high coverage. Our dataset allows us to test their findings out-of-sample, and in a period, early decades of the 20^{th} century, when newspapers were the dominant source of information dissemination. Interestingly, our findings are clearly opposed to their previous findings: Including the entire cross-section of stocks and controlling for firm size, higher media coverage levels are associated with persistently higher returns. The high coverage quintile portfolio outperforms the low coverage quintile portfolio by 2.76%, 2.76%, and 2.28% per year in the first, second and third year after portfolio formation. In the first year, the Sharpe Ratio of this strategy is 0.48, which is nearly identical to that of momentum (0.49). The strategy's returns cannot be explained by a large set of factor models. They are higher for small and illiquid stocks, as well as high idiosyncratic volatilty and loser stocks. Article tone does not interact significantly with this coverage level effect. Due to the persistence of media coverage, the coverage level strategy exhibits an annual portfolio turnover of only 33%. A back-of-the-envelope calculation suggests that profits after transaction costs are still clearly positive for this strategy.

price pattern than with effects due to persistently different levels of visibility.

The positive relation between media coverage and stock returns contradicts expectations under Merton (1987)'s investor recognition model. Why could media coverage be *positively* related to future stock returns? We find that firms with high media coverage exhibit future improvements in corporate governance and high future growth in sales, investments and profits. These associations are consistent with media coverage being a value-creating monitoring mechanism. If good governance is not properly priced—as suggested by Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2009)—this explains the positive association between media coverage level and stock returns. Besides, media coverage could serve as an underestimated (free) substitute for product market advertising. The strong positive link between media coverage levels and sales growth supports this argument.

In Section 2 we introduce our datasets, in particular the New York Times coverage measure. Our asset pricing tests for the relation between media coverage changes (levels) are described in Section 3 (Section 4). In Section 5, we jointly analyze the effect of changes and levels in media coverage. We conclude in Section 6.

2 Data and Methodology

In this section, we discuss the data sources and variables used in this study. We first describe the media coverage datasets we use, in particular the novel dataset on New York Times media coverage (Section 2.1). We then describe the financial market data used (Section 2.2). All variables are defined in detail in Appendix A.

2.1 New York Times Coverage 1924-2013

We obtain annual New York Times coverage of U.S. firms for the years 1924 to 2013 from the New York Times Chronicle webpage (`http://chronicle.nytlabs.com/`). We include all ordinary shares (share codes 10 and 11) listed on NYSE, AMEX and NASDAQ between 1926 and 2014. We search for firm-specific articles using historical company names. Before, we perform technical adjustements to these names (e.g. correcting abbreviations, see Appendix B for details). To assure data quality we exclude names that appear in Webster's Dictionary, e.g. 'Apple'.

The percentage of firms which are covered at least once in a given year is plotted in Figure

1. It is between 70% and 80% for most of the 20^{th} century, and drops to 40% at the end of the 1990s. This plunge in coverage can be explained by a change of the New York Times coverage policy with respect to financial statements: Around 1997, the New York Times stopped publishing 'Company Reports' with financial statement information, probably due to the electronic availability of these numbers via other data providers or the internet. Other studies on media coverage, e.g. Fang and Peress (2009), observe similar coverage statistics.

[Figure 1 here.]

In robustness tests and to check the validity of the data, we compare the New York Times Chronicle data to an extended version of the LexisNexis media coverage dataset collected by Hillert, Jacobs, and Müller (2014). This data is only available for 1973 to 2013 and comprises articles in the New York Times, Wall Street Journal, Washington Post and USA Today.[4] It contains articles with a Relevance Score of at least 80, which indicates a 'major reference' to the company according to the LexisNexis manual. Unlike the New York Times Chronicle data, the LexisNexis data includes the texts of the articles. Thus, we are able to measure article tone. We employ the Loughran and McDonald (2011) dictionary of negative words which is specifically designed to capture the tone of business and financial documents and which is typically used in recent studies.[5] We use the yearly number of articles in the New York Times and in all four national newspapers combined. We also calculate the average yearly tone of national newspaper articles. Table 1 provides summary statistics of the media coverage datasets.

[Table 1 here.]

Panel A of Table 1 shows the distribution of media coverage for the New York Times articles from the Chronicle webpage (1924-2013 and 1973-2013), from LexisNexis (1973-2013) and for the national newspaper articles from LexisNexis (1973-2013). Clearly, the Chronicle coverage is much higher than LexisNexis coverage. This is expected, since LexisNexis coverage is restricted to articles with 'major references' to the firm, whereas Chronicle coverage contains

[4]New York Times articles are available starting in January 1973. For the Wall Street Journal, only abstracts are available starting in May 1973. Additionally the relevance score is missing for Wall Street Journal articles until 1989. Washington Post articles are available starting in January 1977 and USA Today articles are available starting in January 1989.

[5]Loughran and McDonald (2015) survey different approaches to measure artcile tone.

all articles that mention the firm's name. Panel B of Table 1 reports correlations between log-coverage of the three measures between 1973 and 2013. New York Times coverage according to Chronicle is highly correlated with LexisNexis coverage at 0.48. Differences in the two measures are probably mostly due to the missing relevance filter in Chronicle. The noise introduced through the inclusion of 'minor references' or articles that are mistakenly linked to a firm in the Chronicle data might bias our results towards zero. In Panel C of Table 1, we report average cross-sectional correlations between the log-level and log-changes of New York Times Chronicle coverage and financial market variables. Some correlations stand out. In particular, size is positively associated with the level of coverage with a correlation of 0.44. This correlation indicates that properly controlling for size is important when analyzing the level of media coverage. Furthermore, high coverage firms tend to have low idiosyncratic volatility (correlation of -0.19), high betas (0.16) and low book-to-market ratios (-0.12). However, parts of these correlations might be attributable to the high correlation with firm size. The correlation of the log-change in coverage with the level of coverage is 0.19.

2.2 Other Data

Monthly and daily financial market variables, like returns or trading volume are taken from CRSP. If necessary, we calculate variables ourselves, e.g. betas, idiosyncratic volatility, and Amihud (2002) illiquidity (see Appendix A for details). Accounting data, the number of shareholders, and the number of employees are from Compustat. Mutual fund ownership is calculated based on Thomson-Reuter's mutual fund holdings database (s12). Factor returns, like Fama and French (1993)'s SMB-factor are downloaded or provided by the authors of the respective original papers. In our empirical analysis, we exclude observations when the stock's price was below \$1 at the end of last year to avoid microstructure issues.[6]

3 The Effect of Changes in Media-Coverage

In this section, we analyze the relation between changes in media coverage and stock returns. We first test for the general existence of a robust return difference between coverage increase stocks and coverage decrease stocks (Section 3.1). We then check whether this

[6] A \$5 price filter and the exclusion of $\leq 1^{st}$-NYSE-decile stocks do not qualitatively change our results.

return difference is higher for certain firms and times (Section 3.2). Last, we analyze the role of article tone for the effect of coverage changes on stock returns (Section 3.3).

3.1 The Change Effect

At the beginning of each year $t+1$ from 1926 to 2014 we sort stocks into six portfolios by the change in media coverage from year $t-1$ to year t. Coverage change is measured by $\Delta ln(1+Num)$, the log-change in one plus the number of articles about the firm, so that firms with zero coverage in one of the two last years are still included. We separately analyze firms, if they have no coverage at all during the last two years ('no coverage' stocks). Firms with non-zero coverage and no change in coverage over the last two years are assigned to the 'no change' portfolio. The strong (weak) increase portfolio consists of stocks with above (below) median coverage increases. The strong (weak) decrease portfolio consists of stocks with above (below) median absolute coverage decreases.

We first graphically analyze the difference between strong coverage increase and strong coverage decrease stocks. Figure 2 displays the cumulative average return of the equal weighted zero net investment portfolio buying strong increase stocks and selling strong decrease stocks from the beginning of the formation year t to the end of the third year after formation $t+3$. A clear impact-reversal pattern emerges. Strong increase stocks outperform weak increase stocks during the formation year by more than 10%. Over the next two years about half of this impact is reversed, consistent with attention-driven mispricing in year t, as proposed by Barber and Odean (2008). In Figure 3, we show the average abnormal turnover of stocks in the strong increase portfolio relative to the average abnormal turnover of stocks in the strong decrease portfolio during the same four years. Abnormal turnover is measured by log(turnover) in the current month relative to log(turnover) in the same month from the year before. During the formation year, turnover is 15% to 25% higher than before for coverage increase relative to coverage decrease stocks. This result is consistent with Engelberg and Parsons (2011)'s finding that local newspaper coverage causes local trading activity. The increase in turnover for coverage increase stocks reverses partially during the next three years. For instance, in June of year t, the formation year, abnormal turnover relative to year $t-1$ is +23.34%. In June of years $t+1$ to $t+3$, abnormal turnover is −4.53%, −3.42% and +0.19%, respectively. Hence, the cumulative effect is $+23.34\% - 4.53\% - 3.42\% + 0.19\% = 15.58\%$.

The strong increase in trading activity for stocks with coverage increases is again in line with attention-driven trading, as proposed by Barber and Odean (2008).

[Figures 2 and 3 here.]

We now graphically analyze the performance of a trading strategy that is constructed to profit from the predictable two-year return reversal after a coverage increase. We call this strategy the 'change strategy'. In this strategy, we combine two long-short investment strategies, giving each a weight of 50%. In the first strategy, we buy stocks with a strong coverage decrease and sell stocks with a strong coverage increase from year $t-1$ to year t, rebalancing to equal weights each month. In the second strategy, we buy stocks with a strong coverage decrease and sell stocks with a strong coverage increase from year $t-2$ to year $t-1$, rebalancing to equal weights each month. This strategy profits when stocks with recent increases in media coverage perform worse than stocks with recent decreases in coverage.

Motivated by the common idea that overpricing of dot-com stocks was amplified by media coverage and the subsequent spike in retail buying, we first display the performance of the change strategy around the time of the 'dot-com bubble'. Cumulative returns of the strategy are displayed along with cumulative returns of the NASDAQ index over Treasury bills for 1997 to 2004. Returns of the change strategy are normalized to have the same volatility as NASDAQ returns.[7] As expected, the change strategy performed particularly well, when the dot-com bubble burst. In the first 18 months after March 2000, the change strategy's cumulative (compounded) returns are 220% (611%) while NASDAQ's cumulative (compounded) return is −120% (−74%). This result is consistent with strong overpricing of coverage increase stocks during the build-up of the dot-com bubble.[8]

[Figure 4 here.]

[7]Long-short returns of the change strategy are divided by their own volatility and multiplied by the volatility of NASDAQ returns, which is equivalent to using leverage to make both return series comparably risky.

[8]Bhattacharya, Galpin, Ray, and Yu (2009) analyze internet IPOs during the build-up of the dot-com bubble (1996-2000) and find that hardly any of the outperformance of internet IPOs relative to non-internet IPOs can be explained by the tone or coverage level of these firms. Their analysis differs from ours in many ways, e.g.: they look only at internet firms with IPOs during 1996-2000, mainly analyze the tone of news items, including news wires, do not consider changes in media coverage, and focus on the short-term (two to twenty day) effect of news items.

In Figure 5, we display the performance of the change strategy from 1927 to 2014, along with cumulative returns of the four factors from the Carhart (1997) model. All return series are normalized to have the volatility of the market index return, so that a comparison of Sharpe Ratios for the period from 1927 to 2014 can be made by comparing the level of cumulative returns in 2014. Overall, the strategy of buying coverage decrease stocks and selling coverage increase stocks performs very well. It attains a Sharpe Ratio of 0.63, which is close to 30% higher than that of the momentum strategy (0.49).

[Figure 5 here.]

We now turn to formal statistical tests. In Panel A of Table 2, we display the raw returns of the six coverage change portfolios in the formation and the subsequent three years. Average monthly returns for the strong increase minus strong decrease portfolio are in line with the graphical evidence from Figure 2. There is an increase in prices for coverage increase stocks in the formation year, which is reversed over the next two years. The long-short returns during the reversal period are statistically significant at the 1%-level. Returns in the third year after formation are insignificantly different from zero, which is evidence in favor of temporary mispricing instead of a permanent decrease in expected returns after increased recognition, as proposed by Merton (1987). In a Patton and Timmermann (2010) montonicity test, we can reject the null of 'decreasing relation' at the 10%-level (1%-level) for year $t+1$ ($t+2$).

[Table 2 here.]

In Panels B and C of Table 2, we run tests to find out whether the strong excess returns of the change strategy can be explained by known risk factors or anomalies. Panel B displays alphas and factor loadings of the increase minus decrease strategy for the Sharpe (1964) CAPM, the Fama and French (1993) three-factor model and the Carhart (1997) four-factor model. The reversal effect during years $t+1$ and $t+2$ remains economically and statistically significant for all three factor models. Alphas range between -1.56% and -2.88% per year, with statistical significance at least at the 5%-level.[9] The strategy has a negative exposure to the value factor, consistent with stronger recent coverage increases for growth stocks.

[9] Analyzing alphas of the long and the short leg separately does not provide clear results about the origin of the premium: Depending on the factor model used, the alpha shifts between the legs.

It loads positively on the market factor, suggesting that the reversal is stronger when the market is in a downturn. We further explore the performance of the change strategy over time in Section 3.2. In Panel C, we report the alphas of the change strategy in the first three years after portfolio formation using a large set of factor models. These factor models usually combine the Carhart (1997) four-factor model with an additional factor, which measures a known driver of returns like for example the betting-against-beta factor by Frazzini and Pedersen (2014) (see Appendix A for variable descriptions). Regardless of the factor model we employ, the alpha in the first year after formation $t+1$ is always negative and statistically and economically significant. The alpha in year $t+2$ is also always negative and economically significant (more than 1% and up to 4.08% annualized), but statistically insignificant in 2 out of 10 models. The Max Return factor by Bali, Cakici, and Whitelaw (2011) and the UMO (undervalued-minus-overvalued) factor by Hirshleifer and Jiang (2010) explain around half of the effect during the second year. The existence of a relation between these factors and the coverage change effect seems reasonable. Lottery characteristics of the stocks in the Max Return strategy are likely to be positively associated with increases in media coverage. The UMO factor aims to identify common misvaluation across firms, and as Figure 4 and the positive exposure to the market factor in Panel B demonstrate, the performance of the change strategy seems to be positively linked to the level of market prices. For both factors, the direction of causality is unclear. Extreme returns as well as common misvaluation could be caused by media coverage, but could also cause media coverage.

In summary, there is strong evidence for attention-driven mispricing in the cross-section of stock returns. A strategy that aims to profit from the reversal effect after attention-driven price increases attains a Sharpe Ratio far above that of the momentum strategy.[10] Excess returns of this change strategy cannot be explained by standard factor models. Results for Fama and MacBeth (1973) regressions are reported in Section 5.1. In this multivariate analysis, we show that the negative effect of coverage increases on future stock returns is not explained by the consequently higher level of media coverage. This is an important test, since Fang and Peress (2009) find evidence for a negative relation between coverage levels and stock returns.

[10]The implementability of investment strategies (transaction costs and higher moments) is discussed in Section 5.3.

3.2 Which Firms and Periods Drive Results?

In this section, we analyze whether the coverage change effect is stronger for certain firms and periods. In Table 3, we analyze how limits to arbitrage (size and illiquidity) and characteristics of last year's stock returns (idiosyncratic volatility and momentum) interact with the change effect. We do this by sorting first by one of these variables, and then by coverage change. Panel A of Table 3 shows the results for the double sort by size and then by coverage change. We report the raw returns, Sharpe (1964) alphas and Carhart (1997) alphas for the strong increase minus strong decrease portfolios within each size quintile in the two years after formation ($t+1$ and $t+2$), i.e. in the years where we find the reversal. We also report the difference of the coverage change effect between the extreme size quintiles ('5-1') and the mean of the coverage change effect across the five size quintiles ('mean'). The mean across the five size quintiles can be interpreted as the change effect controlling for size. It is always statistically and economically significant. The difference of the coverage change effect between large and small stocks ('5-1') is insignificantly positive in year $t+1$ and insignificantly negative in year $t+2$. Hence there is no evidence for a stronger impact-reversal pattern for small (or large) stocks. Actually, the effect vanishes for the smallest stocks. Results for the double sort with Amihud (2002) illiquidity in Panel B provide further evidence that the effect is not driven by very illiquid stocks. On the contrary, it is weakest within the quintile of the most illiquid stocks. Panel C provides a more significant interaction: The change effect is systematically stronger for stocks with high idiosyncratic volatility. This interaction is economically significant. For all factor models, the change effect increases by more than 2.50% per year in high relative to low idiosyncratic volatility stocks. This difference in the change effect is also statistically significant for the Carhart (1997) model in year $t+1$ and Sharpe (1964) CAPM in year $t+2$. In Panel D, we find stronger reversal effects in year $t+1$ for stocks with extreme returns during the formation year t, consistent with the evidence from Panel C. In year $t+2$, the reversal effect is much stronger for winner stocks (by up to 3.84% per year). It is plausible that overall winner stocks were more overvalued than loser stocks, since attention-driven trading happens mostly on the buy-side due to short sale constraints. Hence the overvaluation of stocks should be larger in the winner quintile.

[Table 3 here.]

In Table 4, we analyze the strength of the change effect over time. One could expect the overvaluation of coverage increase stocks to reverse particularly strongly and quickly during 'bad times'. The returns of the change strategy during the dot-com bubble (Figure 4) and the positive exposure to the market factor in Panel B of Table 3 already provide some evidence in line with this hypothesis. We now run regressions of the coverage increase minus coverage decrease returns from above on a dummy that equals one during NBER recession months (Panel A of Table 4) or after months with high aggregate uncertainty, as measured by above-median average idiosyncratic volatility (Panel B). The evidence is in line with stronger reversal during times of recession and high uncertainty. While the alpha is significantly negative also during non-recession months, it more than doubles in magnitude during recession months in year $t + 1$. This interaction is statistically significant at the 5%-level for raw long-short returns, the Sharpe (1964) CAPM and the Fama and French (1993) three-factor model. In year $t + 2$ the interaction is insignificant. NBER recessions are announced only after the realization, so that this time-variation of returns of the change effect cannot be exploited by investors. Hence, we use aggregate uncertainty, measured by above-median average idiosyncratic volatility during the last month, as a proxy for 'bad times' which is available before portfolio formation. The interaction is statistically significant at the 5%-level (1%-level) in year $t+1$ (year $t+2$) for all factor models. The reversal effect actually nearly vanishes during times of low aggregate uncertainty, when annualized alphas are around 1%. During times of high aggregate uncertainty, they range between 3.60% and 4.44% per year. Hence, the reversal effect after attention-driven overvaluation is concentrated in times of high aggregate uncertainty.[11]

[Table 4 here.]

In summary, we find that the predictable reversal of price increases among stocks with increases in media coverage is not driven by small or illiquid firms (limits to arbitrage). It is stronger for stocks with high idiosyncratic volatility and for winner stocks. And it is concentrated in 'bad times', i.e. recessions or times of high uncertainty.

[11] We also test for interaction with Baker and Wurgler (2006) sentiment, but find no economically or statistically significant effect (unreported).

3.3 The Role of Article Tone

In this section, we analyze the interaction between the change effect and article tone. It seems plausible that positive coverage of strong increase stocks should amplify the overvaluation and the subsequent reversal effect. To analyze tone, we use LexisNexis media coverage of national newspapers from 1973 to 2013. Using not just New York Times coverage, but also Wall Street Journal, Washington Post, and USA Today coverage increases the number of articles available for the tone measure. We first repeat the tests from Table 2 using univariate sorts and standard factor models and our new measure of media coverage to check whether results are robust.[12] In Panels A and B of Table 5, we report raw returns and alphas of the coverage change portfolios for national newspaper coverage from 1973 to 2013. Most importantly, our main conclusions remain the same: After an impact during year t, prices revert over the subsequent two years. Relative to the New York Times Chronicle sample (1926-2014), the economic significance of the reversal increases slightly and more of the reversal happens in the first year after formation. This may indicate that markets have become faster in correcting misvaluation. The main difference relative to the 1927-2014 New York Times Chronicle sample is the decrease of the contemporaneous impact in year t, so that there is now a complete reversal after two years ($+0.47\% - 0.27\% - 0.20\% = 0.00\%$).

[Table 5 here.]

In Panel C of Table 5, we sort firms first by the average article tone during the formation year into three portfolios, and then—within each tone portfolio—by coverage change. We measure article tone by the fraction of negative words according to the Loughran and McDonald (2011) dictionary. We report returns of each portfolio and the excess return and alphas of coverage increase over coverage decrease portfolios for each tone portfolio. The reversal effect in year $t+1$ is about twice as large for firms with positive tone articles. However, the difference is not statistically significant. In year $t+2$, this pattern reverses and the reversal comes mainly from firms with negative tone articles in the formation year. However, this difference in the change effect between the negative and positive tone portfolio is only statistically significant for the Sharpe (1964) CAPM alpha. Hence, stocks with negative coverage during the formation year tend to have a delayed reversal relative to stocks with

[12]Using instead of national coverage New York Times coverage only does not qualitatively change our results.

positive coverage during the formation year. We find no evidence that the reversal is generally stronger for stocks with positive coverage during the formation year. However, we do find a base effect of tone: Stocks with positive coverage during year t underperform stocks with negative coverage during year t in the first year after formation, which is in line with an overreaction to media tone.

In summary, we find that the impact-reversal pattern found for New York Times coverage changes from 1924 to 2013 holds when we switch to national newspaper coverage changes from 1973 to 2013. We find no evidence that the return reversal after coverage increases is stronger for stocks with positive coverage during the formation year. We do find some evidence of a general overreaction to media tone however.

4 The Effect of the Level of Media-Coverage

In this section, we analyze the relation between the level of media coverage and stock returns. We first test whether there is a robust return difference between high coverage and low coverage stocks (Section 4.1). We then check whether this return difference is higher for certain firms and times (Section 4.2). Next, we analyze the role of article tone for the effect of coverage levels on stock returns (Section 4.3). Finally, we explore possible drivers of the effect of coverage level on stock returns (Section 4.4). This section is related to the analysis of Fang and Peress (2009). We provide a replication of their results and a reconciliation with our results in Appendix C.

4.1 The Level Effect

The level of media coverage is strongly associated with firm size. Size and coverage exhibit an average cross-sectional correlation of 0.44 from 1926 to 2013 (see Panel C of Table 1). Hence, it is crucial to properly control for size when analyzing the effect of coverage levels on stock returns. Following the previous literature (e.g., Hong, Lim, and Stein (2000), Nagel (2005), and Hillert, Jacobs, and Müller (2014)), we adjust media coverage levels for firm size cross-sectionally when we sort on coverage levels.[13] Size-adjusted coverage is calculated as the residual of a cross-sectional regression of $ln(1 + NUM_{i,t})$, the log of one plus the

[13]In Section 5.1, we use the log-level of media coverage directly in Fama and MacBeth (1973) regressions.

number of articles on firm i in year t, on $ln(Size_{i,t})$. The average coefficient of $ln(Size_{i,t})$ in this regression is 0.39, indicating that a 1% increase in firm size increases media coverage by 0.39% (see Specification (1) of Table D1 in Appendix D). Residual coverage is by construction uncorrelated with firm size.

When we sort stocks into quintile portfolios by residual coverage of year t, we obtain a surprising pattern. In Panel A of Table 6, we show that returns of high coverage level stocks exceed returns of low coverage level stocks in years $t+1$ to $t+3$. These excess returns are all statistically significant at the 5%-level (year $t+1$) or 1%-level (years $t+2$ and $t+3$). They are economically significant, ranging from 1.80% for year $t+1$ to 3.12% for year $t+3$. Suprisingly, the premium of high coverage over low coverage stocks increases as the gap to the formation year increases. This effect becomes more extreme when we control for standard factor models in Panel B. Alphas of the long-short portfolio are statistically insignificant in year $t+1$ and become statistically and economically significant for years $t+2$ and $t+3$.

[Table 6 here.]

A simple explanation for the reduced return difference in the first year(s) after formation is omitted variable bias: We find a strong positive correlation between coverage levels and coverage changes at 0.19 (see Panel C of Table 1). The change effect we analyze in Section 3 leads to low returns of coverage increase stocks in the two years after portfolio formation. Hence, not controlling for coverage changes will bias the effects measured for coverage levels. In Panel C of Table 6, we show portfolio characteristics for the five residual coverage quintiles in the simple model without controlling for coverage changes (top) and in an extended model with additional control variables including coverage changes (bottom). The top table shows that—as desired—media coverage increases from the low to the high residual coverage portfolio, and firm size is uncorrelated with residual coverage. In particular, average firm size differs by just 4.1% in quintiles one and five. However, average changes in coverage from year $t-1$ to year t increase from -21.2% in the low coverage quintile to $+19.0\%$ in the high coverage quintile in the simple model. Even the changes in the previous year are positively related to today's coverage levels and range from -2.5% to $+7.3\%$. These differences confirm that our simple model of residual coverage does not properly control for coverage changes. Thus, we expand our residual coverage model by adding the log change in articles in years $t-1$ and t as additional controls. To avoid omitted variable bias, we furthermore include year t's return and its absolute value.[14] Besides, Fang and Peress (2009) and Hillert, Jacobs, and Müller (2014) find that NASDAQ firms are much less likely to receive newspaper coverage. Hence, we control for the exchange stocks are listed on. The estimation results are displayed in Specification (2) of Table D1 in Appendix D. All independent variables are highy significant. Coverage increases in years $t-1$ and t and more extreme returns in year t are associated with higher levels of media coverage. Firms listed at AMEX (NASDAQ) receive 18% (46%) less media coverage than their NYSE counterparts.

We now rerun portfolio sorts into five residual coverage portfolios based on the extended residual coverage model. Results are reported in Table 7. In Panel A we can observe that high coverage stocks still outperform low coverage stocks by a statistically (at the 1% -level) and economically (2.76% per year) significant margin. In line with expectations, the return effect now declines as the gap to the formation year increases. The return premium for high coverage stocks over low coverage stocks is highly persistent: Even in the third year after portfolio formation, we find a highly significant return difference. In a Patton and Timmermann (2010) montonicity test, we can reject the null of 'decreasing relation' at the 5%-level (10%-level) for the first (second) year after portfolio formation.

[Table 7 here.]

In Panels B and C of Table 7, we test whether known determinants of the cross-section of stock returns explain this positive coverage level return effect. In Panel B, we run regressions of high minus low coverage portfolio returns on the Sharpe (1964) CAPM, the Fama and French (1993) three-factor model, and the Carhart (1997) four-factor model. The coverage effect is reduced by around one quarter, but remain statistically and economically significant. Alphas during years $t+1$ to $t+3$ are always statistically significant at the 1%-level and in the range between 1.68% and 2.28% per year.[15] The coverage strategy has a positive exposure to the market return and a small growth stock tilt. In Panel C, we report alphas (without factor loadings) for the first three years after formation using a set of factor models. These factor models usually combine the Carhart (1997) four-factor model with an additional factor, which measures a known driver of returns like for example the betting-against-beta factor

[14] A residual coverage model without these two variables leads to a simlar or a slightly stronger coverage level effect of 0.22%, 0.30%, and 0.27% in years $t+1$, $t+2$, and $t+3$, respectively.

[15] Analyzing alphas of the long and the short leg separately does not provide clear results about the origin of the premium: Depending on the factor model used, the alpha shifts between the legs.

by Frazzini and Pedersen (2014) (see Appendix A for variable descriptions). Regardless of the factor model we employ, the alphas in the first three years after formation are always statistically and economically significant.

[Figure 6 here.]

As for the change effect, we now graphically analyze the performance of the level strategy. We buy high coverage quintile stocks and sell low coverage quintile stocks, as measured by residual coverage in year t. We hold these stocks for year $t+1$, rebalancing to equal weights each month. In Figure 6, we display the performance of the level strategy from 1927 to 2014, along with cumulative returns of the four factors from the Carhart (1997) model. Returns of the level strategy are normalized to have the same volatility as the market index return.[16] Hence, a comparison of Sharpe Ratios for 1927-2014 can be made by comparing the level of cumulative returns in 2014. Overall, the strategy of buying high coverage stocks and selling low coverage stocks performs very well. It attains a Sharpe Ratio of 0.48, which is close to that of the momentum strategy (0.49).

The robust positive relation between media coverage levels and stock returns discovered in this section raises the question of how our result fits together with Fang and Peress (2009)'s result that no coverage stocks outperform high coverage stocks. In Appendix C, we provide a replication of their results and a reconciliation with ours. We start by using their sample and methodology together with our media data to replicate their results. The replication confirms their results not only qualitiatively but also quantitatively. When we expand their sample of NYSE and 500 randomly selected NASDAQ stocks to the entire cross-section of stocks the return difference between no coverage and high coverage stocks drops sharply and becomes even negative in the Carhart (1997) four-factor model. Expanding their ten year LexisNexis sample to the full 1973 to 2013 LexisNexis national coverage data and using a portfolio holding period of twelve months, the Carhart (1997) four-factor alpha becomes significantly negative. Motivated by the high correlation between firm size and coverage levels, we analyze size double sorts in the last step. Controlling for size deciles, the no coverage minus high coverage premium turns consistently negative. Taken together, the inclusion of all stocks,

[16]Long-short returns of the level strategy and the other factor returns are divided by their own volatility and multiplied by the volatility of market returns, which is equivalent to using leverage to make all return series comparably risky.

the extension of the holding period from one month to twelve months, and controlling for size turn the significantly positive no coverage minus high coverage premium from Fang and Peress (2009) into the significantly negative premium we find for low coverage over high coverage stocks.

In summary, this section shows strong evidence for a positive return premium of high media coverage stocks relative to low media coverage stocks. A strategy that aims to profit from the coverage effect attains a Sharpe Ratio nearly identical to that of the momentum strategy.[17] Excess returns of this level strategy cannot be explained by standard factor models.[18]

4.2 Which Firms and Periods Drive Results?

In this section, we analyze whether the coverage level effect is stronger for certain firms and periods, analogous to Section 3.2. In Table 8, we analyze how limits to arbitrage (size and illiquidity) and characteristics of last year's stock returns (idiosyncratic volatility and momentum) interact with the level effect. For this purpose, we run dependent double sorts by each of these variables and residual coverage. In Panel A, we find strong evidence that the level effect is stronger for small firms, in particular during the first year after portfolio formation. The difference in raw returns between the high and the low coverage quintile between large and small stocks is 3.84% per year. This is statistically significant at the 1% level, and it cannot be explained by the Sharpe (1964) CAPM or the Carhart (1997) four-factor model. The evidence in Panel B points in a similar direction, but is not statistically significant. The level effect seems to be stronger for illiquid stocks. The evidence in Panel C shows a clear interaction of idiosyncratic volatility with the coverage level effect. The level effect is driven by stocks with above median idiosyncratic volatility. This interaction is statistically significant at the 1%-level for raw returns, Sharpe (1964) alphas and Carhart (1997) alphas in years $t+1$ and $t+2$. The economic significance is large: The level effect in the high idiosyncratic volatility quintile is between 4.68% and 7.20% per year higher than in the low idiosyncratic volatility quintile. In Panel D, stocks are first sorted by the formation year's returns and then by residual coverage. As expected based on the results

[17]The implementability of investment strategies (transaction costs and higher moments) is discussed in Section 5.3.

[18]Results for Fama and MacBeth (1973) regressions are reported in Section 5.1. In this multivariate analysis, we show that the positive effect of coverage levels on future stock returns is found, even when we use the log of coverage directly, without estimating residual coverage in a first stage.

for idiosyncratic volatility, the extreme portfolios tend to exhibit the largest level effect. However, there is also an asymmetry. The level effect is particularly strong among losers. The increase in the level effect from winners to losers ranges from 2.40% to 5.16% and is statistically significant for most specifications during years $t + 1$ and $t + 2$.

The dependent double sort by momentum in Panel D is related to the interaction between media coverage and momentum analyzed by Hillert, Jacobs, and Müller (2014). They find that the momentum effect and the subsequent reversal are particularly pronounced within high media coverage stocks. Hence, we would expect a particularly high (low) coverage level effect for winner (loser) stocks during the continuation period, and a particularly low (high) coverage level effect for winner (loser) stocks during the reversal period. Year $t+2$, the second year after formation is clearly during the reversal period and we consistently find a 3.60% lower level effect for winner stocks from year t. Due to the low frequency of media coverage measurement (December returns in year $t+1$ may be sorted by media coverage from January in year t), it is hard to say when the enhanced continuation effect of high coverage stocks should be found. Additionally, the usage of last year's stock return as a control variable in the residual coverage model might have an impact on the media-enhanced continuation effect. When restricting the return analysis to the first quarter (first six months) of year $t+1$, the level effect is larger for winner stocks relative to loser stocks from year t by annualized 2.94% (by annualized 2.33%). Hence our results are consistent with the media-enhanced momentum effect found by Hillert, Jacobs, and Müller (2014).

[Table 8 here.]

We also test for interaction of the level strategy returns with NBER recessions, times of high aggregate uncertainty, and Baker and Wurgler (2006) sentiment. We do not find economically or statistically significant effects (unreported).

In summary, we find that the outperformance of high coverage stocks increases among stocks of small firms and illiquid stocks (limits to arbitrage). Furthermore, the level effect is stronger for stocks with high idiosyncratic volatility and for loser stocks.

4.3 The Role of Article Tone

In this section, we analyze the interaction between the level effect and article tone. Again, we use LexisNexis media coverage of national newspapers from 1973 to 2013. We first rerun the tests with univariate sorts and standard factor models from Table 7 with our new measure of media coverage to check whether results are robust.[19] First, we sort by residual coverage including zero coverage stocks, as before. In Panel A of Table 9, we report raw returns of the coverage level portfolios using national newspaper coverage. Most importantly, our main conclusions remain the same: High coverage stocks from year t outperform low coverage stocks significantly during years $t+1$ to $t+3$. The magnitude of the effect decreases slightly, but remains economically significant. The effect is also robust to controlling for standard factor returns as shown in Panel B. Since the measurement of tone requires strictly positive coverage, we now analyze the level effect for the set of non-zero coverage stocks. Panels C and D report the results. The level effect becomes stronger when zero coverage stocks are excluded. Its economical significance increases from 2.04% to 2.88% per year. It is always statistically significant at the 1%-level and still cannot be explained by standard factor models.

[Table 9 here.]

In Panel E of Table 9, we sort firms first by the average formation year article tone based on the Loughran and McDonald (2011) dictionary of negative words into three portfolios, and then—within each tone portfolio—by residual coverage. We report returns of each portfolio and the excess return and alphas of high coverage over low coverage portfolios for each tone portfolio. The level effect does not monotonically interact with tone. Taking years $t+1$ and $t+2$ together, the neutral tone stocks tend to have the strongest level strategy returns. Like in the double sort on article tone and changes in coverage, this double sort also indicates that there might be an overreaction to article tone. Stocks with the most positive article tone in year t subsequently underperform relative to their negative tone counterparts.

In summary, we find that the positive premium of high over low coverage stocks found for New York Times coverage over 1926-2013 holds when we switch to national newspaper coverage levels over 1973-2013. We find no evidence that the premium is stronger for stocks with positive or negative coverage during the formation year.

[19] Using New York Times coverage only, instead of national coverage in this section does not qualitatively change our results.

4.4 What Drives the Level Effect?

The strong positive relation between the level of media coverage and stock returns contradicts the investor recognition hypothesis by Merton (1987). What else links the visibility associated with high levels of media coverage to returns? If high profitability due to high coverage is not priced, this could explain our level effect. Tetlock (2014) suggests there are two ways media coverage could improve firm profitability. First, coverage could increase sales and profits, similar to product market advertising. Second, the media could play a monitoring role and prevent value-destroying behavior by managers (e.g. empire building). We now analyze these two potential explanations.

[Table 10 here.]

In Panel A of Table 10, we report results from Fama-MacBeth regressions of three-year growth in sales and profitability on media coverage and control variables. Specifications are based on Novy-Marx (2013) (for sales and gross profitability) and Fama and French (2000) (for operating profitability). Results are consistent with the hypothesis that high levels of media coverage increase sales and profitability by creating visibility for a firm's products. A one standard deviation increase in coverage levels is related to a 0.49% and a 0.82% increase in operating profitability growth for New York Times Chronicle and national coverage, respectively. What about the effect of *changes* in media coverage? Increases of media coverage also have a significantly positive effect on sales and gross profitability. However, it seems that these increases in sales do not result in higher bottom line operating profits, see Specifications (5) and (6). In Panel B of Table 10, we analyze the relation between media coverage and three-year growth in investments (growth of total asset and CAPX) and employees. We use the same control variables as for the sales and gross profitability specifications in Panel A. Higher levels of coverage are consistently associated with growing firms. Future total assets, CAPX, and the number of employees increase for high coverage firms. Firms with increases in coverage also exhibit a growing workforce. The impact of media coverage increases on asset growth is positive, but only statistically significant when we use the larger dataset from New York Times Chronicle. Results on the relation between coverage changes and CAPX growth are mixed and statistically insignificant. Overall, results from Panels A and B are consistent with Tetlock (2014)'s first suggestion that higher levels of media coverage increase sales and profits. In contrast, the sales and investment growth of firms with year-to-year increases in coverage at a given coverage level does not lead to higher bottom line profits, consistent with more inefficent growth of hyped firms.

The higher operating profitability growth of high coverage firms could also be explained by more efficient management due to monitoring through the media. This would be consistent with Miller (2006)'s finding that the press acts as a 'watchdog for accounting fraud'. Along with Jaroszek, Niessen-Ruenzi, and Ruenzi (2015)'s finding that fraud risk is not properly priced, a monitoring effect of the media could explain the return premium we find for high coverage stocks. More generally, corporate governance might be improved due to high media coverage, consistent with Dyck, Volchkova, and Zingales (2008)'s evidence that media coverage leads to a reduction in corporate governance violations. Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2009) find that good-governance firms provide positive abnormal returns relative to bad-governance firms. Hence, a positive association of media coverage with good governance would provide evidence in favor of this monitoring explanation of our level effect.

To check whether high coverage has a positive effect on governance, we regress changes in the entrenchment index (E Index) from Bebchuk, Cohen, and Ferrell (2009) on media coverage and control variables. The E Index is a count of the number of entrenchment provisions a firm has (e.g. golden parachutes or poison pills). We use panel regressions with industry and year fixed effects, double-clustered standard errors, and the same control variables as in the previous regressions.[20] As hypothesized higher levels of media coverage are associated with improved corporate governance, i.e. the entrenchment index decreases as the number of articles about a firm increases (specifications (1) and (2) of Panel C in Table 10). Interestingly, the effect of *changes* in coverage is positive. Firms with increasing coverage exhibit predictably more entrenchment a few years later. This is consistent with managers of hyped firms engaging in inefficient activities. In addition to the E Index, we analyze the effect of media coverage on the O ('other provisions') Index. The O Index is constructed from the subset of the 24 provisions that make up the Gompers, Ishii, and Metrick (2003) (GIM) governance index, but are not included in the E Index. Bebchuk, Cohen, and Ferrell (2009) find that these 18 provisions are not (or sometimes even positively) related to firm value, so that excluding them reduces noise relative to the GIM Index. Consistent with this,

[20]The E Index is available starting only in the 1990s and firm-level observations are updated every two to three years, so that we do not have enough periods for Fama-MacBeth regressions.

we find that the O Index does not decrease more strongly for high coverage firms.

Overall, results are in line with both of Tetlock (2014)'s suggestions. First, high media coverage levels predict high growth of firms' sales and profits, consistent with media coverage as a substitute for product market advertising. Second, high media coverage levels predict improvements in corporate governance, consistent with the press as a monitoring mechanism. If good governance is not properly priced—as suggested by the literature—this explains the positive association between media coverage level and stock returns.

5 Bringing Together the Change and the Level Effect

In this section, we bring together our analyses of media coverage changes (Secion 3) and levels (Section 4). In Section 5.1, we run Fama and MacBeth (1973) regressions to jointly test the impact of coverage levels and changes. We then analyze whether the relation between newspaper coverage and stock returns was different for the pre-1960 newspaper-dominated subperiod, the 1961-1995 TV-era subperiod, or the post-1996, internet-age subperiod (Section 5.2). In Section 5.3 we analyze the implementability of the two strategies by looking at transaction costs and return characteristics (higher moments) of the strategies.

5.1 Multivariate Evidence

In Table 11, we report results of Fama and MacBeth (1973) regressions on the firm-year level. To predict year $t+1$ returns, we include the log-level of media coverage from year t, as well as the log-changes in media coverage in years $t-1$ and t. We always include firm-size as a control variable (see reasoning in Section 4.1). Results in all specifications are strong and consistent with the above analyses. The level of media coverage is positively associated with stock returns, whereas the previous years' changes in media coverage are negatively associated with this year's stock returns. These effects are statistically highly significant and beat hurdle rates that take into account multiple testing, see Harvey, Liu, and Zhu (2013). The economic significance for Specification (1) of Panel A is in line with results from portfolio sorts. A one-standard-deviation increase in the level of coverage implies a $0.0106 \cdot 1.5235 = 1.61\%$ increase in annual returns. A one-standard-deviation increase in coverage change in year t implies a $-0.0187 \cdot 0.6013 = -1.13\%$ decrease in returns.

[Table 11 here.]

In Specifications (2) to (5), additional control variables are added. Specification (2) includes the stock's market beta, book-to-market ratio, and last year's return (market, value, size, and momentum analogous to the Carhart (1997) factor model). To make sure that non-linearities in size do not drive our results, we add NYSE size decile dummies in Specification (3).[21] Coefficients hardly change. In addition to size dummies, we include Fama-French 12 industry dummies in Specification (4). Again, our results are stable: change and level effect are present even within industry-years. In particular for the change effect, this indicates that it is not just a result of the media hyping entire industries. In Specification (5), we include the returns of the two years previous to last year to control for long-term reversal, the Amihud (2002) illiquidity ratio, and idiosyncratic volatility. We also include the level and the change of stock turnover in the previous year to make sure that the negative relation between trading activity and future returns found by Brennan, Chordia, and Subrahmanyam (1998) does not drive our results. Some of these control variables may be problematic, in particular the returns from previous years, volatility and trading activity, since they might be partially caused by media coverage. Indeed the coefficients of coverage changes are reduced by nearly 50% in Specification (5), indicating such an association between these controls and media coverage. However, coefficients for coverage changes are still statistically and economically significant. The coverage level coefficient is not reduced by including these control variables.

In Specifications (6) and (7), we use the most restrictive specification from above to test whether employing 1975-2013 LexisNexis New York Times coverage or LexisNexis national newspaper coverage changes results. It does not. Coefficients remain statistically significant. The economic significance implied by coefficients remains high as well. A one-standard-deviation increase in the level of LexisNexis New York Times (national newspaper) coverage implies a $0.0107 \cdot 0.7000 = 0.75\%$ ($0.0106 \cdot 0.9906 = 1.05\%$) increase in annual returns. A one-standard-deviation increase in last year's New York Times (national newspaper) coverage change implies a $-0.0142 \cdot 0.3849 = -0.55\%$ ($-0.0142 \cdot 0.5593 = -0.79\%$) decrease in returns. The economically stronger results for national newspaper coverage (Column (7)) relative to New York Times coverage (Column (6)) are expected because four newspapers offer a better proxy for a firm's visibility than one.

[21] Adding $ln(size)^2$ instead does not qualitatively change results (unreported).

In Panel B of Table 11 we report additional robustness checks. First, we check whether controlling for the ownership structure of a firm influences the effect of coverage levels on stock returns. One could argue that higher levels of visibility attract retail investors who add noise trader risk to a stock's return. This noise trader risk might drive out well-diversified arbitrageurs with lower return expectations. In the model of Lintner (1969), this would lead to higher expected returns of high coverage stocks. Indeed, we find that media coverage is positively associated with the number of shareholders in a company and negatively associated with mutual fund ownership. These relations are statistically significant and economically strong.[22] However, ownership does not seem to be the driving force behind the level effect. When we control for mutual fund ownership and the number of shareholders in Specifications (1), (3), and (5) of Panel B, the level effect remains highly significant. Second, we check whether advertising explains the reversal effect. Lou (2014) finds that increases in advertising lead to an impact-reversal pattern in returns. Since advertising expenditures are positively related to media coverage (see Gurun and Butler (2012) and Focke, Niessen-Ruenzi, and Ruenzi (2015)), omitting advertising from our regression might lead to a downward bias in the coverage change effect. We add advertising expenditures in Specifications (2), (4), and (6), which reduces the number of firms in our panel significantly. Nevertheless, the coverage change effect remains economically and statistically significant.

5.2 Time Split

The importance of newspapers as an information source has diminished since the start of our panel in 1924. Until around 1960, newspapers were the major information channel for investors. From then until the mid-1990s, TV was the most important alternative media channel. Starting around 1995, the internet became widely used as an information source. Consequently, we analyze the relation between newspaper coverage and stock returns for the three subperiods in Table 12: 1926-1960 (Panel A), 1961-1995 (Panel B), and 1996-2014 (Panel C). For the latest subperiod, we additionally report results based on LexisNexis national newspaper coverage, including (Panel D) and excluding (Panel E) the financial crisis.

[22] A 1% increase in the number of shareholders (mutual fund ownership) is associated with a 0.12% (−0.84%) change in media coverage. See Specification (5) of Table D1 in Appendix D.

[Table 12 here.]

We analyze equal-weighted portfolios sorted by log-changes in coverage and residual levels of coverage, as defined in Sections 3 and 4. We report the monthly 5-1-returns and their CAPM and Carhart (1997) alphas for years t+1 to t+3.

In the early period, there is no significant change effect. In the later two periods, it is economically and statistically significant. Particularly, during the most recent period, which includes the dot-com bubble, the two year reversal amounts to more than 8%. The results for the level effect are stable in the first two subperiods, i.e. until 1995. In the internet era, the level effect is statistically insignificant and economically smaller. This observation seems to be related to the recent financial crisis since the weak performance is mainly driven by a return of −13.39% in 2008. Similarly, in 1929, the beginning of the Great Depression, the return of the level strategy amounts to −10.58%. This makes sense since firms that might be hit first and strongest by an economic crisis are likely to receive a lot of media coverage before the crisis. For instance, American International Group (AIG) Inc., General Motors Corp., and Washington Mutual Inc. were all high coverage firms in 2007 and severly hurt by the 2008 crisis. Excluding the year 2008 (see Panel E of Table 12) results in a statistically and economically strong level effect suggesting that the press continues to play an important role in the internet era.

5.3 Coverage-Based Investment Strategies

In this section, we analyze whether the coverage change and the coverage level strategies are implementable as profitable investment strategies. Before looking at trading costs, we discuss potential hidden risks of these strategies by looking at higher moments. Figures 5 and 6 display cumulative returns, which are all normalized to have the same volatility. Both media coverage based strategies seem to perform very well, even compared to the momentum, one of the major asset pricing puzzles. However, there might be hidden risks, such as negative skewness or high kurtosis of strategy returns. A comparison with the four factor returns from the Carhart (1997) model for 1927 to 2014 alleviates these concerns. The skewness of the coverage change (level) strategy is at +0.87 (+0.40). The skewness of the two coverage strategies compares favorably to the skewness of momentum (−3.10) and market-returns (0.20). Value (2.13) and size (1.96) are more positively skewed. The excess kurtosis of the coverage change (level) strategy is at +9.97 (+7.39) which is lower than the ones of momentum (30.82), value (21.90), market-returns (10.68), and size (22.19).

[Figure 7 here.]

It turns out that many of the crashes of one of the two media coverage strategies occur simultaneous to an upward spike in the other strategy. The correlation between both return series is -0.12. Combining both strategies and giving each strategy a weight of 50% helps to further diversify crashes. The skewness (excess kurtosis) of the combined strategy is now at 0.76 (6.88). Figure 7 shows that the Sharpe Ratio of this strategy (0.89) easily beats that of the other four strategies. It also reveals that—taken together—the two media coverage strategies have not performed well since the dot-com crash. As discussed in Section 5.2, this bad performance is driven by the level effect's abysmal returns during the financial crisis of 2007 and 2008.

[Table 13 here.]

Another issue related to the implementability of our strategies might be transaction costs. To see whether our results are robust to a restriction of the stock universe to liquid stocks, we obtain the Corwin and Schultz (2012) spread proxy and drop stocks from our sample, which are above the 70^{th} percentile of the spread distribution at the end of the formation year. We additionally refrain from rebalancing monthly, but rather rebalance only once at the beginning of each year. Table 13 shows that returns of the change strategy are somewhat reduced by these modifications but are still significant (Panel A). The returns of the level strategy hardly change (Panel B) as a response. We make a back-of-the-envelope estimate of direct transaction costs of a strategy that combines two overlapping long-short investment strategies with two-year holding periods, giving each a weight of 50%. In the first strategy, we use the last year as the formation year. In the second strategy, we use the second to last year as the formation year. The turnover of the change (level) strategy after the two year holding period is at around 85% (33%) in both legs.[23] For the change (level) strategy,

[23]These transition probabilities from extreme portfolios demonstrate an important difference between coverage changes and residual coverage levels. Whereas changes revert quickly, residual coverage levels are highly persistent. This difference between coverage changes and levels is consistent with our interpretation of changes as a proxy for short-term changes in visibility ('attention') and levels as a proxy for long-term, persistent levels of visibility ('recognition').

historical average Corwin and Schultz (2012) spreads in the traded stocks have been at 1.27% (1.01%). Hence, annual trading costs due to spreads have historically been around $0.85 \cdot 1.27\% = 1.08\%$ ($0.33 \cdot 1.01\% = 0.33\%$) per year. At annual returns of 1.92% (2.94%) this leads to after-spread returns of around 0.84% (2.61%) for the change (level) strategy. Hence, the change strategy may be unprofitable after trading costs, consistent with limits to arbitrage. The level strategy however seems to be profitable even after taking into account trading costs.[24]

In summary, we find that historical returns of the media coverage based investment strategies do not exhibit crash risks. A back-of-the-envelope estimate indicates that the profits of the change strategy may be hard to obtain after tradings costs, whereas the level strategy profits are clearly positive after considering direct transaction costs.

6 Conclusion

Exploiting a novel 90-year panel of media coverage on the firm-year level, we analyze the relation between media coverage and stock returns. We contribute to the literature by answering two research questions. We are the first to analyze the relation between changes in media coverage and stock returns. We find an impact-reversal pattern in stock returns consistent with attention-driven overvaluation, as proposed by Barber and Odean (2008): Stocks with increases in media coverage outperform stocks with decreases in media coverage during the formation year and underperform during the subsequent two years. Second, we reanalyze the relation between levels of media coverage and stock returns. Our result is clearly opposed to previous findings: Stocks with high media coverage significantly and persistently outperform their low coverage counterparts.

The level effect is hard to reconcile with theory. Merton (1987)'s investor recognition model and other market segmentation models usually suggest that higher visibility should be related to lower stock returns, because the typical investor of a highly visible firm requires a lower risk premium since she is better diversified. Mispricing could be an explanation: We find that firms with high media coverage exhibit future improvements in corporate governance and high future growth in sales, investments and profits. These associations are consistent

[24]This is a back-of-the-envelope calculation. We are aware of neglecting additional trading costs (e.g. price impacts, short sale costs, and costs of rebalancing to equal weights at the end of each year).

with media coverage being a value-creating monitoring mechanism. If good governance is not properly priced—as suggested by Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2009)—this explains the positive association between media coverage level and stock returns. Besides, the strong positive link between media coverage levels and sales growth is consistent with media coverage as an underestimated (free) substitute for product market advertising.

The results of our empirical analysis challenge the common view of media coverage causing a reduction of cost of capital in the long-run. The return pattern of the change effect indicates that increases in media coverage may indeed push up prices temporarily. This might enable firms and their managers to manipulate prices in the short-run (e.g., before IPOs, SEOs, M&A events or insider sales). In contrast, the permanent effects of coverage levels are not in line with reduced expected returns. However, they still suggest a positive role for the media: High media coverage is associated with improvements in corporate governance and increases in profitability. Since these increases in profitability are not adequately priced, the relation between media coverage levels and stock returns is positive.

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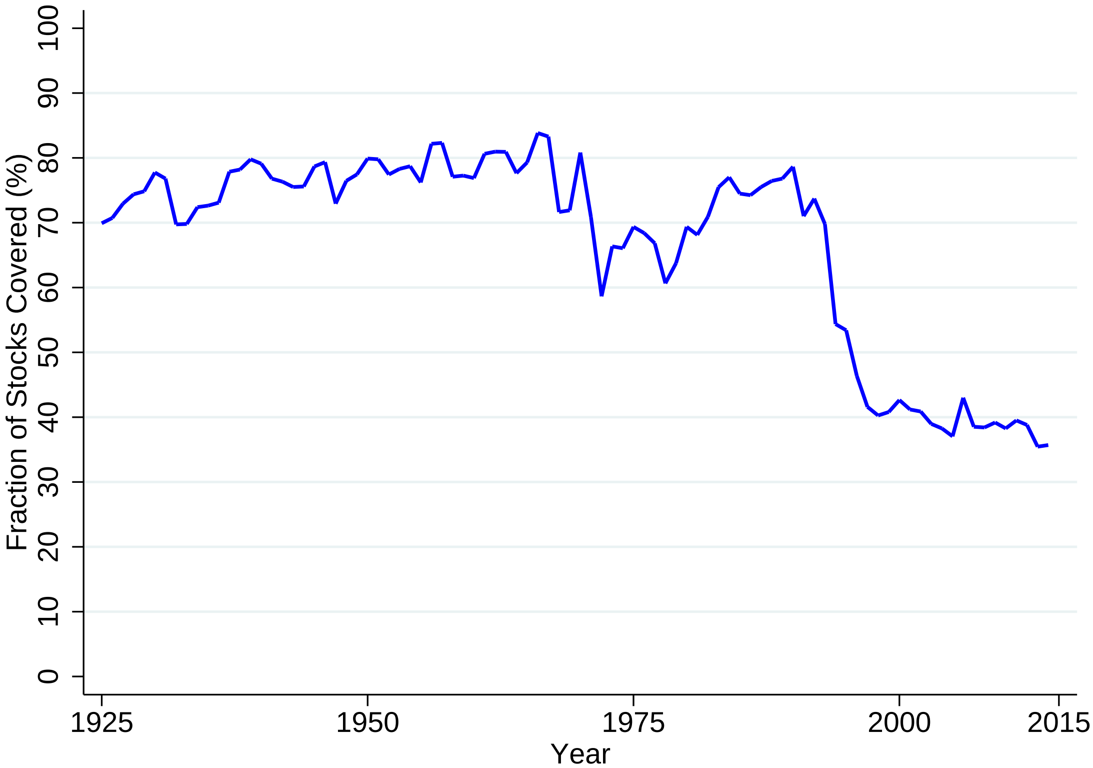
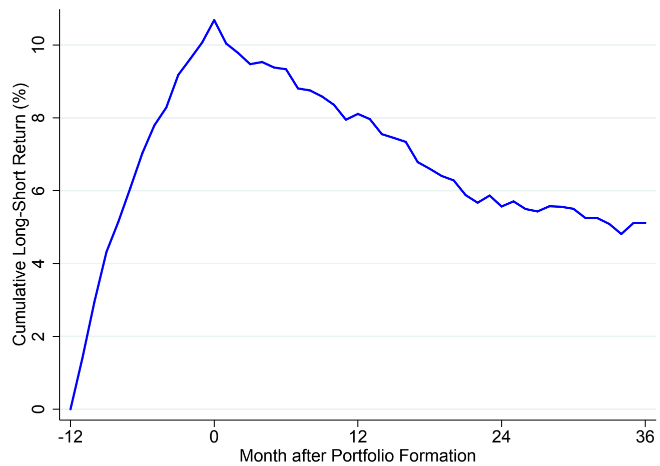
Figure 1: Fraction of Stock Universe with > 0 Coverage



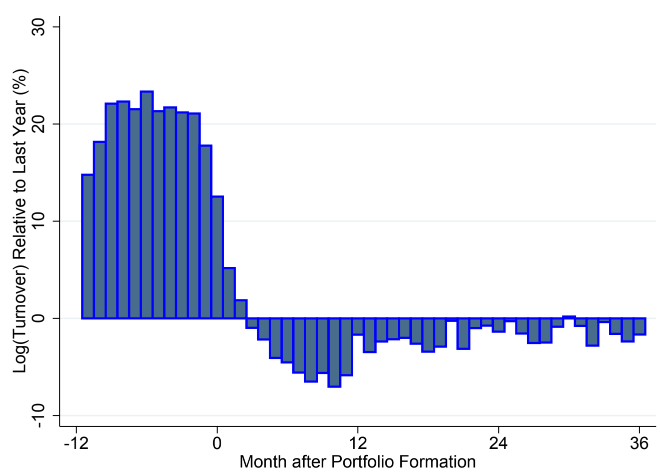
In this figure, we display the fraction of stocks with > 0 yearly NYT[c] coverage from 1926 to 2014. We consider all common stocks from the NYSE (starting 1926), AMEX (starting 1963) and NASDAQ (starting 1973) with a share price ≥ $1 at the end of the year.

Figure 2: Performance of Reverse Change Strategy Around Formation Year



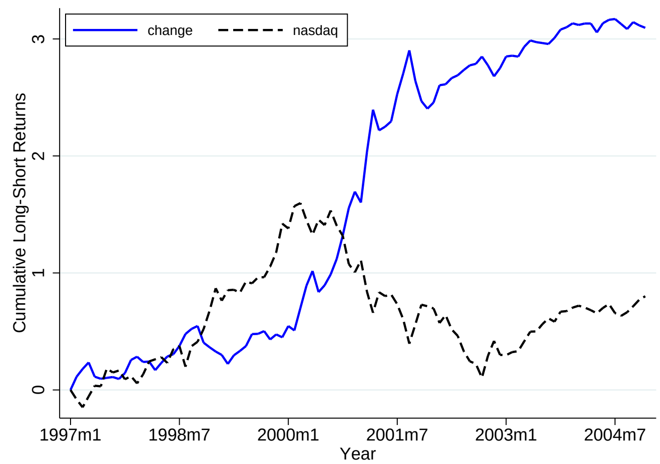
In this figure, we display the cumulative long-short returns of buying (selling) stocks with increases (decreases) in media coverage (see Section 3.1 for details) in the formation year, as well as the following three years.

Figure 3: Turnover of Change Strategy Around Formation Year



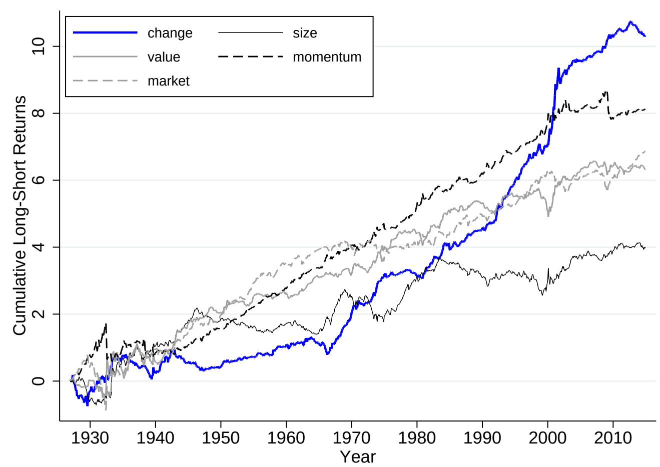
In this figure, we display the average abnormal turnover of the stocks traded in the Change strategy (see Section 3.1 for details) in the formation year, as well as the following three years.

Figure 4: Performance of Change Strategy Around Dot-Com Boom



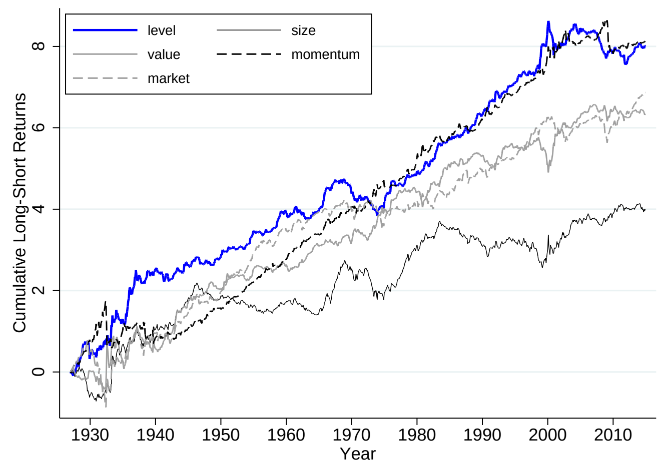
In this figure, we display the cumulative long-short returns of two trading strategies from 1997 to 2004. We report the performance of the NASDAQ Composite index in excess of the Treasury bill rate and the performance of the Change strategy (see Section 3.1 for details). All return series are normalized to have the volatility of the NASDAQ index returns.

Figure 5: Performance of Change Strategy



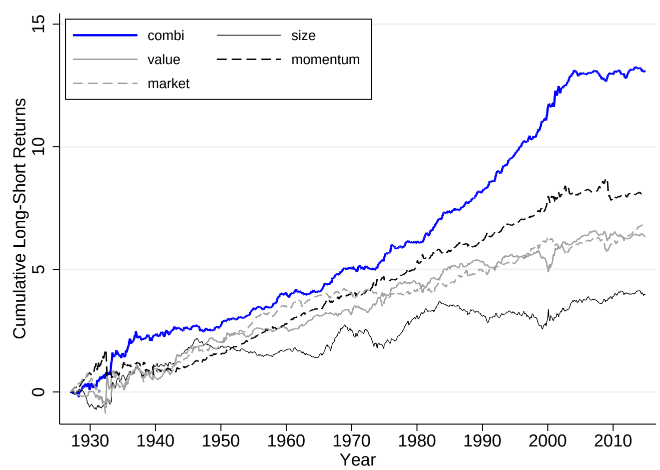
In this figure, we display the cumulative long-short returns of several trading strategies from 1927 to 2014. We report the performance of the four factors from the Carhart (1997) model, as well as the performance of the Change strategy (see Section 3.1 for details). All return series are normalized to have the volatility of the market index returns (Rm-Rf).

Figure 6: Performance of Level Strategy



In this figure, we display the cumulative long-short returns of several trading strategies from 1927 to 2014. We report the performance of the four factors from the Carhart (1997) model, as well as the performance of the Level strategy (see Section 4.1 for details). All return series are normalized to have the volatility of the market index returns (Rm-Rf).

Figure 7: Performance of Combined, $\frac{Change+Level}{2}$ Portfolio



In this figure, we display the cumulative long-short returns of several trading strategies from 1927 to 2014. We report the performance of the four factors from the Carhart (1997) model, as well as the performance of a strategy that equally weights the change strategy (see Section 3.1 for details) and the level strategy (see Section 4.1 for details). All return series are normalized to have the volatility of the market index returns (Rm-Rf).

Table 1: Summary Statistics – Media Coverage Data

Panel A: The Distribution of Media Coverage Measures								
Dataset	N	Mean	Std. Dev.	p25	p50	p75	p90	p99
NYT^C (1924-2013)	247,430	38.99	610.14	0	2	8	33	515
NYT^C (1973-2013)	187,683	29.70	452.46	0	1	6	22	428
NYT^L (1973-2013)	198,804	1.66	12.26	0	0	0	2	32
NAT^L (1973-2013)	198,804	4.65	28.44	0	0	2	7	79

Panel B: Correlations Among Media Coverage Measures (1973-2013)			
	$\ln(1+NYT^C)$	$\ln(1+NYT^L)$	$\ln(1+NAT^L)$
$\ln(1+NYT^C)$	1.00	-	-
$\ln(1+NYT^L)$	0.48	1.00	-
$\ln(1+NAT^L)$	0.53	0.83	1.00

Panel C: Average Cross-Sectional Correlations for Chronicle Data (1926-2013)		
	$\ln(1+NYT^C{}_t)$	$\Delta\ln(1+NYT^C{}_t)$
$\ln(1+NYT^C{}_t)$	1.00	0.19
$\Delta\ln(1+NYT^C{}_t)$	0.19	1.00
$\ln(Size_t)$	0.44	0.02
$Beta_t$	0.16	0.02
$\ln(B/M_t)$	-0.12	-0.06
Ret_t	0.03	0.09
$\lvert Ret_t \rvert$	-0.01	0.07
$\ln(IVol_t)$	-0.19	0.02

In this table, we report summary statistics on the media coverage data we use. NYT^C is the yearly number of New York Times articles about a firm according to the New York Times Chronicle webpage (available 1924-2013). NYT^L is the yearly number of New York Times articles about a firm according to LexisNexis (available 1973-2013). NAT^L is the yearly number of national newspaper articles about a firm according to LexisNexis (available from 1973-2013). ΔX_t is the change in X from year t-1 to year t. $Size_t$ is a firm's market capitalization. $Beta_t$ is a firm's market beta. B/M_t is a firm's book to market ratio. Ret_t is a firm's yearly return. $IVol_t$ is a firm's idiosyncratic volatility.

Table 2: The Change Effect – Univariate Sorts and Factor Models

Panel A: Univariate Portfolio Sort				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
no coverage 0	1.45%	1.15%	1.21%	1.26%
strong decrease 1	1.02%	1.23%	1.34%	1.31%
2	1.18%	1.22%	1.33%	1.32%
no change 3	1.32%	1.17%	1.24%	1.48%
4	1.54%	1.18%	1.22%	1.28%
strong increase 5	1.91%	1.02%	1.13%	1.27%
5-1	0.89%***	-0.21%***	-0.21%***	-0.04%
	(11.07)	(-3.23)	(-3.72)	(-0.60)
N (Months)	1,068	1,068	1,056	1,044
Years	1/1926-12/2014	1/1926-12/2014	1/1927-12/2014	1/1928-12/2014

Panel B: Factor Models

	Year t			Year $t+1$		
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.0205	0.0133	0.0450**	0.0383*	0.0548***	0.0611***
	(0.79)	(0.63)	(2.17)	(1.87)	(3.06)	(3.56)
SMB		0.1047	0.1121*		0.0175	0.0196
		(1.41)	(1.69)		(0.47)	(0.54)
HML		-0.0878	-0.0190		-0.1335***	-0.1189**
		(-1.63)	(-0.39)		(-2.87)	(-2.49)
MOM			0.1489***			0.0308
			(5.10)			(1.25)
Alpha	0.87%***	0.89%***	0.74%***	-0.24%***	-0.20%***	-0.23%***
	(12.12)	(12.49)	(10.42)	(-3.41)	(-3.12)	(-3.43)
N (Months)	1,062	1,062	1,056	1,062	1,062	1,056
Years	7/1926-12/2014	7/1926-12/2014	1/1927-12/2014	7/1926-12/2014	7/1926-12/2014	1/1927-12/2014

	Year $t+2$			Year $t+3$		
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.0328*	0.0471***	0.0311**	0.0602***	0.0689***	0.0614**
	(1.65)	(3.12)	(2.31)	(2.65)	(2.60)	(2.46)
SMB		0.0124	0.0094		-0.0182	-0.0194
		(0.33)	(0.27)		(-0.61)	(-0.67)
HML		-0.1114***	-0.1449***		-0.0342	-0.0497
		(-3.37)	(-4.36)		(-1.24)	(-1.51)
MOM			-0.0730***			-0.0336
			(-2.91)			(-1.23)
Alpha	-0.23%***	-0.20%***	-0.13%**	-0.08%	-0.06%	-0.03%
	(-3.89)	(-3.77)	(-2.37)	(-1.29)	(-1.09)	(-0.45)
N (Months)	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014

Panel C: Other Factor Models					
	$t+1$	$t+2$	$t+3$	N (Months)	Years
1F	-0.24%***	-0.23%***	-0.08%	1,062	7/1926-
	(-3.41)	(-3.89)	(-1.29)		12/2014
3F	-0.20%***	-0.20%***	-0.06%	1,062	7/1926-
	(-3.12)	(-3.77)	(-1.09)		12/2014
4F	-0.23%***	-0.13%**	-0.03%	1,056	1/1927-
	(-3.43)	(-2.37)	(-0.45)		12/2014
4F + ST + LT	-0.21%***	-0.17%***	-0.02%	1,008	1/1931-
	(-2.84)	(-3.12)	(-0.34)		12/2014
FF-5F	-0.20%***	-0.20%***	0.00%	618	7/1963-
	(-2.81)	(-2.89)	(-0.02)		12/2014
Q-Model	-0.22%**	-0.21%**	0.07%	504	1/1972-
	(-2.47)	(-2.57)	(0.67)		12/2013
4F + BAB	-0.21%***	-0.10%*	0.00%	1,008	1/1931-
	(-3.20)	(-1.72)	(0.01)		12/2014
4F + PS Liquidity	-0.29%***	-0.22%***	-0.05%	552	1/1968-
	(-3.04)	(-3.07)	(-0.48)		12/2013
4F + Sadka	-0.35%**	-0.34%***	-0.01%	357	4/1983-
	(-2.53)	(-3.46)	(-0.10)		12/2012
4F + Kelly	-0.30%***	-0.25%***	-0.07%	491	1/1973-
	(-2.89)	(-3.13)	(-0.69)		11/2013
4F + Max Return	-0.17%**	-0.09%	0.07%	996	1/1927-
	(-2.52)	(-1.48)	(0.91)		12/2009
4F + QMJ	-0.17%**	-0.15%*	0.07%	638	7/1957-
	(-2.10)	(-1.89)	(0.73)		8/2010
4F + UMO	-0.24%**	-0.15%	0.14%	486	7/1972-
	(-2.16)	(-1.56)	(1.38)		12/2012

In this table, we report equal-weighted average monthly returns and alphas for portfolios sorted by $\Delta\ln(1+\mathrm{NYT^C}_t)$, the log-change in media coverage from year $t-1$ to year t. We form six portfolios: a 'no coverage' portfolio for stocks with zero coverage in years t-1 and t, a 'no change' portfolio for stocks with > 0 coverage but no change from t-1 to t, and four above/below median increase/decrease portfolios. $\Delta\ln(1+\mathrm{NYT^C}_t)$ is updated at the end of each year and portfolios are rebalanced to equal weights monthly. Panel A: We report monthly average returns for years t (contemporaneous to $\Delta\ln(1+\mathrm{NYT^C}_t)$) and years $t+1$ to $t+3$ (investable). The row labelled '5-1' reports the difference between the returns of portfolio 5 (strong increase) and portfolio 1 (strong decrease). Panel B reports the alpha-estimates for 5-1-returns for years t to t+3 and our main factor models, i.e. the CAPM (1F), the Fama and French (1993) model (3F) and the Carhart (1997) model (4F). Panel C reports the alpha-estimates for a set of other factor models. Factor loadings are not reported. See Appendix A for variable definitions. The sample covers all > \$1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 3: The Change Effect – Dependent Double Sorts with Firm Characteristics

Panel A: Interaction with Firm Size						
	Year $t+1$			Year $t+2$		
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
small 1	-0.26%	-0.25%	-0.25%	0.07%	0.06%	0.03%
2	0.02%	-0.03%	-0.05%	-0.27%	-0.32%	-0.34%
3	-0.23%	-0.23%	-0.31%	-0.42%	-0.38%	-0.26%
4	-0.32%	-0.38%	-0.46%	-0.13%	-0.18%	-0.05%
large 5	-0.17%	-0.22%	-0.19%	-0.12%	-0.19%	-0.05%
5-1	0.09%	0.03%	0.06%	-0.18%	-0.24%*	-0.08%
	(0.61)	(0.18)	(0.33)	(-1.22)	(-1.71)	(-0.50)
mean	-0.19%***	-0.22%***	-0.25%***	-0.17%***	-0.20%***	-0.13%**
	(-3.04)	(-3.66)	(-4.05)	(-3.21)	(-3.59)	(-2.46)
N	1,068	1,062	1,056	1,056	1,056	1,056
Years	1/1926- 12/2014	7/1926- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014

Panel B: Interaction with Amihud-Illiquidity						
	Year $t+1$			Year $t+2$		
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
liquid 1	-0.18%	-0.21%	-0.20%	-0.14%	-0.20%	-0.07%
2	-0.33%	-0.40%	-0.37%	-0.13%	-0.23%	-0.19%
3	-0.02%	-0.05%	-0.15%	-0.51%	-0.44%	-0.40%
4	-0.04%	-0.07%	-0.07%	-0.20%	-0.18%	-0.15%
illiquid 5	-0.11%	-0.21%	-0.21%	0.12%	0.06%	0.05%
5-1	0.07%	0.00%	-0.01%	0.26%*	0.26%*	0.12%
	(0.37)	(0.00)	(-0.08)	(1.65)	(1.76)	(0.69)
mean	-0.13%**	-0.19%***	-0.20%***	-0.17%***	-0.20%***	-0.15%***
	(-2.38)	(-3.45)	(-3.29)	(-3.23)	(-3.74)	(-2.74)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1928- 12/2014	1/1928- 12/2014	1/1928- 12/2014

Panel C: Interaction with Idiosyncratic Volatility						
		Year $t+1$			Year $t+2$	
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
low 1	-0.08%	-0.11%	-0.10%	0.05%	0.02%	0.01%
2	-0.08%	-0.09%	-0.10%	-0.11%	-0.13%	-0.11%
3	-0.15%	-0.19%	-0.19%	-0.33%	-0.33%	-0.22%
4	-0.15%	-0.13%	-0.15%	-0.39%	-0.41%	-0.33%
high 5	-0.33%	-0.37%	-0.46%	-0.18%	-0.24%	-0.20%
5-1	-0.25%	-0.26%	-0.36%**	-0.24%	-0.27%*	-0.21%
	(-1.52)	(-1.62)	(-2.21)	(-1.55)	(-1.80)	(-1.41)
mean	-0.16%***	-0.18%***	-0.20%***	-0.19%***	-0.21%***	-0.17%***
	(-3.41)	(-3.70)	(-3.45)	(-4.24)	(-4.75)	(-3.54)
N	1,044	1,044	1,044	1,032	1,032	1,032
Years	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014	1/1929-12/2014	1/1929-12/2014	1/1929-12/2014

Panel D: Interaction with Momentum						
		Year $t+1$			Year $t+2$	
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
losers 1	-0.27%	-0.32%	-0.38%	-0.07%	-0.07%	-0.10%
2	-0.09%	-0.14%	-0.12%	-0.07%	-0.12%	-0.05%
3	-0.08%	-0.06%	-0.01%	-0.11%	-0.13%	-0.12%
4	-0.13%	-0.11%	-0.06%	-0.07%	-0.07%	-0.02%
winners 5	-0.31%	-0.34%	-0.32%	-0.39%	-0.39%	-0.29%
5-1	-0.04%	-0.02%	0.06%	-0.32%**	-0.32%**	-0.19%
	(-0.28)	(-0.13)	(0.35)	(-2.28)	(-2.14)	(-1.37)
mean	-0.18%***	-0.19%***	-0.18%***	-0.14%***	-0.16%***	-0.11%**
	(-3.54)	(-3.93)	(-3.37)	(-2.78)	(-3.12)	(-2.04)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014

In this table, we report results of dependent double sorts. We first sort stocks into quintile portfolios by a firm characteristic (size, illiquidity, idiosyncratic volatility and last year's return), measured at the end of year t. Second, within these quintile portfolios we again sort stocks by log-change of media coverage. We form six portfolios: a 'no coverage' portfolio for stocks with zero coverage in years t-1 and t, a 'no change' portfolio for stocks with > 0 coverage but no change from t-1 to t, and four above/below median increase/decrease portfolios. We report returns and alphas—of the CAPM (1F) and the Carhart (1997) (4F) model—for the 5-1 (strong increase minus strong decrease) portfolio within each of the 5 quintiles from the first sort. We also report the difference in returns between the extreme 5-1 portfolios (e.g. large firms vs. small firms) and the mean across all five 5-1 portfolios. The sample covers all $> \$1$ U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 4: The Change Effect – Over Time

Panel A: NBER Recessions						
		Year $t+1$			Year $t+2$	
	(Raw)	(1F)	(4F)	(Raw)	(1F)	(4F)
$I_{recession}$	-0.36%**	-0.31%**	-0.27%**	0.06%	0.11%	0.05%
	(-2.50)	(-2.13)	(-2.10)	(0.40)	(0.81)	(0.38)
Alpha	-0.14%**	-0.17%**	-0.17%**	-0.22%***	-0.26%***	-0.14%**
	(-1.98)	(-2.22)	(-2.38)	(-3.97)	(-4.44)	(-2.44)
N	1,068	1,062	1,056	1,056	1,056	1,056
Years	1/1926- 12/2014	7/1926- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014

Panel B: High Aggregate Uncertainty						
		Year $t+1$			Year $t+2$	
	(Raw)	(1F)	(4F)	(Raw)	(1F)	(4F)
$I_{uncertain}$	-0.30%**	-0.30%**	-0.30%**	-0.34%***	-0.33%***	-0.37%***
	(-2.34)	(-2.37)	(-2.54)	(-3.16)	(-3.15)	(-3.54)
Alpha	-0.07%	-0.09%	-0.08%	-0.04%	-0.06%	0.06%
	(-1.10)	(-1.54)	(-1.28)	(-0.76)	(-1.14)	(0.91)
N	1,061	1,061	1,056	1,056	1,056	1,056
Years	8/1926- 12/2014	8/1926- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014

In this table, we report results for regressions of 5-1 (strong increase minus strong decrease) returns on indicator variables (indicating NBER recessions or high aggregate uncertainty in the last month), and the CAPM (1F) and Carhart (1997) (4F) factors. Factor exposures are not reported. $I_{recession}$ is an indicator variable that equals one during NBER recession months. $I_{uncertain}$ is an indicator variable that equals one after high aggregate uncerainty months. High aggregate uncertainty is defined by above median average idiosyncratic volatility of stocks. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 5: The Change Effect – National Coverage and Tone

Panel A: Univariate Portfolio Sort				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
no coverage 0	1.79%	1.29%	1.35%	1.35%
strong decrease 1	1.42%	1.40%	1.45%	1.43%
2	1.43%	1.38%	1.40%	1.35%
3 (no change)	1.50%	1.32%	1.43%	1.42%
4	1.63%	1.28%	1.27%	1.31%
strong increase 5	1.90%	1.13%	1.25%	1.32%
5-1	0.47%***	-0.27%***	-0.20%**	-0.10%
	(4.54)	(-2.71)	(-2.53)	(-1.13)
N	480	480	468	456
Years	1/1974-12/2013	1/1975-12/2014	1/1976-12/2014	1/1977-12/2014

Panel B: Factor Models						
		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.44%***	0.50%***	0.44%***	-0.33%***	-0.28%***	-0.25%***
	(4.38)	(5.30)	(4.29)	(-3.07)	(-3.07)	(-2.59)
N	480	480	480	480	480	480
Years	1/1974-12/2013	1/1974-12/2013	1/1974-12/2013	1/1975-12/2014	1/1975-12/2014	1/1975-12/2014
		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	-0.26%***	-0.23%***	-0.13%	-0.16%*	-0.14%	-0.07%
	(-3.28)	(-2.92)	(-1.52)	(-1.83)	(-1.53)	(-0.79)
N	468	468	468	456	456	456
Years	1/1976-12/2014	1/1976-12/2014	1/1976-12/2014	1/1977-12/2014	1/1977-12/2014	1/1977-12/2014

Panel C: Interaction with Tone (1975-2014)								
				Year $t+1$				
	1	2	3	4	5	5-1	(1F)	(4F)
positive 1	1.37%	1.20%	1.29%	1.27%	1.12%	-0.25%*	-0.30%**	-0.22%
						(-1.69)	(-2.09)	(-1.58)
2	1.39%	1.32%	1.32%	1.26%	1.10%	-0.29%**	-0.33%**	-0.28%**
						(-2.28)	(-2.52)	(-2.22)
negative 3	1.44%	1.47%	1.41%	1.43%	1.36%	-0.08%	-0.13%	-0.14%
						(-0.64)	(-0.91)	(-0.82)
3-1	0.07%	0.27%**	0.12%	0.16%**	0.24%*	0.17%	0.17%	0.08%
	(0.48)	(2.05)	(0.90)	(2.03)	(1.83)	(0.94)	(0.95)	(0.40)
mean	1.40%	1.33%	1.34%	1.32%	1.19%	-0.22%**	-0.26%**	-0.22%**
						(-2.16)	(-2.54)	(-2.12)

				Year $t+2$				
	1	2	3	4	5	5-1	(1F)	(4F)
positive 1	1.25%	1.38%	1.49%	1.38%	1.34%	0.10%	0.12%	0.17%
						(0.77)	(0.99)	(1.18)
2	1.28%	1.30%	1.34%	1.20%	1.18%	-0.10%	-0.17%	-0.07%
						(-0.80)	(-1.42)	(-0.64)
negative 3	1.46%	1.47%	1.48%	1.30%	1.29%	-0.17%	-0.19%	-0.08%
						(-1.37)	(-1.61)	(-0.59)
3-1	0.21%	0.09%	-0.00%	-0.08%	-0.05%	-0.26%	-0.31%*	-0.25%
	(1.49)	(0.81)	(-0.02)	(-1.04)	(-0.33)	(-1.46)	(-1.92)	(-1.33)
mean	1.33%	1.38%	1.43%	1.29%	1.27%	-0.06%	-0.09%	-0.00%
						(-0.74)	(-1.07)	(-0.01)

In Panels A and B of this table, we report equal-weighted average monthly returns and alphas for portfolios sorted by $\Delta\ln(1+NAT^{C}{}_{t})$, similar to Table 2. Instead of using New York Times Chronicle media coverage, we now use national (New York Times, Wall Street Journal, Washington Post, and USA Today) coverage from LexisNexis. In Panel C, we report results of dependent double sorts, similar to Table 3. Here, we use article tone (for national newspaper articles during year t) as the first sorting variable. Article tone is measured by the fraction of negative words according to the Loughran and McDonald (2011) dictionary. Tone portfolio 1 (3) contains the 30% of stocks with the most positive (negative) average article tone in year t. The remaining 40% of stocks are assigned to the neutral tone portfolio (2). The sample covers all $>$ \$1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 6: The Level Effect – Need to Control for Change Effect

Panel A: Univariate Portfolio Sort				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
low 1	1.66%	1.05%	1.10%	1.12%
2	1.55%	1.18%	1.27%	1.27%
3	1.41%	1.20%	1.24%	1.31%
4	1.26%	1.20%	1.33%	1.41%
high 5	1.16%	1.21%	1.35%	1.37%
5-1	-0.51%***	0.15%**	0.25%***	0.26%***
	(-5.29)	(2.21)	(4.14)	(4.23)
N	1,068	1,068	1,056	1,044
Years	1/1926-12/2014	1/1926-12/2014	1/1927-12/2014	1/1928-12/2014

Panel B: Factor Models

		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.1699***	0.1344***	0.1137***	0.1634***	0.1377***	0.1254***
	(8.33)	(8.29)	(6.15)	(6.18)	(6.48)	(5.25)
SMB		0.1403***	0.1371***		0.0960**	0.0938**
		(4.41)	(4.54)		(2.39)	(2.42)
HML		0.0555	0.0132		0.0472	0.0228
		(1.57)	(0.42)		(1.22)	(0.64)
MOM			-0.0928***			-0.0551
			(-3.68)			(-1.52)
Alpha	-0.61%***	-0.64%***	-0.55%***	0.06%	0.03%	0.09%
	(-7.32)	(-7.47)	(-7.31)	(1.02)	(0.62)	(1.61)
N	1,062	1,062	1,056	1,062	1,062	1,056
Years	7/1926- 12/2014	7/1926- 12/2014	1/1927- 12/2014	7/1926- 12/2014	7/1926- 12/2014	1/1927- 12/2014

		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.1557***	0.1357***	0.1341***	0.1411***	0.1247***	0.1233***
	(12.17)	(10.04)	(9.82)	(7.66)	(6.46)	(6.33)
SMB		0.0946**	0.0943**		0.1038***	0.1036***
		(2.45)	(2.46)		(4.00)	(4.00)
HML		0.0102	0.0068		-0.0272	-0.0302
		(0.37)	(0.23)		(-1.20)	(-1.09)
MOM			-0.0073			-0.0064
			(-0.32)			(-0.28)
Alpha	0.15%***	0.14%***	0.14%***	0.17%***	0.16%***	0.17%***
	(2.91)	(2.80)	(2.59)	(3.14)	(3.23)	(3.37)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014	1/1928- 12/2014	1/1928- 12/2014	1/1928- 12/2014

Panel C: Portfolio Characteristics								
Without Coverage Change Control								
	$(1+NYT^{C}{}_{t})$		$\Delta\ln(1+NYT^{C}{}_{t})$		$\Delta\ln(1+NYT^{C}{}_{t-1})$		$\ln(Size_{t})$	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	0.211	0.000	-0.212	-0.027	-0.025	-0.002	4.302	4.108
2	1.060	0.989	-0.086	-0.065	0.013	-0.011	3.635	3.496
3	1.653	1.552	0.069	0.027	0.039	0.015	3.589	3.370
4	2.216	2.139	0.181	0.110	0.063	0.032	3.595	3.364
5	3.905	3.690	0.190	0.098	0.073	0.027	4.261	4.116

With Coverage Change Control								
	$\ln(1+NYT^{C}{}_{t})$		$\Delta\ln(1+NYT^{C}{}_{t})$		$\Delta\ln(1+NYT^{C}{}_{t-1})$		$\ln(Size_{t})$	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	0.356	0.043	-0.007	0.000	0.009	0.000	4.395	4.271
2	1.190	1.134	0.003	-0.008	0.047	0.008	3.772	3.683
3	1.670	1.586	0.011	0.002	0.042	0.020	3.645	3.466
4	2.137	1.980	0.007	0.002	0.022	0.012	3.566	3.290
5	3.879	3.715	-0.006	-0.004	0.012	0.003	4.379	4.248

In this table, we report equal-weighted average monthly returns and alphas for quintile portfolios sorted by residual media coverage, i.e. the residual from a cross-sectional regresion of $\ln(1+NYT^{C}{}_{t})$ on $\ln(Size_{t})$. Residual media coverage is updated at the end of each year and portfolios are rebalanced to equal weights monthly. Panel A: We report monthly average returns for years t (contemporaneous to residual coverage), and years $t+1$ to $t+3$ (investable). The row labelled '5-1' reports the difference between the returns of portfolio 5 (high coverage) and portfolio 1 (low coverage). Panel B reports the alpha-estimates for 5-1-returns for years t to $t+3$ and our main factor models, i.e. the CAPM (1F), the Fama and French (1993) model (3F) and the Carhart (1997) model (4F). Panel C reports means and medians (over time) of mean portfolio characteristics of the five residual coverage portfolios for two residual models. The sample covers all $> \$1$ U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 7: The Level Effect – Univariate Sorts and Factor Models

Panel A: Univariate Portfolio Sort				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
low 1	1.28%	1.10%	1.12%	1.14%
2	1.46%	1.19%	1.23%	1.28%
3	1.42%	1.18%	1.25%	1.27%
4	1.45%	1.30%	1.36%	1.37%
high 5	1.45%	1.33%	1.35%	1.33%
5-1	0.17%***	0.23%***	0.23%***	0.19%***
	(4.04)	(4.15)	(4.50)	(4.03)
N	1,068	1,056	1,044	1,032
Years	1/1926- 12/2014	1/1927- 12/2014	1/1928- 12/2014	1/1929- 12/2014

Panel B: Factor Models

		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.1253***	0.1038***	0.0901***	0.1084***	0.0988***	0.1013***
	(6.36)	(5.99)	(4.51)	(6.39)	(5.95)	(5.99)
SMB		0.1017***	0.0994***		0.0872***	0.0876***
		(5.13)	(5.03)		(3.11)	(3.14)
HML		0.0111	-0.0174		-0.0498**	-0.0445*
		(0.51)	(-0.61)		(-2.14)	(-1.88)
MOM			-0.0631**			0.0114
			(-2.38)			(0.69)
Alpha	0.09%**	0.08%*	0.14%***	0.16%***	0.17%***	0.16%***
	(2.25)	(1.88)	(2.69)	(3.33)	(3.64)	(3.53)
N	1,062	1,062	1056	1,056	1,056	1,056
Years	7/1926-12/2014	7/1926-12/2014	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014

		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Rm-Rf	0.0918***	0.0909***	0.0952***	0.0804***	0.0842***	0.0858***
	(5.28)	(6.93)	(6.67)	(3.32)	(5.16)	(5.28)
SMB		0.0925***	0.0932***		0.0816***	0.0819***
		(3.45)	(3.59)		(3.23)	(3.19)
HML		-0.1162***	-0.1074***		-0.1326***	-0.1292***
		(-4.69)	(-4.03)		(-4.85)	(-5.15)
MOM			0.0191			0.0074
			(0.86)			(0.28)
Alpha	0.17%***	0.19%***	0.18%***	0.14%***	0.17%***	0.16%***
	(3.64)	(4.54)	(3.95)	(3.14)	(4.04)	(3.58)
N	1,044	1,044	1,044	1,032	1,032	1,032
Years	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014	1/1929-12/2014	1/1929-12/2014	1/1929-12/2014

Panel C: Other Factor Models					
	$t+1$	$t+2$	$t+3$	N	Years
1F	0.16%***	0.17%***	0.16%***	1,056	1/1927-
	(3.33)	(3.64)	(3.53)		12/2014
3F	0.17%***	0.19%***	0.18%***	1,056	1/1927-
	(3.64)	(4.54)	(3.95)		12/2014
4F	0.16%***	0.17%***	0.16%***	1,056	1/1927-
	(3.53)	(4.04)	(3.58)		12/2014
4F + ST + LT	0.15%***	0.15%***	0.14%***	1,008	1/1931-
	(3.34)	(3.59)	(3.07)		12/2014
FF-5F	0.18%***	0.18%***	0.13%*	618	7/1963-
	(2.67)	(2.85)	(1.96)		12/2014
Q-Model	0.27%***	0.27%***	0.22%**	504	1/1972-
	(3.31)	(2.84)	(2.37)		12/2013
4F + BAB	0.16%***	0.16%***	0.15%***	1,008	1/1931-
	(3.42)	(3.25)	(3.00)		12/2014
4F + PS Liquidity	0.18%**	0.17%***	0.16%**	552	1/1968-
	(2.54)	(2.67)	(2.38)		12/2013
4F + Sadka	0.22%**	0.25%***	0.25%***	357	4/1983-
	(2.48)	(3.18)	(3.48)		12/2012
4F + Kelly	0.21%***	0.21%***	0.21%***	491	1/1973-
	(3.00)	(3.10)	(3.20)		11/2013
4F + Max Return	0.23%***	0.22%***	0.17%***	984	1/1927-
	(4.81)	(4.15)	(3.03)		12/2009
4F + QMJ	0.24%***	0.26%***	0.19%***	638	7/1957-
	(3.62)	(3.92)	(2.93)		8/2010
4F + UMO	0.15%**	0.17%**	0.19%**	486	7/1972-
	(1.99)	(2.33)	(2.56)		12/2012

In this table, we report equal-weighted average monthly returns and alphas for quintile portfolios sorted by residual media coverage, i.e. the residual from a cross-sectional regresion of $\ln(1+\text{NYT}^{C}{}_{t})$ on $\ln(\text{Size}_t)$ and other control variables (see Section 4.1). Residual media coverage is updated at the end of each year and portfolios are rebalanced to equal weights monthly. Panel A: We report monthly average returns for year t (contemporaneous to residual coverage), and years $t+1$ to $t+3$ (investable). The row labelled '5-1' reports the difference between the returns of portfolio 5 (high coverage) and portfolio 1 (low coverage). Panel B reports the alpha-estimates for 5-1-returns for years t to $t+3$ and our main factor models, i.e. the CAPM (1F), the Fama and French (1993) model (3F) and the Carhart (1997) model (4F). Panel C reports the alpha-estimates for a set of other factor models. Factor loadings are not reported. See Appendix A for variable definitions. The sample covers all > $1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 8: The Level Effect – Dependent Double Sorts with Firm Characteristics

Panel A: Interaction with Firm Size

	Year $t+1$			Year $t+2$		
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
small 1	0.45%	0.46%	0.40%	0.18%	0.18%	0.19%
2	0.30%	0.19%	0.11%	0.14%	0.03%	0.06%
3	0.23%	0.13%	0.10%	0.17%	0.11%	0.15%
4	0.11%	0.03%	0.02%	0.22%	0.16%	0.17%
large 5	0.13%	0.01%	0.02%	0.12%	0.03%	0.02%
5-1	-0.32%***	-0.45%***	-0.38%***	-0.06%	-0.16%	-0.17%
	(-2.62)	(-3.82)	(-3.10)	(-0.54)	(-1.33)	(-1.48)
mean	0.24%***	0.16%***	0.13%***	0.17%***	0.10%**	0.12%***
	(4.19)	(3.31)	(2.71)	(3.45)	(2.33)	(2.71)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014

Panel B: Interaction with Amihud-Illiquidity

	Year $t+1$			Year $t+2$		
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
liquid 1	0.23%	0.17%	0.16%	0.15%	0.12%	0.09%
2	0.07%	0.00%	0.04%	0.23%	0.15%	0.20%
3	0.26%	0.14%	0.17%	0.26%	0.17%	0.19%
4	0.25%	0.12%	0.16%	0.23%	0.10%	0.12%
illiquid 5	0.39%	0.33%	0.37%	0.20%	0.12%	0.14%
5-1	0.16%	0.16%	0.21%*	0.05%	-0.00%	0.05%
	(1.27)	(1.25)	(1.70)	(0.43)	(-0.01)	(0.39)
mean	0.24%***	0.15%***	0.18%***	0.21%***	0.13%**	0.16%***
	(4.08)	(2.93)	(3.94)	(3.74)	(2.52)	(3.38)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014

Panel C: Interaction with Idiosyncratic Volatility						
		Year $t+1$			Year $t+2$	
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
low 1	0.12%	0.02%	0.04%	0.10%	0.04%	0.03%
2	0.06%	0.02%	0.00%	0.15%	0.09%	0.09%
3	0.26%	0.18%	0.14%	0.22%	0.17%	0.16%
4	0.26%	0.21%	0.16%	0.18%	0.15%	0.09%
high 5	0.58%	0.65%	0.64%	0.49%	0.50%	0.49%
5-1	0.47%***	0.63%***	0.60%***	0.39%***	0.45%***	0.45%***
	(3.38)	(4.51)	(4.34)	(3.42)	(3.97)	(3.80)
mean	0.26%***	0.21%***	0.20%***	0.23%***	0.19%***	0.17%***
	(5.10)	(4.75)	(4.48)	(5.01)	(4.43)	(4.22)
N	1,044	1,044	1,044	1,032	1,032	1,032
Years	1/1928- 12/2014	1/1928- 12/2014	1/1928- 12/2014	1/1929- 12/2014	1/1929- 12/2014	1/1929- 12/2014

Panel D: Interaction with Momentum						
		Year $t+1$			Year $t+2$	
	(5-1 Raw)	(5-1 1F)	(5-1 4F)	(5-1 Raw)	(5-1 1F)	(5-1 4F)
losers 1	0.43%	0.45%	0.45%	0.47%	0.43%	0.50%
2	0.18%	0.08%	0.04%	0.29%	0.26%	0.25%
3	0.19%	0.12%	0.08%	0.21%	0.13%	0.12%
4	0.17%	0.07%	0.03%	0.02%	-0.03%	-0.04%
winners 5	0.23%	0.16%	0.25%	0.17%	0.10%	0.07%
5-1	-0.20%*	-0.28%**	-0.20%	-0.30%**	-0.33%**	-0.43%***
	(-1.71)	(-2.40)	(-1.58)	(-2.31)	(-2.52)	(-3.06)
mean	0.24%***	0.18%***	0.17%***	0.23%***	0.18%***	0.18%***
	(4.36)	(3.74)	(3.80)	(4.66)	(3.83)	(3.97)
N	1,056	1,056	1,056	1,044	1,044	1,044
Years	1/1927-12/2014	1/1927-12/2014	1/1927-12/2014	1/1928-12/2014	1/1928-12/2014	1/1928-12/2014

In this table, we report results of dependent double sorts. We first sort stocks into quintile portfolios by a firm characteristic (size, illiquidity, idiosyncratic volatility and last year's return), measured at the end of year t. Second, within these quintile portfolios we again sort stocks into quintile portfolios by residual media coverage. We report returns and alphas—of the CAPM (1F) and the Carhart (1997) (4F) model—for the 5-1 (high coverage minus low coverage) portfolio within each of the 5 quintiles from the first sort. We also report the difference in returns between the extreme 5-1 portfolios (e.g. large firms vs. small firms) and the mean across all five 5-1 portfolios. The sample covers all > \$1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 9: The Level Effect – National Coverage and Tone

Panel A: Univariate Portfolio Sort Incl. Zero-Coverage				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
low 1	1.56%	1.23%	1.21%	1.26%
2	1.66%	1.14%	1.25%	1.28%
3	1.76%	1.24%	1.31%	1.37%
4	1.91%	1.29%	1.39%	1.38%
high 5	1.85%	1.41%	1.41%	1.46%
5-1	0.29%***	0.17%**	0.21%***	0.20%***
	(4.62)	(2.11)	(3.16)	(2.67)
N	468	468	456	444
Years	1/1975-12/2013	1/1976-12/2014	1/1977-12/2014	1/1978-12/2014

Panel B: Factor Models Incl. Zero-Coverage						
		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.31%***	0.25%***	0.37%***	0.18%**	0.15%*	0.14%*
	(5.12)	(3.61)	(4.58)	(2.12)	(1.85)	(1.71)
N	468	468	468	468	468	468
Years	1/1975-12/2013	1/1975-12/2013	1/1975-12/2013	1/1976-12/2014	1/1976-12/2014	1/1976-12/2014
		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.20%**	0.22%***	0.22%***	0.18%***	0.22%***	0.25%***
	(2.48)	(2.93)	(2.90)	(2.88)	(3.54)	(3.87)
N	456	456	456	444	444	444
Years	1/1977-12/2014	1/1977-12/2014	1/1977-12/2014	1/1978-12/2014	1/1978-12/2014	1/1978-12/2014

Panel C: Univariate Portfolio Sort Excl. Zero-Coverage				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
No Coverage in t	1.81%	1.32%	1.38%	1.38%
low 1	1.56%	1.17%	1.18%	1.25%
2	1.71%	1.09%	1.17%	1.28%
3	1.71%	1.18%	1.17%	1.34%
4	1.73%	1.32%	1.32%	1.40%
high 5	1.59%	1.41%	1.44%	1.42%
5-1	0.03%	0.24%***	0.27%***	0.17%***
	(0.37)	(3.18)	(4.16)	(2.67)
N	468	468	456	444
Years	1/1975-12/2013	1/1976-12/2014	1/1977-12/2014	1/1978-12/2014

Panel D: Factor Models Excl. Zero-Coverage						
		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.00%	-0.09%	0.07%	0.21%***	0.15%**	0.17%**
	(0.02)	(-1.12)	(0.87)	(2.94)	(2.17)	(2.36)
N	468	468	468	468	468	468
Years	1/1975-12/2013	1/1975-12/2013	1/1975-12/2013	1/1976-12/2014	1/1976-12/2014	1/1976-12/2014
		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.25%***	0.24%***	0.23%***	0.16%**	0.17%***	0.19%***
	(4.08)	(4.09)	(3.99)	(2.51)	(2.91)	(3.27)
N	456	456	456	444	444	444
Years	1/1977-12/2014	1/1977-12/2014	1/1977-12/2014	1/1978-12/2014	1/1978-12/2014	1/1978-12/2014

Panel E: Interaction with Tone (1976-2014)								
				Year $t+1$				
	1	2	3	4	5	5-1	(1F)	(4F)
positive 1	1.14%	1.07%	1.13%	1.20%	1.32%	0.17%	0.15%	-0.05%
						(0.89)	(0.79)	(-0.30)
2	1.10%	1.10%	1.22%	1.30%	1.32%	0.22%***	0.23%***	0.20%***
						(2.64)	(2.79)	(2.63)
negative 3	1.27%	1.19%	1.35%	1.35%	1.53%	0.26%**	0.21%*	0.20%*
						(2.20)	(1.86)	(1.70)
3-1	0.13%	0.11%	0.22%**	0.16%	0.22%	0.09%	0.06%	0.26%
	(1.41)	(1.07)	(2.05)	(1.29)	(1.25)	(0.41)	(0.28)	(1.32)
mean	1.17%	1.12%	1.23%	1.28%	1.39%	0.22%**	0.20%**	0.13%
						(2.42)	(2.31)	(1.47)
				Year $t+2$				
	1	2	3	4	5	5-1	(1F)	(4F)
positive 1	1.19%	1.22%	1.35%	1.45%	1.40%	0.21%	0.20%	0.12%
						(1.15)	(1.07)	(0.82)
2	1.02%	1.04%	1.07%	1.26%	1.42%	0.40%***	0.41%***	0.37%***
						(4.30)	(4.25)	(4.30)
negative 3	1.25%	1.16%	1.23%	1.54%	1.41%	0.16%	0.14%	0.07%
						(1.55)	(1.38)	(0.70)
3-1	0.05%	-0.06%	-0.12%	0.09%	0.01%	-0.04%	-0.06%	-0.06%
	(0.54)	(-0.70)	(-1.19)	(0.70)	(0.06)	(-0.24)	(-0.28)	(-0.36)
mean	1.15%	1.14%	1.22%	1.42%	1.41%	0.27%***	0.27%***	0.21%***
						(3.32)	(3.34)	(2.62)

In Panels A through D of this table, we report equal-weighted average monthly returns and alphas for portfolios sorted by residual media coverage, similar to Table 7. Instead of using New York Times Chronicle media coverage, we now use national newspaper (New York Times, Wall Street Journal, Washington Post, and USA Today) coverage from LexisNexis. For the analyses in Panels A and B (C and D), firms with zero coverage in t are (not) included. In Panel E, we report results of dependent double sorts, similar to Table 8. Here, we use article tone (for national newspaper articles during year t) as the first sorting variable. Article tone is measured by the fraction of negative words according to the Loughran and McDonald (2011) dictionary. Tone portfolio 1 (3) contains the 30% of stocks with the most positive (negative) average article tone in year t. The remaining 40% of stocks are assigned to the neutral tone portfolio (2). The sample covers all $>$ \$1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 10: What Drives the Level Effect?

Panel A: Sales and Profitability						
	Sales Growth		Gross Profitability Growth		Operating Profitability Growth	
	NYT^C	NAT^L	NYT^C	NAT^L	NYT^C	NAT^L
	(1)	(2)	(3)	(4)	(5)	(6)
$ln(1+NUM_t)$	0.0221***	0.0442***	0.0044***	0.0090***	0.0028*	0.0080***
	(5.10)	(5.59)	(3.16)	(5.25)	(1.81)	(2.79)
$\Delta ln(1+NUM_{t-1})$	0.0385***	0.0151**	0.0084**	0.0049***	0.0025	-0.0009
	(4.02)	(2.35)	(2.24)	(2.65)	(0.56)	(-0.35)
$\Delta ln(1+NUM_t)$	0.0279***	0.0170	0.0073*	0.0040**	-0.0019	-0.0016
	(3.57)	(1.62)	(1.70)	(1.98)	(-0.43)	(-0.55)
$ln(Size_t)$	0.3020***	0.3443***	-0.0117***	-0.0092***	-0.0023	0.0059
	(7.70)	(10.33)	(-3.03)	(-3.90)	(-0.38)	(1.41)
$ln(B/M_t)$	-0.0651***	-0.0714***	-0.0844***	-0.0817***	-0.1009***	-0.0849***
	(-4.89)	(-5.79)	(-16.16)	(-14.80)	(-8.94)	(-8.45)
Ret_t	0.1886***	0.1490***	0.0657***	0.0492***	0.0307***	0.0241***
	(5.40)	(7.40)	(5.09)	(10.15)	(3.78)	(4.39)
Gross $Profits_t/Assets_t$	-0.1150***	-0.1375***	0.1967***	0.1912***		
	(-2.95)	(-3.13)	(9.49)	(7.45)		
$Earnings_t/Equity_t$	0.2678*	0.0564	0.0206	-0.0313**		
	(1.67)	(1.43)	(0.42)	(-2.25)		
$FCF_t/Equity_t$	-0.1615***	-0.1559***	-0.0329*	-0.0223***		
	(-6.31)	(-7.31)	(-1.76)	(-3.22)		
$Payout_t/Equity_t$	-1.7479***	-1.9025***	-0.8294***	-0.9138***		
	(-10.02)	(-10.88)	(-6.38)	(-9.74)		
$ln(Sales_t)$	-0.3842***	-0.4313***				
	(-9.28)	(-9.81)				
$ln(IVol_t)$	-0.0030	-0.0184	-0.0137	-0.0165**	-0.0058	-0.0053
	(-0.12)	(-0.67)	(-1.62)	(-1.96)	(-0.83)	(-0.56)
$ln(Turnover_t)$	0.0299**	0.0386***	0.0035	0.0036	-0.0140***	-0.0137***
	(2.33)	(2.64)	(0.80)	(0.88)	(-5.00)	(-3.88)
$Leverage_t$	0.6582***	0.6610***	-0.0688***	-0.1018***	0.2854***	0.2544***
	(6.83)	(5.56)	(-3.50)	(-8.66)	(12.40)	(12.17)
$Dividends_t/Equity_t$					0.5384***	0.4805***
					(4.07)	(4.47)
Dividend $Payer_t$					-0.0524***	-0.0445***
					(-5.64)	(-6.69)
Operating $Profits_t/Equity_t$					-0.2469***	-0.2892***
					(-4.77)	(-7.84)
T (Years)	50	37	50	37	50	37
Average R^2	0.2456	0.2314	0.2086	0.1638	0.1657	0.1197
Average N	1,986	2,535	1,996	2,549	1,531	1,921
FF12 Industry	Yes	Yes	Yes	Yes	Yes	Yes
Exchange	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Investments and Employee Growth						
	Asset Growth		CAPEX Growth		Employee Growth	
	NYT^C	NAT^L	NYT^C	NAT^L	NYT^C	NAT^L
	(1)	(2)	(3)	(4)	(5)	(6)
$\ln(1+NUM_t)$	0.0185***	0.0477***	0.0450***	0.1023***	0.0105***	0.0222***
	(3.91)	(6.10)	(3.38)	(7.21)	(3.52)	(4.20)
$\Delta\ln(1+NUM_{t-1})$	0.0342***	0.0073	0.0080	-0.0161	0.0180***	0.0089**
	(3.72)	(0.97)	(0.38)	(-0.91)	(3.37)	(2.06)
$\Delta\ln(1+NUM_t)$	0.0269***	0.0047	-0.0015	-0.0197	0.0202***	0.0044
	(3.27)	(0.48)	(-0.06)	(-0.96)	(2.65)	(0.76)
$\ln(Size_t)$	0.1933***	0.2415***	1.0063***	0.9249***	0.0950***	0.0825***
	(3.72)	(9.08)	(17.97)	(14.91)	(9.68)	(10.63)
$\ln(B/M_t)$	-0.1575***	-0.1675***	0.1808***	0.0424**	-0.0840***	-0.1134***
	(-6.73)	(-9.68)	(2.98)	(2.06)	(-4.35)	(-11.85)
Ret_t	0.1888***	0.1529***	0.3649***	0.3295***	0.1376***	0.0966***
	(7.11)	(12.34)	(5.83)	(9.08)	(4.04)	(10.35)
$Gross\ Profits_t/Assets_t$	0.0223	0.0460	-0.3713***	-0.2255***	0.0142	-0.0110
	(0.66)	(1.31)	(-3.53)	(-3.83)	(0.44)	(-0.56)
$Earnings_t/Equity_t$	0.4500**	0.1321***	1.4913*	0.2313***	0.5702*	0.1153***
	(2.01)	(4.05)	(1.65)	(3.83)	(1.69)	(5.95)
$FCF_t/Equity_t$	-0.1694***	-0.1080***	-0.4392**	-0.1602***	-0.1123**	-0.0591***
	(-2.58)	(-3.61)	(-2.12)	(-2.88)	(-2.13)	(-3.53)
$Payout_t/Equity_t$	-2.5562***	-2.7553***	-5.5802***	-4.7857***	-1.7274***	-1.9080***
	(-13.10)	(-13.07)	(-7.35)	(-7.73)	(-7.65)	(-11.04)
$\ln(IVol_t)$	-0.0697***	-0.0882***	0.1114	0.1655**	-0.0083***	-0.0307***
	(-3.19)	(-4.25)	(1.35)	(2.24)	(-0.39)	(-1.99)
$\ln(Turnover_t)$	0.0386***	0.0393***	0.0124	0.0227	0.0274***	0.0223***
	(6.19)	(5.67)	(0.67)	(1.46)	(4.37)	(3.24)
$Leverage_t$	0.4058***	0.4865***	1.5994***	1.5441***	0.1225**	0.0156
	(4.96)	(7.72)	(11.58)	(10.42)	(2.06)	(0.51)
$\ln(Assets_t)$	-0.2553***	-0.3102***				
	(-5.33)	(-9.38)				
$\ln(CAPEX_t)$			-1.1339***	-1.0678***		
			(-19.59)	(-18.74)		
$\ln(Emp_t)$					-0.1490***	-0.1394***
					(-13.63)	(-12.74)
T (Years)	50	37	50	37	50	37
Average R^2	0.2321	0.1941	0.2249	0.1985	0.1949	0.1462
Average N	1,997	2,551	1,963	2,502	1,926	2,488
FF12 Industry	Yes	Yes	Yes	Yes	Yes	Yes
Exchange	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Corporate Governance				
	ΔE Index		ΔO Index	
	NYT^C	NAT^L	NYT^C	NAT^L
	(1)	(2)	(3)	(4)
$\ln(1+NUM_t)$	-0.0096**	-0.0150*	0.0134	0.0146
	(-2.21)	(-1.73)	(1.56)	(1.59)
$\Delta(1+NUM_{t-1})$	0.0137	0.0281***	0.0038	-0.0018
	(1.26)	(3.34)	(0.35)	(-0.14)
$\Delta(1+NUM_t)$	0.0200	0.0064	0.0008	0.0192
	(1.43)	(0.55)	(0.08)	(1.19)
$\ln(Size_t)$	-0.0324***	-0.0300***	-0.0271***	-0.0332***
	(-2.70)	(-2.97)	(-4.31)	(-3.46)
$\ln(B/M_t)$	-0.0132	-0.0188	-0.0369***	-0.0476***
	(-1.06)	(-1.50)	(-3.14)	(-2.58)
Ret_t	-0.0086	-0.0091	0.0194	0.0224*
	(-0.57)	(-0.47)	(1.24)	(1.91)
Gross $Profits_t/Assets_t$	-0.0665	-0.0555	-0.0964	-0.0960*
	(-1.63)	(-1.32)	(-1.53)	(-1.92)
$Earnings_t/Equity_t$	0.0340	0.0240	-0.1734*	-0.1572*
	(0.50)	(0.34)	(-1.84)	(-1.77)
$FCF_t/Equity_t$	-0.0243	-0.0206	0.1802*	0.1627*
	(-0.44)	(-0.36)	(1.96)	(1.79)
$Payout_t/Equity_t$	0.4799**	0.4404***	0.4615**	0.4368***
	(2.42)	(2.69)	(2.37)	(3.19)
$\ln(IVol_t)$	0.0019	0.0124	-0.0090	-0.0186
	(0.14)	(1.18)	(-0.31)	(-0.52)
$\ln(Turnover_t)$	0.0386***	0.0406***	0.0291**	0.0254*
	(6.10)	(7.02)	(1.98)	(1.75)
$Leverage_t$	-0.0076	-0.0024	-0.0128	-0.0155
	(-0.25)	(-0.14)	(-0.30)	(-0.60)
E $Index_t$	-0.0960***	-0.0972***		
	(-12.06)	(-13.44)		
O $Index_t$			-0.0826***	-0.0833***
			(-6.31)	(-6.24)
R^2	0.094	0.096	0.081	0.083
Observations	6,171	6,629	6,016	6,453
Year FEs	Yes	Yes	Yes	Yes
FF12 Industry FE	Yes	Yes	Yes	Yes
Exchange FE	Yes	Yes	Yes	Yes

In Panel A (B) of this table, we report results from Fama and MacBeth (1973) regressions of profitability (investment) growth from year t to year t+3 on firm characteristics from year t. In Columns (1) and (2) ((3) and (4); (5) and (6)) of Panel A, the dependent variable is the change in sales (gross profitability; operating profitability) from year t to t+3. In Columns (1) and (2) ((3) and (4); (5) and (6)) of Panel B, the dependent variable is the change in total assets (capital expenditures; number of employees) from year t to t+3. In Panel C, we show results from panel regressions of changes in corporate governance indices on firm characteristics. In Columns (1) and (2) ((3) and (4)) of Panel C, the dependent variable is the change in the E Index (O Index) from year t to year t+2 or year t+3. The E and O Index are available for the years 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006. NUM_t is the number of articles about a firm in year t from the respective database (indicated at the top of the table). NYT^C is the yearly number of New York Times articles about a firm according to the New York Times Chronicle webpage. NAT^L is the yearly number of national newspaper articles about a firm according to LexisNexis (available from 1973). $Size_t$ is the firm's market capitalization at the end of year t. B/M_t is the firm's book-to-market ratio. Ret_t is the stock's return in year t. Gross $Profits_t/Assets_t$ is the firm's gross profitability in year t divided by total assets in year t. $Earnings_t/Equity_t$ is the firm's income before extraordinary items in year t divided by the book value of equity in year t. $FCF_t/Equity_t$ is the firm's free cash flow in year t divided by the book value of equity in year t. $Payout_t/Equity_t$ is the firm's total payout (dividends and share repurchases) in year t divided by the book value of equity in year t. $Dividends_t/Equity_t$ are the firm's dividend payments in year t divided by the book value of equity in year t. Dividend $Payer_t$ is a dummy variable equal to one if the firm pays out a dividend in year t. Operating $Profits_t/Equity_t$ is the firm's operating profitability in year t divided by the book value of equity in year t. $IVol_t$ is the stock's idiosyncratic volatility, measured with daily returns in year t, based on the Fama and French (1993) model. $Turnover_t$ is the stock's average monthly turnover, measured by monthly volume over shares outstanding in year t. $Leverage_t$ is the firm's book value of debt over the sum of book value of debt and market value of equity. The sample covers all > $1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. In Panels A and B, Newey and West (1987) standard errors with three lags are used. In Panel C, standard errors are double-clustered by firm and year. t-statistics are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 11: Change and Level Effect – Multivariate Evidence

Panel A: Main Results							
	(1926/1928/1930-2014)					(1976-2014)	
			NYT^C			NYT^L	NAT^L
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\ln(1+NUM_t)$	0.0106***	0.0087***	0.0085***	0.0074***	0.0087***	0.0128***	0.0119***
	(4.75)	(4.47)	(4.46)	(4.85)	(5.19)	(3.40)	(3.81)
$\Delta\ln(1+NUM_{t-1})$	-0.0191***	-0.0159***	-0.0160***	-0.0149***	-0.0079**	-0.0117**	-0.0115***
	(-4.00)	(-3.99)	(-4.08)	(-4.29)	(-2.56)	(-2.42)	(-3.67)
$\Delta\ln(1+NUM_t)$	-0.0187***	-0.0137***	-0.0138***	-0.0128***	-0.0044	-0.0123***	-0.0126***
	(-4.59)	(-4.56)	(-4.78)	(-4.64)	(-1.24)	(-3.05)	(-2.86)
$\ln(Size_t)$	-0.0186**	-0.0143**	-0.0210**	-0.0182**	-0.0064	-0.0006	-0.0017
	(-2.58)	(-2.18)	(-2.51)	(-2.27)	(-0.82)	(-0.05)	(-0.13)
$Beta_t$		-0.0141	-0.0140	-0.0190*	0.0113	0.0079	0.0081
		(-1.23)	(-1.22)	(-1.94)	(1.06)	(0.50)	(0.52)
$\ln(B/M_t)$		0.0287***	0.0285***	0.0362***	0.0207***	0.0238***	0.0225***
		(3.94)	(4.04)	(5.35)	(3.42)	(2.83)	(2.62)
Ret_t		0.0428***	0.0426***	0.0454***	0.0481***	0.0316**	0.0317**
		(3.19)	(3.17)	(4.24)	(4.49)	(2.00)	(2.03)
Ret_{t-1}					-0.0200*	-0.0104	-0.0100
					(-1.94)	(-1.10)	(-1.07)
Ret_{t-2}					-0.0070	-0.0115	-0.0114
					(-1.06)	(-1.54)	(-1.52)
$Amihud_t$					0.0131*	0.0133	0.0136
					(1.87)	(1.21)	(1.23)
$\ln(IVol_t)$					-0.0267	-0.0359	-0.0372
					(-1.21)	(-1.54)	(-1.61)
$\ln(Turnover_t)$					-0.0073	0.0037	0.0031
					(-1.01)	(0.43)	(0.36)
$\Delta\ln(Turnover_t)$					-0.0333***	-0.0465***	-0.0460***
					(-5.04)	(-4.23)	(-4.22)
T (Years)	89	87	87	87	85	39	39
Average R^2	0.0295	0.0875	0.0965	0.1440	0.1141	0.0714	0.0716
Average N	2,733	2,172	2,172	2,172	1,735	3,139	3,139
NYSE Size Dec.	No	No	Yes	Yes	No	No	No
FF12 Industry	No	No	No	Yes	No	No	No
Exchange	No	No	No	No	Yes	Yes	Yes

In this table, we report results from Fama and MacBeth (1973) regressions of year t+1 stock returns on firm characteristics from year t. NUM_t is the number of articles about a firm in year t from the respective database (indicated at the top of the table). NYT^C is the yearly number of New York Times articles about a firm according to the New York Times Chronicle webpage. NYT^L is the yearly number of New York Times articles about a firm according to LexisNexis (available from 1973). NAT^L is the yearly number of national newspaper articles about a firm according to LexisNexis (available from 1973). $Size_t$ is the firm's market capitalization at the end of year t. (continued on next page)

Panel B: Robustness						
	NYT^C		NYT^L		NAT^L	
	(1)	(2)	(3)	(4)	(5)	(6)
$\ln(1+NUM_t)$	0.0055***	0.0061***	0.0137***	0.0128***	0.0105***	0.0129***
	(3.18)	(2.68)	(2.99)	(3.98)	(3.01)	(3.65)
$\Delta\ln(1+NUM_{t-1})$	-0.0143***	-0.0069	-0.0143**	-0.0105*	-0.0105***	-0.0105*
	(-3.53)	(-1.13)	(-2.41)	(-1.67)	(-3.19)	(-1.71)
$\Delta\ln(1+NUM_t)$	-0.0114***	-0.0126**	-0.0083*	-0.0118**	-0.0076**	-0.0083
	(-2.61)	(-2.31)	(-1.75)	(-2.08)	(-2.19)	(-1.22)
MF $Ownership_t$	0.0120		0.0139		0.0201	
	(0.15)		(0.17)		(0.23)	
$\ln(Shareholders_t)$	-0.0014		-0.0025**		-0.0027**	
	(-1.27)		(-1.99)		(-2.14)	
$\ln(Advertising_t)$		-0.0107		-0.0076		-0.0076
		(-1.32)		(-0.95)		(-0.95)
$\Delta\ln(Advertising_t)$		0.0043		0.0039		0.0037
		(0.79)		(0.67)		(0.63)
T (Years)	31	42	31	39	31	39
Average R^2	0.0680	0.0934	0.0679	0.0885	0.0678	0.0893
Average N	2,874	902	3,069	996	3,069	996
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Exchange	Yes	Yes	Yes	Yes	Yes	Yes

(continued) $Beta_t$ is the stock's market beta. B/M_t is the firm's book-to-market ratio. Ret_t is the stock's return in year t. $Amihud_t$ is the stock's Amihud (2002) illiquidity ratio, measured over the days of year t. $IVol_t$ is the stock's idiosyncratic volatility, measured with daily returns in year t, based on the Fama and French (1993) model. $Turnover_t$ is the stock's average monthly turnover, measured by monthly volume over shares outstanding in year t. MF $Ownership_t$ is the percentage of a firm's market capitalization held by mutual funds (available from 1981 to 2011) at the most current reporting quarter at the end of year t. $Shareholders_t$ is the number of a firm's shareholders reported at the most current fiscal year end of year t. $Advertising_t$ are the firm's advertising expenditures (available since 1971) from the most recent fiscal year end of year t. In Column (3) of Panel A, NYSE size decile dummy variables are included, and in Column (4) we additionally include Fama/French 12 industry dummies. In Columns (5) to (7) of Panel A we include exchange dummies for AMEX and NASDAQ listing. In Panel B, we include all control variables from Specifications (5)-(7) of Panel A, but do not report their coefficients. The sample covers all > \$1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with three lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 12: Change and Level Effect – Time Splits

	Panel A: 1926-1960 with NYT^{C}					
		Change Effect			Level Effect	
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
Raw	-0.06%	-0.07%	0.04%	0.29%***	0.31%***	0.27%***
	(-0.79)	(-0.79)	(0.39)	(3.12)	(3.80)	(3.91)
1F	-0.06%	-0.07%	0.00%	0.18%**	0.23%***	0.22%***
	(-0.72)	(-0.78)	(0.01)	(2.43)	(3.22)	(3.47)
4F	-0.11%	-0.03%	0.01%	0.14%**	0.18%**	0.16%***
	(-1.29)	(-0.36)	(0.09)	(2.00)	(2.43)	(2.60)

	Panel B: 1961-1995 with NYT^{C}					
		Change Effect			Level Effect	
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
Raw	-0.33%***	-0.20%***	-0.16%**	0.25%***	0.20%***	0.13%*
	(-4.25)	(-3.23)	(-2.06)	(3.45)	(2.99)	(1.75)
1F	-0.35%***	-0.23%***	-0.18%**	0.19%***	0.14%**	0.07%
	(-4.71)	(-3.81)	(-2.28)	(2.81)	(2.37)	(1.00)
4F	-0.31%***	-0.10%	-0.18%**	0.13%**	0.08%	0.03%
	(-4.37)	(-1.49)	(-2.29)	(2.02)	(1.27)	(0.44)

	Panel C: 1996-2014 with NYT^{C}					
		Change Effect			Level Effect	
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
Raw	-0.29%	-0.48%***	0.05%	0.10%	0.14%	0.15%
	(-1.27)	(-3.01)	(0.31)	(0.72)	(1.04)	(1.47)
1F	-0.36%	-0.56%***	-0.03%	0.09%	0.11%	0.12%
	(-1.48)	(-3.36)	(-0.22)	(0.63)	(0.86)	(1.28)
4F	-0.29%	-0.41%***	0.09%	0.16%	0.22%*	0.25%***
	(-1.36)	(-2.89)	(0.58)	(1.14)	(1.85)	(2.59)

Panel D: 1996-2014 with NAT^L						
	Change Effect			Level Effect		
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
Raw	-0.29%	-0.15%	-0.12%	0.12%	0.16%	0.15%
	(-1.49)	(-1.26)	(-0.72)	(0.84)	(1.13)	(1.41)
1F	-0.36%*	-0.23%*	-0.20%	0.16%	0.17%	0.14%
	(-1.87)	(-1.91)	(-1.28)	(0.95)	(1.09)	(1.27)
4F	-0.31%*	-0.08%	-0.12%	0.18%	0.24%*	0.26%**
	(-1.68)	(-0.66)	(-0.72)	(1.10)	(1.67)	(2.24)

Panel E: 1996-2014 excl. 2008 with NAT^L						
	Change Effect			Level Effect		
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
Raw	-0.26%	-0.12%	-0.09%	0.23%*	0.26%**	0.24%**
	(-1.25)	(-1.02)	(-0.52)	(1.76)	(2.03)	(2.24)
1F	-0.36%*	-0.25%**	-0.19%	0.29%**	0.30%*	0.25%**
	(-1.65)	(-2.26)	(-1.15)	(2.07)	(1.95)	(2.04)
4F	-0.28%	-0.08%	-0.09%	0.32%**	0.39%***	0.38%***
	(-1.46)	(-0.74)	(-0.54)	(2.38)	(2.98)	(3.74)

In this table, we report monthly raw returns and alphas of equal-weighted portfolios sorted by log-changes in, and residual levels of media coverage, as defined in Sections 3 and 4. We report the raw return, the CAPM alpha (1F), and the Carhart (1997) alpha (4F) for 5-1-returns for years t+1 to t+3. Panel A reports results for 1926-1960, when newspapers were the main channel of information dissemination. Panel B reports results for 1961-1995, when TV became an important source of information. Panel C reports results for 1996-2014, when the Internet became relevant, using New York Times Chronicle coverage. Panel D reports results for 1996-2014, using national coverage (New York Times, Wall Street Journal, Washington Post, and USA Today). Panel E reports results for 1996-2014 excl. 2008, using national coverage. See Appendix A for variable definitions. The sample covers all > $1 U.S. common stocks traded on the NYSE, AMEX and NASDAQ. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table 13: Change and Level Effect – Without the Most Illiquid 30% of Stocks

Panel A: Univariate Portfolio Sort – Change				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
no coverage 0	1.71%	1.11%	1.05%	1.08%
strong decrease 1	1.24%	1.21%	1.25%	1.23%
2	1.33%	1.19%	1.25%	1.26%
no change 3	1.54%	1.26%	1.19%	1.26%
4	1.67%	1.24%	1.14%	1.23%
strong increase 5	2.16%	1.09%	1.05%	1.17%
5-1	0.93%***	-0.12%**	-0.20%***	-0.06%
	(11.73)	(-2.29)	(-3.83)	(-0.93)
N	1,056	1,056	1,044	1,032
Years	1/1926- 12/2013	1/1927- 12/2014	1/1928- 12/2014	1/1929- 12/2014

Panel B: Factor Models – Change						
		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.90%***	0.91%***	0.78%***	-0.15%***	-0.10%**	-0.14%***
	(12.70)	(12.66)	(9.91)	(-2.60)	(-1.97)	(-2.62)
N	1,050	1,050	1,044	1,056	1,056	1,056
Years	7/1926- 12/2013	7/1926- 12/2013	1/1927- 12/2013	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014
		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	-0.22%***	-0.20%***	-0.14%***	-0.08%	-0.07%	-0.05%
	(-4.39)	(-4.20)	(-2.77)	(-1.48)	(-1.23)	(-0.91)
N	1,044	1,044	1,044	1,032	1,032	1,032
Years	1/1928- 12/2014	1/1928- 12/2014	1/1928- 12/2014	1/1929- 12/2014	1/1929- 12/2014	1/1929- 12/2014

Panel C: Univariate Portfolio Sort – Level				
	Year t	Year $t+1$	Year $t+2$	Year $t+3$
low 1	1.47%	1.06%	1.05%	1.07%
2	1.71%	1.13%	1.13%	1.19%
3	1.66%	1.20%	1.19%	1.21%
4	1.60%	1.29%	1.26%	1.26%
high 5	1.58%	1.29%	1.31%	1.29%
5-1	0.12%***	0.23%***	0.26%***	0.22%***
	(2.88)	(4.11)	(4.84)	(4.75)
N	1,056	1,056	1,044	1,032
Years	1/1926- 12/2013	1/1927- 12/2014	1/1928- 12/2014	1/1929- 12/2014

Panel D: Factor Models – Level						
		Year t			Year $t+1$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.02%	0.00%	0.06%	0.14%***	0.14%***	0.13%***
	(0.46)	(-0.11)	(1.30)	(3.17)	(3.23)	(3.28)
N	1,050	1,050	1,044	1,056	1,056	1,056
Years	7/1926- 12/2013	7/1927- 12/2013	1/1927- 12/2013	1/1927- 12/2014	1/1927- 12/2014	1/1927- 12/2014
		Year $t+2$			Year $t+3$	
	(1F)	(3F)	(4F)	(1F)	(3F)	(4F)
Alpha	0.18%***	0.18%***	0.18%***	0.17%***	0.21%***	0.19%***
	(3.70)	(4.16)	(3.77)	(3.78)	(4.42)	(4.31)
N	1,044	1,044	1,044	1,032	1,032	1,032
Years	1/1928- 12/2014	1/1928- 12/2014	1/1928- 12/2014	1/1929- 12/2014	1/1929- 12/2014	1/1929- 12/2014

In this table, we report the results from panels A (raw returns) and B (factor models) of Tables 2 (Change effect) and 7 (Level effect), excluding the 30% of stocks with the highes spreads in year t, as measured by the Corwin and Schultz (2012) spread proxy. In contrast to Tables 2 and 7 the initially equal-weighted portfolios are not rebalanced monthly, but only yearly in January, when media coverage measures are updated. t-statistics are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

A Appendix: Variable Description

The following table briefly defines the main variables used in our empirical analysis. Abbreviations for the data sources are:

(i) C: New York Times Chronicle database

(ii) L: LexisNexis database

(iii) CRSP: CRSP's Stocks Database

(iv) CS: Compustat

(v) TR: Thomson-Reuter's mutual fund holdings database (s12)

(vi) NBER: National Bureau of Economic Research

(vii) OP: From the homepages of or from correspondence with the authors of the respective original papers

EST indicates that the variable is estimated or computed based on original variables from the respective data sources.

Panel A: Media Coverage Variables		
Variable Name	Description	Source
$NYT^C{}_t$	Year t's Number of New York Times articles about a firm according to the NYT-Chronicle webpage (available 1924-2013).	C
$NYT^L{}_t$	Year t's Number of New York Times articles about a firm according to LexisNexis (Relevance Score of ≥ 80, available 1973-2013).	L
$NAT^L{}_t$	Year t's Number of national newspaper (New York Times, Wall Street Journal, Washington Post, USA Today) articles about a firm according to LexisNexis (Relevance Score of ≥ 80, available 1973-2013).	L
NUM_t	Year t's number of newspaper articles about a firm according to the database (one of the above) used for the current regression's specification.	C or L
Article Tone	Year t's average article tone for a firm for LexisNexis articles (Relevance Score of ≥ 80, available 1973-2013), measured by the fraction of negative words according to the Loughran and McDonald (2011) wordlist.	L & OP, EST

Panel B: Financial Market Variables		
$Amihud_t$	The firm's Amihud (2002) Illiquidity-Ratio, estimated from year t's daily stock returns and trading volumes.	CRSP, EST
$Beta_t$	The firm's market beta $= \frac{Cov(Ret-Ret_f, Ret_m-Ret_f)}{Var(Ret_m-Ret_f)}$, estimated over year t's daily returns, where Ret_m is CRSP's value-weighted market return and Ret_f is the Treasury Bill rate from Kenneth French's webpage.	CRSP, EST
B/M_t	The firm's book-to-market ratio from the end of year t's financial year end.	CRSP & CS, EST
I_{AMEX}	Indicator variable that is one for AMEX stocks.	CRSP
I_{NASDAQ}	Indicator variable that is one for NASDAQ stocks.	CRSP
$IVol_t$	The firm's idiosyncratic volatility, estimated from the standard-deviation of OLS-residuals of the Fama and French (1993) model over year t. The factor returns used are from Kenneth French's data library.	CRSP & OP, EST
Ret_t	The firm's stock-return over year t.	CRSP
$Size_t$	The firm's market capitalization in million USD at the end of year t.	CRSP, EST

Panel B (continued): Financial Market Variables

Variable Name	Description	Source
$Turnover_t$	The firm's average monthly turnover, measured as monthly volume over shares outstanding, in year t.	CRSP, EST
$Advertising_t$	The firm's total advertising expenditures (XAD) in million USD in year t.	CS
$Assets_t$	The firm's total assets (AT) in million USD at the end of year t.	CS
$CAPEX_t$	The firm's capital expenditures (CAPX) in million USD at the end of year t.	CS
$Dividends_t$	The firm's dividends (DVC) in million USD in year t.	CS
Emp_t	The firm's number of employees (EMP) in thousands at the end of year t.	CS
$Equity_t$	The firm's book equity in million USD at the end of year t. Following Fama and French (1993)'s definition equity is shareholders equity (SEQ or else CEQ+PSTK or else AT-LT) plus deferred taxes (TXDITC or else TXDB+ITCB or else TXDB or else ITCB) minus preferred stock (PSTKR or else PSTKL or else PSTK). Before 1950, this number is from Kenneth French's data library.	CS, OP, EST
FCF_t	The firm's free cash flow (NI+DP+WCAPCH-CAPX) in million USD at the end of year t.	CS, EST
Gross $Profits_t$	The firm's gross profitablilty (REVT-COGS) in million USD at the end of year t.	CS, EST
$Leverage_t$	The firm's leverage ((AT-CEQ)/(CSHOxPRCCF+AT-CEQ)) at the end of year t.	CS, EST
Operating $Profits_t$	The firm's operating profitablilty (REVT-COGS-XSGA-XINT) in million USD at the end of year t.	CS, EST
$Payout_t$	The firm's total payout, i.e. dividends and repurchases (DVC+PRSTKCC) in million USD in year t.	CS, EST
$Sales_t$	The firm's sales (SALE) in million USD at the end of year t.	CS
$Shareholders_t$	The firm's number of shareholders (CSHR) in thousands at the end of year t.	CS
MF $Ownership_t$	Percentage of the stock's market capitalization held by mutual funds at the last available quarterly holdings report in year t.	CRSP, TR, EST

Panel B (continued): Financial Market Variables

Variable Name	Description	Source
Rm-Rf	Value-weighted market return over the one-month Treasury bill rate according to Kenneth French's data library.	OP
SMB	Small minus big factor return according to Kenneth French's data library.	OP
HML	High minus low factor return according to Kenneth French's data library.	OP
MOM	Momentum factor return according to Kenneth French's data library.	OP
ST	Short-term reversal factor return according to Kenneth French's data library.	OP
LT	Long-term reversal factor return according to Kenneth French's data library.	OP
FF-5F	Fama and French (2015) factor returns (2x3) according to Kenneth French's data library.	OP
Q-model	Q-factor returns according to Hou, Yue, and Zhang (2015).	OP
BAB	Betting-against-beta factor returns according to Frazzini and Pedersen (2014).	OP
PS-Liquidity	Pástor and Stambaugh (2003) factor returns.	OP
Sadka	Sadka (2006) factor returns.	OP
Kelly	Kelly and Jiang (2014) factor returns.	CRSP, EST
Max Return	Bali, Cakici, and Whitelaw (2011) factor returns.	OP
QMJ	Asness, Frazzini, Israel, Moskowitz, and Pedersen (2015) (quality-minus-junk) factor returns.	OP
UMO	Hirshleifer and Jiang (2010) (undervalued-minus-overvalued) factor returns.	OP
Corwin-Schultz	Corwin and Schultz (2012) spread proxy from Shane Corwin's webpage.	OP
$I_{recession}$	Indicator variable that is one during NBER recession months from the NBER webpage (`http://www.nber.org/cycles/cyclesmain.html`).	NBER
$I_{uncertain}$	Indicator variable that is one after high aggregate uncerainty months. High aggregate uncertainty is defined by above median average idiosyncratic volatility of stocks.	CRSP, EST

B Appendix: Media Coverage Data

This section briefly describes the procedure we use to extract New York Times coverage on the firm-year level from the New York Times Chronicle webpage `http://chronicle.nytlabs.com/`).

1. Generate list of company names using CRSP's comnam variable (all common stocks traded on NYSE, AMEX, and NASDAQ between 1925 and 2014).

2. Make a few further technical adjustments to the comnam string:

   - We delete the legal form of the company (INC, CORP, LTD, ...), since it is usually not used by the New York Times.
   - We replace abbreviations (e.g. INTL or CHEM) by the respective unabbreviated word (e.g. INTERNATIONAL or CHEMICAL).
   - CRSP puts spaces between abbreviated names (e.g. 'NLT Corp' is saved as 'N L T Corp'). We delete these spaces.
   - If a company name includes the state name abbreviation ('CT' for 'Connecticut'), or another additional identifier used by CRSP to distinguish the firm (e.g. 'NEW'), we delete this additional identifier.
   - Ampersands ('&') are replaced by 'AND'.

3. Drop company names from the list, if they are part of Webster's Dictionary (word list 'web2' under `http://www.cotse.com/tools/wordlists.htm`)

4. Download the yearly number of articles containing these adjusted company names from the New York Times Chronicle webpage (`http://chronicle.nytlabs.com/`).

C Appendix: Relating Results to Fang and Peress (2009)

In this section, we relate the results of Fang and Peress (2009) to our results. We start by replicating their findings, and then change the universe of stocks, the measurement of media coverage and control variables in order to get to our results.

In the first row of Table C1 we report the main result by Fang and Peress (2009). They find that stocks with no media coverage outperform those with high (above median) media coverage by 0.39% per month. This excess return is not explained by the Sharpe (1964) CAPM or the Carhart (1997) four-factor model. We replicate their analysis and report our results in the second row of Table C1. The magnitude of our estimate of the No-High return (0.38% per month) is nearly identical to that of Fang and Peress (2009). In the next row, we exclude earnings reports which just reprint numbers from financial statements without any commenting and use equal weights for the four national newspapers. Fang and Peress (2009) include earnings reports and weight coverage by circulation of the respective newspaper. This adjustment slightly reduces the No-High return. Next, we decrease the Relevance Score requirement from 90% to 80%, which does not significantly change results. Fang and Peress (2009) analyze NYSE stocks and 500 randomly selected NASDAQ stocks. In the fifth row of Table C1, we extend our stock universe to the entire cross-section of NYSE, AMEX and NASDAQ stocks. In this complete dataset, the No-High premium decreases strongly, even turning negative when adjusted for the Carhart (1997) factors. Fang and Peress (2009) use a one-month holding period. Increasing the holding period to twelve months further decreases the No-High premium. In the last row of Table C1 we extend our sample period from Fang and Peress (2009)'s ten-year period from 1993 to 2002 to the full LexisNexis sample from 1973 to 2013. In this specification, the Carhart (1997) alpha becomes statistically significantly negative at the 5%-level. So far, the main two steps reducing the premium for no-coverage over high-coverage stocks are the inclusion of all stocks from NASDAQ and AMEX and the extension of the holding period from one month to twelve months.

In Table C2, we additionally control for firm size by double sorting first by size and then by coverage level. Panel A uses LexisNexis national newspaper coverage, just like Fang and Peress (2009). During year $t + 1$, the first year after portfolio formation, the No-High premium is negative in seven out of the ten size deciles, but insignificantly different from zero on average. During year $t + 2$, the second year after portfolio formation, the No-High premium is negative in all ten size deciles. The average No-High portfolio returns -2.76% per year, which is statistically significant at the 5%-level. Interestingly, 2.76% per year is exactly the premium we find for top-quintile coverage level stocks over bottom-quintile coverage level stocks in Section 4.1. As discussed in Section 4.1, the insignificance of the year $t+1$ effect might be due to omitted variable bias. No coverage stocks tend to exhibit a recent decrease in coverage, whereas high coverage stocks tend to exhibit a recent increase, so that the No-High portfolio's return is positively biased by the coverage change effect. In Panel B of Table C2, we use New York Times coverage from the Chronicle database and extend our sample period to 1927-2014. The No-High effect is now clearly negative in all size deciles, and significantly negative on average for both years $t+1$ and $t+2$.

Hence, the inclusion of all stocks, the extension of the holding period from one month to twelve months, and controlling for size turn the significantly positive No-High premium from Fang and Peress (2009) into the significantly negative premium we find for low coverage over high coverage stocks.

Table C1: Relating Results to Fang and Peress (2009) – Univariate Sorts

Specification	No	Low	High	Raw	No-High (1F)	(4F)
Results Fang and Peress (2009)	1.35%	1.11%	0.96%	0.39%**	0.45%**	0.24%**
Replication	1.40%	0.99%	1.03%	0.38%**	0.43%**	0.24%*
				(2.03)	(2.20)	(1.69)
Excl. EAs & Equal-Weighted	1.38%	0.98%	1.12%	0.26%	0.32%	0.11%
				(1.24)	(1.51)	(0.75)
Relevance Score 80+	1.38%	1.03%	1.11%	0.27%	0.34%	0.15%
				(1.32)	(1.60)	(1.03)
Complete Cross-Section	0.96%	0.71%	0.91%	0.04%	0.12%	-0.06%
				(0.17)	(0.47)	(-0.49)
1-Year Holding Period	0.89%	0.74%	0.96%	-0.07%	0.01%	-0.07%
				(-0.29)	(0.03)	(-0.49)
1974-2014	1.22%	1.18%	1.23%	-0.01%	0.03%	-0.11%*
				(-0.17)	(0.35)	(-1.90)

In this table, we report equal-weighted portfolio returns for three portfolios: no media coverage, low (below median) media coverage and high (above median) media coverage. Media coverage is measured by LexisNexis national coverage in the previous month. We report raw returns, CAPM- and Carhart (1997)-alphas of the no coverage minus the high coverage portfolio returns. In the first row, we show the main result by Fang and Peress (2009). In the following rows, we first replicate their main result and then show how it changes when the media coverage measure, stock universe and portfolio strategy are adjusted towards our dataset and methodology (see text for details). t-statistics are based on Newey and West (1987) standard errors with one lag and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

Table C2: Relating Results to Fang and Peress (2009) – Double Sorts with Size

Panel A: National Coverage (1974-2014)				
		Year t+1		
Size Decile	No	Low	High	No-High
small 1	1.62%	1.72%	1.52%	0.09%
2	1.17%	1.19%	1.34%	-0.17%
3	1.11%	1.30%	1.28%	-0.17%
4	1.23%	1.24%	1.14%	0.09%
5	1.10%	1.20%	1.11%	-0.01%
6	1.08%	1.08%	1.25%	-0.17%
7	1.15%	1.17%	1.13%	0.03%
8	1.16%	1.19%	1.22%	-0.06%
9	1.12%	1.09%	1.33%	-0.21%
large 10	0.95%	1.03%	1.16%	-0.21%
mean				-0.08%
				(-0.68)
		Year t+2		
Size Decile	No	Low	High	No-High
small 1	2.03%	1.77%	2.30%	-0.27%
2	1.57%	1.68%	1.98%	-0.41%
3	1.35%	1.39%	1.63%	-0.28%
4	1.42%	1.56%	1.85%	-0.42%
5	1.26%	1.30%	1.40%	-0.14%
6	1.32%	1.40%	1.42%	-0.10%
7	1.21%	1.26%	1.47%	-0.26%
8	1.36%	1.34%	1.39%	-0.03%
9	1.22%	1.24%	1.44%	-0.22%
large 10	1.12%	1.14%	1.26%	-0.14%
mean				-0.23%**
				(-2.57)

Panel B: New York Times Coverage (1927-2014)				
		Year t+1		
Size Decile	No	Low	High	No-High
small 1	1.75%	1.63%	1.82%	-0.07%
2	1.23%	1.28%	1.36%	-0.13%
3	1.02%	1.18%	1.22%	-0.20%
4	1.03%	1.16%	1.22%	-0.19%
5	1.02%	1.03%	1.16%	-0.14%
6	1.05%	1.11%	1.13%	-0.08%
7	1.02%	1.09%	1.11%	-0.09%
8	1.02%	1.05%	1.04%	-0.02%
9	0.93%	1.03%	1.08%	-0.15%
large 10	0.91%	0.90%	0.98%	-0.07%
mean				-0.11%**
				(-2.06)
		Year t+2		
Size Decile	No	Low	High	No-High
small 1	1.88%	1.87%	2.04%	-0.16%
2	1.42%	1.54%	1.63%	-0.21%
3	1.15%	1.31%	1.47%	-0.32%
4	1.23%	1.25%	1.28%	-0.05%
5	1.06%	1.16%	1.23%	-0.17%
6	1.14%	1.18%	1.20%	-0.06%
7	1.00%	1.07%	1.17%	-0.17%
8	1.03%	1.09%	1.12%	-0.08%
9	0.91%	1.06%	1.14%	-0.22%
large 10	0.94%	0.91%	1.01%	-0.07%
mean				-0.15%***
				(-3.33)

In this table, we report portfolio returns from a dependent double sort, where stocks are sorted first into deciles by size (at the end of year t), and then into no media coverage, low (below median) media coverage and high (above median) media coverage stocks. Media coverage is the number of articles in year t. We report raw excess returns of the no coverage over the high coverage portfolio, and the mean of these 10 long-short portfolio returns. In Panel A, we use national coverage from LexisNexis to calculate portfolio returns from 1974 to 2014. In Panel B, we use New York Times coverage from New York Times Chronicle to calculate portfolio returns from 1927 to 2014. t-statistics for the mean long-short returns are based on Newey and West (1987) standard errors with eleven lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

D Appendix: Additional Tables

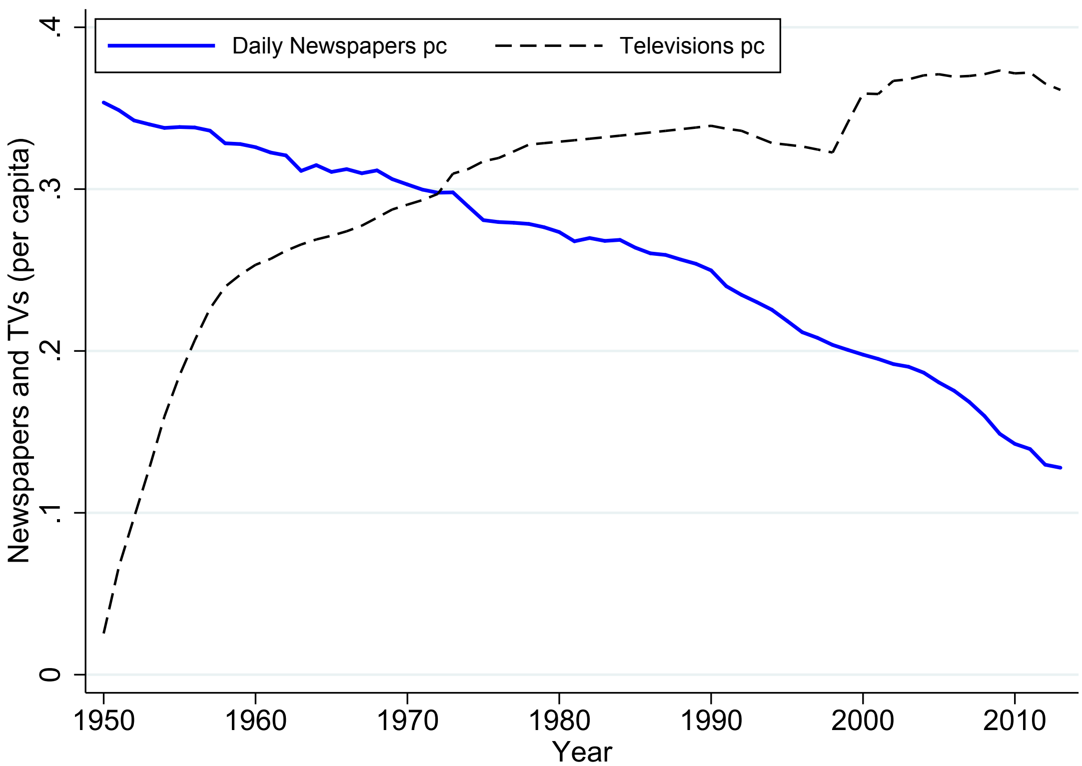
Table D1: Residual Media Coverage Models

	1926-2013 NYT^C		1973-2013 NAT^L		
	(1)	(2)	(3)	(4)	(5)
$\ln(Size_t)$	0.3859***	0.3715***	0.3022***	0.2713***	0.2633***
	(31.07)	(23.64)	(23.13)	(23.92)	(10.53)
Ret_t		-0.5010***		-0.3187***	-0.2834***
		(-7.39)		(-13.91)	(-9.81)
$\|Ret_t\|$		0.5646***		0.2945***	0.2689***
		(6.41)		(13.30)	(10.26)
I_{AMEX}		-0.1829***		-0.1620**	-0.0728
		(-7.38)		(-2.51)	(-1.49)
I_{NASDAQ}		-0.4582***		-0.3504***	-0.1955***
		(-8.66)		(-5.27)	(-4.12)
$\Delta\ln(1+NUM_{t-1})$		0.6059***		0.5934***	0.6154***
		(31.25)		(15.27)	(18.99)
$\Delta\ln(1+NUM_t)$		0.3149***		0.3266***	0.3407***
		(18.21)		(11.24)	(12.13)
MF $Ownership_t$					-0.8357***
					(-4.32)
$\ln(Shareholders_t)$					0.1200***
					(6.77)
T (Years)	88	88	41	39	31
Average R^2	0.1974	0.2697	0.3330	0.4740	0.5002
Average N	2749	2504	4935	4505	3977

In this table, we report the Fama and MacBeth (1973) coefficients and standard-errors for regressions of $\ln(1+NUM_t)$ on the following variables. NUM stands for NYT^C, i.e. New York Times Chronicle media coverage in specifications (1) and (2). In specifications (3) and (4) it stands for NAT^L, i.e. national coverage according to LexisNexis. $Size_t$ is a firm's market capitalization at the end of year t. Ret_t is a firm's stock-return over year t. I_{AMEX} is an indicator variable indicating whether a stock is traded on AMEX. I_{NASDAQ} is an indicator variable indicating whether a stock is traded on NASDAQ. $\Delta\ln(1+NUM_{t-1})$ is the log-change of yearly media coverage (the number of articles+1) from year t-2 to year t-1. $\Delta\ln(1+NUM_t)$ is the log-change of yearly media coverage (the number of articles+1) from year t-1 to year t. MF $Ownership_t$ is the percentage of a firm's market capitalization held by mutual funds at the most current reporting quarter at the end of year t. $Shareholders_t$ is the number of a firm's shareholders reported at the most current fiscal year end at the end of year t. t-statistics are based on Newey and West (1987) standard errors with three lags and are reported in parentheses. ***, **, and * indicate significance at the one, five, and ten percent level, respectively.

E Appendix: Additional Figures

Figure E1: Daily Newspapers and Televisions Per Capita 1950-2013



In this figure, we display the circulation of daily newspapers and the number of televisions, normalized by population size, from 1950 to 2013. Sources and calculation (November 6^{th} 2015): `http://www.census.gov/popest/data` for population and number of households, `http://www.naa.org/Trends-and-Numbers` for daily newspaper circulation 1950-2013, `http://www.tvhistory.tv/Annual_TV_Households_50-78.JPG` for the number of households with TVs 1950-1978, `http://www.statista.com/statistics/243789/number-of-tv-households-in-the-us` for the number of households with TVs 2001-2013. In between 1979 and 2000, we interpolate the percentage households with TVs. To get from the percentage of household with TVs to TVs per capita, we divide by the average number of persons per household. Taking into account multiple TVs per household would further increase our estimate.