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## Master Theses FSS 2023: Topics

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**TOPIC NR1: How does taxation affect delegated portfolio management?**

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**Advisor:** Chia-Yi Yen

Many professional investors have highlighted that taxation is the biggest cost for mutual fund investors.<sup>1</sup> As documented in Sialm and Starks (2012), the average tax burden of a mutual fund is as large as 1% of the fund's value, similar in magnitude as the fund expense ratio. While expense ratio is an erosion factor to fund performance, "the profound impact of taxes on fund returns is a subject too long ignored," said John C. Bogle, the founder and chief executive of Vanguard. As a result, tax-aware investors should pay attention to how their fund managers react to an increase in taxation.

On the one hand, a higher tax may facilitate tax-efficient portfolio management if fund investors care about tax payments. As Sialm and Zhang (2020) predicted, mutual fund performance in equilibrium depends on the size of the tax clientele. They find that tax-efficient funds exhibit superior performance, both, after and even before tax. Therefore, a rational and savvy investor should allocate his/her assets to tax-efficient asset management companies, yet Sialm and Zhang (2020) do not observe fund inflows to these funds, making it puzzling why investors seem to pay little attention to taxation. On the other hand, a higher tax rate can trigger agency problems between fund managers and investors. When taxes increase, fund managers receive lower compensation than before. Their once optimal compensation contracts are no longer sufficient to incentivize them to exert the same amount of effort. Agarwal et al. (2021) provide empirical evidence in the hedge fund context. They find that income tax rates are negatively related to the performance of hedge funds. Moreover, they document that tax rates do not influence fund flows, suggesting that investors seem insensitive to this tax-induced agency problem.

In this thesis, the student is expected to conduct a literature review on how taxation affects delegated portfolio management and to broadly replicate Agarwal et al. (2021) in the mutual fund context. The discussion should focus on the following questions: Do mutual fund managers and investors react to tax changes and if so, do they respond differently? For instance, from the perspective of mutual fund managers, do they manage portfolios in a more tax-efficient manner, or do they exert fewer effort because of a lower after-tax income? In addition, from the perspective of mutual fund investors, do they really care about tax efficiency and reveal their preferences with respect to fund flows? If not, why don't they care about taxes?

Requirements: The empirical work requires using databases on mutual funds, such as the CRSP Mutual Fund database, the Thomson Reuters Ownership database, NBER TAXSIM, and FRED. It is important that the candidate has at least basic knowledge of a statistical software program (e.g., Stata) and econometrics.

**Introductory Literature:**

- Agarwal, V., Chen, G., Shi, Z., & Wang, B. (2021). Income taxes and managerial incentives: Evidence from hedge funds. SSRN Electronic Journal.
- Sialm, C., & Starks, L. (2012). Mutual fund tax clienteles. *The Journal of Finance*, 67(4), 1397-1422.
- Sialm, C., & Zhang, H. (2020). Tax-Efficient Asset Management: Evidence from Equity Mutual Funds. *The Journal of Finance*, 75(2), 735-777.

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<sup>1</sup> Parker, C. (2018). Frank Armstrong. In *Harriman's New book of investing rules: The do's and don'ts of the world's best investors*. essay, Harriman House Publishing.

**TOPIC NR2: Do fund managers value ESG? A revealed preference approach**

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**Advisor:** Chia-Yi Yen

Environmental, social, and governance (ESG) integration has gained increasing popularity in the asset management industry in recent years. According to a report issued by the OECD, Boffo and Patalano (2020), ESG incorporation accounted for 26% of assets under management in the U.S. at the year-end of 2017. The trend is even more pronounced after the COVID crisis; more than two-thirds of asset owners have now incorporated ESG elements in their investment processes (Index Industry Association, 2022). Such a rapidly increasing demand for ESG integration may be explained by two opposing reasons. On the one hand, fund managers may tilt their portfolios towards more ESG stocks in order to improve long-term performance, taking into account the physical and transition risks associated with ESG issues. On the other hand, fund managers may simply use the buzzword “ESG investment” in order to attract more fund flows, at the expense of an under-diversified and inferior portfolio.

One approach to resolve this debate is through the analysis of fund managers’ revealed preferences. Literature suggests that managers who invest their own money in the institutions they manage—and thus have so-called “skin-in-the-game”—tend to make decisions based on their own preferences. Therefore, the decisions made by those “skin-in-the-game” managers can be considered “revealed preference.” Based on the revealed preference inferred from the “skin in the game,” Orlov et al. (2022) find that fund managers with more “skin-in-the-game” are less likely to tilt their portfolios towards ESG stocks, indicating that “fund managers do not expect ESG strategies to deliver higher risk-adjusted performance.”

In this thesis, the student is expected to conduct a literature review on whether and why fund managers value ESG investment. The discussion should include related topics such as the impact of ESG integration on fund performance, fund risk-taking, and fund flows. In the empirical part of this thesis, the student should replicate the analyses in Orlov et al. (2022) and develop and test related new hypotheses.

Requirements: The empirical work requires using databases on mutual funds, such as CRSP Survivorship Bias Free Mutual Fund Database, Morningstar Direct Database, and SEC EDGAR database. It is important that the candidate has at least basic knowledge of a statistical software program (e.g., Stata) and econometrics.

**Introductory Literature:**

- Boffo, R., and R. Patalano (2020), “ESG Investing: Practices, Progress and Challenges”, OECD Paris, [www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf](http://www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf)
- Index Industry Association, IIA, 2022, Annual global esg asset manager survey, Available at [www.indexindustry.org](http://www.indexindustry.org)
- Orlov, V., Ramelli, S., & Wagner, A. F. (2022). Revealed Beliefs about Responsible Investing: Evidence from Mutual Fund Managers. *Swiss Finance Institute Research Paper*, (22-98).

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**TOPIC NR3: Carbon transition risk and asset prices: Is there are carbon premium?**

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**Advisor:** Larissa Ginzinger

Many studies attempt to explain the cross-sectional pattern of stock returns based on exposure to aggregate risk factors, such as size and book-to-market ratios, or firm-specific risk linked to observable firm characteristics. Both the evidence of rising temperatures and renewed policy efforts to curb carbon emissions raise the question of whether carbon emissions now pose a material transition risk to investors that is reflected in the cross-section of stock returns and portfolio holdings. Transition risk refers to the risks arising from the potential transition to a low-carbon economy.

Bolton and Kacperczyk (2021) examine whether carbon emissions affect the cross-section of US stock returns. They find that stocks of companies with higher total CO<sub>2</sub> emissions earn higher returns, controlling for several return predictors. This carbon premium cannot be explained by differences in unexpected profitability or other known risk factors. In addition, the authors find that institutional investors engage in exclusionary screening based on direct emissions intensity (the ratio of total emissions to sales) in a few prominent industries. Overall, their results are consistent with an interpretation that investors are already demanding compensation for their exposure to carbon emissions risk. An alternative approach to measuring transition risk is proposed by Sautner et al. (2023), who use textual analysis to identify the attention paid by earnings call participants to companies' climate change exposures.

The goal of this thesis is twofold. First, the student is expected to carefully replicate the main findings of Bolton and Kacperczyk (2021) using emissions data from Refinitiv and the US Environmental Protection Agency's Greenhouse Gas Reporting Program (GHGRP). Do (changes in) different types of carbon emissions affect stock returns? Do investors avoid companies with high carbon emissions? Second, the student should extend the results of Bolton and Kacperczyk (2021) by (i) extending the sample period to more recent years; and (ii) using the textual analysis-based measure of firm-level climate change exposure by Sautner et al. (2023).

**Requirements:**

Stock return data and firm-level accounting data can be downloaded from CRSP and Compustat respectively. Institutional ownership information is available from Thomson Reuters. Emission data is available from Refinitiv. These databases are freely accessible to members of the University of Mannheim. GHGRP emissions data and climate change exposure data by Sautner et al. (2023) are publicly available. It is important that the candidate has at least basic knowledge of statistical software (e.g. Stata, R or Python) and econometrics.

**Introductory Literature:**

- Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk?. *Journal of Financial Economics*, 142(2), 517-549.
- Giglio, S., Kelly, B., & Stroebel, J. (2021). Climate finance. *Annual Review of Financial Economics*, 13, 15-36.
- Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1), 15-36.
- Pástor, L., Stambaugh, R. F., & Taylor, L. A. (2022). Dissecting green returns. *Journal of Financial Economics*, 146(2), 403-424.
- Sautner, Z., van Lent, L., Vilkov, G., & Zhang, R. (2023). Firm-level climate change exposure. *Journal of Finance*, forthcoming.

**TOPIC NR4: Corporate green bonds and firms' environmental profiles**

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**Advisor:** Larissa Ginzinger

A recent development in corporate finance is the use of corporate green bonds, i.e., bonds whose proceeds are used to finance environmental and climate-friendly projects such as renewable energy, green buildings or resource conservation. While corporate green bonds were essentially non-existent prior to 2013, they have become increasingly popular over the past few years - a development that has been referred to as the "green bond boom".

Flammer (2021) shows that investors respond positively to the issuance of green bonds, a response that is stronger for first-time issuers and third-party certified bonds. Moreover, issuers improve their environmental performance post-issuance (i.e., higher environmental ratings and lower CO2 emissions) and experience an increase in ownership by long-term and green investors. Overall, the results are consistent with a signaling argument - by issuing green bonds, companies credibly signal their commitment to the environment. Seltzer et al. (2022) use bond credit ratings and yield spreads to examine whether firms' regulatory risk is an important channel through which firms' environmental profiles affect their credit risks. Using the Paris Agreement as a shock to climate risk regulation, they provide evidence that climate regulatory risk causally affects bond credit ratings and yield spreads.

First, the student is expected to carefully replicate the main findings of Flammer (2021) using green bond data from Refinitiv and the SDC New Issues database. How do investors react to the issuance of green bonds? Does this reaction depend on the type of bond and the issuer? Do green bond issuers improve their environmental performance after issuance? Do green investors' equity holdings change after green bond issuance? Second, the student should extend the results of Flammer (2021) by (i) extending the sample period to include more recent years; and (ii) taking into account climate regulatory risks. In this part of the thesis, the student might follow the approach of Seltzer et al. (2022) and/or use the firm-level climate change exposure data provided by Sautner et al. (2023).

**Requirements:**

Stock return data and firm-level accounting data can be downloaded from CRSP and Compustat, respectively. ESG scores, carbon emissions, and information on green bonds can be obtained from Refinitiv. These databases are readily accessible for affiliates of the University of Mannheim. Climate change exposure data by Sautner et al. (2023) are publicly available. Additionally, an additional set of green bond data from the SDC New Issues database will be provided by the supervisor. It is important that the candidate has at least basic knowledge of a statistical software program (e.g., Stata, R, or Python) and econometrics.

**Introductory Literature:**

- Flammer, C. (2021). Corporate green bonds. *Journal of Financial Economics*, 142(2), 499-516.
- Sautner, Z., van Lent, L., Vilkov, G., & Zhang, R. (2023). Firm-level climate change exposure. *Journal of Finance*, forthcoming.
- Seltzer, L. H., Starks, L., & Zhu, Q. (2022). Climate regulatory risk and corporate bonds. NBER Working Paper.
- Tang, D. Y., & Zhang, Y. (2020). Do shareholders benefit from green bonds?. *Journal of Corporate Finance*, 61, 101427.
- Zerbib, O. D. (2019). The effect of pro-environmental preferences on bond prices: Evidence from green bonds. *Journal of Banking & Finance*, 98, 39-60.

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**TOPIC NR5: The effect of stock ownership incentives on employee performance**

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**Advisor:** Clemens Mueller

Corporations often incentivize their employees in the form of [stock ownership programs](#). Such programs allow employees to purchase shares of their employer, often at discounted prices. These programs provide a form of within-firm rent sharing and aim to streamline incentives not just for senior level executives, but also for rank-and-file employees.

There is a large literature on stock ownership as well as on stock options. On stock ownership programs, Babenko & Sen (2014) analyze employee decisions to participate in such programs. Kim & Ouimet (2014) analyze firm productivity of small versus large broad-based employee share ownership plans. On stock options, Hochberg & Lindsey (2010) show that broad-based non-executive stock options have a positive effect on firm performance. Aldatmaz et al. (2018) show that turnover declines and Babenko et al. (2011) find positive effects on firm investment.

The goal of this thesis is as follows: First, the student should analyze and assemble an overview of country-wide employee stock ownership national incentive programs in Europe. There is a European commission study available which provides sources and data. The student should familiarize herself with national incentives and which programs are likely to have a big impact and which ones do not.

Second, the student will - with the help of the supervisor - set up a panel on an inventor-year level. The data capture how productive individual inventors are. The final task is to analyze to what extent the staggered introduction of country-wide incentives has a positive effect on inventor productivity.

Requirements: All data used in this thesis is publicly available. An introduction to patent data will be provided. It is important that the candidate has at least basic knowledge of a statistical software program (e.g., Stata, R, or Python) and econometrics.

**Introductory Literature:**

- Aldatmaz, S.; Ouimet, P.; Van Wesep E. (2018). The option to quit: The effect of employee stock options on turnover, *Journal of Financial Economics*, Volume 127, Issue 1, Pages 136-151.
- Babenko, I.; Lemmon, M.; Tserlukevich, Y. (2011). Employee Stock Options and Investment, *The Journal of Finance*, Vol. 66, No. 3, Pages 981-1009.
- Babenko, I.; Sen, R. (2014). Money Left on the Table: An Analysis of Participation in Employee Stock Purchase Plans, *The Review of Financial Studies*, Volume 27, Issue 12, Pages 3658–3698.
- Kim, E.H.; Ouimet, P. (2014). Broad-Based Employee Stock Ownership: Motives and Outcomes, *The Journal of Finance*, Volume 69, Issue 3, Pages 1273-1319
- Lowitzsch, J.; Hashi, I. (2012). The Promotion of Employee Ownership and Participation, *European Commission*.
- Hochberg, Y.; Lindsey, L. (2010). Incentives, Targeting, and Firm Performance: An Analysis of Non-executive Stock Options, *The Review of Financial Studies*, Volume 23, Issue 11, Pages 4148–4186.

**TOPIC NR6: Do portfolio returns of judges affect criminal case outcomes?**

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**Advisor:** Clemens Mueller

The literature has extensively looked at biased decision making of criminal judges. Cohen & Yang (2019) show that Republican-appointed judges sentence black defendants to 3 more months than similar nonblacks and female defendants to 2 fewer months than similar males compared to Democratic-appointed judges. Relatedly, Gormley et al. (2022) show that Republican-appointed judges impose 1,050 percent larger fines for hiring illegal immigrants, while Democrat-appointed judges impose 136 percent larger fines for pollution-related violations.

An open research question is how finance biases judicial decision making. Financial disclosures of judges in the United States allow to analyze stock ownership of judges. Knill et al. (2022) for example analyze to what extent owning stock in a peer firm affects outcomes in civil cases. The research question of this thesis is to analyze criminal cases. Do unexpected low returns have an effect on case outcomes?

The goal of this thesis is as follows: First, the student should briefly review the literature on biased decision making in the judicial system. Then, the student should assemble a database of investments of judges in the US. The first part of the paper is descriptive: How diversified are judges? Do they invest in individual stocks or in passive index funds? Second, the student should analyze to what extent recent stock market performance affects decision making in criminal cases.

Requirements: The student will receive assistance working with judicial data. Stock market data is obtained from CRSP via WRDS. The remainder of the data will be provided. It is important that the candidate has at least basic knowledge of a statistical software program (e.g., Stata, R, or Python) and econometrics.

**Introductory Literature:**

- Anderson, J.M.; Helland, E.A.; McAlister, M. (2015). Measuring How Stock Ownership Affects Which Judges and Justices Hear Cases. *Georgetown Law Journal*, Vol. 103, No. 1163.
- Cohen, A.; Yang C.S. (2019). Judicial Politics and Sentencing Decisions. *American Economic Journal: Economic Policy*, 11 (1): 160-91.
- Gormley, T.A.; Kaviani, M.; Maleki, H. (2022). When do Judges Throw the Book at Companies? The Influence of Partisanship in Corporate Prosecutions, SSRN working paper.
- Knill, A.M.; Kindelsperger, J.; Ovtchinnikov, A.V. (2022). Stock Ownership of Federal Judges and its Impact on Firms. HEC Paris Research Paper No FIN-2021-1443.