Journal of Economics and Business 56 (2004) 159–176

Journal of Economics & Business

Why have the returns to technical analysis decreased?

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Received 13 August 2002; received in revised form 28 July 2003; accepted 22 August 2003

Abstract

Returns to managed futures funds and Commodity Trading Advisors (CTAs) have decreased dramatically. Funds overwhelmingly use technical analysis. This research determines if structural change in futures price movements could explain the reduced fund returns. Bootstrap tests are used to test significance of a change in statistics related to daily returns, close-to-open changes, breakaway gaps, and serial correlation. Several statistics have changed across a broad range of commodities. Lower price volatility is the most likely explanation of the lower returns from technical analysis. The structural changes likely caused the decreased returns rather than increased technical trading causing the structural changes.

JEL classification: G13

Keywords: Bootstrap; Managed futures; Technical analysis

1. Introduction

During the 1980s and early 1990s, investment in managed futures grew quickly. In recent years however, futures fund returns have decreased and the value of assets invested in managed futures has stagnated along with returns (Pendley & Zurla, 2002). Fig. 1 shows the Barclay Commodity Trading Advisor Index versus time and shows a steady trend of decreasing returns during the past 20 years. The causes of this decrease in fund performance are not fully known. Two possible explanations for the decrease are (a) decreased market

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doi:10.1016/j.jeconbus.2003.08.001

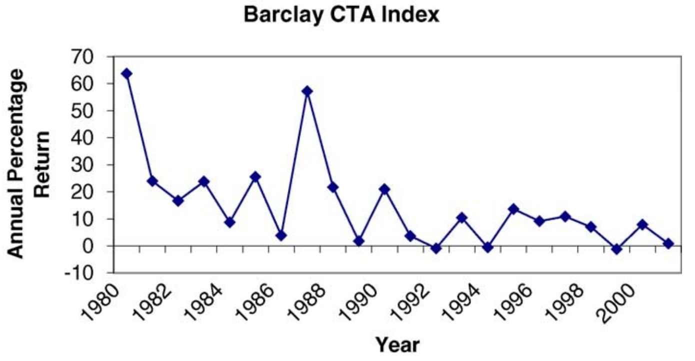

Fig. 1. Barclay CTA index annual percentage returns by year. Source: The Barclay Group (2002).

volatility (and therefore profit opportunities) and (b) price distortion caused by the growth of the industry. Certainly there must have been changes in the distribution of futures prices in order for returns to have decreased so dramatically.[1] This naturally leads to the research question, "What structural changes have occurred in futures price movements?" Knowing the way futures price distributions have changed will help explain why futures fund returns have decreased.

Most financial participants are at least superficially interested in the return characteristics of managed futures funds and Commodity Trading Advisors. Technically traded managed futures funds rely almost exclusively on past prices to generate buy and sell signals. Accordingly positive returns to these funds require weak-form inefficiency of the markets. Therefore, the return attributes of managed futures funds are of high interest not only to investors but also to regulators, investment advisors, and policy makers. Research is needed to determine the ways in which the market has changed, thereby allowing technical traders to adjust trading systems to account for these changes.

Most previous studies of returns to managed futures funds focus on the predictability of returns (e.g., Brorsen & Townsend, 2002; Schwager, 1996), factors that increase returns (e.g., Irwin & Brorsen, 1987), and if an increase in the trading volume of managed futures funds decreases returns (e.g., Brorsen & Irwin, 1987; Holt & Irwin, 2000). Some authors have examined the profitability of technical trading (e.g., Brock, Lakonishok, & LeBaron 1992; Lukac & Brorsen, 1990; Osler & Chang, 1995), and Boyd and Brorsen (1992) used simulated technical trading profits to see which price statistics are correlated with technical returns, but no authors have examined possible causes of the recent decrease in returns to technical analysis. Furthermore, many authors have examined the distribution (e.g., Gordon, 1985; Mandelbrot, 1963) and dependence (e.g., Gordon, 1985; Mann & Heifner, 1976) of futures price changes. The few studies that have evaluated a possible change in price distributions and dependence are limited in statistical techniques and commodities tested.

[1] Indeed there have been many charges that trading by the funds has distorted prices. But the evidence in support of these charges is still inconclusive (Brorsen & Irwin 1987; Commodity Futures Trading Commission 2002; Holt & Irwin 2000).