

Anexo I. Registro del Título del Trabajo Fin de Grado (TFG)

NOMBRE DEL ALUMNO: Fernando Celaya

PROGRAMA: GITI+ADE

GRUPO: A

FECHA: 26/06/2024

Director Asignado: Paraskevopoulos, Ioannis
Apellidos Nombre

Título provisional del TFG:

The PnL Drivers of Long-Short Trading Strategies

ADJUNTAR PROPUESTA (máximo 4 páginas: Índice provisional, objetivos, metodología y bibliografía)

Provisional Index

1. Introduction
 - a. Overview of Long-Short trading strategies
 - b. Significance of understanding PnL drivers
 - c. Objectives and scope of the study
2. Literature Review
3. Methodology
 - a. Strategy Description
 - i. Theoretical strategy
 - ii. Implementation
 - b. Factor model description
 - i. Theoretical model
 - ii. Implementation
4. Data Description
5. Results
6. Discussion
 - a. Results analysis
 - b. Shortcomings
7. Conclusion

Objectives

The objectives of the TFG are mainly to analyse the main drivers of the profit or loss of a long-short quantitative trading strategy.

After having implemented the strategy, those results themselves will be analysed in an absolute way to see if the behaviour of the strategy is as expected and desired. Afterwards, the exact drivers of the behaviour of the strategy will be extracted and further analysed.

Methodology

In order to accomplish the stated objective, the first step is to implement the quantitative strategy. The TFG starts from a previous implementation for which some changes have been made. This strategy is then run on a universe of assets (in this case the S&P 500 of the last 10 years) and the results of the strategy are extracted. A few alternative benchmark models are also implemented and run.

After those results are obtained, a factor model is established and implemented. The returns are regressed on the different standard factors to obtain the exposure to the different factors and to obtain the strategy's alpha. That alpha is then further compounded into quarterly results and regressed on company data to try to further understand the drivers of the results.

Bibliography

- Brunetti, M., & Luca, R. D. (2023). Pre-selection in cointegration-based pairs trading. *Statistical methods applications*, 32, 1611–1640. <https://doi.org/10.1007/s10260-023-00702-4>
- Elliott, R. J., Van Der Hoek *, J., & Malcolm, W. P. (2005). Pairs trading. *Quantitative Finance*, 5, 271–276. <https://doi.org/10.1080/14697680500149370>
- Foltice, B., & Langer, T. (2015). Profitable momentum trading strategies for individual investors. *Financial markets and portfolio management*, 29, 85–113. <https://doi.org/10.1007/s11408-015-0246-4>
- Gatev, E., Goetzmann, W. N., & Rouwenhorst, K. G. (1998). Pairs trading: Performance of a relative value arbitrage rule. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.141615>
- Gautam, A., & Goyal, R. (2023). Analysis of performance of the pairs trading strategy using public sector enterprises stocks. *AIP conference proceedings*. <https://doi.org/10.1063/5.0154542>
- Hoel, C. (2017). Statistical arbitrage pairs : Can cointegration capture market neutral profits? Retrieved June 26, 2024, from <https://www.semanticscholar.org/paper/Statistical-arbitrage-pairs-%3A-can-cointegration-Hoel/ef63c9574249e9c67c2df6955111814608f60712?p2df>
- Jirapongpan, R., & Phumchusri, N. (2020, April). Prediction of the profitability of pairs trading strategy using machine learning. *ResearchGate*. Retrieved June 26, 2024, from https://www.researchgate.net/publication/341695315_Prediction_of_the_Profitability_of_Pairs_Trading_Strategy_Using_Machine_Learning
- Kim, K. (2011). Performance analysis of pairs trading strategy utilizing high frequency data with an application to koshi 100 equities. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.1913707>
- Kozak, S., Nagel, S., & Santosh, S. (2018). Interpreting factor models. *The Journal of finance*, 73, 1183–1223. <https://doi.org/10.1111/jofi.12612>
- Li, F., Dodds, C., & Boabang, F. (2001). Evaluation of the pairs-trading strategy on the toronto stock. Retrieved June 26, 2024, from https://library2.smu.ca/bitstream/handle/01/24939/li_fengji_mrp_2013.pdf?sequence=1&isAllowed=y
- Oaposen, J., & Berkowitz, J. (2004). Estimating bank trading risk. a factor model approach. <https://www.nber.org/system/files/chapters/c9606/c9606.pdf>
- Pairs trading strategies in a cointegration framework: Back-tested on cfd and optimized by profit factor. (2019). *Applied Economics*. Retrieved May 6, 2024, from <https://www.tandfonline.com/doi/full/10.1080/00036846.2018.1545080?scroll=top&needAccess=true>
- Paraskevopoulos, I., Figuerola-Ferretti, I., & Tang, T. (2023). *Managing mispricings: Matching the investor and counter-party spread strategies* [Pre print paper available upon request at [XXXXXXXXXX](#)], Universidad Pontificia Comillas.

- Perlin, M. S. (2009). Evaluation of pairs-trading strategy at the brazilian financial market. *Journal of derivatives hedge funds*, 15, 122–136. <https://doi.org/10.1057/jdhf.2009.4>
- The profitability of pairs trading strategies: Distance, cointegration and copula methods. (2016). *Quantitative Finance*. <https://doi.org/10.1080/14697688.2016.1164337>
- Sen, J. (n.d.). Designing efficient pair-trading strategies using cointegration for the indian stock market. Retrieved June 26, 2024, from <https://arxiv.org/pdf/2211.07080>
- Trinks, P. J., & Scholtens, B. (2015). The opportunity cost of negative screening in socially responsible investing. *Journal of business ethics*, 140, 193–208. <https://doi.org/10.1007/s10551-015-2684-3>
- Xie, C., Zhang, Y., Wang, M., & Liu, Z. (2023). Quantamental trading: Fundamental and quantitative analysis with multi-factor regression model strategy. In C. T. Dang, J. Cifuentes-Faura, & X. Li (Eds.), *Proceedings of the 2nd international conference on business and policy studies* (pp. 1455–1470). Springer Nature Singapore.

Firma del estudiante:

A handwritten signature in black ink, consisting of several overlapping, fluid strokes that form a cursive-like shape.

Fecha: 26/06/2024