ISOR F

ACWI Monthly 3-Factor Market Timing Strategy: Volatility, Sentiment & Momentum

Daniele Colecchia [1], *Stefano Prandi* [2]

[22 APR 2023]

Abstract

Purpose: the present paper aims to formulate a market timing strategy intended for all-world stock indices which be capable of dominating the benchmarks.

Design / Methodology / Approach: with respect to the previous papers by the same authors, the present study conjugates more factors within the proposed active strategy: volatility, sentiment and momentum.

Findings: the proposed market timing stratey is backtested on 17 stock indices and in most of the cases is capable of dominating a buy-and-hold position on said indices; in few cases it delivers just a much better risk-adjusted performance. The overperformance downgrade due to the transaction cost is assessed by means of a sensitivity analysis whose outcome is encouraging and confirms the viability of the strategy even for wide BidAsk-spread ETFs and little Asset Under Management (AUM).

Practical Implications: the backtesting sample is large enough to support statistical evidence; on the grounds of a paired 1-tailed T-test, it is possible to generalise the active strategy overperformance to any equity ETFs regardless of the geographical exposition and the volatility bucket.

Originality and Value: with respect to the current academic literature, the distinctive feature of the proposed market timing strategy is that it conjugates more factors at the same time; besides, contrarily from almost all the academic models, the strategy in question is definitely cost-effective and applicable to an extremely wide set of securities, namely to all-world stock indices. By resorting to this strategy, it is possible to dominate the MSCI ACWI (All-Country World Index).

---

[1] Ordinary Member of the Italian Association for Financial Analysis (AIAF), Milan, Italy.
Email: d.colecchia@isorf.org
[2] Ordinary Member of the Italian Association for Financial Analysis (AIAF), Milan, Italy.
Email: s.prandi@isorf.org

ISORF

I. Introduction

The present study is aimed at superseeding the active strategy by Colecchia & Prandi [1] suitable for stock indices which conjugates the benefits of volatility portfolios, formulated by Moreira & Tayler [4], with those provided by sentiment indicators such as the ZEW, initially observed by Homolka & Pavelkovà [5]. As regards the ZEW-like sentiment indicators, it is worth mentioning that the NFP is adopted as the gauge of the SP500 sentiment since its semantic is similar to that of the ZEW: a positive reading indicates prospected economic growth whereas a negative reading heralds a forthcoming economic downturn.

Within the context of the present empirical study the active strategy in question is furtherly refined by considering, in addition to the volatility and the sentiment, the stock index momentum too; to these regards, the strategy formulated in this paper capitalises on the momentum strategy proposed by Colecchia & Prandi [2] which in turn exploits the price level, in accordance with George & Hwang [3] findings but with a different timeframe (monthly) and periodicity.

The active strategy hereby formulated, whose purpose is to dominate the benchmark, is meant to fit any equity ETF thus it is backtested on the most important stock indices of the world in order to provide evidence of its generalised overperformance. The generalisation above mentioned is supported by statistical inference on the grounds of the outcome of a paired 1-tailed T-test conducted on the 17 stock indices subjected to the strategy backtesting.

In order to backtest the active strategy on as many stock indices as possible, the authors of this paper have relaxed some constraints, namely those regarding the availability of the sentiment index and of the availability of the implied volatility (IV). The sentiment index has been merely disregarded when unavailble whereas the IV has been replaced with the predicted volatility estimated with a TGARCH model, a model proposed by Glosten-Jagannathan-Runkle [7] and assessed by Prandi & Colecchia on the GCC stock indices [6].

Contrarily from the most of the academic papers on Asset Management, the present paper encompasses a (transaction) cost sensitivity analysis aimed at ascertaining the viability of the proposed strategy for real life securities and financial markets. According to Zakamulin [8], within the context of said sensitivity analysis, point estimates are replaced with wide ranges of values for the relevant cost parameters – the BidAsk spread and the incidence of the fixed per-transaction fees – on the grounds of the fact that these parameters may differ significantly depending on the type of investor, the custodian, the broker and the Asset Under Management (AUM). The sensitivity analysis makes possible to ascertain whether the active strategy keeps on being preferable to the passive strategy even assuming an unfavourable operating context characterised by a micro AUM and huge BidAsk spreads.

References

[1] Colecchia, D.; Prandi S. "A Sentiment based Volatility Portfolio Strategy for The Swiss Equity Market" ISORF Factors
https://www.isorf.org/factors

[2] Colecchia, D.; Prandi S. "Momentum Strategy: A Risk Management Perspective" ISORF Factors
https://www.isorf.org/factors

[3] George T. J., Hwang C. Y. 2004 "The 52-week High and Momentum Investing" The Journal of Finance, Vol. 59, 2004
https://doi.org/10.1111/j.1540-6261.2004.00695.x

[4] Moreira, A; Tyler, M. 2022 "Volatility-Managed Portfolios." The Journal of Finance, vol. 72, no. 4, 2017, pp. 1611–43,
http://www.jstor.org/stable/26652549. Accessed 12 May 2022

[5] Homolka, L., Pavelková, D. 2018 "Predictive Power of the ZEW Sentiment Indicator: Case of the German Automotive Industry", Acta Polytechnica Hungarica. 2018, vol. 15, s. 161-178.
https://doi.org/10.12700/APH.15.4.2018.4.9 7

[6] Prandi S.; Colecchia D. 2023 "A Market Timing Strategy For The GCC Conventional and Shariah Stock Indices"
Saudi Journal of Economics and Finance, Vol. 7 (4), April 2023
https://doi.org/10.36348/sjef.2023.v07i04.005

[7] Glosten, R.; Jagannathan R.; Runkle, E. 1993. "On the Relation between the Expected Value and the Volatility of the Nominal Excess Return on Stocks". Journal of Finance 48: 1779–801.
https://doi.org/10.1111/j.1540-6261.1993.tb05128.x

[8] Zakamulin, V. 2014. "Moving Average and Time-Series Momentum Rules",
Journal of Asset Management, 2014, vol. 15 (4)
https://doi.org/10.1057/jam.2014.25

[9] Modigliani F., & Modigliani L. (1997). Risk-adjusted performance. Journal of Portfolio Management, 23(2)
https://doi.org/10.3905/jpm.23.2.45