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A Digital and Analog approach to understanding  
price behavior and trade management

VAREA Research Commentary

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Modern electronic exchanges facilitate trade through faster and more precise price discovery. The quest to understand the nature, behavior and volatility of prices has generated innumerable studies and theories by professionals and amateurs alike but with a lack of meaningful results. VAREA however, develops approaches that are pragmatic in its understanding of price behavior and, when integrated with sound trade management techniques, have the potential to consistently generate above-market returns. VAREA will discuss its approach to understanding price behavior and applying it to trade management in this brief commentary document.

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VAREA's goal is to have a reasonable and a sustainable edge in understanding price behavior rather than to have precision in understanding price behavior. Economic cycles, evolving market structures and regulatory changes makes a precise understanding of price behavior possible only in hindsight. An understanding of price behavior must be also viewed from the perspective of time interval; an intraday interval is different than an understanding of price behavior for a monthly, or quarterly interval. Additionally, for a viable trading opportunity, a forward-looking understanding of price behavior is necessary. A forward-looking price outlook, however, has a binary outcome: a) Stable prices/ "markets are resting" or b) Volatile prices/ "markets are running". VAREA's approach is to focus on b) above and stated more formally: the objective is to reasonably predict 1-3 days of volatile prices 1 day in advance<sup>1</sup>.

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Popular approaches to volatility forecasts using ARIMA and GARCH models have been around for decades. Traditional models develop a "narrow" perspective of price behavior by considering closing prices alone and ignoring the dimension of price "stickiness". It is the nature of markets to provide price discovery. A prolonged "stickiness" in price implies that demand and supply forces have reached an equilibrium. Such a state is short-lived, and it is normal for markets to be routinely away from an equilibrium. In this search for an equilibrium state, it is not unusual to expect days when forces of demand exceed or overwhelm supply and vice versa. Conversely, it is relatively abnormal to expect days when forces of demand and supply are in continuous and recurring equilibrium. VAREA created and developed a proprietary algorithm to observe price along with a dimension of "stickiness".

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Generating these observations requires computing power to expose the latent explanatory variables from the directly observable raw price data. The explanatory variables are further analyzed and refined to service VAREA's objective described above. VAREA's research has been subject to large-sample, long-period statistical studies to test for significant conclusions and robustness. The studies confirm VAREA's hypothesis and ability to predict periods of increasing volatility a day in advance. A summary of statistical studies is available on request.

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<sup>1</sup> Longer time intervals such as weeks, and months are under research & development



40 With the satisfaction of statistical studies, the next phase in VAREA's approach to understanding price behavior comes into the foreground. This phase entails trade management and trading/portfolio strategy. VAREA's research does not come up with a prediction of price direction but rather a prediction of timing. This is accepted as a pragmatic limitation of the approach and is partially mitigated by a systematic trade management technique. Trade entry points (time of entry and price of entry) are provided for either direction along with risk stops and profit targets for each corresponding direction. Trades are taken in dual units for either direction with the first unit chasing a modest target, a "workhorse" and the second unit pursuing an aggressive target, a "racehorse".

50 Specific and complete trade definitions on managing the workhorse and racehorse trades are generated systematically and provided to subscribing clients in advance of the trade. The trade management is direction neutral until a workhorse target is achieved after which the trade commits to a single direction. The trade definitions including risk stops; targets; entry points; are the outcome of back testing studies on long periods of data. A summary of back testing results, sample trade definitions, and current signals is available on the website.<sup>2</sup>

Additional rules need to be considered for portfolio management. While there can be a plethora of portfolio rules and constraints, VAREA has considered the following few: a) A risk appetite of 40x Risk Stop per direction, b) Maximum number of contracts capped at 50, and c) Cash withdrawal of 5% of balance at the end of each quarter. A summary of performance over 1yr, 2yr, 3yr, 5yr, and 10yr horizons using back testing trade results is available on request.

60 VAREA's initial research has focused on understanding the behavior of prices in futures markets. The futures market has some advantages (or disadvantages depending on the reader's perspective): a) Nearly continuous price discovery through 23 hours a day, 5 days a week trading activity, b) Pure price data unaffected by dividends, stock splits etc., c) Leverage with ease of taking Long or Short positions, d) Fully margined and daily settlement, and e) Trading gains from futures are subject to a combination of short-term capital gains and long-term capital gains tax rates. VAREA's understanding of the price behavior can be extended to other markets such as Equities (single stocks, ETFs), Options, and Decentralized Finance (DeFi) assets such as Cryptos.

VAREA has integrated its price behavior prediction capabilities with decades of trading experience to create a unique set of trading algorithms. These algorithms have the flexibility to be further calibrated to align with income generation, capital growth, and risk appetite goals for a wide spectrum of investor needs and financial markets.

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<sup>2</sup> <https://www.algoreturns.com/trident-signal-menu/>