IWFSAS 2021

6th Annual International Workshop on

Financial System Architecture & Stability

Conference Report

Gustavson School of Business
University of Victoria

PRME Principles for Responsible Management Education
AACSB ACCREDITED
EQUIS ACCREDITED

Conference Overview

The 6th annual International Workshop on Financial System Architecture & Stability (IWFSAS) was held virtually on August 30th and 31st 2021. The workshop was hosted by the Peter B. Gustavson School of Business at the University of Victoria. The theme of the conference was "**The Post-COVID Recovery and the Race to Net Zero: Implications for Financial Markets and Institutions**." The conference website provides more details on the program, speakers and the papers selected for presentation.

The organizers would like to thank all participants for making the event such a great success. We also take this opportunity to thank our scientific committee members for their fantastic work in reviewing the submissions. Our sincere thanks also to Sheryl Zornes from Gustavson School of Business for ensuring all the logistics with Zoom run smoothly.

The workshop featured 15 paper presenters and 15 academic discussants. The total number of registrations for the conference was 177 registrants across the various parts of the academic sessions and industry panel. All sessions were well attended. Participants included graduate students, academics, industry leaders and policymakers. Geographically, the workshop welcomed participants from North America, Europe, Asia and Australia.

The conference had five academic sessions, a keynote address and an industry panel. The keynote address, titled "Wicked Knowledge Co-Creation – An Imperative for Climate Finance Solutions" was given by Professor Andrew Karolyi, Dean of the SC Johnson College of Business at Cornell University. The video recording of the keynote will be featured in the RRBM website. The industry panel, hosted in collaboration with VI3Hub, Foresight Canada and IESVic, tackled the topic of "Financing Canadian Cleantech: Matching Growth Capital with Investor Demand." The keynote and the industry panel were advertised separately to the public and attracted members of the public who did not attend the academic sessions.

Program Co-chairs:
Basma Majerbi (Gustavson School of Business, University of Victoria)
Christie Stephenson (UBC Sauder)
Michael King (Gustavson School of Business, University of Victoria)
Rym Ayadi (EMEA and The Business School, formerly Cass)
Organizing committee Members:
Kevin Andrew (Gustavson School of Business, University of Victoria,
Kristy Faccer (Pacific Institute for Climate Solutions, University of Victoria)
Paul Schure (Department of Economics, University of Victoria)
Sandra Challita (EMEA and ESDES)

Keynote Speech

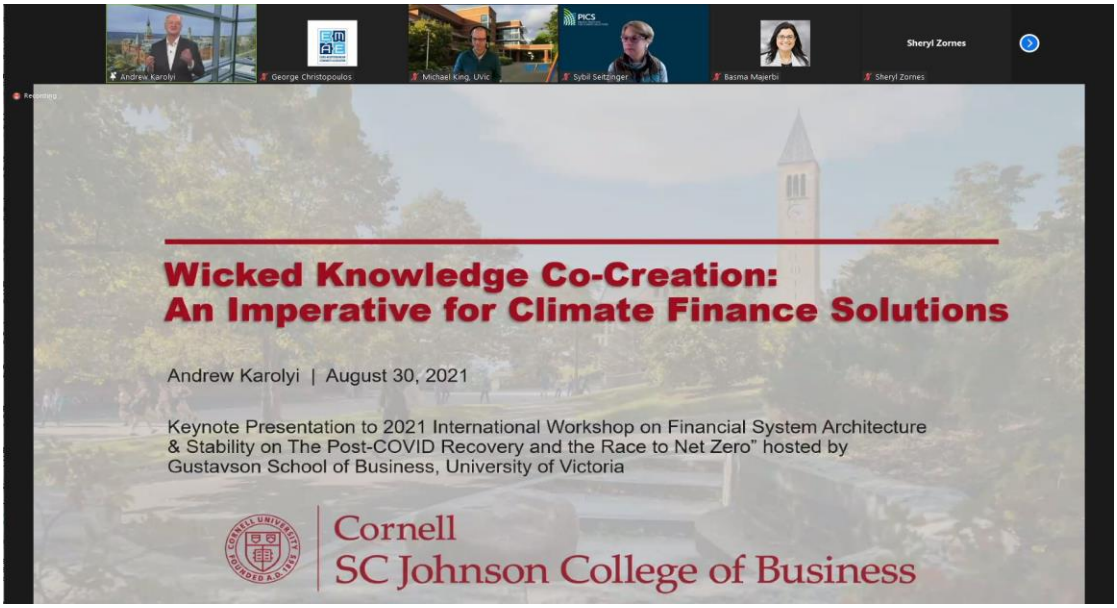
Chair: **Basma Majerbi**, University of Victoria
Speaker: **Andrew Karolyi**, SC Johnson College of Business, Cornell University, *Wicked Knowledge Co-Creation – An Imperative for Climate Finance Solutions.*

Andrew Karolyi is one of the finance industry's leading academics, with multiple publications in the top finance journals on topics including asset management, corporate finance and emerging markets. Prof. Karolyi is a passionate advocate for engaged scholarship who is leading by example. As executive editor of the *Review of Financial Studies* (RFS), Prof. Karolyi pioneered a novel submission process that led to the March 2020 RFS special issue on "Climate Finance" (with co-editors Harrison Hong and José Scheinkman). Prof. Karoyli shared the behind-the-scenes story of this innovation then spoke about the principles of knowledge co-creation. Climate Finance is a relatively new field of academic inquiry. Compared to other fields, such as economics, leading finance journals have lagged in publishing high quality research related to climate change. Prof. Karolyi's keynote address discussed the process by which the RFS Special Issue was created using a novel submission process that attracted many young scholars and stimulated research on the topic of climate finance.

The RFS Special Issue represents the first body of knowledge on Climate Finance. Karolyi emphasized the importance of reducing barriers to entry to the field, especially for young scholars. Barriers include lack of access to data, uncertainty about the publication process and a lack of able reviewers. The RFS Special Issue used a submission protocol that evaluated proposals as opposed to finished papers. This shifted the risk burden away from researchers. The Climate Finance Special Issue published in March 2020 included ten papers which have

already been cited at a much higher level than other finance papers during the same period. Since then, there has been a significant increase in papers in the sub-field of Climate Finance. Prof. Karolyi provided a self-assessment of this experiment based on the guidelines by Coggan and al. (2021) on co-creating knowledge.

From his perspective as Dean of Cornell SC Johnson College of Business, and as a leader of the Responsible Research in Business & Management (RRMB) network, Andrew shared why finance academics need to tackle the wickedest problems facing the planet before closing with a personal message for junior and senior scholars in finance, as well as industry practitioners and market regulators.
A video recording of his keynote can be found here: https://youtu.be/UExAioGGMqc



What *really* constitutes success?

- An August 2021 study in Environmental Challenges by Coggan et al., entitled "Co-creating knowledge in environmental policy development" lays out impact guidelines:
  - ***Actors.*** *Were those affected by the decision, those with power to influence the outcome and those with info relevant to the issue or solution included or at least represented?* **B+**
  - ***Process.*** *Were objectives made clear and the process set up to support achieving the objectives? Was the broader context of the issue discussed and understood? Was the context of the participants taken into account within knowledge co-creation activities?* **A-**
  - ***Rules.*** *Was the researcher's role made clear? Was there a clear intermediary? Was there a clear reward for involvement? Were expected outcomes communicated?* **A**
  - ***Resources.*** *Was there a neutral meeting place? Were boundary limits provided? Did participants have enough time to process all information?* **B**
  - ***Reflection.*** *Were participants given the opportunity to reflect on the direction of the discourse, on the composition of the group? Was the reflection taken into account?* **C+**

Public Panel on Financing Canadian Cleantech

Moderator: **Basma Majerbi,** University of Victoria
Panelists:

- **Jeanette Jackson**, CEO, Foresight Cleantech Accelerator Centre
- **Christine Bergeron**, President and CEO, Vancity
- **Mike Winterfield**, Founder and Managing Partner, Active Impact Investments
- **Adam Goehner**, Senior Manager, ESG Strategy and Risk, British Columbia Investment Corporation (BCI)
- **Sahar Sam**, Co-Founder and CSO, Solaires Enterprises
- **Ged McClean**, Former Director, IESVic, University of Victoria

This year's industry panel, hosted in partnership with Foresight Canada, VI3Hub and IESVic, tackled several topics related to Canada's cleantech sector. Canada is a world leader in clean technology ("cleantech) and ranked second in the 2021 Global Cleantech Innovation Index, with 11 out of the top 100 companies. Our cleantech sector offers tremendous opportunities to decarbonize the economy while stimulating the economy post-pandemic. Despite increasing investor demand for climate-focused investment opportunities, Canada's cleantech entrepreneurs still face a shortage of growth capital.

Jeanette Jackson started by clarifying the broad scope of the modern cleantech sector. This includes diverse industries (mining, oil & gas, agriculture, transportation, built environment, manufacturing and waste) and technologies (water management, carbon capture & storage, electrification, renewables, data & artificial intelligence and robotics).

Particular focus was paid to the capital requirements of cleantech entrepreneurs at different stages of the venture lifecycle. Funding sources include founders own funds, government R&D grants, angel investing, venture capital, private equity, banks and other institutional investors such as pension funds.

Three panelists represented capital providers: a venture capital fund focused on climatetech, a BC credit union with strong social and environmental mandate, and a BC pension fund considered as a leader in ESG integration. The panelists debated the financing challenges and opportunities facing this vital sector, and recommend ways to unlock private capital and emphasized the importance of collaboration to address some of the existing gaps.

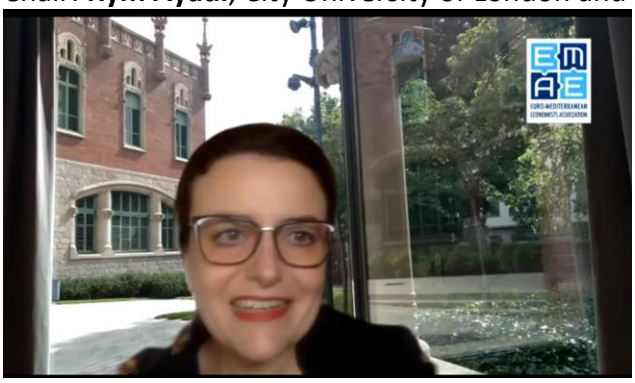
Two cleantech founders on the panel spoke to the challenges associated with navigating the early stages of the firm life-cycle, before government grants and larger institutional investors become involved. Despite enthusiasm for the sector, there are still gaps in funding at various stages.

The session recording is available here: https://youtu.be/yyBGaa6nmwg

Academic Program

Session 1: Real Effects of ESG and Environmental Regulations

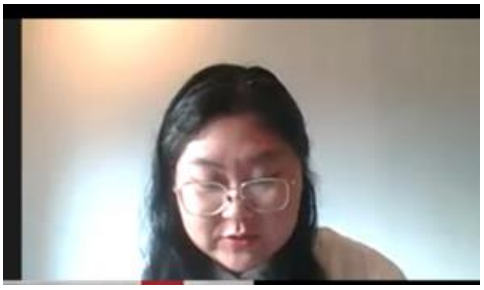
Chair: **Rym Ayadi**, City University of London and EMEA



Presentations:

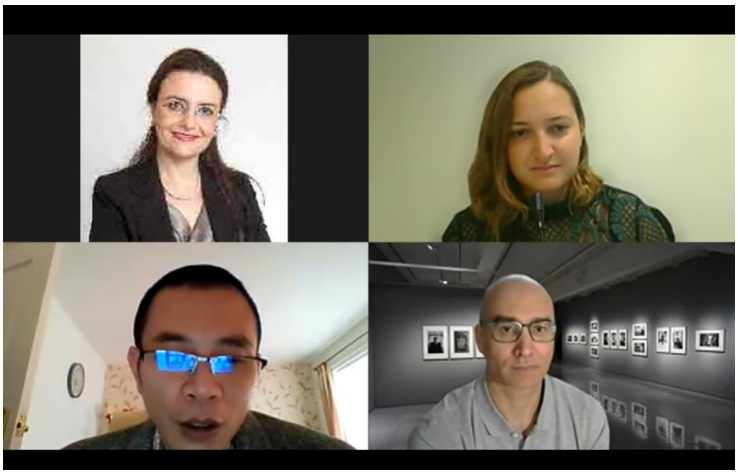
- **Rui Duan**, WU Vienna University of Economics and Business, *Product Market Competition, Innovation and Environmental Regulations.*
    - Discussant: **Victor Song**, Simon Fraser University
- **Stefano Piserá**, University of Essex and University of Udine, *Do ESG Practices Lead to Higher Firm Productivity? Evidence from Europe.*
    - Discussant: **Paul Schure**, University of Victoria
- **Guanming He**, Durham University, *Does CEO Debt-Like Compensation Mitigate Corporate Social Irresponsibility?*
    - Discussant: **Sadok El Ghoul**, University of Alberta

Rui Duan's paper, "Product Market Competition, Innovation and Environmental Regulations" uses variation in the stringency of regulatory monitoring across US counties to identify the effect of environmental regulation on innovation. The paper focuses on the role of product market competition in strengthening the effect of regulation on innovation. The paper finds that environmental regulation has a positive effect on innovation for firms in highly competitive product markets and a negative effect for firms in less competitive markets. These results suggest that competitive pressures are an important determinant of a firms' response to environmental regulation.



Stefano Piserá's research, titled "Do ESG Practices Lead to Higher Firm Productivity? Evidence from Europe", examines the effect of Corporate Social Responsibility (CSR), as measured by ESG scores, on firm productivity. The authors construct a panel of 560 listed firms based in the EU and compute their total factor productivity using a variety of methods. Next, they regress productivity on ESG scores and a set of controls to find that firms with higher ESG scores also have higher productivity. This result holds for aggregate ESG scores as well as the individual components separately. In additional exercises the authors make efforts to control for reverse causality and endogenous sample selection and find that the positive association between productivity and ESG scores is robust. These results suggest that firms which "do good" also "do well".

Guanming He's paper, "Does CEO Debt-Like Compensation Mitigate Corporate Social Irresponsibility?", examines the relationship between ESG-Risk and debt-like compensation of CEOs. ESG-Risk is a measure of corporate social irresponsibility. It is meant to capture exposure to reputational risk due to negative ESG events. Debt-like compensation includes defined benefit pensions and deferred compensation. The paper shows that firms which use debt-like compensation of CEOs have lower exposure to ESG-related reputational risk. The results suggest that incentive compatible compensation schemes do in fact reduce risk-taking behaviour.

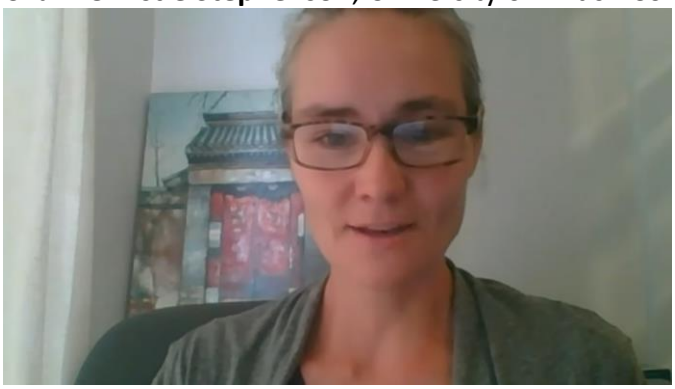


The session recording is available here: https://youtu.be/Ebc0nlWhn74

Session 2: See Keynote

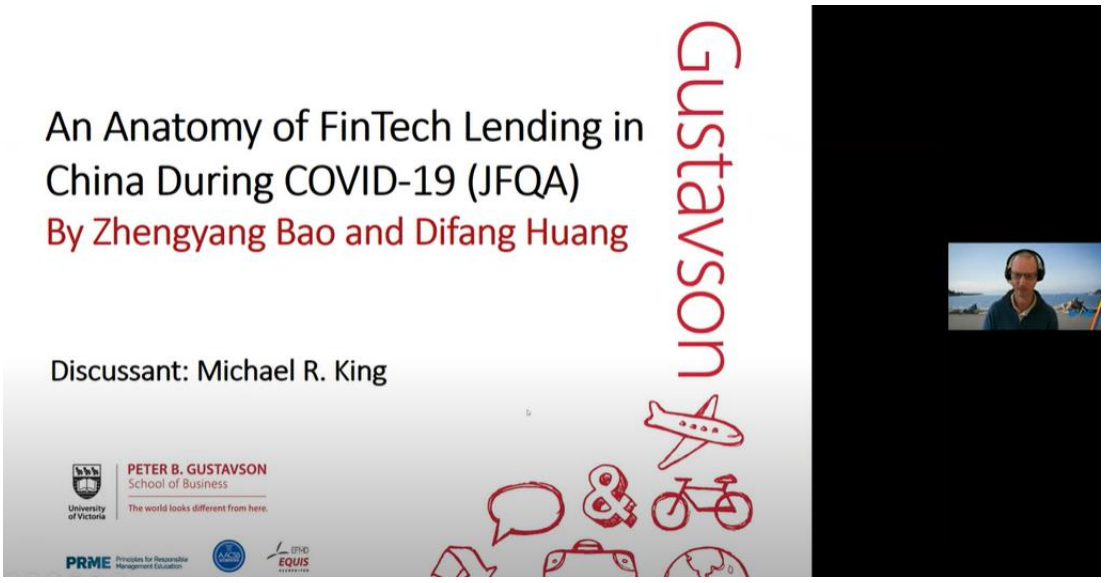
Session 3: Lessons from Pandemics & a Look into the Future of Climate Change

Chair: **Christie Stephenson**, University of British Columbia



Presentations:

- **Difang Huang**, Monash University, *An Anatomy of FinTech Lending in China During COVID-19*.
    - Discussant: **Michael King**, University of Victoria
- **John Rogers**, Federal Reserve Board, *Modern Pandemics: Recession and Recovery.*
    - Discussant: **Merwan Engineer**, University of Victoria
- **Patrycja Klusak**, University of East Anglia, *Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness.*
    - Discussant**: Elham Kheradmand Nezhad**, University of Montreal



Difang Huang's paper, "An Anatomy of FinTech Lending in China During COVID-19", uses Chinese loan-level data to identify the effects of COVID-19 on the quantity and quality of loans in both the FinTech and traditional banking sector. The authors identify an increase in new

loans after the onset of the pandemic for both their FinTech and traditional banking sectors. However, the increase is driven primarily by existing customers in the traditional banking sector. The authors find a sharp increase in the delinquency rate for FinTech loans after the onset of the pandemic. There is no parallel increase in delinquency among traditional loans. These results suggest the importance of relationship lending in the traditional banking sector. They also lend support to the pecking order theory of default.

John Rogers' research, titled "Modern Pandemics: Recession and Recovery", investigates the characteristics of six past health crises: the 1968 Flu, SARS, H1N1, MERS, Ebola and Zika. Using time series methods, the authors show that real GDP growth falls sharply in response to a health crisis. However, recovery is also rapid, with positive GDP growth observed in the second year after the crisis. The evidence suggests that labour markets are slower to recover, with unemployment rates remaining elevated for three years after the shock. Furthermore, the labour market effects are most severe for workers with limited education. While the work does not include the current COVID-19 pandemic in its sample, the results are very relevant for understanding the current crisis.

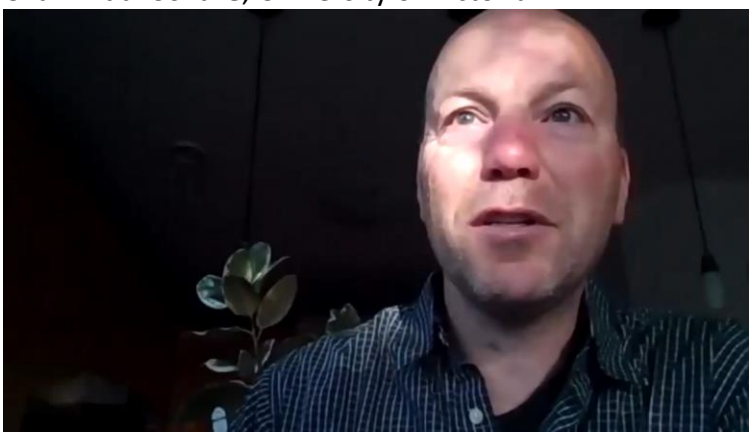
Patrycja Klusak's paper, "Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness", investigates the impact that future climate change will have on sovereign credit ratings and the cost of servicing sovereign debt. The authors use machine learning methods to establish a relationship between macroeconomic indicators and sovereign credit ratings. Next, they take country level paths for these indicators from previous work. They

are then able to feed these projections into their credit rating model to simulate the future path of credit ratings. They use historical data on the cost of a ratings notch to translate these future changes in credit ratings into change in interest rates. They find that under a high warming scenario (RCP 8.5) the annual interest payments on sovereign debt increase by 137-205 billion USD.

The session recording is available here: https://youtu.be/n5SxMftLVjg

Session 4: Doctoral Students' Research in Sustainable Finance

Chair: **Paul Schure**, University of Victoria



Presentations:

- **Elsa Allman**, Baruch College, *Pricing Climate Change Risk in Corporate Bonds.*
    - Discussant: **Ali Shahrad**, University of Victoria
- **Alberto Citterio**, University of Insubria, *The Role of ESG in Predicting Financial Distress: Cross-Country Evidence.*
    - Discussant: **Claudia Girardone**, University of Essex
- **Joonsung Won**, Baruch College, *The Effect of ESG Disclosure on Corporate Investment Efficiency.*
    - Discussant: **Ke Xu**, University of Victoria

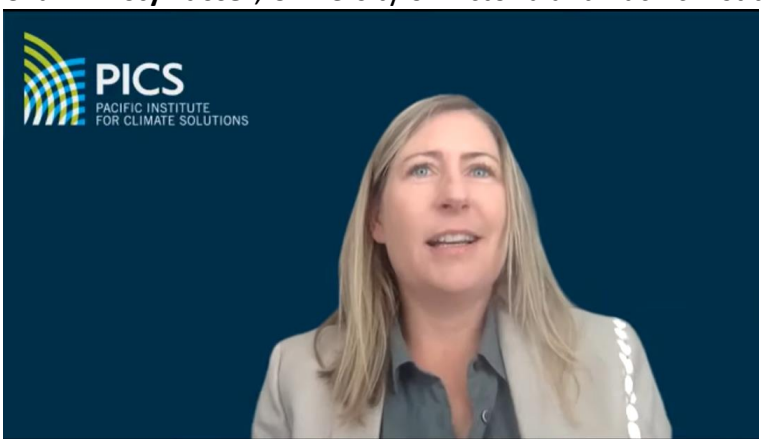
Elsa Allman's paper, "Pricing Climate Change Risk in Corporate Bonds", uses variation in firm exposure to sea level rise to identify the climate risk premium associated with corporate bonds. The authors find that a one standard deviation increase in exposure to sea level rise is associated with an increase in the yield spread of 7 basis points. For context, the authors note that a one notch increase in credit quality is associated with a 13 basis point decrease in yield spread. Interestingly, the authors document that there is no significant relationship between sea level rise and credit ratings, suggesting that ratings agencies do not currently capture this type of physical climate risks in their models. Lastly, the authors estimate their model on separate industries and find that the results are driven primarily by the energy sector.

Alberto Citterio's paper, "The Role of ESG in Predicting Bank Financial Distress: Cross-Country Evidence", investigates the relationship between bank risk and ESG scores. The paper shows that there is a negative relationship between several measures of bank risk and ESG scores. Next, Alberto uses a suite of statistical and machine learning techniques to use ESG information to predict financial distress of banks. He finds that ESG information can be a useful predictor of financial distress, outperforming some traditional financial measures, such as the ratio of equity to assets.

Joonsung Won's paper, titled "The Effect of ESG Disclosure on Corporate Investment Efficiency", identifies the EU Non-Financial Reporting Directive of 2014 as a shock to the quality of ESG-related financial reporting. The authors do this by showing that American companies with operations in the EU, which are exposed to the disclosure shock, improve their ESG disclosure more compared to a control group of companies without operations in Europe. They then show that this plausibly exogenous increase in disclosure leads to more investment among firms prone to underinvestment due to agency frictions. They also show that increasing ESG disclosure reduces financing constraints. Taken together, these results suggest that ESG information is valuable to investors and can mitigate information asymmetries.
The session recording is available here: https://youtu.be/wBrfNDnChM8

Session 5: Climate Change Mitigation, Management Practices & Portfolio Choice

Chair: **Kristy Faccer**, University of Victoria and Pacific Institute for Climate Solutions



Presentations:

- **Saurabh Trived**, La Trobe University, *Do Firms Benefit from Carbon Risk Management: Evidence from Credit Default Swaps Market.*
    - Discussion: **Ines Chaieb**, University of Geneva
- **Xander Hut**, Erasmus University, *Climate Change and Long-Horizon Portfolio Choice: Combining Theory and Empirics.*
    - Discussant: **Kevin Andrew**, University of Victoria
- **Lilian Ng**, York University, *Outsourcing Climate Change.*
    - Discussant: **Nora Pankratz**, University of California at Los Angeles

Saurabh Trivedi's paper, "Do Firms Benefit from Carbon Risk Management: Evidence from the Credit Default Swaps Market", looks at the relationship between a measure of carbon risk management and CDS spreads. They authors extract 13 firm-level indicators of carbon risk management and construct a firm level carbon risk management score as the sum of these indicators. They find that a one standard deviation increase in the carbon risk management score is associated with a reduction in CDS spreads of 73 basis points. They also present evidence that this effect is stronger since the signing of the Paris Climate Agreement in 2015. The results suggest that firm level actions to mitigate climate risk are priced by the market.

Xander Hut's paper, "Climate Change and Long-Horizon Portfolio Choice: Combining Theory and Empirics", introduces a methodology for forecasting the effects of physical climate risk on equity returns, the risk-free rate and the equity premium. The authors use Bayesian time series methods to incorporate prior information about the nature of climate change into long-run forecasts. They use these forecasts to compute the optimal portfolio allocation between equities and bonds at various horizons. They find that incorporating prior beliefs about climate change reduces the weight given to equities at all horizons.

Lilian Ng's paper, "Outsourcing Climate Change", provides firm level evidence on the rise of indirect (Scope 2 and Scope 3) emissions over time. This contrasts with direct (Scope 1) emissions, which have been relatively stagnant for American firms. The authors provide evidence that US firms outsource emissions to suppliers overseas. The authors also use variation in domestic regulatory stringency and a series of other exogenous shocks to causally identify the effect of imports on emissions. This research highlights the importance of considering both direct and indirect emissions when evaluating the environmental performance of firms.

The session recording is available here: https://youtu.be/yQKocNYGyRI

Session 6: ESG Rating Issues in Equity Markets

Chair: **Michael King**, University of Victoria

Presentations:

- **Aleksandra Rzeznik**, York University, *The Salience of ESG Ratings for Stock Pricing: Evidence from (Potentially) Confused Investors.*
    - Discussant: **Vikas Mehrotra**, University of Alberta
- **Jeong Ho (John) Kim**, Emory University, *Doing Well by Doing Good? Risk, Return and Environmental and Social Ratings.*
    - Discussant: **Yrjo Koskinen**, University of Calgary
- **Aaron Yoon**, Northwestern University, *Stock Price Reactions to ESG News: The Role of ESG Ratings and Disagreement.*
    - Discussant: **Aymen Karoui**, Morningstar/Sustainalytics and York University
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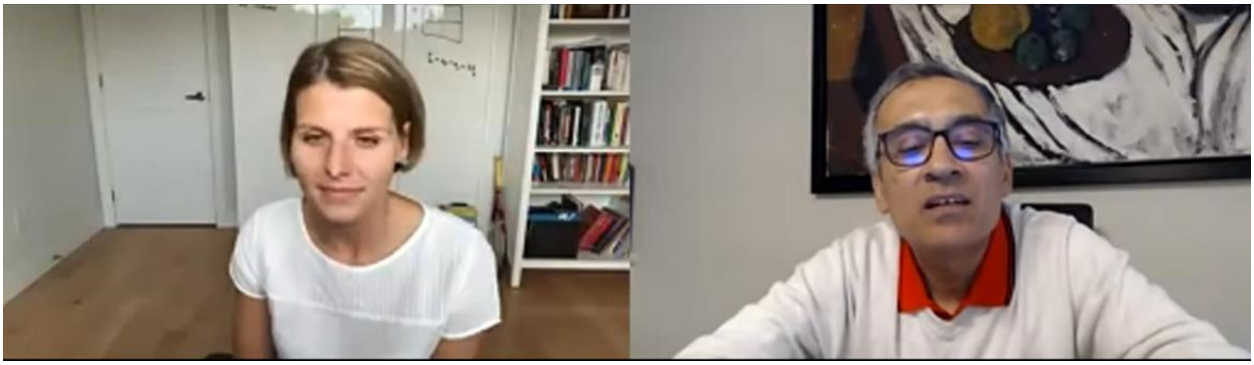
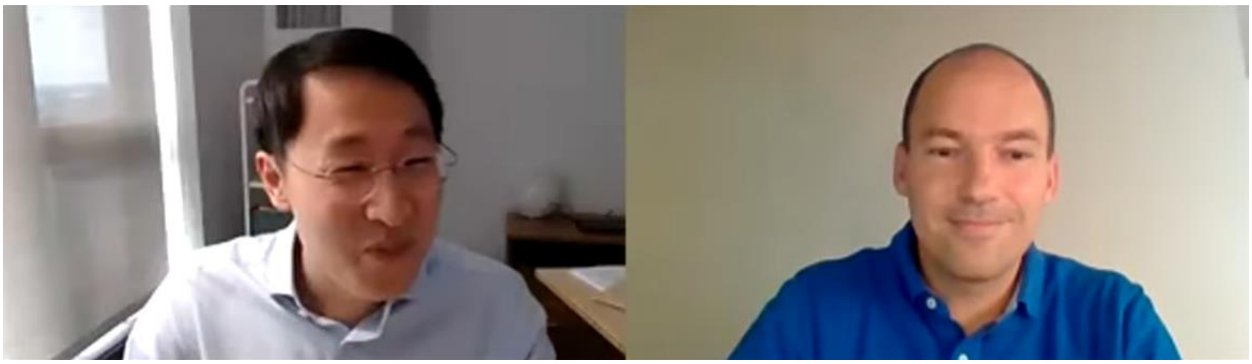


Aleksandra Rzeznik's paper, "The Salience of ESG Ratings for Stock Pricing: Evidence from (Potentially) Confused Investors", exploits a change in the method of reporting ESG scores by providers. As part of a change in methodology, the ratings providers inverted the ratings so that a low score, which previously indicated high ESG-risk firms, now is associated with low ESG risk. The authors identify that firms with perceived downgrades in their ESG ratings see more negative returns. Furthermore, they show that these results are driven by uninformed

investors. This paper first makes it clear that ESG news is in fact salient for stock returns and that different types of investors process the information contained in these scores differently.

Jeong Ho Kim's paper, "Doing Well by Doing Good? Risk, Return and Environmental and Social Ratings", empirically assesses the relationship between environmental and social (ES) scores and risk and expected returns. They do not find a strong relationship between ES scores and realized stock returns. They do find that firms with high ES scores have lower downside risk than firms with lower ES ratings. However, the economic magnitude of these differences is small. The results of this paper suggest that the risk-return profile of ES firms cannot be the sole reason for or against ES investing.



Aaron Yoon's paper, "Stock Price Reactions to ESG News: The Role of ESG Ratings and Disagreement", tests whether ESG ratings predict future firm-level ESG-related information. They use a dataset on ESG events, which classifies them as positive or negative, to measure ESG-related news. They investigate the relationship between this news and several leading ESG scores to determine that these scores are in fact informative for future ESG-related events. They find that this predictability diminishes for firms with large disagreement among raters. The results of this work suggest that, despite disagreement among different providers, there is relevant information embedded in ESG ratings.

The session recording is available here: https://youtu.be/dACWxdlRVDQ