Trading profitability of technical strategies in individual stocks

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This paper examines the profitability and its statistical significance of intraday technical trading across 40 individual stocks listed in the New York Stock Exchange (NYSE). The NYSE Trades and Quotes (TAQ) dataset from October to December in 2001 and from April to June in 2002 is used with 5 minutes intervals, and 3,807 technical trading rules from filter, moving average, trading range break, and channel breakouts are examined. White's (2000) Reality Check bootstrap procedure is applied to the large sets of technical rules, in order to find the profitability and reduce the data-snooping problem, which might occur when we find profitable rules by pure luck even if they do not have predictive ability on returns. This paper shows that the technical rules are not successful for predicting return dynamics in all 40 individual stocks, once the data-snooping problem is corrected. This implies that the profitable chances tend to disappear within 5 minutes, while any firm-specific characteristics would not be attributed to the profitability of technical rules on individual stocks.

The technical analysis is the use of the past price (volume) series to predict price returns in financial assets. It has been widely used by professionals and much investigated by academic researchers. The conclusions by academic works on whether the technical trading is profitable are quite mixed, and most of those papers have focused on daily data. However, Osler (2003) demonstrates that order clustering in the order book can explain two popular predictions from technical trading analyses (trends tend to be reversed around the round numbers while those tend to be intensified once the rate penetrates the round numbers). Her result implies the presence of predictable variations in return series in ultra high-frequency data.

There have been few papers analyzing trading profits from technical indicators by using tick-by-tick data, in particular, in stock markets. Motivated by that, this paper utilizes transaction prices in NYSE with 5 minutes intervals to test the profitability of technical strategies. Marshall et al (2008) also uses the 5 minutes intervals, but for their composite price dataset, i.e., the Standard and Poor's Depository Receipts (SPDRs). They show that none of their 7,846 rules are able to beat the market after the data snooping problem is corrected.

Rather than using the SPDRs, this paper analyzes the profitability for individual stocks to ask whether traders could be able to make profits if they focus on trading a few or a set of individual stocks so frequently. Some profitability may be expected there because 5 minutes data gives rules more opportunities to transact. In addition, if we find some profitability only for some stocks, we would be able to relate it to some firm-specific characteristics. However, I show that none of the 40 individual stocks produce successful trading rules after correcting the data-snooping biases. This implies that it would be quite hard in stock markets to predict returns in recent days. In addition, the result would imply that the technical rules in the composite returns

are not profitable in 5 minutes intervals as in Marshal et al. (2008) because none of the individual stocks are profitable in the same intervals.

Keywords:
Technical trading, high frequency data, reality check bootstrapping

References

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