Master Thesis Topics FSS 2024

Chair of Finance – Prof. Dr. Erik Theissen

UNIVERSITY OF MANNHEIM
Business School

Presentation is downloadable on our website.

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Chair of Finance

- **Address:**
  - L 9, 1-2
  - Secretary: third floor (“3. OG“)
  - Assistants: second and fourth floor
- **Office hours:**
  - By appointment
  - General questions: please visit our homepage first
  - Questions about specific topics: please feel free to contact the respective supervisor
- **Research at the Chair of Finance**

a) Market Microstructure

b) Empirical Asset Pricing

c) Blockchain & Cryptocurrency

Topic Allocation

- **Prerequisite:** You must have successfully completed one seminar of the area "Banking, Finance, and Insurance" (Prof. Albrecht, Prof. Maug, Prof. Niessen-Ruenzi, Prof. Ruenzi, Prof. Spalt, Prof. Theissen).

- The assignment of topics is carried out jointly by the finance area.

- Assignment to the topics will be based on your priority list and the grade in the respective seminar.

Time Schedule

- **Application period:** Thursday, 07.03.2024 – Thursday, 14.03.2024
- **Topics Allocation Announcement:** Monday, 18.03.2024
- **Registration Period:** Monday, 18.03.2024 – Monday, 25.03.2024
- **Starting Date:** Monday, 18.03.2024
- **Colloquium:** Friday, 24.05.2024 (in-person)
- **Submission Deadline:** Monday, 05.08.2024

Guide to Scientific Writing

- **An information sheet on writing a seminar paper or a master thesis is provided on our website.**

- **Most important rules:**
  - Your thesis should be 45 pages (+/- 10%).
  - 50 pages is the absolute maximum.
  - Tables and figures have to be included in the text (and count towards the page restriction).
  - Only supplementary material that is not needed to read and understand the thesis may be collected in an appendix.
  - Please only include literature that is either in English or German.

Important Remarks

- **Plagiarism policy:**
  - Your master thesis will be analyzed by plagiarism detection software (Turnitin).
  - Our chair has a **zero-tolerance policy** regarding plagiarism.
  - Students who submit plagiarized work will be graded with 5.0.

- **Language quality:**
  - Grading of your master thesis takes also into account the language quality.
  - Linguistic shortcomings negatively impact your final grade.
  - The master thesis can be either written in English or German.

FAQ

- **Some topics look more difficult than others. Why should I choose a rather difficult topic?**

  We take the difficulty of the topic into account when grading your thesis.

- **Can I do an internship during the writing process?**

  We generally advise against doing an internship during the writing process.

- **My computer crashed and I lost all my progress on the thesis. Can I get an extension of the deadline?**

  No, you are responsible to make enough backups of your work.

- **Can I submit earlier?**

  Yes.

Master Topics

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Other Questions?

T1. Dark Pool Trading and Information Acquisition

Erik Theissen

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Topic Description

- Broogard and Pan (2022) provide empirical evidence that more trading in dark pools leads to higher information acquisition.
- The analysis is based on (1) two measures of information acquisition (Weller's (2018) price jump ratio and the future earnings response coefficient) and (2) a shock to the level of dark trading caused by the SEC's tick size pilot program
- The objective of the Master thesis is to replicate this study using European data and exploiting a specific feature of European regulation, the double volume cap (DVC, see Johann et al. 2019)
- The DVC implies that dark pool trading for a stock is banned for six months when the market share of all dark pools exceeds 8%. Thus, dark pool trading is "switched off and (six months later) on again for these stocks. The idea for the thesis is to exploit this exogenous variation in dark pool trading for the analysis.

Requirements:

The candidate should feel comfortable in the use of appropriate software (such as STATA or Python) and econometric methods.

T1. Dark Pool Trading and Information Acquisition

Erik Theissen

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Broogard, J. and J. Pan (2022): Dark Pool Trading and Information Acquisition. Review of Financial Studies 35, 2625-2666.
- Johann, T., T. Putnins, S. Sagade and C. Westheide (2019): Quasi-Dark Trading: The Effects of Banning Dark Pools in a World of Many Alternatives. Working Paper, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3365994.
- Weller, B. (2018): Does Algorithmic Trading Deter Information Acquisition? Review of Financial Studies 31, 2184-2226.

T2. Ex-dividend Day Price Pressure of Stocks and ETFs

Chen Lin

UNIVERSITY OF MANNHEIM
Business School

Topic Description

- Two premises forge the prediction of transitory price pressure at ex-dividend days – investors on average like dividends, and the financial market is not perfect liquid. Taken together, because at the stock ex-dividend days there are more investors willing to buy shares than investors willing to sell, and the financial market cannot fully absorb the demand imbalance, a transitory price pressure, that stock prices move upwards at the ex-div days and revert in the following days, is observed (Hartzmark & Solomon, 2013).
- While stocks are often the test assets, the price pressure hypothesis on itself does not have to be restricted on stocks. Exchange-traded funds (ETFs) have increasingly become one of most important investment vehicles. ETFs issue dividends in a similar mechanism as stocks (declaration, ex-dividend, dividend payout) and investors can buy and sell ETFs just as stocks. The structure of ETFs thus allows for the price pressure hypothesis to be tested.
- Furthermore, investors of ETFs on average can be less sophisticated than investors of stocks. Recent evidence suggests that investors of ETFs are non-fundamental (Ben-David et al, 2018) and their decisions are more likely driven by attentions (Ben-David et al, 2022). These clientele features may imply stronger price pressure at ETFs than stocks. On the other hand, liquid provision can be better for ETFs than for stocks because ETFs contract specialized agents for market making (see Gorbatikov, & Sikorskaya (2022)).
- The expectation of the master thesis is two folds: 1) the student should extend the analysis in Hartzmark & Solomon (2013) using stocks with sampling period from 2012 to 2023, and 2) the student should also extend the analysis to using ETFs as test assets. The student is welcome to expand the topic in self-interested ways. For example, in 1) the student could replicate the findings in Hartzmark & Solomon (2013) and discuss the differences in the original and the extend sampling periods, or in 2) investigate the level differences (if any) in price pressure between stocks and ETFs at ex-dividend days.

Requirements

The empirical work requires the use of large databases (i.e. <CRSP>). The databases are readily accessible for affiliates of the University of Mannheim. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

T2. Ex-dividend Day Price Pressure of Stocks and ETFs

Chen Lin

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Hartzmark, S. M., & Solomon, D. H. (2013). The dividend month premium. Journal of Financial Economics, 109(3), 640-660.
- Hartzmark, S. M., & Solomon, D. H. (2019). The dividend disconnect. The Journal of Finance, 74(5), 2153-2199.
- Hartzmark, S. M., & Solomon, D. H. (2022). Predictable price pressure (No. w30688). National Bureau of Economic Research.
- Ben-David, I., Franzoni, F., & Moussawi, R. (2018). Do ETFs increase volatility?. The Journal of Finance, 73(6), 2471-2535.
- Ben-David, I., Franzoni, F., Kim, B., & Moussawi, R. (2023). Competition for Attention in the ETF Space. The Review of Financial Studies, 36(3), 987-1042.
- Gorbatikov, E., & Sikorskaya, T. (2022). Two APs are better than one: ETF mispricing and primary market participation. Available at SSRN 3923503.

T3. Corporate Bond Liquidity during Financial Crises

Justus Veehof

UNIVERSITY OF MANNHEIM
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Topic Description

- The onset of the 2007/2008 financial crisis coincided with a significant increase in corporate bond spreads. It is widely believed that deteriorating liquidity played a pivotal role in the widening of spreads. Dick-Nielsen et al. (2012) is one of the first studies to empirically test this hypothesis. Drawing on a newly constructed illiquidity measure, the researchers indeed find that the illiquidity premium in corporate bond spreads increased after the crisis‘ onset. Also, the increase in the illiquidity premium is less pronounced for highly rated corporate bonds, consistent with a flight to quality.
- The objective of this thesis is threefold. The student should (1) review the literature on corporate bond liquidity and dealer behavior during and after the 2007/2008 financial crisis, (2) replicate the main analyses of Dick-Nielsen et al. (2012), and (3) extend their analyses.

Requirements

The empirical work requires the use of large databases (i.e. TRACE, Refinitiv Eikon, IBES). The databases are readily accessible for affiliates of the University of Mannheim. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

T3. Corporate Bond Liquidity during Financial Crises

Justus Veehof

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Dick-Nielsen, Jens; Feldhütter, Peter; Lando, David (2012): Corporate bond liquidity before and after the onset of the subprime crisis. Journal of Financial Economics 103 (3), pp. 471-492.
- Bao, Jack; O'Hara, Maureen; Zhou, Xing (2018): The Volcker Rule and corporate bond market making in times of stress 130 (1), pp. 95-113.
- Bessembinder, Hendrik; Jacobsen, Stacey; Maxwell, William; Venkataraman, Kumar (2018): Capital Commitment and Illiquidity in Corporate Bonds. Journal of Finance 73 (4), pp. 1615-1661.
- Friewald, Nils; Jankowitsch, Rainer; Subrahmanyam, Marti G. (2012): Illiquidity or credit deterioration: A study of liquidity in the US corporate bond market during financial crises. Journal of Financial Economics 105 (1), pp. 18-36.

T4. Dissecting the Long-term Performance

Mengnan Wu

UNIVERSITY OF MANNHEIM
Business School

Topic Description

- The Chinese A-share market ranks as the world's second-largest in terms of total market capitalization, following the U.S. equity markets. Stringent listing requirements in the domestic market, among other factors, have led to a substantial number of Chinese firms opting for external listings. Despite the Chinese economy's performance being arguably better than expected, domestically listed firms in the A-share market have shown worse performance. The problematic listing and delisting processes lead to adverse selection of firms in the A-share market.
- Following Allen et al. 2024, the student should 1) provide stylized facts on whether the A-share firms underperformance in terms of stock returns and accounting measures relative to firms from other markets or firms externally listed Chinese firms, and 2) empirically examine the “institutional deficiencies hypothesis” for the gaps in stock returns and accounting performance.

Requirements

The empirical work requires the use of large databases (i.e. Eikon, Compustat, CRSP and CSMAR). Some of the required databases are readily accessible for affiliates of the University of Mannheim, and some will be provided by the thesis supervisor. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

Starting References

- Allen, F., Qian, J., Shan, C., & Zhu, J. (2024). Dissecting the long-term performance of the Chinese stock market. *The Journal of Finance.*
- Carpenter, J. N., Lu, F., & Whitelaw, R. F. (2021). The real value of China's stock market. *Journal of Financial Economics*, 139(3), 679-696.
- Liu, J., Stambaugh, R. F., & Yuan, Y. (2019). Size and value in China. *Journal of Financial Economics*, 134(1), 48-69.
- Bessembinder, H., Cooper, M. J., & Zhang, F. (2019). Characteristic-based benchmark returns and corporate events. *The Review of Financial Studies*, 32(1), 75-125.

T5. Acute Biodiversity Risk and Stock Returns

Yanghua Shi

UNIVERSITY OF MANNHEIM
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Topic Description

- Biodiversity, which includes genetic diversiy, species diversity, and ecosystem diversity, is essential for the well-being of both ecosystems and hence human societies (UNESCO, 2010). However, this important natural capital has been decreasing at „the fastest rate known in geological history“, which is largely caused by human activity (UNESCO, 2010, p. 4).
- Despite being an emergent research area in finance, some reseaches have already shown that biodiversity risks matters for economy. E.g. Giglio et al. (2023) shows that biodiversity risks affect financial markets in a way different from climate risks; Garel et al. (2023) show that events that raise awareness about biodiversity issues may influence firm valuation.
- The main purpose of the thesis is to replicate the results from Cherief et al. (2022), except that the thesis is going to investigate stock instead of corporate bond. The student will investigate how events that acutely affect biodiversity will influence the stock prices. Besides the events listed in Cherief et al. (2022), student is supposed to look for other relevant events and rationalize the choice of the events in the thesis.
- The student may also incorporate e.g. sentiment data, as done by Giglio et al. (2023).

Requirements

The empirical work requires the use of large databases (i.e. the dataset included in the link among the starting references). The databases are readily accessible for affiliates of the University of Mannheim. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

T5. Acute Biodiversity Risk and Stock Returns

Yanghua Shi

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Cherief, Amina, Takaya Sekine, and Lauren Stagnol. "The Market Effect of Acute Biodiversity Risk: the Case of Corporate Bonds." Available at SSRN 4288552 (2022).
- Garel, Alexandre, et al. "Do Investors Care About Biodiversity?." Swiss Finance Institute Research Paper 23-24 (2023).
- Giglio, Stefano, et al. Biodiversity Risk. No. w31137. National Bureau of Economic Research, 2023.
- A potentially useful data source: https://www.biodiversityrisk.org/download/
- https://www.unesco.pl/fileadmin/user_upload/pdf/BIODIVERSITY_FACTSHEET.pdf

T6. Seasonal Pattern in Mutual Fund Flows

Büsra Eroglu

UNIVERSITY OF MANNHEIM
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Topic Description

- Environmental factors, like weather and length of daylight, influence investor sentiment, which leads to time-varying risk aversion.
- According to psychology literature, Seasonal Affective Disorder (SAD) is a form of depression that typically arises during the fall and winter months when there is less natural sunlight.
- Investors suffering from SAD display more risk-averse behavior in winter and tend to make safer choices than non-sufferers (Kramer and Weber, 2012).
- A similar seasonality pattern is observed in mutual fund flows. For the risky group of mutual funds, both net flows and net exchanges decrease during the fall and increase in the spring. Conversely, the pattern for money market funds, which represent the safest category, is reversed, with flows increasing in the fall and decreasing in the spring (Kamstra et al., 2017). Besides SAD, seasonality in fund flows is also linked to tax-related seasons and the January effect.
- The objective of this thesis is to empirically analyze the seasonality pattern in US mutual fund flows and explore how these patterns vary across different types of funds.

Requirements

The empirical work requires the use of large databases (i.e. CRSP). The databases are readily accessible for affiliates of the University of Mannheim. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

T6. Seasonal Pattern in Mutual Fund Flows

Büsra Eroglu

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Ben-Rephael, A., Kandel, S. & Wohl, A. (2012). Measuring Investor Sentiment with Mutual Fund Flows. *Journal of Financial Economics*, 104, 363–382.
- Choi, H.-S. (2015). Seasonality In Mutual Fund Flows. *Journal of Applied Business Research (JABR),* 31(2), 715–726.
- Kamstra, M. J., Kramer, L. A., Levi, M. D., & Wermers, R. (2017). Seasonal Asset Allocation: Evidence from Mutual Fund Flows. *The Journal of Financial and Quantitative Analysis*, 52(1), 71–109.
- Kramer, L. A., & Weber, J. M. (2012). This is Your Portfolio on Winter: Seasonal Affective Disorder and Risk Aversion in Financial Decision Making. *Social Psychological and Personality Science*, 3(2), 193-199.

For further questions, e-mail me at beroglu@mail.uni-mannheim.de

T7. Skills and Scalability of Mutual Fund Managers

Hongting Jiang

UNIVERSITY OF MANNHEIM
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Topic Description

- Is it worthwhile to hold mutual funds, instead of investing by yourself? Since mutual fund is one of the most prevailing investment objects, this question has been discussed for long time. Researchers have divergent findings on the (after fee) performance of mutual funds: Some papers find that the mutual fund managers have investment skills(Michael Jensen ,1968; Richard Ippolito 1992), others find that the mutual fund managers underperform the benchmarks(Martin Gruber ,1996).
- A theoretical paper by Berk and Green (2004) attempted to reconcile the findings. They propose that the mutual fund outperformance, measured by α, is a function of capital under management q. The function illustrated below, comprises two components: the a, which can be interpretated by the managers' skills in generating profit from the initial 1 dollar, and $b \cdot q$, measuring the extent to which the profitability is affected by the diseconomy of scales (meaning that the profitability is reducing as the size of the fund increasing). Their model suggests that the (out)performance of mutual funds is decided by two manager traits: the skills a and the scalability b. A recent paper by Barras et al. (2022) empirical tested it on the fund level and confirms the existence of diseconomies of scale in the mutual fund area.

$$\alpha(q) = a - b \cdot q$$

- However, the linear relationship of this function implies strict diseconomies of scale, assuming constant manager ability in scaling up or down. Yet, this may not always hold true. When a fund receives new capital, finding similarly profitable opportunities as existing holdings can be challenging, especially in highly competitive markets. Conversely, when investors request redemptions, managers must sell holdings to minimize negative price pressure. The differing upscaling and downscaling abilities can be tested empirically.
- The tasks for this master thesis is threefold: First, to summarize existing literature on mutual fund performance and manager skills. Second, to replicate the key findings of Barras et al. (2022). Finally, to extend the analysis by revisiting mutual fund skills and scalabilities contingent upon upscaling and downscaling statuses.

Requirements

The empirical work requires the use of large databases (i.e. CRSP, Thomson Reuters)The databases are readily accessible for affiliates of the University of Mannheim. The candidate should feel comfortable in the use of a statistical software program (such as STATA) and econometric methods.

T7. Skills and Scalability of Mutual Fund Managers

Hongting Jiang

UNIVERSITY OF MANNHEIM
Business School

Starting References

- Barras, Laurent, Patrick Gagliardini, and Olivier Scaillet. "Skill, scale, and value creation in the mutual fund industry." The Journal of Finance 77, no. 1 (2022): 601-638.
- Berk, Jonathan B., and Richard C. Green. "Mutual fund flows and performance in rational markets." Journal of political economy 112, no. 6 (2004): 1269-1295.
- Berk, Jonathan B., and Jules H. Van Binsbergen. "Measuring skill in the mutual fund industry." Journal of financial economics 118, no. 1 (2015): 1-20.
- Gruber, Martin J. "Another puzzle: The growth in actively managed mutual funds." The journal of finance 51, no. 3 (1996): 783-810.
- Van Binsbergen, Jules H., Jungsuk Han, Hongxun Ruan, and Ran Xing. "A horizon based decomposition of mutual fund value added using transactions." Journal of Finance, Forthcoming (2019).

T8. Deposit Insurance Credibility and Revealed Preferences

Thomas Johann

UNIVERSITY OF MANNHEIM
Business School

Topic Description

- Imagine investors can choose between two investment products, A and B.
- A offers a higher interest rate than B.
- The seller of product A and the seller of product B both claim that the product is risk-free.
- If investors belief that both products are risk-free, they all should buy product A.
- But if the seller of product A seems less trustworthy, some investors might sacrifice some interest and choose product B.

- Together with my co-authors, I analyze a situation that is very similar to above described scenario. (Bhattacharya et al. 2024)
- Just replace the products by fixed term deposits and the sellers by different european countries.
- We find that many investors decide not to invest in the highest interest rate paying products despite european deposit insurance schemes that, if you believe the ECB, make every product risk-free.

T8. Deposit Insurance Credibility and Revealed Preferences

Thomas Johann

UNIVERSITY OF MANNHEIM
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Topic Description (continued)

- However, in our paper it is very difficult to measure trust in the ECB on an individual investor level, which makes it difficult to prove this relationship.

- It will be the goal of this master thesis to plan, conduct and evaluate an online experiment to answer the question whether there is a relationship between trust and investment.

Prerequisites

- Programming skills
- Good time management – we only have 4 months to plan, execute and analyse the experiment

Starting References

- Bhattacharya, Utpal and Johann, Thomas and Loos, Benjamin and Rochow, Tilman, Polarization in Perceived Risk (October 2023). HKUST Business School Research Paper No. 2023-127, Available at SSRN: https://ssrn.com/abstract=4489068 or http://dx.doi.org/10.2139/ssrn.4489068

T9. Market Efficiency and Data Mining

Stefan Scharnowski

UNIVERSITY OF MANNHEIM
Business School

Topic Description

- According to weak-form market efficiency, prices should already reflect all information of past prices and volume. It should thus not be possible to predict future returns based on their historical time series. Accordingly, prices should behave like a random walk.
- Many different tests have been proposed to study return predictability, for example with respect to autocorrelation, variance ratios, cointegration, … leading to different conclusions even for the same assets. A potential explanation for the diverging findings may be the wide range of design choices researchers can and have to make when it comes to analyzing efficiency. This facilitates data mining and leads to a wide distribution of results – that can be studied empirically. This distribution is nowadays sometimes called “non-standard errors”.
- The aim of this project is to empirically study the distribution of findings and thus the potential impact of data mining regarding return predictability in a market of your choice (equity, fixed income, mutual funds, ESG or green investments, FX, crypto, …) using multiple approaches, sample periods, data cleaning methods, and statistical tests. Data availability depends on the market chosen, for example CRSP or Datastream.

Requirements

The candidate should feel comfortable in the use of a statistical software program (such as Stata) and econometric methods.

Starting References

- Menkveld, A. J., Dreber, A., Holzmeister, F., Huber, J., Johannesson, M., Kirchler, M., ... & Weitzel, U. (2021). Non-standard errors.
- Campell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). The econometrics of financial markets. Princeton University Press.
- Fama, E. F. (1995). Random walks in stock market prices. Financial analysts journal, 51(1), 75-80. https://doi.org/10.2469/faj.v51.n1.1861
- Fieberg, C., Günther, S., Poddig, T., & Zaremba, A. (2024). Non-standard errors in the cryptocurrency world. International Review of Financial Analysis, 103106. https://doi.org/10.1016/j.irfa.2024.103106
- Lo, A. W., & MacKinlay, A. C. (1988). Stock market prices do not follow random walks: Evidence from a simple specification test. The Review of Financial Studies, 1(1), 41-66. https://doi.org/10.1093/rfs/1.1.41
- Alexeev, V., & Tapon, F. (2011). Testing weak form efficiency on the Toronto Stock Exchange. Journal of Empirical Finance, 18(4), 661-691. https://doi.org/10.1016/j.jempfin.2011.05.002
- Kaiser, L. (2019). Seasonality in cryptocurrencies. Finance Research Letters, 31. https://doi.org/10.1016/j.frl.2018.11.007
- Soebhag, A., Van Vliet, B., & Verwijmeren, P. (2023). Non-standard errors in asset pricing: Mind your sorts. Available at SSRN 4136672.
- Urquhart, A. (2016). The inefficiency of Bitcoin. Economics Letters, 148, 80-82. https://doi.org/10.1016/j.econlet.2016.09.019
- Walter, D., Weber, R., & Weiss, P. (2023). Non-standard errors in portfolio sorts. Available at SSRN 4164117.