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Technical analysis and individual investors☆

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ABSTRACT

We find that individual investors who use technical analysis and trade options frequently make poor portfolio decisions, resulting in dramatically lower returns than other investors. The data on which this claim is based consists of transaction records and matched survey responses of a sample of Dutch discount brokerage clients for the period 2000–2006. Overall, our results indicate that individual investors who report using technical analysis are disproportionately prone to have speculation on short-term stock-market developments as their primary investment objective, hold more concentrated portfolios which they turn over at a higher rate, are less inclined to bet on reversals, choose risk exposures featuring a higher ratio of nonsystematic risk to total risk, engage in more options trading, and earn lower returns.

1. Introduction

The intersection between the literature on individual investors and the literature on technical analysis is sparse. As a result, knowledge about individual investors' use of technical analysis has been limited. In the present paper, we present the

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results of a new study which deepens our understanding about how using technical analysis impacts individual investors' portfolios.

The existing literature on technical analysis effectively ignores the experience of individual investors. Instead, it emphasizes its efficacy, the time periods in which its use is associated with abnormal trading profits, and the markets where such abnormal profits have been earned.[1] In a comment about individual investors that serves as an exception, Neely (1997) describes the profitable use of technical analysis to trade in foreign exchange markets, but states the following: "Technical trading is much less useful for individuals, who would face much higher transactions costs and must consider the opportunity cost of the time necessary to become an expert on foreign exchange speculating and to keep up with the market on a daily basis. . . In addition to higher transactions costs, individual investors following technical rules also must accept the risk that such a strategy entails." (p. 31). We note that Neely provides no empirical evidence to support his remarks about individual investors' use of technical analysis.

Most of what is known about the actual use of technical analysis by individual investors comes from a study of U.S. investors by Lewellen et al. (1980) (LLS),[2] and is based on transaction records and matched survey responses from the period 1964–1970. In line with Neely's remark, the findings from this study suggest that technical analysis severely degrades the performance of individual investors' portfolios. LLS report that investors who trade the most frequently use technical analysis to a disproportionate degree and underperform other investors by 4.1% per year on a risk-adjusted basis. This result is economically important: LLS find that 27% of the investors in their sample use technical analysis.

The LLS results about technical analysis being both costly to individual investors and widespread were economically important during the 1960s. But are these results robust in respect to time and space? This is a critical question, and forms the starting point of our investigation.

The existing literature on individual investor behavior since LLS has effectively ignored technical analysis. We believe this is because of a major difference in the type of data LLS used in their study and the data used in more recent studies by other authors. LLS combine their transaction data with matched survey data in which investors report the strategies they use (such as technical analysis), the investment objectives they maintain (such as achieving short-term capital gains), and other related information. In contrast, the data used by more recent studies, such as those by Odean (1998a, 1999) and Barber and Odean (2000, 2001a,b, 2002; Barber and Odean, 2008), only include account-level transactions, not survey information.[3]

In this paper, we report that the key findings from LLS (1980) are robust to time and space, and moreover are driven by investors' decisions about portfolio concentration, turnover, and options trading. Our study uses data from the Netherlands which cover the period 2000–2006 and are from a discount broker where investors trade online. These data consist of transaction records and matched survey responses, the same structure used by LLS.[4]

LLS apply the term "high roller" to describe high-turnover investors, and associate high rollers with the use of technical analysis as a strategy and achieving short-term capital gains as an objective. Notably, LLS make no effort to isolate the separate effects of technical analysis, a focus on achieving short-term capital gains, and high turnover. In contrast, we do, and believe that ours is the first paper to isolate the impact of individual investors' use of technical analysis on concentration, turnover, derivatives use, betting on reversals, risk-taking, and returns. Our new findings constitute the major contributions of the current paper.

We find that investors who report using technical analysis hold more concentrated portfolios than other investors, and have higher ratios of nonsystematic risk to total risk. They also trade more frequently than other investors, especially in respect to options. As a result of these behavior patterns, investors using technical analysis earn lower raw and risk-adjusted returns than other investors. The magnitudes are economically important: controlling for concentration and turnover, the marginal cost associated with technical analysis is approximately 50 basis points of raw return per month. Turnover associated with technical analysis adds a further 20 basis points per month of cost. Concentration adds an additional 2 basis points.

A major finding from our study concerns investors who both trade options frequently and use technical analysis. For "high derivative rollers," the marginal cost of technical analysis from poor portfolio selection is 140 basis points, not the 50 basis points which we find for the full sample of investors, with turnover linked to technical analysis adding an additional 29 basis points of cost. Importantly, we find that outside the group of high derivative rollers, the average cost of using technical analysis is small and not statistically significant.

Our paper makes three contributions to the behavioral finance literature on individual investors. First, we find that the choices of investors in our data using technical analysis are consistent with the behavior of subjects in experimental studies who use price charts. Second, we find that the behavioral traits of investors using technical analysis are similar to those which the literature links to excessive optimism and overconfidence. Third, we find that high derivative rollers who use

[1] We discuss selections from this literature in Appendix A1.

[2] Throughout the paper, we use the abbreviation LLS when citing papers co-authored by Lease, Lewellen, and Schlarbaum. Note, however, that the actual order of authors varies across these citations.

[3] Both sets of data include individual account-level transaction data—LLS (1974, 1976, 1977, 1978a,b, 1980) from a full-fee brokerage, and Odean (1998a, 1999) and Barber and Odean (2000, 2001a,b, 2002, 2008) from a discount brokerage.

[4] In the body of the paper (Section 4.6), we discuss both similarities and differences in the two databases.