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Topics for master theses

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Prof. Hillert offers master theses in four areas:

1. Asset management
2. Information disclosure by firms and information demand by investors
3. Empirical asset pricing
4. Textual analysis

Topic Number	Title	Area
1	The nominal price puzzle – Empirical evidence from mutual funds	Asset management
2	Sentiment sensitivity of fund flows and fund performance	Asset management
3	Countercyclical fund flows and fund performance	Asset management
4	Is the performance-flow-relation convex? International evidence	Asset management
5	An empirical analysis of amendments of SEC filings	Information disclosure and demand
6	Investors' reaction to news – Empirical evidence from the U.S. stock market	Empirical asset pricing
7	Investors' reaction to extreme stock returns and the role of information	Empirical asset pricing
8	Differences of opinion and the cross-section of U.S. stock returns – Evidence from news articles	Empirical asset pricing
9	An empirical analysis of competing explanations for the idiosyncratic volatility puzzle	Empirical asset pricing

10	The value of verbal information in 10-K filings	Textual analysis
11	Does earnings conference call content predict future firm performance? An empirical analysis for the U.S.	Textual analysis
12	Do analyst conference calls improve analysts' forecast accuracy? Evidence from the U.S.	Textual analysis
13	International business/finance dictionaries for measuring annual report tone	Textual analysis

Description of topics

1. The nominal price puzzle – Empirical evidence from mutual funds

- Description:

Weld et al. (2009) show that the average nominal share price of U.S. stocks has remained at about \$30 over the period from the 1930s to today. For instance, General Electric's stock traded at \$38.25 on December 31, 1935 and at \$37.07 on December 31, 2007. Without performing stock splits, General Electric's stock price would have been \$10,676.16. Being unable to identify a rational explanation in their empirical analyses, Weld et al. (2009) conclude that the nominal share price is a puzzle. Note that there are many studies on stock splits before Weld et al.'s 2009 paper.

Rozeff (1998) analyzes stock splits for U.S. mutual funds and finds that not only companies but also mutual funds regularly undertake stock splits. This result challenges some potential explanations for the nominal share price puzzle. For instance, splitting stocks for liquidity reasons is not an issue for mutual funds, as fund investors do not need to trade fund shares on exchanges, but can invest in and withdraw from funds by directly trading with the fund.

This master thesis builds on Rozeff (1998) and analyzes the nominal share price puzzle for mutual funds. First, the student should extend Rozeff (1998) analysis to the more recent period. Next, the student should analyze mutual funds' share prices in countries other than the U.S. to provide international evidence for a nominal share price puzzle. In the last part, the student should consider potential explanations for the nominal share price puzzle. For example, the student should test whether funds in certain price ranges receive higher money flows from investors.

- Requirements:

A data set of U.S. and international mutual funds will be provided to the student. Additional information on the funds can be obtained from Morning Direct, which is available at Goethe University Frankfurt.

- Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.
- Literature:
Rozeff, M. S., 1998. Stock splits: Evidence from mutual funds. *Journal of Finance* 53, 335-349.
Weld, W. C., R. Michaely, R. H. Thaler, and S. Benartzi, 2009. The nominal share price puzzle. *Journal of Economic Perspectives* 23, 121-142.

2. Sentiment sensitivity of fund flows and fund performance

- Description:
Coval and Stafford (2007) show that mutual funds experiencing large money outflows sell significant proportions of their stock holdings which creates selling pressure in these stocks. Similarly, large money inflows are associated with buying pressure and temporary price increases in the underlying stocks. Market participants that provide liquidity to mutual funds facing extreme flows earn significant returns. Lou (2012), who also studies mutual fund induced price pressure, documents similar findings. A related paper by Rakowski (2010) shows that fund flow volatility is negatively related to fund performance.
This topic follows this strand of literature and asks whether funds with investor sentiment sensitive (insensitive) money flows earn low (high) returns. Funds with investor sentiment sensitive money flows will obtain large inflows (outflows) when investor sentiment is high (low) and stock prices are likely to be overvalued (undervalued). So, these funds are likely to face buying/selling pressure at the worst point in time. In contrast, funds with insensitive or even counter-sensitive fund flows are less affected by investor sentiment or can even exploit investor sentiment by buying at depressed and selling at inflated stock prices. Taken together, funds with investor sentiment sensitive flows are expected to underperform their investor sentiment insensitive/counter-sensitive counterparts.
In the first part of the thesis, the student should determine funds' flow sensitivity with respect to investor sentiment (e.g., Baker and Wurgler's (2006) investor sentiment index). Next, the student should compare the characteristics of sentiment sensitive and sentiment insensitive funds. Last, the student should test whether there are significant performance differences between sentiment sensitive and sentiment insensitive/counter-sensitive mutual funds.
- Requirements:
A data set of U.S. mutual funds will be provided to the student. If needed, additional information can be obtained from Morning Direct, which is available at Goethe University Frankfurt.
Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:
Baker, M., and J. Wurgler, 2006. Investor sentiment and the cross-section of stock returns. *Journal of Finance* 61, 1645-1680.
Coval, J., and E. Stafford, 2007. Asset fire sales (and purchases) in equity markets. *Journal of Financial Economics* 86, 479-512.
Lou, D., 2012. A flow-based explanation for return predictability. *Review of Financial Studies* 25, 3457-3489.
Rakowski, D., 2010. Fund flow volatility and performance. *Journal of Financial and Quantitative Analysis* 45, 223-237.

3. Counter-cyclical fund flows and fund performance

- Description:
Coval and Stafford (2007) show that mutual funds experiencing large money outflows sell significant proportions of their stock holdings which creates selling pressure in these stocks. Similarly, large money inflows are associated with buying pressure and temporary price increases in the underlying stocks. Market participants that provide liquidity to mutual funds facing extreme flows earn significant returns. Lou (2012), who also studies mutual fund induced price pressure, documents similar findings. On the aggregate stock market level, Warther (1995) shows that stock market returns are positively correlated with unexpected contemporaneous mutual fund flows.
This topic follows this strand of literature and asks whether funds with pro-cyclical money flows and funds with counter-cyclical flows show significant differences in performance. As funds with counter-cyclical flows have the opportunity to buy (sell) stocks when the average fund is selling (buying), they can provide liquidity to other funds which should translate into positive abnormal returns (see Coval and Stafford, 2007). More precisely, in this context, funds with pro-cyclical (counter-cyclical) money flows are funds that receive high (low) money flows when the aggregate fund market or the fund's investment segment receives high aggregate flows and vice versa.
In the first part of the thesis, the student should determine funds' flow sensitivity with respect to aggregate fund and funds' investment segment flows. Next, the student should compare the characteristics of pro-cyclical and counter-cyclical funds. Last, the student should test whether there is a significant difference in the performance of pro-cyclical and counter-cyclical funds.
- Requirements:
A data set of U.S. mutual funds will be provided to the student. If needed, additional information can be obtained from Morning Direct, which is available at Goethe University Frankfurt.
Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:
Coval, J., and E. Stafford, 2007. Asset fire sales (and purchases) in equity markets. *Journal of Financial Economics* 86, 479-512.
Lou, D., 2012. A flow-based explanation for return predictability. *Review of Financial Studies* 25, 3457-3489.
Warther, V. A., 1995. Aggregate mutual fund flows and security returns. *Journal of Financial Economics* 39, 209-235.

4. Is the performance-flow-relation convex? International evidence

- Description:
Sirri and Tufano (1998) find a convex flow-performance relation for U.S. mutual funds. The funds with the best past performance receive disproportionately large money inflows while the funds with the poorest past performance have hardly any outflows. This convex flow-performance relation has been confirmed in international mutual fund markets (Ferreira et al., 2012). These studies measure funds flows by percentage changes in total net assets (accounting for performance-induced changes in total net assets). However, a recent paper by Spiegel and Zhang (2013) argues that using percentage flows is problematic as heterogeneity across funds' flow-performance relation can bias overall results. More precisely, using percentage flows and not controlling for potential heterogeneity in the funds' flow-performance relation can yield false convexity estimates. Spiegel and Zhang (2013) propose a fund's market share as a new measure for fund flows which is more robust to funds' heterogeneity. Using this new measure, they find no evidence of a convex flow-performance relation.
In the first part of this thesis, the student should review the literature on the performance-flow relation with a focus on international studies as well as on the measurement of fund flows. In the second part, the student should empirically analyze the flow-performance relation in an international sample. More precisely, the student should compare the results between the percentage flows and the market share specification.
- Requirements:
An international data set of funds can be obtained from Morning Direct, which is available at Goethe University Frankfurt.
Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.
- Literature:
Ferreira, M., A. Keswani, A. Miguel, and S. Ramos, 2012. The flow-performance relationship around the world. *Journal of Banking and Finance* 36, 1759–1780.
Sirri, E., and P. Tufano, 1998. Costly search and mutual fund flows. *Journal of Finance* 53, 1589-1622.

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

5. An empirical analysis of amendments of SEC filings

- Description:

In the U.S., firms are required to send their financial reports via the Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) to the Securities and Exchange Commission (SEC). Whenever SEC filings contain missing or incorrect information firms have to file an amendment to the original filing. Incorrect information can range from harmless errors to more severe errors or even plain accounting fraud. So far, there is little research on how often amendments happen and what kind of information is corrected or added. This thesis should take a first step in this direction.

In the first part of this thesis, the student should summarize the rules regarding SEC filings, especially regarding the filing of amendments. In addition the student should create a short overview of the literature on corporate fraud and firms' information disclosure in general. In the second part, the student should provide summary statistics on amendments (e.g., their frequency, for which type of form they occur most (least) often, and time between original filings and amendment). Furthermore, the student should analyze which firms often (rarely) make amendments. More precisely, the student should test whether there are any systematic differences between firms with no or few amendments and firms with many amendments (e.g., differences in firm size, past performance, or differences across industries). Last, the student should examine the market reaction to the filings of an amendment and whether the filing of an amendment is predictive for future firm performance.

Requirements:

A data set of firms' SEC filings will be provided to the student. All standard databases like CRSP (stock market data), Compustat (accounting data), and I/B/E/S (analyst data) are available via WRDS at Goethe University Frankfurt..

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:

As there are hardly any closely related papers the following references cover firms' information disclosure more generally.

Palmrose, Z.-V., V. Richardson, and S. Scholz, 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* 37, 59-89.

Skinner, D., 1997. Earnings disclosures and stockholder lawsuits, *Journal of Accounting and Economics* 23, 249-282.

Tetlock, P., 2014. Information Transmission in Finance. *Annual Review of Financial Economics*, 365-384.

6. Investors' reaction to news – Empirical evidence from the U.S. stock market

- Description:

In his 1988 presidential address at the annual meeting of the American Finance Association, Richard Roll shows that the arrival of public information does hardly explain changes in asset prices. This result is very surprising, as traditional finance theory suggests that stock price changes should be caused by new information. Tetlock (2014) points out that this puzzle has not been resolved so far and that the comprehensive news data that have become available recently may help to get new insights on this topic.

Wang et al. (2018) take a step in this direction. They use Ravenpack news data, among the most comprehensive news data sets available, to analyze investors' reaction to news. They find that buying stocks with the most positive and shorting stocks with the most negative news is associated with positive future abnormal returns. This result suggests that investors do not fully incorporate news into prices. While Wang et al. (2018) differentiate between good and bad news, Tetlock (2011) analyzes investors' reaction to new and old information. He finds that there is a return reversal after stale news indicating that investors do not properly identify old news and react to news that has already been incorporated into prices.

In this master thesis, the student should review the literature on investors' reaction to (public) news. In the main part of the thesis, the student should first replicate key results of Wang et al. (2018). Next, the student should extend the results, for example, by analyzing investors' short-term (daily instead of monthly time frequency) reaction and by differentiating between news sources (e.g., newspapers, newswires, and online sources). Last, the student should use Ravenpack's event novelty score to distinguish between new and stale news and test whether news staleness affects investors' reaction to news.

- Requirements:

A preprocessed data set of daily U.S. stock returns from CRSP will be provided to the student. All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt. Ravenpack (comprehensive news data) is also accessible at Goethe University Frankfurt.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:

Chan, W. S., 2003. Stock price reaction to news and no-news: drift and reversal after headlines. *Journal of Financial Economics* 70, 223-260.

Hillert, A., H. Jacobs, and S. Müller, 2014. Media makes momentum. *Review of Financial Studies* 27, 3467-3501.

Roll, R., 1988. R-squared. *Journal of Finance* 43, 541-566.

Tetlock, P. C., 2011. All the news that's fit to reprint: Do investors react to stale information? *Review of Financial Studies* 24, 1481-1512.

Tetlock, P. C., 2014. Information transmission in finance. *Annual Review of Financial Economics* 6, 365-384.

Wang, Y., B. Zhang, and X. Zhu, 2018. The Momentum of News. Working paper.

7. Investors' reaction to extreme stock returns and the role of information

- Description:

Over the last 15 years, researchers have analyzed investors' reaction to extreme returns and the role of news. Chan (2003) analyzes the future returns of stocks with the lowest and the highest one-month returns. He identifies that the future returns of these two groups of stocks depend strongly on whether the stocks are featured in the news. While there is return continuation after extreme returns accompanied by news articles, stock returns reverse when there is no public news. In a more recent paper, Savor (2012) examines investors' reaction to one-day extreme returns (below minus 10% or above plus 10%). Like Chan (2003), he distinguishes between news and no-news days but uses analyst reports instead of newspaper and newswire articles. Similar to Chan (2003), he finds that there is a return continuation after extreme returns accompanied by news while there is a return reversal after extreme returns without news. Hillert et al. (2014) analyze the role of newspaper articles for standard momentum strategies (see e.g., Jegadeesh and Titman, 1993, 2001) and document that there is a stronger momentum effect in high coverage stocks. While these studies broadly arrive at similar conclusions, there are also important differences, for example, with respect to the time horizon (e.g. one-day returns vs. returns over several months) and the definition of news (e.g. analyst reports vs. newspaper articles).

In this master thesis, the student should briefly review the literature on return predictability and news. In the main part of the thesis, the student should first replicate key results of selected papers and then focus on investors' reaction to short-term returns (extreme one- to five-day returns). Thereby, the student should explore the role of news for investors' reaction using different news proxies including analyst reports as well as newspaper and newswire articles.

- Requirements:

A preprocessed data set of daily U.S. stock returns from CRSP will be provided to the student. All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt. I/B/E/S (analyst reports) and Ravenpack (news articles) are also available.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:

Chan, W. S., 2003. Stock price reaction to news and no-news: drift and reversal after headlines. *Journal of Financial Economics* 70, 223-260.

Hillert, A., H. Jacobs, and S. Müller, 2014. Media makes momentum. *Review of Financial Studies* 27, 3467-3501.

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

Jegadeesh, N., and S. Titman, 2001. Profitability of momentum strategies: An evaluation of alternative explanations. *Journal of Finance* 56, 699-720.

Savor, P. G., 2012. Stock returns after major price shocks: The impact of information. *Journal of financial Economics* 106, 635-659.

8. Differences of opinion and the cross-section of U.S. stock returns – Evidence from news articles

- Description:

Miller (1977) develops a model in which investors have heterogeneous beliefs. In this model, stock prices reflect the views of the optimists, while pessimistic views are not incorporated into prices because of short-sale constraints. Consequently, stocks with stronger investor disagreement yield, on average, lower future returns. Several empirical studies have tested the predictions of Miller (1977). For instance, Diether et al. (2002) find that stocks with higher dispersion in analysts' earnings-per-share forecasts earn lower returns than otherwise similar stocks. Chen et al. (2001) use the breadth of mutual fund ownership of a stock as a proxy for investor disagreement. In line with Miller (1977), they document that a decrease in mutual fund ownership is associated with lower future returns.

The idea of this topic is to use news articles to measure investor disagreement. As many (retail) investors are strongly influenced by the media in their trading decisions (see, e.g., Engelberg and Parsons, 2011), relying on a news-based investor disagreement proxy could be a very promising and powerful approach. Hillert et al. (2018) takes a first step in this direction. They construct a newspaper article-based market-wide measure for differences of opinion and find that high disagreement days are followed by lower market returns, which is consistent with Miller (1977).

In this master thesis, the student should first review the literature on differences of opinion and the cross-section of stock returns as well as the literature on the effects of news articles on investor beliefs and stock markets. In the main part of the thesis, the student should construct a news-based measure for differences of opinion on the individual stock level and check whether this measure explains the cross-section of stock returns. Next, the student should check whether news-based investor disagreement better explains future stock returns than existing investor disagreement proxies.

- Requirements:

All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt.

A comprehensive news data set will be provided to the student.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:
Chen, J., H. Hong, and J. C. Stein, 2002. Breadth of ownership and stock returns. *Journal of Financial Economics* 66, 171-205.
Diether, K. B., C. J. Malloy, and A. Scherbina, 2002. Differences of opinion and the cross section of stock returns. *Journal of Finance* 57, 2113-2141.
Engelberg, J. E., and C. A. Parsons, 2011. The causal impact of media in financial markets. *Journal of Finance* 66, 67-97.
Hillert, A., H. Jacobs, and S. Müller, 2018. Journalist disagreement. *Journal of Financial Markets* 41, 57-76.
Miller, E. M., 1977. Risk, uncertainty, and divergence of opinion. *Journal of Finance* 32, 1151-1168.

9. An empirical analysis of competing explanations for the idiosyncratic volatility puzzle.

- Description:
Ang et al. (2006) document that stocks with low idiosyncratic volatility (ivol) yield higher returns than their high ivol counterparts. Similarly, Kumar et al. (2009) find that so called lottery stocks (high ivol, high idiosyncratic skewness, and low stock prices) underperform non-lottery stocks. Bali et al. (2011) show that Ang et al. (2006)'s finding can be better explained by MAX which is the highest one day return of a stock within a month. More precisely, after controlling for MAX, idiosyncratic volatility is no longer predictive for the cross-section of stock returns. Last, Kumar et al. (2016) find that the stocks ranked among the daily winners or daily losers subsequently underperform and that this can largely explain the previous findings. Taken together, there are several competing explanations for the underperformance of high risk/lottery stocks. The aim of this thesis is to compare the predictive power of the different stock characteristics for future stock returns.
In the first part of this thesis, the student should summarize the literature on (idiosyncratic) risk and the cross-section of stock return. Besides, the student should review the literature on lottery-preferences (e.g., Barberis and Huang, 2008). In the the second part, the student should replicate the main findings of papers providing explanations for the underperformance of high idiosyncratic volatility stocks. Furthermore, the student should analyze the predictive power of the different variables for the cross-section of stock returns. Last, the student should explore whether cross-sectional and/or time-series interactions provide further insights on the source of the ivol anomaly.
- Requirements:
All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

- Literature:
Ang, A., R. Hodrick, Y. Xing, and X. Zhang, 2006. The cross-section of volatility and expected returns. *Journal of Finance* 61, 259-299.
Barberis, N., and M. Huang, 2008. Stocks as lotteries: The implications of probability weighting for security prices. *American Economic Review* 98, 2066–2100.
Bali, T., N. Cakici, and R. Whitelaw, 2011. Maxing out: Stocks as lotteries and the cross-section of expected returns. *Journal of Financial Economics* 99, 427-446.
Kumar, A., 2009. Who gambles in the stock market? *Journal of Finance* 64, 1889-1933.
Kumar, A., S. Ruenzi, and M. Ungeheuer, 2017. Daily Winners and Losers. working paper.

10. The value of verbal information in 10-K filings

- Description:
Loughran and McDonald (2011) show that the tone of the verbal information helps to explain the announcement returns around the filing dates of 10-K filings. More precisely, a more pessimistic tone is associated with a lower three day abnormal announcement return. Loughran and McDonald (2011) compute tone over the entire text of the filing and, thus, they do not distinguish between the different items. However, there is a recent paper, Cohen et al. (2016), that suggests that certain items (e.g., Item 1A “risk factors” and Item 3 “legal proceedings”) may be particularly important. Thus, the goal of this thesis is to determine the tone for each section separately and to analyze and compare the explanatory power of the tone of the different items for the return around the filing date of the 10-K.
In this master thesis, the student should first briefly summarize the literature on textual analysis of firms’ 10-K filings. In the second part, the student should conduct his or her own textual analysis of 10-K filings. This task comprises the identification and text extraction of the different sections as well as computing the tone for each item. The empirical part should start with summary statistics on the verbal information of the different items. Next, the value of the verbal information of the different items should be analyzed. Last, the student should examine whether there is dispersion of tone across the different sections and whether such dispersion itself provides valuable information.
- Requirements:
All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt.
A sample of firms’ 10-K filings will be provided. Please note, that this data set may have an aggregate size of several hundreds of gigabyte such that an external hard drive may be needed.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

Furthermore, programming skills (or ability/willingness to acquire such skills) to identify the items and to run the textual analysis are required. The programming language (e.g., Python, Perl, R) can be chosen freely. However, the supervisor can provide answers to programming-related questions only if Python is chosen as programming language.

- Literature:

Cohen, L., C. Malloy, and Q. Nguyen, 2016. Lazy Prices. working paper.

Loughran T., and B. McDonald, 2011. When is a liability not a liability? *Journal of Finance* 66, 35-65.

Loughran T., and B. McDonald, 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research* 54, 1187-1230.

11. Does earnings conference call content predict future firm performance? An empirical analysis for the U.S.

- Description:

In the U.S., it is common that firms host earnings conference calls. In these calls, the firm's executives first give a presentation which is followed by a question and answer session. Since the introduction of the Regulation Fair Disclosure (FD), firms typically provide transcripts of these conference calls. Matsumoto et al. (2011) use a sample of more than 10,000 transcripts of conference calls to examine the information content of the presentation and the question and answer part of the call. They find that both parts contain valuable information. However, the discussion segment is relatively more informative than the presentation. This result suggests that active analyst involvement in conference calls increases the information content of the call. Druz et al. (2015) analyze the tone of earnings conference calls and find that stock prices react significantly to managers' tone in conference calls. Furthermore, they find that the tone that is not explained by current economic performance predicts the firm's future earnings.

Davis et al. (2015) show that the tone of earnings conference calls contains a manager-specific component, i.e. some managers have the tendency to be optimistic while others are on average more pessimistic.

This topic builds on this literature and asks whether the content of earnings conference calls is predictive for future firm performance. For example, does more positive tone or less vague information predict higher future earnings (surprises)? Is conference call content predictive for future stock returns? Which parts of the earnings conference and the contributions of which participants are most informative?

In this master thesis, the student should first summarize the literature analyzing earnings conference call content. In the second part, the student should empirically analyze the verbal information provided in conference calls. This task comprises collecting and editing the call

transcripts (e.g., identifying the speeches of each call participant) and running a textual analysis. The student should test whether call content predicts firms' future earnings (surprises) and future stock returns. In the analyses, the student should also analyze which parts of the conference call and whose contributions (e.g., CEO, CFO, analysts) are most informative.

- Requirements:

All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt.

A sample of (unedited) earnings conference call transcripts will be provided.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

Furthermore, programming skills (or ability/willingness to acquire such skills) to conduct the textual analysis are required. The programming language (e.g., Python, Perl, R) can be chosen freely. However, the supervisor can provide answers to programming-related questions only if Python is chosen as programming language.

- Literature:

Davis, A., W. Ge, D. Matsumoto, and J. Zhang, 2015. The effect of manager-specific optimism on the tone of earnings conference calls. *Review of Accounting Studies* 20, 639-673.

Druz, M., A. Wagner, and R. Zeckhauser, 2015. Tips and tells from managers: How analysts and the market read between the lines of conference calls. NBER working paper.

Matsumoto, D., M. Pronk, and E. Roelofsen, 2011. What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions. *Accounting Review* 86, 1383-1414.

- General references for textual analysis in finance:

Loughran T., and B. McDonald, 2011. When is a liability not a liability? *Journal of Finance* 66, 35-65.

Loughran T., and B. McDonald, 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research* 54, 1187-1230.

12. Do analyst conference calls improve analysts' forecast accuracy? Evidence from the U.S.

- Description:

In the U.S., it is common that firms host earnings conference calls. In these calls, the firm's executives first give a presentation which is followed by a question and answer session. Since the introduction of the Regulation Fair Disclosure (FD), firms typically provide transcripts of these conference calls. Matsumoto et al. (2011) use a sample of more than 10,000 transcripts of conference calls to examine the information content of the presentation and the question and answer part of the call. Druz et al. (2015) analyze the tone of earnings conference calls and find that stock prices react significantly to managers' tone in conference calls. Furthermore, they

find that the tone that is not explained by current economic performance predicts the firm's future earnings.

Davis et al. (2015) show that the tone of earnings conference calls contains a manager-specific component, i.e. some managers have the tendency to be optimistic while others are on average more pessimistic.

This topic aims at a different direction. Conference calls provide an opportunity for analysts to obtain new information to update their earnings forecasts. If analysts successfully obtain additional value information they should make more accurate forecast. The aim of this thesis is to examine this question empirically.

In this master thesis, the student should first summarize the literature on earnings conference calls. In the second part, the student should empirically analyze whether the verbal information provided in conference calls is related to analysts' forecast accuracy. This task comprises collecting a sample of transcripts, identifying the speeches of each participant, and running a textual analysis. In addition to running the textual analysis, the student needs to calculate analysts' forecast error from I/B/E/S.

- Requirements:

All standard databases like CRSP (stock market data) and Compustat (accounting data) are available via WRDS at Goethe University Frankfurt. I/B/E/S (analyst forecasts) is available as well.

A sample of (unedited) earnings conference call transcripts will be provided.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

Furthermore, programming skills (or ability/willingness to acquire such skills) to conduct the textual analysis are required. The programming language (e.g., Python, Perl, R) can be chosen freely. However, the supervisor can provide answers to programming-related questions only if Python is chosen as programming language.

- Literature:

Davis, A., W. Ge, D. Matsumoto, and J. Zhang, 2015. The effect of manager-specific optimism on the tone of earnings conference calls. *Review of Accounting Studies* 20, 639-673.

Druz, M., A. Wagner, and R. Zeckhauser, 2015. Tips and tells from managers: How analysts and the market read between the lines of conference calls. NBER working paper.

Matsumoto, D., M. Pronk, and E. Roelofsen, 2011. What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions. *Accounting Review* 86. 1383-1414.

- General references for textual analysis in finance:

Loughran T., and B. McDonald, 2011. When is a liability not a liability? *Journal of Finance* 66, 35-65.

Loughran T., and B. McDonald, 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research* 54, 1187-1230.

13. International business/finance dictionaries for measuring annual report tone

- Description:

Textual analysis is a growing research area in accounting and finance (see e.g., Loughran and McDonald, 2016). However, so far, the research has been focused on U.S. companies and financial markets. Potential explanations for this U.S. focus include the excellent access to companies' financial reports in the EDGAR system of the U.S. Securities and Exchange Commission (SEC) and the availability of well tested dictionaries to measure document tone (Loughran and McDonald, 2011). A first step to overcome the lack of textual analysis research tools is Bannier et al. (2019), who analyze annual reports of German companies to develop a German version of the Loughran and McDonald (2011) dictionary. More precisely, they exploit the German regulatory setting in which companies must publish a German and an English annual report. Using these two documents, they can verify their German version of the Loughran and McDonald (2011) dictionaries and show that they obtain similar results when analyzing English and German annual report tone.

This topic follows the approach of Bannier et al. (2019) by extending the well-established Loughran and McDonald (2011) dictionaries to languages other than English and German. Like Bannier et al. (2019), the student should collect a sample of annual reports from firms in a specific country. To allow for validity tests, the documents should be available not only in the country's language but also in English. In the next step, the student should develop the Loughran and McDonald (2011) dictionaries for the country's language. Finally, the student should test whether analyzing English and the country's document tone yield similar results.

Students are free to choose a country that they are interested in. Countries with major financial markets (e.g., France, China, South Korea, and Japan) are particularly interesting research environments. It is highly recommend for the students to have excellent knowledge of the country's language.

- Requirements:

International stock market and accounting data are available in Thomson Reuters Datastream, which is available at the Goethe University Frankfurt.

Please note that the annual reports have to be downloaded by the student which requires some time. However, the time and effort that is spent on data collection will be taken into account for grading.

Basic knowledge (or ability/willingness to acquire basic knowledge) in econometrics and statistic software (e.g., Stata, R) is required. Previous experience with empirical analyses is helpful.

Furthermore, programming skills (or ability/willingness to acquire such skills) to conduct a textual analysis are required. The advisor will provide introductory material for the programming. Students are free to choose their preferred programming language for the textual analysis (e.g., Python, Perl, and R). However, the supervisor can provide answers to programming-related

questions only for Python. Also, introductory material on how to perform a textual analysis are only available in Python.

- Literature:

Banner, C., T. Pauls, and A. Walter, 2019. Content analysis of business communication: introducing a German dictionary. *Journal of Business Economics* 89, 79-123.

Loughran T., and B. McDonald, 2011. When is a liability not a liability? *Journal of Finance* 66, 35-65.

Loughran T., and B. McDonald, 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research* 54, 1187-1230.