

# LEO LIU

Room 313, West Wing, Level 3 of UNSW Business School, Kensington 2052

(+61)421078664 ◊ auleo.liu@gmail.com

## RESEARCH FIELD OF INTERESTS

---

Applied Industry Organization: Innovation and Entrepreneurship, Corporate Finance and Corporate Governance

## EDUCATION

---

**University of New South Wales** *2017 - 2022*  
PhD in Finance  
School of Banking and Finance

**University of New South Wales** *2015 - 2017*  
Master of Philosophy, Finance.  
School of Banking and Finance

**Bond University** *2009 - 2012*  
Bachelor of Commerce

## WORKING PAPERS

---

**Measuring Advanced Manufacturing and Process Innovation: Applications to Productivity and Growth** (with Elvira Sojli and Wing Wah Tham) (Job Market Paper)

### Abstract:

We propose new time-varying measures of advanced manufacturing and process innovations based on patent invention claims and titles from 1850 to 2019 across 51 countries. Using this measure, we provide evidence that these innovations are important for firm and aggregate economic growth through technological spillover to product innovations and increased profitability. We find that patents with advanced processes have higher forward citations and economic value than product patents of the same technology class and cohort. Firms with higher quality process innovation are associated with higher profits, sales, capital, employment, and total factor productivity in the short run, while product innovation plays a larger role in the longer run. At the aggregate level, both advanced manufacturing and product innovations are positively related to US economic growth. In cross-country analysis, we find that product innovation is more important than process innovation for emerging countries with low labor costs for growth convergence towards the US economy, but the opposite holds for productivity.

### Conferences:

- AIEA-NBER Conference on Innovation and Entrepreneurship 2022
- ABFER (Asian Bureau of Finance and Economic Research) 2022
- CEPR (Centre for Economic Policy Research) Rising Asia 2022
- EARIE (European Association for Research in Industrial Economics) 2022
- SEM (Society for Economic Measurement) 2022
- RMI (Research Management Institute) 2022
- SETA (Symposium on Econometric Theory and Applications) 2022
- FMCG (Financial Market and Corporate Governance) 2022
- Asian Innovation Economics Conference 2021 (invitation-only)
- Business Financing and Banking Research Group Annual Workshop 2021 (invitation-only)
- Macroeconomics Reading Group Workshop 2021 (invitation-only)

**Common Ownership and Antitrust Enforcement: Evidence from the Court** (with Huaizhou Li, Ronald Masulis and Jason Zein)

### Abstract:

An increasing number of publicly-owned rival firms are jointly held by a small group of large institutional investors. This has led to serious concerns regarding the economic implications of such common ownership. We analyze U.S. legal cases to uncover links between common ownership and antitrust litigation. This approach allows us to establish a direct connection between common ownership and anti-competitive product market behavior. We empirically show that there is a significant positive relationship between common ownership and the probability that a pair of firms face the same antitrust prosecution. We use mergers between financial institutions as exogenous variations in common ownership to provide causal evidence on this proposed relation. We also show that firm-pairs subject to antitrust litigation are characterized by more socially connected directors, pointing to a possible coordination mechanism.

Conferences:

- CELS 2022 (Conferences on Empirical Legal Studies)
- FMCG 2022

**Clean Innovations** (with Elvira Sojli and Wing Wah Tham)

**Abstract:**

In the pursuit of green growth and the fight for climate change containment, scientists and policy-makers have suggested that science can play a critical role through clean innovation. Using patent data on environment-related technologies, which we link to toxic chemical releases and pollution prevention activities reported by industrial and federal facilities, we provide a large-scale accounting of the relation between environment-related technological (clean) inventions and facility-level pollution. We find that firms with clean inventions are associated with lower future industrial facilities' pollution, pose a lower public health hazard threat, have cleaner customers, and engage in higher pollution abatement efforts. We find that clean innovation is positively associated with firm growth, the relative contribution is significantly lower in comparison to non-clean innovation. Clean innovation significantly decreases a firm's environmental regulatory risk and cost of capital. We find that firms with higher regulatory pressure, local investors' pressure, more environmental governance committees, environmentally cleaner suppliers, financial capability, clean intellectual and human capital have a higher propensity to invest in pollution abating innovations.

**Working in Progress:**

**Re-defining Industry Classification** (with Roni Michaely, Elvira Sojli and Wing Wah Tham)

**Reassessing the Measures of Carbon Emission Intensity** (with Harrison Hong, Elvira Sojli and Wing Wah Tham)

**A New CEO General Ability Index** (with Lixiong Guo)

Conferences: FMA 2017 semi-finalist for best paper award, CAFM 2017, AFBC 2017.

**Easy to Parse, Easy to Trade** (with Van Dang)

Conferences: Asian FA 2019, FMA 2019, FIRN 2019

## WORKING EXPERIENCE

**UNSW Business School**

2022

*Lecturer (assistant professor) of Finance*

- Responsible for teaching several core courses and contributing to school's research portfolio

**UNSW Business School**

2022

*Early Career Fellow (Level A)*

- Responsible for teaching several core postgraduate courses and contributing to the UNSW business school research portfolio

**UNSW Business School**

2020 - 2021

*PhD Teaching Fellow (Level A)*

- Responsible for teaching several core postgraduate courses

**Rozetta (formerly CMCRC)**

2017 - 2018

*Research Consultant / Business Analyst*

- Development of Research Platform ([www.mqdashboard.com](http://www.mqdashboard.com)) to assist regulators and stock exchanges in assessing market quality and the effects of market design changes. Primary roles include developing algorithm and metrics of market quality assessment; Producing research reports to regulator and exchanges to assist their decision-making.

## TEACHING EXPERIENCE

---

### Lecturer-in-Charge

- FINS5517 Applied Portfolio Management (2021)
  - Teaching Evaluation: mean score 5.72 (Faculty 5.32)
- MFIN6201 Empirical Techniques and Application in Finance (2020, 2021, 2022)
  - Most Recent Teaching Evaluation: mean score 5.73 (Faculty 5.31)
- MFIN6210 Empirical Studies in Finance (2020)
  - Teaching Evaluation: mean score 5.58 (Faculty 5.22)

## PROFESSIONAL SERVICES

---

- FMA International 2017 (discussant)
- CAFM 2017 (discussant)
- Asian FA 2019 (discussant)
- FIRN 2019 (discussant)
- FMCG 2022 (discussant)
- Journal of Multinational Financial Management (referee)

## TECHNICAL SKILLS

---

- A Python developer, contributed to scientific packages such as pandas.
- Proficient in a variety of modern technologies: Apache Spark, SAS, Postgres, MongoDB, Stata, Machine Learning such as tree, deep neural networks and natural language processing.

## LANGUAGE

---

Chinese - Native  
English - Fluent

## NATIONALITY

---

Australian Citizen

## REFEREES

---

Assoc. Prof. Wing Wah Tham  
University of New South Wales  
UNSW Business School  
Email: [w.tham@unsw.edu.au](mailto:w.tham@unsw.edu.au)

Prof. Jason Zein  
University of New South Wales  
UNSW Business School  
Email: [j.zein@unsw.edu.au](mailto:j.zein@unsw.edu.au)

Assoc. Prof. Elvira Sojli  
University of New South Wales  
UNSW Business School  
Email: [e.sojli@unsw.edu.au](mailto:e.sojli@unsw.edu.au)