THE IMPORTANCE OF PRICE INFORMATION

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There are a number of academic journals in finance and quantitative methods present articles which; i) Develop current theory, or ii) Confront current theory by exposing limitations and/or iii) Aid the development of new theory, especially of a practical nature.

In the last 15 years technical analysis articles in the academic literature have begun to address these issues. Price has played an important role in testing trading systems. Recent econometric textbooks on financial markets, Campbell et al (1997) include some discussion on the impact of charting in financial forecasting. However, the literature is still defensive on the subject as noted by Taylor and Allen (1992).

The attention that technical analysis receives from financial markets is problematic because of its inconsistency with financial theory. Time varying vector auto-regressions should yield optimal linear forecasts for the mean square error of a stochastic process. The Weiner–Kolmogorov prediction theory satisfying the Markov property should eliminate the need for other forecasting methods. However this method takes no account of the higher moments of the non-linear process which financial markets follow (Neftci 1991). Yet possible non-linearity in asset prices has been known for some time. Irregular signals based on technical analysis rules and any speculative bubbles based upon behavioural finance, cannot be accommodated by the linear process. Thus technical trading has an important role in the development of existing models.

Brock, Lakonishok and LeBaron (1992), confronted the efficient market hypothesis, and showed that returns obtained by simple yet popular trading strategies used in technical analysis were not consistent with the random walk model and the GARCH family of models upon which most of the testing of financial theory is based. Fama and French (1986) found statistically significant serial correlation in price series over various time horizons, the magnitude could not be explained by non-synchronous trading or market price spread. Hence market prices exhibit some form of memory pattern within them and future prices have some predictability content within them from past prices. Earlier research in financial markets found the prices do not always adjust quickly to information shocks, Beja and Goldman (1980), as financial economic theory would suggest. The existence of prices following a short-run disequilibrium could be attributed to the cost of acquiring and evaluating information and the need to adjust to this new information (Grossman and Stiglitz,1980). A deficiency in the quality of information efficiency and its affect on price in specific markets for limited periods of time, can offer a trading window using simple technical trading methods. (Bessembinder and Chan

1995). The latter pointed out that some Asian markets may not be as informationally as efficient as their US or European counterparts.

Financial research related to technical analysis may not be apparent on first reading. Ding Granger and Engle (1993) found that long memory processes in asset markets using absolute returns gave a superior performance compared with squared returns. A limitation in this research was the absence of a directional indicator. The thrust of this research should appeal to a technical analyst who could use the results as an overbought/oversold indicator, if related to price activity. The combining of technical price indicators as a trading system is addressed by Murphy (1999). The debate of returns compared with the price element has been covered by Lee et al (1999), who concluded that fundamental analysis based on current information provides limited guidance as a direction indicator. The fact that significance has been found using inefficient technical indicators, Neftci, and Brock et al, encourages further price research.

Trading decisions on price have to be made without knowledge of future prices. It is impossible to determine whether the current price is low or high.(Lam and Lam 2000).

For a trading rule to be practicable it has to satisfy the Markov property as defined by Neftci. Hence trading decisions can only utilise past and current information as found in Taylor (1994). The optimal trading strategy is to maximise the summed return over a defined trading period. The control parameters are buy, sell, or hold, the profit is defined by the change in prices over the period the financial asset was held. Neftci used crossover moving average as his trading method and demonstrated that returns were superior over a long time to a buy and hold strategy. The moving average or crossover moving average is commonly used as the technical trading rule for comparison with other trading techniques (Gabbi et al 1999). Alternatives such as an appropriate momentum indicator or candlestick indicator have not received attention in the literature.

Lam and Lam (2000) consider an optimal strategy for future returns. This is not a Markov process in the sense of Neftci. Lam and Lam use the results of Kimoto and Asakawa (1990) to forecast outside the data set. The latter chose to forecast a summary statistic of future prices rather than a defined period into the future. The preferred summary statistic of Lam and Lam was the largest price change before reversal. The robustness of such an indicator is questionable. The optimum solution then becomes dependent on the summary statistic and the appropriate buy / sell times are learnt by the neural network. The results are not conclusive, in that the return is marginally higher than a buy and hold strategy but with a larger standard deviation. Thus a marginally higher profit at a higher risk. Lam and Lam recognise the unstable performance in neural network forecasting, but feel confident to conclude that the summary statistic is preferable to a fixed horizon forecast. How well this statistic will perform against an Elliot wave, Gann lines or pre-assigned support and resistance lines is unknown.

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