Arsène Brou
Department of Finance, Insurance, and Real Estate, Université Laval, Québec, Canada
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## EDUCATION

**Ph.D. in Quantitative Finance**
Department of Finance, Insurance and Real Estate, Université Laval, 2020 – 2025
Advisor: Prof. Richard Luger

**M.Sc. in Statistics and Quantitative Economics (ISE)** 2016 – 2019
Ecole Nationale Supérieure de Statistique et d'Économie Appliquée (ENSEA)
Abidjan, Côte d'Ivoire

**B.Sc. in Economics - Mathematics** 2014 – 2016
Institut National Polytechnique (INP-HB), Yamoussoukro, Côte d'Ivoire

## RESEARCH INTERESTS

**Primary fields**: Financial Econometrics, Asset Pricing, Financial Risk Modeling
**Secondary fields**: Machine Learning, Numerical Methods

## JOB MARKET PAPER

**A. Brou:** The economic value of reward-to-risk timing strategies using return-decomposition GARCH models.

## WORKING PAPERS

1. **A. Brou** and R. Luger: A new decomposition approach to modeling financial returns: conditioning sign on magnitude (R&R at the Journal of Banking & Finance)
2. **A. Brou** and R. Luger: Combining multiple variance-ratio tests: an exact resampling-based approach
3. **A. Brou**, L. Arango-Catillo and R. Luger: Testing for directional dependence in economic time series: A Markov-chain approach
4. **A. Brou** and R. Luger: Matrix-free equicorrelation models

## REFERENCES

**Richard Luger (Advisor)**
Full Professor of Finance
Université Laval
✉ richard.luger@fsa.ulaval.ca
☎ +1 (418) 656-2131, ext. 406229

**Stéphane Chrétien**
Full Professor of Finance
Université Laval
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**Florian Richard**
Assistant Professor of Finance
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**Issouf Soumaré**
Full Professor of Finance
Université Laval
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## EXPERIENCES

### Non Academic

**Consultant in Statistics**, Centre for Affordable Housing Finance in Africa (CAHF), Johannesburg Area, South Africa – 8 months 2019

- Conducted a comprehensive study on housing finance solutions tailored for low-income households, identifying key barriers and opportunities
- Led training sessions for team members on data collection methodologies, ensuring accurate and efficient data gathering
- Designed and implemented survey frameworks, supervising the data collection process to maintain high standards of integrity and reliability
- Analyzed collected data, translating findings into actionable insights to inform policy recommendations and enhance housing finance strategies final report

**Internship (Corporate Credit Risk Management)**, Banque Nationale d'Investissement (BNI), Abidjan, Cote d'Ivoire – 5 months 2018

- Developed score models and calculated Probability of Default (PD) for corporate clients in compliance with Basel agreements, enhancing the bank's risk assessment framework
- Estimated transition matrices between default classes, providing insights into credit risk dynamics and improving predictive accuracy
- Identified and analyzed key explanatory factors contributing to defaults within the bank's portfolio, informing risk management strategies and decision-making processes

### Academia

**Instructor at Université Laval**

- GSF-2107: Quantitative Investment Analysis and Programming, Undergraduate W 2022, F 2024
- R and VBA Programming with Applications in Finance, Graduate F 2022 – Present

**Teaching Assistant at Université Laval**

- GSF-3105: Computational Finance, Undergraduate F 2023, F 2024
- GSF-7000: Financial Econometrics II, Graduate W 2021 – Present
- GSF-6094: Quantitative Risk Management, Graduate F 2021 – Present
- GSF-2107: Quantitative Investment Analysis and Programming, Undergraduate F 2020, W 2021, F 2021

**Research Assistant** for Prof. Issouf Soumaré 2020

Research support for the writing of the book Commodity Exchanges: Concepts, Tools and Guidelines

## RECENT & UPCOMING CONFERENCES

**A new decomposition approach to modeling financial returns: conditioning sign on magnitude**

- 2024 Africa Meeting of the Econometric Society (AFES 2024)

  June 2024, Abidjan, Cote d'Ivoire (virtual)
- 57th Annual Conference of the Canadian Economics Association (CEA 2023)

  June 2023, Winnipeg, Canada
- 62e Conférence annuelle de la Société Canadienne des Sciences Économiques (SCSE 2023)

  May 2023, Québec, Canada
- Centre de Recherche sur les Risques, les Enjeux Economiques et les Politiques Publiques (CRREP) Ph.D. Student Day

  May 2023, Université Laval, Québec, Canada
- 16th International Conference on Computational and Financial Econometrics (CFE 2022)

  December 2022, King's College, London, United Kingdom
- Ph.D. Workshop in Economics, Statistics, and Finance (online)

  December 2022, Montréal, Canada

**The economic value of reward-to-risk timing strategies using return-decomposition GARCH models**

- Financial Management Association, 2025 Annual Meeting (FMA 2025)

  October 2025, Vancouver, Canada
- 18th International Conference on Computational and Financial Econometrics (CFE 2024)

  December 2024, King's College, London, United Kingdom (invited - virtual)
- 58th Annual Conference of the Canadian Economics Association (CEA 2024)

  June 2024, Toronto, Canada
- 63e Conférence annuelle de la Société Canadienne des Sciences Économiques (SCSE 2024)

  May 2024, Montréal, Canada
- 17th International Conference on Computational and Financial Econometrics (CFE 2023)

  December 2023, University of Applied Sciences, Berlin, Germany (virtual)
- Ph.D. Workshop in Economics, Statistics, and Finance (virtual)

  December 2023, Montréal, Canada

**Combining multiple variance-ratio tests: an exact resampling-based approach**

- 64e Conférence annuelle de la Société Canadienne des Sciences Économiques (SCSE 2025)

May 2025, Orford, Canada

- 59th Annual Conference of the Canadian Economics Association (CEA 2025)
  May 2025, Montreal, Canada

## SERVICE

- Discussant CEA Conference - CESG Testing session 2025
- Discussant CEA Conference - Financial Economics: Risk Management II session 2025
- Chair for the CEA Conference - Financial Economics: Portfolio Management session 2024
- Chair for the SCSE Conference - Finance session 2023
- Mentorship Session with M.Sc. Students from ENSEA and Various Universities in Abidjan, Côte d'Ivoire, on Pursuing a Ph.D. in North America 2024
- Invited talk on Côte d'Ivoire's Economy and Culture; Model United Nations final preparation St. Lawrence college, Québec, Canada 2024
- Member of the organizing committee for the 9th Africa Business and Entrepreneurship Research Society (ABERS) Conference 2022

## SOFTWARE, LANGUAGES, AND ASSOCIATION MEMBERSHIPS

**Software**: Good knowledge of R, C++, Rcpp, Python, Julia, VBA, Stata, LaTeX, Bloomberg terminal

**Languages**: French (native), English (fluent), Spanish (Advanced beginner)

**Association Memberships**: Canadian Economics Association, Econometric Society, American Finance Association, Financial Management Association

## AWARDS AND GRANTS

- Ph.D. Student Scholarship, CRREP, Université Laval ($ 6000 CAD) 2022, 2024, 2025
- Ph.D. Student Scholarship, Finance Department, Université Laval ($ 5000 CAD) 2022, 2025
- CEA Student Travel Grant ($ 1250 CAD) 2024
- Ph.D. Student Scholarship, Finance Department, Université Laval ($ 8000 CAD) 2024
- Université Laval Finance Department Entrance Scholarship (Ph.D.) ($ 20000 CAD) 2020 – 2024
- Scholarship, Fonds Conrad-Leblanc, Université Laval ($ 2000 CAD) 2022
- Scholarship, Chaire IG Gestion de Patrimoine en Planification Financière ($ 5000 CAD) 2022
- Public Forum Debate Winner (with a team), ENSEA 2019

Last update: August 15, 2025