FRIC · CENTER FOR FINANCIAL FRICTIONS

CBS · DEPARTMENT OF FINANCE
COPENHAGEN BUSINESS SCHOOL

Danmarks
Grundforskningsfond
Danish National
Research Foundation

Research Statement

My primary research focuses on how to make impact investing impactful. In doing so, it explores sustainable finance at the investor, firm, and investment management levels. My secondary work explores how financial intermediaries interact with investors affecting the convenience yield, systemic risk, and equity risk premium.

Sustainable Finance

In my job market paper, "**Skills and Sentiment in Sustainable Investing**," I explore how the rise of ESG investing has affected investors' sustainable investment returns. I find that investors' mandates are important in explaining these outcomes. Specifically, flexible mandate investors earn 3.1% higher returns by investing into stocks that afterwards increase their ESG scores and are sold to strict mandate investors. This channel is validated by the finding that increases of ESG scores lead to positive abnormal returns in the cross-section of stock returns. The finding that flexible investors outperform on their sustainable investments cannot be explained by current theories such as Pedersen, Fitzgibbons and Pomorski (2021) and Pástor, Stambaugh and Taylor (2021), which is why I extend the latter theory to incorporate that some investors can predict ESG scores. I calibrate my structural model and find that my proposed channel explains half of the return difference. Furthermore, using exogenous variation in investors' holdings arising from exclusions from the leading ESG indices, I show that the effect is due to prediction, not activism. I provide a new climate sentiment measure, which shows that the performance gap is higher when accompanied by rising sentiment. I conclude that using a forward-based, instead of a backward-based, ESG measure would allow the strict investor to directly invest in the sustainable firms improving capital allocation and halving the wealth transfer from strict to flexible investors.

In a second paper, "**The Future of Emissions**," joint with Jules van Binsbergen, we propose such a forward-based ESG measure. We show both empirically and theoretically that backward-looking subjective ratings are limited to the extent that they fail to capture future reductions in emissions. We show evidence that although lower emissions have predicted higher E ratings, higher E ratings have predicted higher, not lower, emissions. This also means that investors, by following these ratings, have inadvertently allocated their money to firms that pollute more, not less. Another problem with the subjective backward-based ratings is that it leads to cheap talk. In fact, we show that firm mentions of 'Sustainability' improves their E score, but does not decrease emissions. While deriving our theoretical results on capital misallocation and impact we develop an easily extendable framework for value-maximisation that nests both standard firm-maximisation and sustainable investing. We conclude that if sustainable investing is to have an impact the current subjective backward-looking ratings need to be replaced by objective forward-looking measures, hence generalizing the policy recommendation of my job market paper. In this paper we propose such a measure. Our measure makes real impact easily observable and transparent. As a consequence, evaluating the sustainability of asset managers becomes straightforward and cheap talk can be avoided simply by linking managerial pay to our measure. Our proposed measure is easily extendible to other observable variables related to an externality (positive or negative) such as social and governance factors.

My current work, "**The Market for Green Funds**,", joint with François Koulischer and Michael Halling, explores how ESG investing has altered the investment management industry. We derive a model that predicts the rise of green investment funds and that these funds have higher value-added, even though their alphas are lower than brown funds after controlling for rising sentiment. Our empirical results provide support for a lower expected return for green funds going forward, and additionally that the increased value-added has gone to investment managers instead of to the investors.

Financial Intermediation

In the paper "**Corporate Asset Pricing**," I show the new fact that idiosyncratic volatility significantly predicts the convenience yield. This fact poses a puzzle with current safe asset theories both because idiosyncratic volatility should not be priced Ross (1976), but also because the theories of Krishnamurthy and Vissing-Jorgensen (2012) and Nagel (2016) have been unable to match the convenience yield since the financial crisis. I develop a new theory that reconciles this puzzle - a theory I label Corporate Asset Pricing (CAP). CAP explains 29% of future convenience yield variation and is verified in the cross-section of firm treasury holdings. I show theoretically that when managers are exposed to moral hazard, corporate investors' required returns will be determined by their idiosyncratic risk. When this is combined with a market segmentation between the risk-free bond and a risk-free alternative from derivatives only available to advanced intermediaries, the corporates will be willing to accept a lower return for the risk-free asset than the traded return in the advanced derivates market. I isolate the demand-based effect from confounders by using exogenous cross-sectional variation from corporate size and industry exposures. The results provide support for the importance of corporates as an investor class in determining asset prices. In summary, this theory has the potential of uniting expected returns across several assets at the same time as explaining why idiosyncratic volatility appears to be prized.

My belief in the importance of intermediaries in determining asset prices are additionally explored by my two earliest papers: "**Macroprudential buffers: Trading systemic risk for risk premia**," and "**Identification and Assessment of Systemic Risks in Financial Networks: Modelling Fire Sales from Regulatory Cliff Effects**." The first paper sets up a simple model that shows how financial regulation may lead to changes in the risk-premia in the economy, and the second paper uses this idea to identify regulatory scenarios that would lead to sharp increases in risk-premia, so-called "fire-sales", which could make a house-price shock spread to a systemic event. In doing so I contribute to the literature on intermediary asset-pricing (He and Krishnamurthy 2013, Adrian et al. 2014, Brunnermeier and Sannikov 2014) by first extending it to macro-prudential regulation and secondly using the new theory to pin-point a concrete issue with current financial regulation.

In summary, in my work I have developed and applied theoretical models that explain new empirical observations of sustainable finance and financial intermediation. I have validated these models by testing additional implications using advanced empirical methods. In the process, I have uncovered frictions to the well-functioning of sustainable finance and I have proposed solutions to improve this market. Whilst I plan to continue this research agenda, my work is not confined to sustainable finance. Instead I strive to answer the broadest questions in financial economics, such as what drives expected returns, how are they affected by financial intermediaries, and, ultimately, what are the consequences for the real economy.

References

Krishnamurthy, Arvind and **Annette Vissing-Jorgensen**, "The aggregate demand for treasury debt", *Journal of Political Economy*, 2012, *120*(2), 233–267.

Nagel, Stefan, "The liquidity premium of near-money assets", *The Quarterly Journal of Economics*, 2016, *131*(4), 1927–1971.

Pástor, Ľuboš, **Robert F Stambaugh** and **Lucian A Taylor**, "Sustainable investing in equilibrium", *Journal of Financial Economics*, 2021, *142*(2), 550–571.

Pedersen, Lasse Heje, **Shaun Fitzgibbons** and **Lukasz Pomorski**, "Responsible investing: The ESG-efficient frontier", *Journal of Financial Economics*, 2021, *142*(2), 572–597.

Ross, Stephen, "The arbitrage pricing theory", *Journal of Economic Theory*, 1976, *13*(3), 341–360.