Master Thesis Topics HWS 2020
Chair of Finance – Prof. Dr. Erik Theissen
Master Thesis Topics

• Presentation is downloadable on our website:

Chair of Finance (I)

• **Address:**
  – L 9, 1-2
  – Secretary: third floor (“3. OG“)
  – Assistants: second, fourth, and fifth floor

• **Office hours:**
  – By appointment
  – General questions: Please visit our homepage first
  – Secretary: Mo-Fr 09.00 – 12.00 am
Chair of Finance (II)

- Research at the Chair of Finance
  
a) Market Microstructure
b) Empirical Asset Pricing
c) Blockchain & Cryptocurrency
Master Thesis Topics

• Prerequisite:
  – You must have successfully completed one seminar of the area "Banking, Finance, and Insurance" (Prof. Albrecht, Prof. Bucher-Koenen, Prof. Maug, Prof. Niessen-Ruenzi, Prof. Ruenzi, Prof. Spalt, Prof. Theissen, Prof. Weber/Wimmer).

• 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:**
  – Wednesday, 09.09.2020 – Friday, 18.09.2020

• **Topics Allocation Announcement:**
  – Thursday, 24.09.2020

• **Registration Period:**
  – Thursday, 24.09.2020 – Tuesday 29.09.2020

• **Starting Date**
  – Tuesday 29.09.2020

• **Colloquium**
  – Friday, 27.11.2020 (online via Zoom)

• **Submission Deadline**
  – Friday, 29.01.2021
Guide to Scientific Writing

• An information sheet on writing a seminar paper or a master thesis is provided on our website:

https://www.bwl.uni-mannheim.de/media/Lehrstuehle/bwl/Theissen/Services/Leitfaden_wissenschaftliche_Arbeiten_SeminarMaster.pdf

• 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
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 impacts your final grade.
  – The master thesis can be either written in English or German.
Questions ???
T1. The Financial Implication of Pharmaceutical Progress
Lukas Zimmermann

Topic Description

• Since the outbreak of the Covid-19 pandemic, many developments could be observed in financial markets. Among the firms that have been in the focus are those working on a medical treatment to cure the disease or a vaccine to protect against the virus. It should be expected that both a drug and a vaccine constitute a competitive advantage and result in significant financial inflows. This master thesis should investigate the financial implication of pharmaceutical progress for the developing firms by examining how securities of pharmaceutical firms react on relevant information. In an efficient market, one would expect that such information is priced in and that respective firms outperform relevant benchmarks.

• First, relevant (publicly traded) firms that are working on a Covid-19 drug or vaccine should be identified. Subsequently, relevant dates on which those firms announced important information concerning their progress in drug or vaccine development should be determined. This includes the announcement of the plan to develop a vaccine or the availability of a potential drug, important intermediate results of clinical trials, the information of entering a new development stage, or general information concerning the progress.

• Relevant benchmark portfolios should be constructed and the performance of the pharmaceutical firms around the events and generally over time should be examined (standard event study methodology and calendar-time portfolio approach). In a further step, the announcement effect should be compared with effects in the pre-Covid-19 time.
Starting References

T2. Stock returns after no-information shocks: Mutual Fund Flow Pressure Revisit

Mengnan Wu

Topic Description

• How does price react to demand or supply shocks? A large body of research has documented the price pressure effects around index additions and block sales. But some doubt the events studied are contaminated by information about fundamentals.

• A rapidly expanding literature has used the investor flows to and from mutual funds as a source of exogenous price pressure. If the required sales from individual investors are sufficiently large, the funds’ liquidity needs may put downward pressure on prices that is unrelated to the fundamental value of the underlying stocks (Wardlaw, 2020).

• The flow-induced trading, across mutual funds, can have a significant impact on individual stock returns and drive stock prices temporarily away from their information-efficient benchmarks (Coval and Stafford, 2007). The flow-based mechanism can potentially cause stock price momentum (Lou, 2012).

• Savor (2012) finds evidence that investors overreact to non-fundamental shocks that move stock prices.

• The goal of the thesis is to broadly replicate Lou(2012), examining institutional price pressure in equity markets by studying mutual fund fire sale in the US market. A survey on the measurement of mutual fund pressure should also be included.

• Knowledge of econometric software is appreciated for the thesis.
T2. Stock returns after no-information shocks: Mutual Fund Flow Pressure Revisit
Mengnan Wu

Starting References


T3. Understanding asymmetric FX volatility around the world
Stefan Scharnowski

Topic Description
• Asymmetric volatility – the tendency of asset returns being more volatile when prices decline than when they increase – is well documented for equities. While there is still some debate on where this asymmetry comes from, there is already a rich literature testing competing hypotheses.
• When it comes to foreign exchange markets, asymmetric volatility has also been documented, albeit less frequently. Moreover, its determinants are hardly understood in FX markets, although the currency market is substantially larger by trading volume than all the world’s equity markets combined.
• The aim of this thesis is to first empirically examine exchange rates for asymmetric volatility. In a second step, potential determinants of this asymmetry will be analyzed.
• The thesis offers an opportunity to conduct original research and learn about advanced methods in econometrics and data science (e.g., APARCH or LASSO). Though advanced knowledge before to starting the thesis is not required, some prior experience in working empirically (Stata or R) and e.g. performing regression analysis would be advisable.
T3. Understanding asymmetric FX volatility around the world
Stefan Scharnowski

Starting References

T4. Cryptocurrency and Coronavirus Crisis
Yanghua Shi

Topic Description

• The relatively new asset class of cryptocurrencies, of which Bitcoin is by far the most popular, has received a lot of attention in recent years, both in the media and in academic research. As COVID-19 negatively affects economy and society globally, it is becoming interesting to investigate the behaviour of cryptocurrency in this unprecedented global pandemic.

• The thesis contributes to the discussion about the way a global crisis would affect cryptocurrencies by empirically analyzing patterns in cryptocurrency data over the progression of the pandemic. A focus should be placed on intraday volatility and trading volume.

• Since this is a relatively novel research question, this thesis is especially suited for those wanting to conduct original research. Some prior experience in working empirically (Stata, R, or Python) would be advisable.
Starting References


• https://cointelegraph.com/news/we-may-expect-a-bitcoin-rally-if-coronavirus-breaks-into-a-second-wave
T5. Real Effects of the European Sovereign Debt Crisis
Yannik Schneider

Topic Description

- Identify and measure the real effects of the 2008-2012 European sovereign debt crisis
- The economic health of countries, firms and banks is linked through banks’ sovereign debt holdings ("sovereign-bank nexus") and bank lending
- Banks with high exposures to distressed sovereigns had to cut down lending to firms during the crisis
- The student will be given data on bank-firm relations, bank sovereign exposure, and firm financials
- The thesis is supposed to explore the effect that a banks’ exposure to a distressed sovereigns had on the firms that were affiliated to the bank
Starting References


• Beck et al. (2018). “When arm's length is too far: Relationship banking over the credit cycle”. *Journal of Financial Economics*

Topic Description

• A large part of finance literature deals with financial market participants (e.g. retail and professional investors or mutual fund managers). There exists considerably less research concerning US government representatives and organizations. Regarding the size of the federal governments budget (USD 4.45 trillion in FY 2019), we, as economists, need to understand whether this money is well spent.

• We know that the budgets of many federal organizations expire at the end of the year. This encourages them to spend their remaining budget in the last week of the year. Liebman and Mahoney (2017) show that federal organizations’ “spending in the last week of the year is 4.9 times higher than the rest-of-the-year weekly average”. Further, Liebman and Mahoney (2017) show that year-end projects have a lower quality.

• The aim of the thesis is to replicate the main findings of Mahoney and Liebman (2017). In addition, the student should extend the analysis to include the recent years of the Trump Administration. In particular, the following questions should be analyzed. Is wasteful year-end spending more severe for the Trump Administration? Do year-end projects face more cost and time overruns? And if so, how large is the welfare loss? To measure cost and time overruns, the student can use the measures of Decarolis et al. (2020).
Starting References


T7. Momentum, Liquidity, and Transaction Costs
Can Yilanci

Topic Description

• Weak form market efficiency is that all information in the time series of past prices is reflected in the current price (Fama, 1970). Hence, analyzing past prices should not allow to predict future returns. In sharp contrast to this concept, strategies that buy past winner stocks and sell past loser stocks generate significant positive returns (Jegadeesh and Titman, 1993). This effect is commonly known as the momentum effect.
• The momentum effect has not only been discovered in the US but also in an international sample of countries and in different asset classes (e.g. see Asness et al. 2013). However, several studies posit that momentum returns are an illusion because momentum strategies require frequent trading in illiquid assets and face high transaction costs (Korajczyk and Sadka, 2004, and Lesmond et al., 2004).
• The momentum effect was very significant in the pre-2000 years but the strategy’s returns diminished in the post-2000 years (Jegadeesh and Titman, 2011). So do the diminishing returns coincide with lower transaction costs?
• The student’s task is threefold. First, the student should review the momentum literature. Second, the student should replicate the main findings of Jegadeesh and Titman (1993). Third, the student should analyze liquidity and transaction costs of momentum portfolios.
T7. Momentum, Liquidity, and Transaction Costs
Can Yilanci

Starting References

Besides expected rates of return and volatilities, Welch (2020) describes betas as one of three intrinsically interesting moments in finance. Beta measures how stocks move relative to the market. Formally, $\beta_i$ is defined as $\frac{\text{Cov}(r_i, r_m)}{\text{Var}(r_m)}$, i.e. the covariance of asset i’s return with the market return divided by the variance of the market return.

Ever since the foundation of the Sharpe-Lintner CAPM (Sharpe, 1964; Lintner 1965), beta is used as a measure to determine stocks’ expected rate of return. Still, scholars propose different ways to estimate beta and to improve beta estimates. Vasicek (1973) suggests to shrink betas towards the cross-sectional mean as very extreme betas are more likely to be under-/over-estimated. Dimson (1979) suggests to include terms for the lagged market return in the OLS regression when stocks are subject to infrequent trading. Ang et al. (2006) propose a downside beta. More recently, Frazzini and Pedersen (2014) calculate betas by separately calculating volatilities and correlations over one-year and five-year horizons. Last but not least, Welch (2020) suggests to use stock returns that are winsorized. But is there really a procedure to estimate betas that is superior to others?

The thesis consists of a theoretical and empirical part. In the first part, the student should review the literature in detail. In the second part, the student should test how the different beta estimates predict the out-of-sample OLS beta. The thesis’ goal is to provide a guideline on how to measure beta with respect to costs and benefits of the various approaches.
T8. All Roads Lead to Rome: How to Estimate Beta
Can Yilanci

Starting References

T9. Stock Market Beta and Macroeconomic Announcement Days
Can Yilanci

Topic Description

- Ever since the foundation of the Sharpe-Lintner CAPM (Sharpe, 1964; Lintner 1965), beta is used as a measure to determine stocks’ expected rate of return. However, early tests of the CAPM did not find evidence for a direct relation between beta and average excess returns (Fama and French, 1992) (“beta anomaly”, dotted line in the figure). Savor and Wilson (2014) show that asset prices behave differently on macroeconomic announcement days. On inflation, unemployment, and FOMC interest announcement dates, there is a significant relation between beta and average excess returns (solid line in the figure).

- Ang et al. (2006) propose downside and upside betas because “investors care differently about downside losses versus upside gains”. They show that there exists a downside premium of about 6%.

- The thesis aims at bringing together the evidence presented in Savor and Wilson (2014) and Ang et al. (2006). In particular, the student’s task is threefold. First, the student should review related literature. Second, the student should replicate the evidence in Savor and Wilson (2014). Third, in the fashion of Ang et al. (2006), the student should calculate downside and upside betas for macroeconomic announcement days. In particular, the following questions should be answered. Do the results of Savor and Wilson (2014) also hold for a more recent period? Is downside risk a priced risk factor on macroeconomic announcement days?
Starting References


