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Investments

Bachelor Seminar Finance

Prof. Dr. Marcel Prokopczuk

Institute for Finance and Commodity Markets

Winter Term 2024/2025

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Requirements

- Preparation of a seminar paper in groups of up to 3
- Scope: 15/20/25 pages (depending on group-size)
- Independently perform empirical / quantitative analysis
- Use of appropriate statistics software
- Pure literature research is not sufficient
- Presentation of seminar paper in blocked seminar
- Assessment: 60 % written work and 40 % presentation

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Procedure

- 11.07.2024, kick-off meeting
- 18.07.2024, submission of the preference-form
- 19.07.2024, allocation of topics (We will send you an email)
- 26.07.2024, submission of binding registration form
- 11.11.2024, term paper submission
- mid-December (TBA): presentation

1) Volatility Targeting

Task:

- A simple strategy that attempts to keep portfolio variance constant.
- Implement the strategy for a non US-stock sample (other asset class/other country) and analyze the risk profile (Maximum draw down, tail risk, etc.) and/or compare it to a similar approach like risk-parity.

Literature:

- Moreira, A., & Muir, T. (2017). Volatility-Managed Portfolios. *The Journal of Finance*, 72(4), 1611-1644.
- Harvey, C. R., Hoyle, E., Korgaonkar, R., Rattray, S., Sargaison, M., & Van Hemert, O. (2018). The impact of volatility targeting. *The Journal of Portfolio Management*, 45(1), 14-33.
- Liu, F., Tang, X., & Zhou, G. (2019). Volatility-Managed Portfolio: Does It Really Work?. *The Journal of Portfolio Management*, 46(1), 38-51.

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2) Portfolio Optimization: Naive vs. Mean-variance

Task:

- Modern portfolio theory relies on the estimation of expected returns and covariances. Especially the former is hard to estimate accurately which often results in extreme portfolio weights. The naive approach on the other hand simply weighs each asset equally.

- Briefly describe the concept of the mean-variance optimization and compare its performance with the naive approach in an empirical analysis.

Literature:

- Brandt, M. W. (2009). Portfolio choice problems. *Handbook of Financial Econometrics*, 1, 269-336.

- DeMiguel, V., Garlappi, L., & Uppal, R. (2007). Optimal versus naive diversification: How inefficient is the $1/N$ portfolio strategy?. *Review of Financial Studies*, 22(5), 1915-1953.

3) Return Seasonalities

Task:

- Keloharju et al. (2016) find return autocorrelation at full-year lags throughout asset classes. For example, some stocks tend to outperform in January, others in February etc.
- Explain why asset returns should or should not exhibit seasonal patterns.
- Perform an empirical analysis using assets/portfolios of your choice (e.g. country indices, industry portfolios, etc.).

Literature:

- Heston, S. L., & Sadka, R. (2008). Seasonality in the cross-section of stock returns. *Journal of Financial Economics*, 87(2), 418-445.
- Keloharju, M., Linnainmaa, J. T., & Nyberg, P. (2016). Return seasonalities. *The Journal of Finance*, 71(4), 1557-1590.

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4) Fama-MacBeth Test of the CAPM

Task:

- Fama and MacBeth (1973) develop a method to test the CAPM
- They first estimate betas in time-series regressions, then risk premia in cross-sectional regressions.
- Their procedure became a standard technique throughout finance research.

Literature:

- Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. *Journal of Political Economy*, 81(3), 607-636.

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5) Black-Litterman Model

Task:

- The Black-Litterman model allows the investor to integrate her views into the asset allocation decision.
- Empirically investigate the performance of the Black-Litterman model and compare it to other models.

Literature:

- Black, F., & Litterman, R. (1992). Global portfolio optimization. *Financial Analysts Journal*, 48(5), 28-43.
- He, G., & Litterman, R. (1999). The intuition behind Black-Litterman model portfolios. Available at SSRN 334304.

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6) Diversification Benefits of Crypto-Currencies

Task:

- Crypto-currencies represent a relatively new asset class. As a mean-variance investor concerned about possible diversification benefits, should they be included in the optimal portfolio?

- Quantify the degree to which cryptos offer such benefits. Start by studying the (conditional) correlations with other asset classes.

Literature:

- Liu, Y., & Tsyvinski, A. (2021). Risks and returns of cryptocurrency. *The Review of Financial Studies*, 34(6), 2689-2727.

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7) Factor Momentum

Task:

- Ehsani and Linnainmaa (2021) find that the classical momentum factor can be explained be the momentum in other cross-sectional asset pricing factors
- Using factors that are publicly available for download, investigate this claim.

Literature:

- Ehsani, S., & Linnainmaa, J. T. (2021). Factor momentum and the momentum factor. *The Journal of Finance.*
- Fan, M., Li, Y., Liao, M., & Liu, J. (2022). A reexamination of factor momentum: How strong is it?. *Financial Review.*

8) The Price of Sin

Task:

- Hong and Kacperczyk (2009) find a risk premium for firms active in 'sin' areas: alcohol, tobacco, and gaming.
- Using standard asset pricing methods, test for the existence of a risk premium of firms that might be targeted by governments in order to protect their citizens from addictive behavior.

Literature:

- Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1), 15-36.

9) Momentum Crashes

Task:

- Momentum refers to abnormal returns of long-short portfolios that buy past winners and sell past losers.
- This strategy seems to break down after market downturns.
- Investigate, if this pattern is also present in industry portfolios, which have been shown to explain individual stock momentum.

Literature:

- Jegadeesh, N., & Titman, S. (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. *The Journal of Finance*, 48(1), 65-91.
- Moskowitz, T. J., & Grinblatt, M. (1999). Do industries explain momentum?. *The Journal of Finance*, 54(4), 1249-1290.
- Daniel, K., & Moskowitz, T. J. (2016). Momentum crashes. *Journal of Financial Economics*, 122(2), 221-247.

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How to write a good seminar paper

- Do not underestimate the time and effort required.
- Read good papers and adapt their style of writing and presenting results.
- Use reliable sources (books, journal papers, Datastream)
- Try to avoid biases like the survivorship bias or look-ahead bias.
- Never report and interpret average returns just by themselves. Relate them to risk (e.g. via Sharpe ratios or alphas).
- Employ statistical techniques (e.g. t-tests or regressions) to test your hypotheses.

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How to maximize the learning effect

- Why? What you learn now, saves you valuable time when you write your thesis.
- Use R instead of Excel.
- Attend Programming for Finance but start coding before.
- Use LaTeX instead of Word.
- Write in English, not German.