FAKULTÄT FÜR BETRIEBSWIRTSCHAFTSLEHRE
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Seminar Thesis Topics HWS 2015

Topic R1: **Wikipedia-Based Investor Sentiment and Stock Market Returns**
Advisor: Michael Ungeheuer

Topic R2: **Media Coverage and International Stock Market Returns**
Advisor: Michael Ungeheuer

Topic R3: **A Horserace of Portfolio-Selection Models**
Advisor: Michael Ungeheuer

Topic R4: **Dissecting the Low-Volatility Anomaly**
Advisor: Alexander Hillert

Topic R5: **Enhanced Momentum Strategies**
Advisor: Alexander Hillert

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Advisor: Alexander Hillert

Topic R7: **Mutual Fund Fees and Performance**
Advisor: Alexander Hillert

Topic R8: **The Impact of Newspaper Tone on Stock Prices**
Advisor: Pavel Lesnevski

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Topic R1:   Wikipedia-Based Investor Sentiment and Stock Market Returns

Classification: Empirical topic
Advisor: Michael Ungeheuer

There is strong evidence that noise trading and investor sentiment have a temporary impact on stock prices and volatility. For instance, Da et al. (2011) find that increases in investor attention – measured by Google search volume for firms' ticker symbols – cause temporary increases in stock prices. Other evidence suggests that sentiment might have an impact on the whole stock market. Da et al. (2015) construct a 'Financial and Economic Attitudes Revealed by Search' (FEARS) index in order to measure investor sentiment on the market level. It is based on the number of Google searches for terms like 'recession' or 'unemployment'. They find that their FEARS index predicts short-term market returns and volatility. In a survey article, Baker and Wurgler (2007) suggest that 'the question is […] how to measure investor sentiment and quantify its effects'. Using Google search volume was a particularly successful answer to this question. However, Google search volume is a noisy measure of investor sentiment, which can attenuate (i.e. bias towards zero) the estimated effects. As an illustration, it is not clear whether someone looking for 'depression' is actually looking for the state of the economy or the mood disorder. The number of views of Wikipedia pages like http://en.wikipedia.org/wiki/Depression_%28economics%29 might be a more precise measure of investor sentiment.

The goal of this seminar thesis is to compare the results from Da et al. (2015) to results based on daily Wikipedia page view data. Is Wikipedia-based investor sentiment another source of forward-looking information on market returns and volatility? Is it possible to construct a profitable market timing strategy based on this new measure of investor sentiment?

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful. We are going to assist you with the collection of Wikipedia page view data.

Introductory Literature:
Da, Zhi; Engelberg, Joseph; Gao, Pengjie (2011): In Search of Attention, *The Journal of Finance*, 66 (5), pp. 1461-1499.

Da, Zhi; Engelberg, Joseph; Gao, Pengjie (2015): The Sum of All FEARS Investor Sentiment and Asset Prices, *Review of Financial Studies*, 28 (1), pp. 1-32.

Moat, Helen Susannah; Curme, Chester; Avakian, Adam; Kenett, Dror Y.; Stanley, Eugene H. (2013): Quantifying Wikipedia Usage Patterns Before Stock Market Moves, *Scientific Reports*, 3, pp. 1-5.

Baker, Malcolm; Wurgler, Jeffrey (2006): Investor Sentiment and the Cross-Section of Stock Returns, *The Journal of Finance*, 61 (4), pp. 1645-1680.

Baker, Malcolm; Wurgler, Jeffrey (2007): Investor Sentiment in the Stock Market, *Journal of Economic Perspectives*, 21 (2), pp. 129-151.

Bollerslev, Tim; Todorov, Viktor (2011): Tails, Fears, and Risk Premia, *The Journal of Finance*, 66 (6), pp. 2165-2211.

Welch, Ivo; Goyal, Amit (2007): A Comprehensive Look at the Empirical Performance of Equity Premium Prediction, *Review of Financial Studies*, 21 (4), pp. 1455-1508.

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Topic R2:   Media Coverage and International Stock Market Returns

Classification: Empirical topic
Advisor: Michael Ungeheuer

There is strong evidence that noise trading and investor sentiment have a temporary impact on stock prices and volatility. Tetlock (2007) finds that the daily tone (fraction of negative words) of a popular Wall Street Journal column, measured over 15 years from 1984-1998, predicts market returns and volatility. His evidence suggests that high media pessimism causes downward pressure on market prices, followed by a reversal. He also finds that extreme values of tone predict high turnover. In a related strand of literature, Da et al. (2011) find that increases in investor attention – measured by Google search volume for firms' ticker symbols – cause temporary spikes in trading and increases in stock prices. Motivated by this literature, one can measure investor attention towards different countries (and their market indices) by recent changes in the number of newspaper articles covering these countries (and their market indices). Using a novel dataset of New York Times articles, this new proxy for investor attention can be collected for each country and year from 1851 to today, so that the limiting factor for an empirical analysis is not the availability of an attention proxy, but market index return availability.

The goal of this seminar thesis is to form and analyze measures of New York Times coverage towards countries (the USA, UK, Germany, …) and their main market indices (Dow Jones, FTSE, DAX). Do changes in media coverage of countries/indices predict market returns and volatility in these countries? Is it possible to construct a profitable trading strategy based on this new measure? If so, has the predictive power of the measure increased as international capital markets have become more integrated during the last decades? In addition to the empirical analysis, a critical discussion of the measure is expected. Is it possible to identify whether attention, information flow, or even the media coverage itself drive results? How does the measure compare to related measures (e.g. Google search volume) in this regard?

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful. We are going to assist you with the collection of media coverage data.

Introductory Literature:
Tetlock, Paul C. (2007): Giving Content to Investor Sentiment: The Role of Media in the Stock Market, *The Journal of Finance*, 62 (3), 1139-1168.

Garcia, Diego (2013): Sentiment During Recessions, *The Journal of Finance*, 68 (3), pp. 1267-1300.

Baker, Malcolm; Wurgler, Jeffrey (2006): Investor Sentiment and the Cross-Section of Stock Returns, *The Journal of Finance*, 61 (4), pp. 1645-1680.

Da, Zhi; Engelberg, Joseph; Gao, Pengjie (2011): In Search of Attention, *The Journal of Finance*, 66 (5), pp. 1461-1499.

Barber, B.; Odean, T. (2008): All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors, *Review of Financial Studies*, 21, pp. 785-818.

Welch, Ivo; Goyal, Amit (2007): A Comprehensive Look at the Empirical Performance of Equity Premium Prediction, *Review of Financial Studies*, 21 (4), pp. 1455-1508.

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Topic R3:   A Horserace of Portfolio-Selection Models

Classification: Empirical topic
Advisor: Michael Ungeheuer

Markowitz's (1952) portfolio optimization procedure requires two categories of inputs which have to be estimated: expected returns and (co-)variances of returns. Relative to (co-)variances, expected returns are hard to estimate precisely based on historical data. Furthermore, Markowitz's optimal portfolio weights are very sensitive to small changes in these expected return estimates. This estimation problem can lead to 'unreasonable' portfolio-weights and discourages portfolio managers from using mean-variance optimization. In the words of Michaud (1989): 'The unintuitive character of many "optimized" portfolios can be traced to the fact that [mean-variance] optimizers are [...] "estimation-error maximizers".' One solution is to ignore expected returns and simply minimize portfolio variance, i.e. to find the global minimum variance portfolio. Additionally, one can ignore covariance estimation and use only expected volatilities to weight stocks. The simplest portfolio-selection models do not require predictions of expected returns or (co-)variances at all: Equal- and value-weighted portfolios have performed surprisingly well historically.

The goal for this seminar thesis is to analyze and compare the performance of these different portfolio selection models for the US stock market.

Requirements:
The empirical work for this topic requires the use of optimization software (e.g. Matlab), statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful. You should be willing to acquire programming skills, in particular in order to implement portfolio optimization (e.g. in Matlab).

Introductory Literature:
Markowitz, H.M. (1952): Portfolio Selection, *Journal of Finance*, 7, pp. 77-91.

Michaud, R.O. (1989): The Markowitz Optimization Enigma: Is 'Optimized' Optimal?, *Financial Analysts Journal*, 45, pp. 31-42.

Chan, L.K.C., Karceski, J., Lakonishok, J. (1999): On Portfolio Optimization: Forecasting Covariances and Choosing the Risk Model, *Review of Financial Studies*, 12(5), pp. 937-974.

DeMiguel, V.L., Garlappi, F.J., Uppal, R. (2009): Optimal versus Naïve Diversification: How Inefficient is the 1/N Portfolio Strategy?, *Review of Financial Studies*, 22(5), pp. 1915-1953.

Jacobs, Heiko; Müller, Sebastian; Weber, Martin (2014): How Should Individual Investors Diversify? An Empirical Evaluation of Alternative Asset Allocation Policies, *Journal of Financial Markets*, 19, pp. 62-85.

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Topic R4: Dissecting the Low-Volatility Anomaly

Classification: Empirical topic
Advisor: Alexander Hillert

Baker et al. (2011) show that low-volatility stocks outperformed stocks with high volatility over the period from 1968 to 2008. In related studies, Ang et al. (2006) show that stocks with low idiosyncratic volatility outperformed stocks with high idiosyncratic risk and Frazzini and Pedersen (2014) show that low beta assets outperform high beta assets.
Li and Sullivan (2014) identify several limitations regarding the implementation of the low volatility anomaly. For example, they find that the alphas is significantly reduced when small and illiquid stocks are excluded from the sample.

In this seminar thesis, the student should replicate the low volatility anomaly and whether the anomaly is robust to changes in the stock sample (e.g., excluding stocks of the first NYSE size decile, excluding stocks with a price below five USD, value-weighted portfolio returns, etc.). In the next step, the student should identify the main driver behind the low volatility anomaly. Is this low idiosyncratic risk or is it low systematic risk?

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful.

Introductory Literature:

Ang, A.; Hodrick, R. J.; Xing, Y.; and Zhang, X. (2006): The Cross-Section of Volatility and Expected Returns, *Journal of Finance*, 61, pp. 259–299.

Baker, M.; Bradley, B.; Wurgler, J. (2011): Benchmarks as limits to arbitrage: understanding the low volatility anomaly, *Financial Analyst Journal*, 67, pp. 40–54.

Frazzini, A.; Pedersen, L. H. (2014): Betting against Beta, *Journal of Financial Economics*, 111, pp. 1-25.

Li, X.; Sullivan, R. N. (2014): The Limits to Arbitrage and the Low-Volatility Anomaly, *Financial Analyst Journal,* 70, pp. 52-63.

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Topic R5:   Enhanced Momentum Strategies

Classification: Empirical topic
Advisor: Alexander Hillert

Momentum, the tendency of past winners to outperform past losers in the recent future, has been convincingly documented for different sample periods, different countries, and different asset classes (e.g., Jegadeesh and Titman (1993), Chabot et al. (2009), Fama and French (2008), Asness et al. (2013), and many others.). Given this popularity, there is a large literature that shows that the momentum effect is stronger among stocks with certain characteristics. For example, Hong et al. (2000) show that stocks with low analyst coverage exhibit stronger momentum than stocks with high analyst coverage, and Lee and Swaminathan (2000) show that momentum is more pronounced in high turnover stocks.

However, Bandarchuk and Hilscher (2013) argue that most firm characteristics are not significantly related to momentum profits if one controls adequately for the extremeness of formation period returns and idiosyncratic volatility. They conclude that it is often not the characteristic per se that matters but its interaction with formation period returns.

In this seminar paper, the student should first replicate momentum-enhancing strategies using a sample of liquid US stocks (see, e.g. Jegadeesh and Titman (2001) for the size and price filters). Potential momentum-enhancing stock characteristics include analyst coverage (Hong et al. (2000)), turnover (Lee and Swaminathan (2000)), low return R^2 (Hou et al. (2006)), and high market-to-book ratios (Daniel and Titman (1999)). Next, the student should test whether these strategies survive the Bandarchuk and Hilscher (2013) critique.

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful.

Introductory Literature:

Asness, C. S.; Moskowitz, T. J.; Pedersen, L. H. (2013): Value and momentum everywhere, *Journal of Finance*, 68, pp. 929–85.

Bandarchuk, P.; Hilscher, J. (2013): Sources of momentum profits: Evidence on the irrelevance of characteristics, *Review of Finance*, 17, pp. 809–45.

Chabot, B.; Ghysels, E.; Jagannathan, R. (2009): Price momentum in stocks: Insights from victorian age data, NBERWorking Paper.

Daniel, K.; Titman. S. (1999): Market efficiency in an irrational world, *Financial Analysts Journal,* 55, pp. 28–40.

Fama, E. F.; French. K. R. (2008): Dissecting anomalies. *Journal of Finance*, 63, pp. 1653–78.

Hong, H. G.; Lim, T.; Stein, J. C. (2000): Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies, *Journal of Finance*, 55, pp. 265–95.

Hou, K.; Peng, L.; Xiong, W. (2006): R^2 and price inefficiency. Unpublished working paper, Ohio State University, Baruch College, Princeton University.

Jegadeesh, N.; Titman, S. (1993): Returns to buying winners and selling losers: Implications for stock market efficiency. *Journal of Finance*, 48, pp. 65–91.

Lee, C. M. C.; Swaminathan. B. (2000): Price momentum and trading volume, *Journal of Finance*, 55, pp. 2017–69.

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Topic R6:   Absolute Strength Momentum

Classification: Empirical topic
Advisor: Alexander Hillert

Jegadeesh and Titman (1993) show that the stocks with the best performance over the last three to twelve months tend to outperform the stocks with the poorest past performance over the next three to twelve months. This effect is called (price) momentum and has been convincingly documented for different sample periods, different countries, and different asset classes (e.g., Chabot et al. (2009), Fama and French (2008), Asness et al. (2013), and many others.).

Gulen and Petkovay (2015) develop a new "absolute strength" momentum strategy that considers only winner (loser) stocks with positive (negative) returns. They argue that "the traditional definition of relative strength does not necessarily imply that relative winners (losers) are stocks that have been increasing (decreasing) in price.". They find that their new momentum strategy performs better than the standard momentum.

In this seminar thesis, the student should calculate the returns of a standard Jegadeesh and Titman (1993) momentum strategy, the absolute strength strategy proposed by Gulen and Petkovay (2015), and the risk-managed momentum developed in Barroso and Santa-Clara (2015). Next, the student should compare the performance of these strategies. Here, the student should distinguish between performance in normal times and performance in market downturns.

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful.

Introductory Literature:

Asness, C. S.; Moskowitz, T. J.; Pedersen, L. H. (2013): Value and momentum everywhere, *Journal of Finance*, 68, pp. 929–85.

Barroso, P.; P. Santa-Clara (2015): Momentum has its moments, *Journal of Financial Economics,* 116, pp. 111-20.

Chabot, B., Ghysels, E.; Jagannathan, R. (2009): Price momentum in stocks: Insights from victorian age data, NBERWorking Paper.

Fama, E. F.; French, K. R. (2008): Dissecting anomalies, *Journal of Finance*, 63, pp. 1653–78.

Gulen, H.; Petkovay, R. (2015): Absolute Strength: Exploring Momentum in Stock Returns, Working Paper.

Jegadeesh, N.; Titman, S. (1993): Returns to buying winners and selling losers: Implications for stock market efficiency, *Journal of Finance*, 48, pp. 65–91.

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Topic R7:   Mutual Fund Fees and Performance

Classification: Empirical topic
Advisor: Alexander Hillert

Many studies have analyzed whether mutual funds are able to earn positive risk-adjusted returns (e.g., Gruber (1996), Carhart (1997), and Daniel et al. (1997)). It is well known that fund fees are one of the major drivers in performance differences across funds and thus, the literature uses after fee performance to identify managerial skill. However, little is known about the relation between before fee performance and fund fees. Gil-Bazo and Ruiz-Verdú (2009) uncover the puzzling fact that funds with worse before-fee performance charge higher fees.

The first task in this seminar thesis is to replicate the analysis by Gil-Bazo and Ruiz-Verdú (2009). Next, the student should check whether the results hold out of sample, i.e. for the most recent period after 2005. Furthermore, the student should analyze whether the results are robust when fund performance is measured by alternative factor models. Additionally, the student can also analyze changes in performance after changes in fund fee as alternative form of identification.

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful.

Introductory Literature:
Carhart, M. M., 1997, On persistence in mutual fund performance, *Journal of Finance*, 52, pp. 57–82.

Daniel, K.; Grinblatt, M.; Titman, S.; Wermers, R. (1997): Measuring mutual fund performance with characteristic-based benchmarks, *Journal of Finance*, 52, pp. 1035–1058.

Gil-Bazo, J.; Ruiz-Verdú, P. (2009): The Relation between Price and Performance in the Mutual Fund Industry, *Journal of Finance*, 64, pp. 2153-2183.

Gruber, M. J. (1996): Another puzzle: The growth in actively managed mutual funds, *Journal of Finance*, 52, pp. 783–810.

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Topic R8:   The Impact of Newspaper Tone on Stock Prices

Classification: Empirical topic
Advisor: Pavel Lesnevski

Recent articles study the impact of media on stock returns. For instance, García (2013) shows that the fraction of positive and negative words in the New York Times columns has an impact on stock returns. The author argues that price changes are driven not by new information but by the tone of the news. Moreover, he shows that this sensitivity to media tone is strong in recessions but weak in expansions.

The task of this seminar thesis is to confirm the findings of García (2013). The student should replicate the baseline results of the paper and to extend them by testing whether investors' sensitivity to news also varies with other indicators of market conditions: market-level uncertainty (Kumar (2009)), aggregate investor sentiment (Baker and Wurgler (2006)), the FEAR index, or policy uncertainty index (Baker, Bloom, and Davis (2013)).

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometrics methods. Some experience in this area would be helpful. A dataset on the media tone will be provided.

Introductory Literature:
Baker, Malcolm; Wurgler, Jeffrey (2006): Investor Sentiment and the Cross-Section of Stock Returns, *The Journal of Finance*, 61, pp. 1645–1680.

García, Diego (2013): Sentiment during Recessions, *The Journal of Finance*, 68, pp. 1267–1300.

Kumar, Alok (2009): Hard-to-Value Stocks, Behavioral Biases, and Informed Trading, *Journal of Financial and Quantitative Analysis*, 44, pp. 1375.

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Topic R9:   The Performance-Flow Relation for Mutual Funds

Classification: Empirical topic
Advisor: Pavel Lesnevski

Starting with Chevalier and Ellison (1997) and Sirri and Tufano (1998), a large literature shows that the relation between funds' performance and their subsequent flows is convex. In other words, funds that perform very well experience disproportionate money inflows and funds that underperform are not penalized by large outflows. However, Spiegel and Zhang (2013) argue that the measurement of fund flows used in the previous literature is not appropriate and that using an alternative market share measure eliminates the convexity.

The first task in this seminar thesis is to replicate the performance-flow relation using the commonly used specification of fractional flow, i.e. net inflows divided by assets under management. Next, the student should repeat the analysis using the market share measure newly proposed by Spiegel and Zhang (2013). Finally, the student should test whether the results of Spiegel and Zhang (2013) also hold out of sample, i.e. for the period after 2006.

Requirements:
The empirical work for this topic requires the use of statistical software (e.g. Stata), manipulation of data and the application of econometric methods. Some experience in this area would be helpful.

Introductory Literature:
Chevalier, J.; Ellison, G. (1997): Risk taking by mutual funds as a response to incentives, *Journal of Political Economy*, 105, pp. 1167–1200.

Sirri, E.; Tufano, P. (1998): Costly search and mutual fund flows, *Journal of Finance*, 53, pp. 1589–1622.

Spiegel, M.; Zhang, H. (2013): Mutual fund risk and market share-adjusted fund flows, *Journal of Financial Economics*, 108, pp. 506–528.