

Sentiment, stock returns, and regime-varying impact

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Abstract – extended

Standard financial theories dwarf the explanatory power of investor sentiment on asset prices and returns since it can be eliminated by arbitrage and thus cannot exert persistent impact. But De Long et al. (1990) imply that noise traders can influence asset prices and returns via two main channels that (i) shifts in investor sentiment *directly* affects stock returns; and (ii) shifts in magnitude of investor sentiment *indirectly* affects stock returns by shaping conditional volatility (known as the DSSW model, and henceforth). Subsequent literature, however, appears to merely focus on the direct channel in the stock market (e.g., Baker and Wurgler, 2006), leaving the indirect one less extensively examined except for Lee et al. (2002) testing both channels through which investor sentiment impacts stock returns in the US stock market. But in their study, the stock market and the research period is comparatively limited and the adoption of the proxy for investor sentiment—Investor Intelligence (II)—is per se in dispute, implying that the extant studies have not yet fully applied the DSSW model to the analysis of investor sentiment. Meanwhile, little evidence is available regarding the potential regime-varying effect of investor sentiment, especially when it involves how such effect varies across the bull and the bear markets.

Given these current gaps, we pay attention to both channels suggested in De Long et al. (1990) in this paper. We enlarge the research sample to the international level by incorporating a total of 48 stock markets across the globe and employ the turnover ratio as the proxy for investor sentiment. The evaluation of the predictability of conditional volatility to stock returns highlights the importance of generalized autoregressive conditionally heteroscedastic (GARCH) models yet the return-risk tradeoff results can be subject to the very choice of the model adopted (e.g. Turner et al., 1989; Harvey, 2001; Ghysels et al., 2005; Yu and Yuan, 2011, etc.). So, we start with comparing three candidates in GARCH-type models including GARCH-M, the GJR-GARCH-M, and the EGARCH-M, to find the fittest one in reflecting the relationship between investor sentiment, stock returns, and conditional volatility. We show that specifications measuring the leverage effect—the GJR-GARCH-M and the EGARCH-M—performs much better than GARCH-M not distinguishing asymmetric influences of good and bad news on volatility, and the EGARCH-M is more suitable than the GJR-GARCH-M. We confirm from the entire sample that in most of the stock markets, shifts in investor sentiment is a critical factor in explaining stock returns and specifically, for the direct channel, optimistic (pessimistic) shifts in investor sentiment would increase (decrease) stock returns; and for the indirect channel, optimistic (pessimistic) shifts would lead to upward (downward) revisions and hence higher (lower) stock returns. This evidence indicates that both channels would influence stock returns but importantly, the direct channel is much stronger than the indirect one because conditional volatility is either insignificant or rather negligible in predicting stock returns. Also, the well-documented leverage effect is not dampened after the consideration of investor sentiment. Next we divide the entire sample into two subsamples, i.e. the bull and the bear markets, to ask whether the effect of investor sentiment varies conditional on different market regimes. The segregation criterion borrows from Pagan and Sossounov (2003) and the results reveal divergences of the impact of investor sentiment in both channels. In the bull market, optimistic (pessimistic) shifts in investor sentiment result in, for the direct channel, higher (lower) stock returns and for the indirect channel, rising (falling) revision in conditional volatility and thus higher (lower) stock returns while in the bear market, optimistic (pessimistic) shifts in investor sentiment bring about lower (higher) stock returns for the direct channel and upward (downward) revision in conditional volatility and thus lower (higher) stock returns for the indirect channel. Moreover, we notice that the leverage effect also varies with more pronounced impact in the bear than the bull markets. Lastly, by comparing the results obtained from another

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separation approach, namely up and down market states following Cooper et al. (2004), we discover that the regime-varying effect of investor sentiment is actually dependent of the segregation criterion.

In summary, we make the following contribution to this literature. First, we apply the GARCH-family models in the context of investor sentiment and by comparing three candidates we find the most suitable one in capturing the effect of investor sentiment on stock returns as well as conditional volatility. Second, this paper is the first to extend the systematic investigation of the impact of investor sentiment from both direct and indirect channels to the international level. Third, we provide the first extensive evidence regarding the regime-varying influences of investor sentiment on stock returns conditional on the bull and bear market regimes, also from both influence channels. Fourth, we confirm the existence of the leverage effect after taking investor sentiment into account.

Abstract – short

We examine direct and indirect channels through which investor sentiment impacts stock returns suggested by De Long et al. (1990). Selecting turnover ratio as the sentiment proxy, a total of 48 stock markets, and three GARCH-family candidates (GARCH-M, GJR-GARCH-M, and EGARCH-M), we find that shifts in investor sentiment would normally positively relate to concurrent stock returns via both channels. The separation of the entire sample to bull and bear markets reveals two main divergences. For the direct channel, optimistic (pessimistic) shifts in investor sentiment generally lead to higher (lower) stock returns in the bull market but lower (higher) stock returns in the bear market. For the indirect channel, optimistic (pessimistic) shifts in investor sentiment would cause upward (downward) revision in conditional volatility indiscriminately in both markets, but higher (lower) stock returns in the bull market and lower (higher) stock returns in the bear market. We also provide some supplementary evidence of the leverage effect that bad news induces higher volatility than good news in stock markets in the context of investor sentiment.