

Timing Trend-Following

Brent Skilton¹, Daniel DeWoskin¹, Ed Tricker²

Abstract

Trend-following profits from timing markets, which leads to the question whether trend-following itself can be timed. This note examines performance statistics for a trend-following benchmark, suggesting that timing the entry or exit from trend-following will not yield consistent performance.

¹ Senior Quantitative Research Analyst

² Chief Investment Officer – Quantitative Strategies

1. Introduction

Trend-following is a strategy that seeks to profit from timing markets. Specifically, trend-following is long an asset when recent returns have been positive, and short when they have been negative. This strategy is generally profitable, with the Societe Generale CTA Trend Following Index showing a 0.53 information ratio since inception in January 2000, see [1]. Investors often ask whether trend-following itself can be timed. A previous research note showed mathematically that trend-following on trend-following is theoretically unlikely to work, see [2]. Here, we explore this idea in practice by investigating whether we can improve overall returns by timing entry and exit to the CTA Trend Index based on its recent performance.

2. Cutting Losses in a Drawdown

One of the simplest approaches an investor could take to time trend-following would be to try to mitigate periods of underperformance by divesting from trend each time it enters a drawdown of $x\%$ from its high-water mark, and then reinvesting when the NAV rises back above this threshold. This fairly straightforward allocation approach reflects a natural human instinct to get out of an underperforming strategy and wait for better times before re-entering. For our analysis we use the Societe Generale CTA Trend Following Index, which represents the returns of a portfolio of trend-following managers, as a benchmark. The performance of an investor following this strategy on the index from its inception in January 2000 to June 2022 is shown in Figure 1 for three different levels of drawdown tolerance: 5%, 10%, and 15%. These are compared to a simple buy-and-hold strategy.

We find that attempting to time trend this way causes the investor to miss much of its good performance. In fact, the lower the investor's tolerance for a drawdown, the worse the outcome.

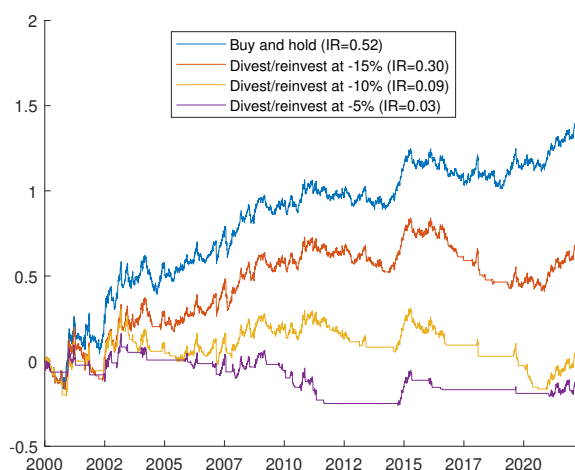


Figure 1. Performance profiles for buy-and-hold, and various divest/reinvest strategies on the CTA Trend Index.

This occurs because lower thresholds equate to more time out of the market and more missed opportunities. With this in mind, we look more generally at the relationship between past and future returns to see if there are any hints at a better timing strategy.

3. Does Trend Show a Performance Rebound?

To gain intuition, we consider the periods with the most extreme positive/negative returns for the CTA Trend Index and look for any patterns in subsequent performance. Table 1 shows the five best and worst non-overlapping 12-month periods for the index and the performance over the subsequent 12-months.

Best 12m periods	12m return	Next 12m return	Worst 12m periods	12m return	Next 12m return
Mar 02 - Feb 03	45.2%	6.2%	Feb 18 - Jan 19	-16.7%	13.8%
Nov 02 - Oct 01	39.0%	11.9%	Aug 16 - Jul 17	-14.3%	1.7%
Apr 14 - Mar 15	32.1%	-3.6%	Apr 01 - Mar 02	-12.6%	35.8%
Apr 07 - Mar 08	22.4%	8.8%	Mar 04 - Feb 05	-9.8%	6.2%
May 05 - Apr 06	17.4%	1.3%	May 13 - Apr 14	-9.4%	27.1%

Table 1. Trend-following performance during and following the CTA Trend Index' best and worst 12-month periods.

For reference, the average performance across all rolling 12-month periods is 6.8% with a standard deviation of 11.0%. Table 1 shows no clear pattern of returns for the subsequent 12 months after each of the best periods; each of the subsequent periods fall within one standard deviation of the average. There does seem to be a trend toward better than average 12-month returns following the worst periods, but there is no clear relationship between the magnitude of the return in a good/bad period and the magnitude of the following 12-month return. The small number of samples here do not represent a real timing strategy, but already we see that the relationship between past and future returns even in the most extreme cases is weak at best. To be more thorough, we extend this analysis to returns of all sizes, and with different time durations.

4. Conditional Distribution of Trend-Following Returns

Here we classify each lagged rolling 3-, 6-, and 12-month return by historical full-sample decile. We then look at a box and whisker plot of the distribution of the subsequent returns. The box shows the 25th to 75th percentile of the data, with the median shown as a line inside the box. The whiskers outside the boxes correspond to the highest and lowest values after removing outliers (defined as points further than 1.5 times the inter-quartile-range above/below the median), which are shown as circles outside the whiskers. The overall average return is shown by the orange line, and is found to be within the boxes for all deciles for all return periods. This indicates that returns by lagged decile are not significantly different from the overall average for these time frames. Consequently, any trend-timing strategies based on previous return history might not be very effective. It is also of interest to note the asymmetry in returns. It is commonly reported that trend-following returns have positive skew, and indeed, almost all outliers in the plots are large positive returns. This hints at part of the problem with timing trend-following: a big risk of missing one of these periods with outsized positive returns.

5. Conclusion

Timing trend-following appears to be very difficult and can lead to greatly reduced returns. In particular, we find that trying to reduce losses by deallocating during drawdowns leads to significant underperformance compared to a buy-and-hold strategy. More generally, we find no statistically significant relationship between past and future trend-following returns, suggesting that timing the entry or exit from a trend-following strategy based on recent performance will not yield consistent success.

References

- [1] <https://portal.barclayhedge.com/cgi-bin/indices/displayHfIndex.cgi?indexCat=SG-Prime-Services-Indices&indexName=SG-Trend-Index>
- [2] G. Wang, T. Feng, and E. Tricker. Can You Trend-Follow Trend-Following? Research Note, Graham Capital Management, July 2022.

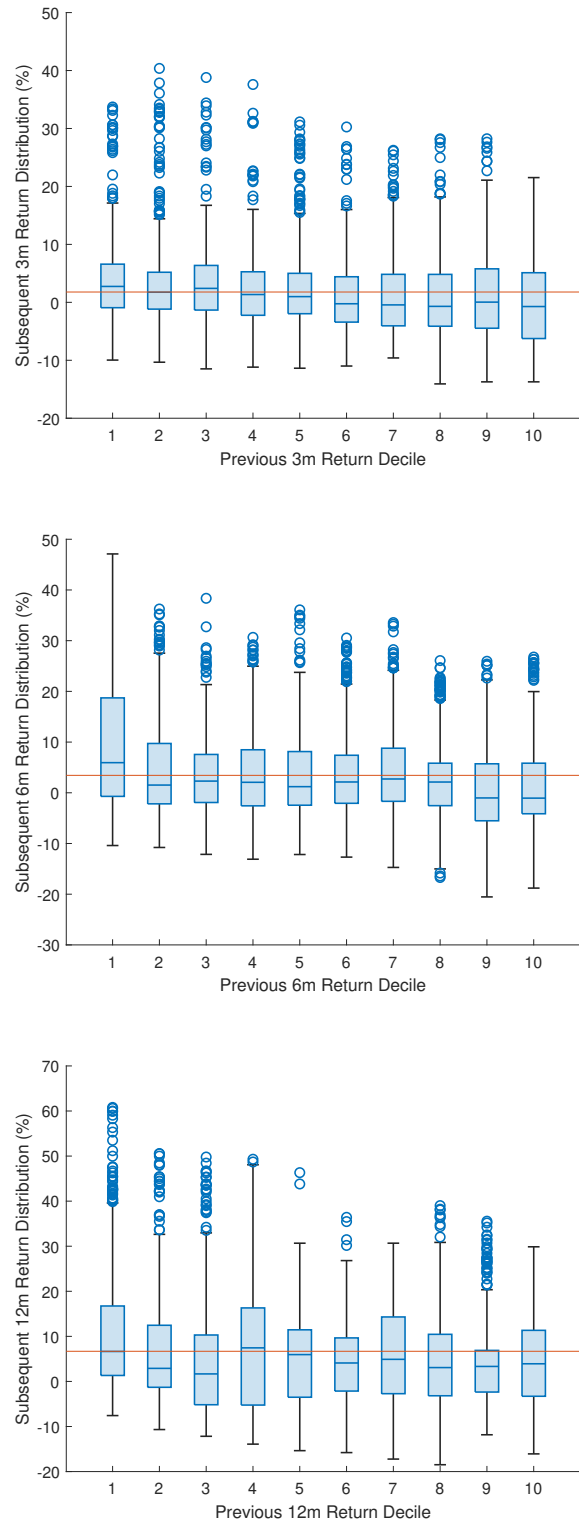


Figure 2. Box and whisker plots for n-month return deciles and their subsequent n-month return distribution. The box contains the 25th to 75th percentile of the data. The whiskers correspond to the highest and lowest values after removing outliers (plotted as circles). The overall average return is shown by the orange line.

Legal Disclaimer

THIS DOCUMENT IS NOT A PRIVATE OFFERING MEMORANDUM AND DOES NOT CONSTITUTE AN OFFER TO SELL, NOR IS IT A SOLICITATION OF AN OFFER TO BUY, ANY SECURITY. THE VIEWS EXPRESSED HEREIN ARE EXCLUSIVELY THOSE OF THE AUTHOR(S) AND DO NOT NECESSARILY REPRESENT THE VIEWS OF GRAHAM CAPITAL MANAGEMENT, L.P. OR ANY OF ITS AFFILIATES (TOGETHER, "GRAHAM"). NEITHER THE AUTHOR NOR GRAHAM HAS ANY OBLIGATION, AND SHOULD NOT BE EXPECTED, TO UPDATE, CORRECT OR DELETE THE INFORMATION CONTAINED HEREIN IN LIGHT OF SUBSEQUENT MARKET EVENTS OR FOR ANY OTHER REASON. GRAHAM MAY TAKE POSITIONS OR MAKE INVESTMENT DECISIONS THAT ARE INCONSISTENT WITH THE VIEWS EXPRESSED HEREIN. THE INFORMATION CONTAINED HEREIN IS NOT INTENDED TO PROVIDE ACCOUNTING, LEGAL, OR TAX ADVICE AND SHOULD NOT BE RELIED ON FOR INVESTMENT DECISION MAKING. THE INFORMATION SET FORTH HEREIN IS SUBJECT IN FULL TO THE TERMS OF USE OF THE GRAHAM CAPITAL MANAGEMENT WEBSITE AND MAY NOT BE REPRODUCED, MODIFIED, DISTRIBUTED OR OTHERWISE USED WITHOUT GRAHAM'S EXPRESS WRITTEN CONSENT.