

# Investments

## Bachelor Seminar

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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

# Procedure

- 17.07.2020, submission of preference-form via email (lauter@fmt.uni-hannover.de)
- 20.07.2020, allocation of topics (I will send you an email)
- 24.07.2020, submission of binding registration form via email
- 20.11.2020, submission (before 11 AM) in my office (or via mail if student access to the building remains restricted)
- mid-December (TBA): presentation (possibly online)
- General information and registration form: <https://www.fmt.uni-hannover.de/de/lehre/seminare/bachelor/seminar-finance-investments-273012/>
- Grading specification form: <https://www.fmt.uni-hannover.de/fileadmin/fmt/pdf/seminare/Bewertungswahl.pdf>
- Guideline for writing seminar papers: [https://www.fmt.uni-hannover.de/fileadmin/fmt/pdf/Richtlinien\\_zum\\_Erstellen\\_von\\_Seminar-\\_und\\_Abschlussarbeiten.pdf](https://www.fmt.uni-hannover.de/fileadmin/fmt/pdf/Richtlinien_zum_Erstellen_von_Seminar-_und_Abschlussarbeiten.pdf)

# 1) Volatility and Sign Forecastability

## Task:

- At certain sampling frequencies, it is possible to forecast the sign of the next return. The same applies to volatility.
- Explain how conditional sign and volatility predictability of returns are related to each other and to conditional means. Perform a backtest of a strategy that invests based on the conditional sign and volatility using a sample of your choice.

## Literature:

- Christoffersen, P. F., & Diebold, F. X. (2006). Financial asset returns, direction-of-change forecasting, and volatility dynamics. *Management Science*, 52(8), 1273-1287.

## 2) Price Efficiency in Evolving Markets: Crypto-Currencies

### Task:

- Crypto-currencies represent a fairly new type of asset that underwent large changes w.r.t. investor composition and the size of the entire market.
- The Adaptive Market Hypothesis postulates that markets follow evolutionary principles and exhibit time-varying degrees of informational efficiency.
- Estimate the (potentially) time-varying informational efficiency in a sample of one or more crypto-currencies and try to identify some of its determinants.

### Literature:

- Wei, W. C. (2018). Liquidity and market efficiency in cryptocurrencies. *Economics Letters*, 168, 21-24.
- Urquhart, A. (2016). The inefficiency of Bitcoin. *Economics Letters*, 148, 80-82.
- Lo, A. W. (2004). The adaptive markets hypothesis. *The Journal of Portfolio Management*, 30(5), 15-29.

### 3) Pairs Trading

#### Task:

- Pairs trading is a simple strategy followed by many hedge funds: Find two (or more) assets whose prices move together. When they diverge, construct a long-short-portfolio until prices converge again.
- Using an appropriate sample, test a pairs trading strategy.

#### Literature:

- Gatev, E., Goetzmann, W. N., & Rouwenhorst, K. G. (2006). Pairs trading: Performance of a relative-value arbitrage rule. *The Review of Financial Studies*, 19(3), 797-827.

## 4) Macroeconomic Forecasting using Tracking Portfolios

### Task:

- Breeden suggests using a portfolio that tracks consumption to test the CCAPM.
- Lamont (2001) picks up the idea to forecast macroeconomic variables.
- Try to build tracking portfolios and thus forecasts for non-US macros.

### Literature:

- Lamont, O. A. (2001). Economic tracking portfolios. *Journal of Econometrics*, 105(1), 161-184.

## 5) Return Seasonalities

### Task:

- Keloharju et al. (2016) find return autocorrelation at full-year lags throughout asset classes.
- 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.



## 6) 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.

## 7) 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.

# How to write a good seminar paper

- Do not underestimate the time and effort required.
- Read the guidelines.
- Read good papers and adapt their style of writing and presenting results.
- Summarize your readings.
- Use reliable sources (books, journal papers, Datastream)
- Interpret your results and relate them to previous research.
- Proofread.

# 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.