The power of bad: The negativity bias in Australian consumer sentiment announcements on stock returns

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ARTICLE INFO

ABSTRACT

This paper examines the equity market reaction to the monthly release of Australian consumer sentiment news. Our results indicate that consumer sentiment has valuable information content. Further, we document a version of the "negativity effect" (from the psychology literature) in which, upon announcement of bad (good) sentiment news, the equity market experiences a significant negative (no) announcement day effect. Notably, we find that the market recovers from the bad news shock relatively quickly post-announcement. The results are robust to a broad range of additional tests.

1. Introduction

The issue of whether sentiment affects stock prices is enduring and has taken on renewed significance in the context of dramatic rises and falls observed in the stock market over the past decade. Earlier studies have explored the impact of United States (US) sentiment measures on various securities such as ADRs (Grossmann et al., 2007), closed-end country funds (Bodurtha et al., 1995), and individual stocks (Baker and Wurgler, 2006). We contribute to this literature by exploring the aggregate Australian stock market reaction to periodic announcements of consumer sentiment from the Westpac-Melbourne Institute of Applied Economic and Social Research. The Australian setting is ideal for such a study because the sentiment index is released only once each month, whereas in markets such as that of the US, there is often a progressive release of sentiment information over the month.[1] This blurred release of information makes reliable measurement of the impact of consumer sentiment announcements on the stock market problematic in the American context.

Examining the direct linkage between investor sentiment and market reaction would be preferred, but the absence of a reliable measure of investor sentiment with a sufficiently deep history makes such an analysis unappealing. However, while exogenous measures of investor sentiment are difficult to identify, Qui and Welch (2006) provide evidence that the University of Michigan US consumer sentiment index (CSI) is a good proxy for investor sentiment in the US. As such, we expect that our Australian CSI is similarly a good proxy for investor sentiment in Australia.

We also address whether positive and negative sentiment announcements impact stock prices equally and, given that we find they do not, we further explore in what form such asymmetry exists. As Baker and Wurgler (2007, p. 130) state: "Now, the question is no longer, as it was a few decades ago, whether investor sentiment affects stock prices, but rather how to measure investor sentiment and quantify its effects." We address this issue by considering whether sentiment announcements reflect the psychological bias of "negativity." The negativity effect gives greater value to negative information than for positive information. The effect embraces a wide range of empirical phenomena as well as theoretical concepts advanced in order to explain them (Peeters and Czapiński, 1990).

The negativity effect can be defined as a situation in which there is a greater impact of negative *versus* positive stimuli on a subject. The basic logic follows Kanouse and Hanson (1971), and Peeters (1971), and is explained by Beach and Strom (1989).

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[1] Thus, in the case of the Michigan consumer CSI (used, for example, by Otoo (1999)), a preliminary estimate is followed about three weeks later by a final number.

Assume that there is a creature that lives solely on fungi; mushrooms are abundant and edible, and toadstools may or may not be abundant but they are poisonous. The creature holds as its working hypothesis that every fungus is a mushroom. However, if a fungus has one or more attributes of a toadstool, that working hypothesis is quickly rejected. The reverse logic does not apply: a fungus that has many of the attributes of a toadstool must not be eaten even if it has one or more attributes of a mushroom. Hence, the negative attributes of a particular fungus determine the decision about its edibility. Assuming that perfect discrimination is not possible, the screening strategy is safest because it favors false negative decisions (rejection of edible mushrooms that have attributes of inedible toadstools) over false positive decisions (acceptance of inedible toadstools that have attributes of edible mushrooms).[2]

In the context of financial markets, consider a group of investors who can shift their holdings between risky investments (stocks) and relatively safe investments (bonds). Assume that the default position adopted by investors is to view all information as good. Thus, if the information has no attributes of bad information, the investor leaves the portfolio largely unchanged. However, if the information represents negative news, it is acted upon vigorously. That is, in this scenario, investors reject the ("good news") assumption quickly and rebalance their portfolio from risky stocks to safe bonds. Again, in a world of uncertainty, perfect discrimination is not possible—the screening strategy is safest because it favors false negative decisions over their false positive counterparts. That is, if the information is correct, i.e., the new information is truly bad news, then the investor has appropriately moved to a safer haven. Conversely, if the information is incorrect, i.e., it is actually not bad news, then they bear a cost—they have missed out on the risk premium due to the lower risk of the bonds relative to stocks over the period, but their portfolio can be rebalanced back towards riskier stocks later. The foregoing description thus applies the negativity effect to the financial markets setting.[3]

Of course, the literature extensively explores asymmetric security market reactions to various types of news announcements; a partial list consists of Busse and Green (2002), Chan (2003), Chen et al. (2003), Chuliá et al. (2010), Jain (1988), Kurov (2010), May (2010), McQueen et al. (1996).[4] However, to our knowledge, this is the first paper to explore the negativity effect on stock returns in the context of consumer sentiment announcements. At a more general level, our robust evidence of the negativity effect has implications for much of the theoretical work based on Grossman and Stiglitz (1980) and Kyle (1985) that assumes symmetry in the effect of information on stock returns.

The remainder of the paper is structured as follows. The next section reviews the background literature and develops testable hypotheses. Section 3 overviews the data collection process and the characteristics of that data. Section 4 documents the method and results of the tests. Section 5 concludes.

2. Hypothesis development

Finance research has generally dichotomized investors in financial markets as either uninformed or informed traders. Uninformed traders (Kyle, 1985) can be "irrational" or "sentiment" traders (Shleifer and Vishny, 1990), "noise" traders (Black, 1986) and/or "liquidity" traders (Treynor, 1971). Conversely, informed traders have been characterized into various types, such as "arbitrageurs" or "smart money" traders or "rational speculators" (Shleifer and Summers, 1990). Informed traders, while advantaged, still face risk and uncertainty. For example, such investors who have inside knowledge or arbitrageurs who can lock in their returns might have lower risks but generally, even trading by fully rational investors is risky and arbitrage is limited (Shleifer and Summers, 1990). As such, fundamental news alone will not exclusively explain stock price movements; uninformed changes in demand, for example, in response to investor sentiment, will likely move prices too (Shleifer and Summers, 1990).

Once it is acknowledged that the relation between prices and fundamental values is decoupled, the issue of what determines stock prices is largely an empirical question. More specifically: in which direction (positive or negative) do stock prices move when sentiment changes and are these impacts symmetric? That is, if investor sentiment rises or falls by a given magnitude, will the magnitude of the effect on the stock market be the same?[5] The main goal of our study is to examine whether and to what extent the negativity effect provides an answer to this question.

As outlined in the introduction, the "negativity effect" is a behavioral concept characterized by a greater impact of negative *versus* positive stimuli on a subject (Peeters and Czapiński, 1990).[6] There are two manifestations of the effect: (1) potential costs are more heavily weighted than potential gains are in making decisions under risk and (2) negative information is weighted more heavily than positive information is in the formation of overall evaluations. The first manifestation gave rise to prospect theory.[7] It is the second manifestation that is of interest here, and it suggests that investors will react more to negative information than to positive information.

If a negative (positive) sentiment shock occurs, investors rebalance their portfolios by selling stocks (bonds) and buying bonds (stocks)—inducing a fall (rise) in the stock market. If sentiment news (good or bad) has equal importance, a symmetric effect should be observed in stock prices. However, if there were a positive–negative asymmetry, then stock market reaction to positive/negative sentiment shocks would be unequal (the direction of asymmetry would depend on the relative "importance" of the good/bad news). The negativity effect implies a special type of asymmetry, i.e., a negative reaction to bad news but a negligible reaction to good news.[8]

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[2] This effect is known under a variety of labels: Pollyanna hypothesis, Vigilance hypothesis, Leniency effect, positivity bias and negativity bias (Lewicka et al., 1992). Rozin and Royzman (2001) categorise negativity bias into four types: Negative potency, greater steepness of negative gradients, negative dominance and greater negative differentiation.

[3] There are other potential explanations for a negativity effect. For example, if positive sentiment is strongly correlated with other more timely information in the economy, then the release of consumer sentiment is not new information, effectively it is a lagging indicator, whereas negative sentiment might be a leading indicator. Regardless, these arguments imply a negativity effect.

[4] In the broader finance literature, consideration of asymmetric effects has also developed many other directions. See, for example, Li (2011) (regarding exchange rate correlation) and Marcucci and Quagliariello (2009) (regarding bank credit risk).

[5] For the purposes of simplifying discussion of our basic ideas here, we assume the simplest case of "random walk" expectations for consumer sentiment. That is, the direction of consumer sentiment news will be simply reflected in the sign of the change in the CSI. We explore more complex time series modeling of CSI expectations later in the paper, the outcome of which support the choice of the random walk approach as our primary measure of CSI news.

[6] The negativity effect can be regarded as a special case of a broader positive–negative asymmetry that was introduced by Peeters (1971).

[7] Veronesi (1999) presents a dynamic, rational expectations equilibrium model of asset prices in which investors overreact (underreact) to bad (good) news in good (bad) times. However, Veronesi's model requires "good time" and "bad time" economic states to accommodate the asymmetric reaction. While prospect theory does not require such states (Kahneman and Tversky, 1979), there is asymmetry in the utility attaching to gains and losses. However, prospect theory does not directly provide us with any prediction of what investors are expected to do upon the arrival of positive or negative information (e.g., that market sentiment has risen or fallen).

[8] Alternatively, investors might hold no particular *a priori* view about the information. If information is released and it is deemed good news regarding the future, then investors react and transfer their funds out of bonds and into stocks. However, if the news is bad, they might choose to do nothing. Such a scenario would be regarded as producing a "positivity effect."