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The direction of media influence: Real-estate news and the stock market☆

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ABSTRACT

This paper uses a novel identification strategy to test the influence of news media on the stock market. Because the stock market does not impact the media coverage of the housing market, a relationship between real-estate news and shares of companies engaged in the housing market is attributable media influence. I find that the content of reporting exhibits a significant relationship with stock returns, and the amount of news with the number of trades. These relationships exist even after controlling for known risk factors, housing market performance and intra-week correlation. This finding is consistent with the function of the media as a source of information and sentiment in financial markets.

1. Introduction

It is difficult to identify what influence the media have on financial markets. With the advent of 24-hour news, the extent of media coverage is almost instantly determined by market performance. Furthermore, when movements are widely anticipated media coverage may even be influenced by future market performance. Consequently, media influence cannot be ascertained from a simple correlation with market performance. A solution is to use two separate markets — one to source the media coverage and another to test its impact. Provided the latter does not influence the former, it follows that any relationship is attributable to media influence. This article takes this approach to circumventing the causality issue by examining the influence of the news media on the UK stock market during the period 1993–2012. I test whether the media coverage of the residential housing market influences traders of company stocks related to the housing market (i.e., house building, residential property investment and development, and residential property fund management). The news articles identified do not report on the performance of the stock market or on companies engaged in the housing market. Controls are used on the performance of the housing market and company-specific risk factors when assessing the relationship between news media and the stock market. Thus a relationship with the stock market can be attributable only to the influence of the media on investors.

The main contribution of this paper is to the growing literature examining the causal impact of the media on financial markets. Focusing on retail investors, Engelberg and Parsons (2011) show that local newspaper coverage of earnings announcements strongly predicts local trading volume. By identifying differential media coverage of the same information event the authors do not assess the content of coverage, just whether earnings announcements

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were covered by local media. Peress (2014) identifies that an exogenous absence of media due to strike action reduces trading volume and intraday volatility. He concludes that media contribute to the efficiency of the market by improving information dissemination. By assessing market activity in the absence of media, no consideration is given for the content of media coverage. Dougal et al. (2012) do indirectly capture the content of media coverage by creating fixed effects for different authors of the *Wall Street Journal*'s 'Abreast of the Market' column. While differing optimism and pessimism may be captured through the fixed effects so too will writing styles, article length, and the possibility that different journalists have different information on the market. Thus while the existing literature does suggest that the media have a significant causal impact on the stock market, the tonal content of media has not been tested with due consideration for causality. This article seeks to add to the literature by identifying if traders of stocks related to the housing market respond to the amount and sentiment of news media housing market articles with less ambiguity about the nature of any correlations identified.

This paper also contributes to the growing literature examining factors that influence the housing market. Given the importance of the housing market to the broader economy (Leung, 2004; Calomiris et al., 2012; Mian et al., 2011), a better understanding of the factors that may influence this market is of particular importance. While Soo (2013) and Walker (2014) quantify news media sentiment on the housing market and identify a relationship with house price changes, few studies have examined the causal impact of the media on the housing market. This is unsurprising for a number of reasons. The infrequency with which house prices are recorded prevents a granular analysis of the relationship between media coverage and house price changes. Further, the infrequency with which individuals buy or sell houses creates a significant lag between the media's influencing sentiment and this sentiment affecting market activity, creating the possibility that in the interim period factors other than the media have influenced individuals. Finally, as previously highlighted, since media coverage is determined by housing market performance, any relationship may be that of the housing market on the media rather than that of the media on the market. Using the stock market to estimate the effect of the media on housing market expectations circumvents these problems.

Mori (2015) examines the information diffusion process in the US real estate investment trust (REIT) market and shows a relationship between lagged returns of companies with media coverage and the current returns of companies without media coverage, suggesting that the media play an important informational role in the market. Media coverage is of specific companies and the REIT market. This article builds on this work by looking at other industries affected by the housing market, examining a UK context and utilising media that does not reference any of the specific companies or industries analysed.

To gauge the media effect, nearly 12,000 articles on the housing market in the *Financial Times* were identified. These articles were published between 1993 and 2012, providing 20 years of analysis. The boom in the UK housing market from 2002 onwards (Burnside et al., 2011; Whitehead and Scanlon, 2012), resulted in significant variation in the amount and content of news reporting, ensuring that the sample period is not limited to a boom or a bust housing market, but also includes periods of stability. Fig. 1 shows that the growth in UK house prices reflected changes in average earnings until 2002, when this growth outstripped earnings growth, indicating a booming housing market. Average house prices continued to increase until mid-2007, fell for the next 18 months and were then relatively stable to the end of 2012. Bloomberg was used to create a portfolio of 41 companies listed on the London Stock Exchange whose primary activity concerns the UK residential property market. Measures of the amount and content of media coverage were used as explanatory variables for portfolio return premiums and volume, controlling for known risk factors and housing market performance.

The main finding of this article is that there is a significant relationship between the tonal content of the housing market articles published in the *Financial Times* and the return premium of companies involved in the housing market, suggesting that the media influence investor sentiment across markets. This finding is consistent with Tetlock (2007), since the tone of media reporting appears to approximate to investor sentiment. This finding is robust to controlling for known risk factors, such as broader market performance, the volume of trading, the January effect, the 2008 financial crisis, controlling for the performance of the housing market, using different measures of portfolio performance, different sample periods, different sets of housing market articles and different model specifications. Falsification tests showed this relationship to be non-spurious; no relationship was identified between future media coverage and current portfolio returns or media coverage and the returns of the FTSE Oil Index. As a final robustness check, to ensure that the stock market was not affecting the tone of media reporting, articles that referenced either the *financial system* or *mortgage-backed securities* were excluded from the analysis, and this did not alter the findings.

The second finding was that the number of articles published affects the volume of trading. This finding is robust to controlling for stock and housing market performance, using different measures of portfolio performance, different model specifications and different sample periods. However, when articles that reference the *financial system* or *mortgage-backed securities* were excluded from analysis, no significant relationship was identified. However, overall the findings suggest traders of stocks related to the housing market respond to the amount and sentiment of news media housing market articles.

The rest of this article is structured as follows. Section 2 describes how housing market articles were identified in the *Financial Times* and how the sentiment of those articles was quantified. Section 3 details the portfolio used to assess media influence and the variables chosen to control for housing market performance. The model used is discussed in Section 4. The results are presented and discussed in Section 5. Section 6 provides a number of robustness tests to demonstrate that the results indicate