

RAUL GUARINI RIVA

6401 N Sheridan Rd #507, Chicago - IL 60626
+1 917 535 5879 ♦ raul.riva@kellogg.northwestern.edu

EDUCATION

Northwestern University

PhD Candidate in Finance - currently in the 5th Year
Advisors: Torben Andersen and Viktor Todorov

Sep 2019 - March 2025 (expected)

Fundação Getulio Vargas (FGV-EPGE / Brazil)

M.Sc. in Economics
Advisors: Caio Almeida and Yuri Saporito

January 2017 - March 2019

Fundação Getulio Vargas (FGV-EPGE / Brazil)

B.A. in Economics (*summa cum laude*)
Advisor: Cecilia Machado

January 2013 - December 2016

PUBLICATIONS

Intraday Cross-Sectional Distributions of Systematic Risk

(with Torben Andersen, Martin Thyrsgaard and Viktor Todorov, at the Journal of Econometrics)

Best paper award at the 2021 SoFiE Conference in Cambridge, UK.

We develop a test for the detection of intraday changes in the cross-sectional distribution of assets' exposure to observable factors. The test is constructed for a panel of high-frequency asset returns, with the size of the cross-section and the sampling frequency increasing simultaneously. It is based on a comparison of the empirical characteristic functions of estimates of the assets' factor loadings at different parts of the trading day, formed from local blocks of asset returns and the corresponding factor realizations. Empirical implementation of the test to stocks in the S&P 500 index and the five Fama–French factors, as well as the momentum factor, reveals different intraday behavior of the factor loadings: assets' exposure to size, market and value risks vary systematically over the trading day while the three remaining factors do not exhibit statistically significant intraday variation.

WORK IN PROGRESS

Asymmetric Violations of the Spanning Hypothesis

(with Gustavo Freire)

We propose a novel decomposition of the risk premium earned by American Treasury bonds and show that the inclusion of macroeconomic data in forecasting models can significantly improve forecasting power, but only for the shorter end of the yield curve. The longer end behaves exactly like Dynamic Term Structure models in Macro-Finance would predict. We deploy several Machine Learning techniques to deal with the high-dimensionality of a comprehensive panel of macroeconomic variables used in forecasting. Our results show that standard Dynamic Term Structure models are at odds with the data for the short end of the yield curve.

CODING SKILLS

- Python: experience with training, validation and deployment of ML models with `scikitlearn`; data handling with `Pandas`; scientific computing with `jax`; visualization with `matplotlib`, `plotly` and `seaborn`
- R: creation of reports and case studies using R Markdown; estimation of large-scale econometric models; experience with large panels of data and visualization with both `ggplot` and `plotly`

- Matlab: estimation of option pricing models; estimation of large-scale DSGE models for Macroeconomics;
- LaTeX and Markdown: experience with using both for technical reporting and documentation.
- SQL: extensive experience creating queries to access financial data on different servers
- Experience using UNIX systems for high-performance computations, including remote deployment, `conda` environments.

LANGUAGES

English: fluent; Portuguese: native; Spanish: advanced.

IMMIGRATION STATUS

Nationality: Brazilian

Current Status: F1-type visa until 2024, with automatic OPT extension.

TEACHING EXPERIENCE

Introduction to Econometrics at Northwestern University Fall 2021, 2022, 2023
Core PhD course

I assisted Prof. Viktor Todorov with a new core course for the Finance PhD degree, covering introductory topics in Statistics and Econometrics. I also hosted lectures and prepared empirical exercises.

Investments at Northwestern University Spring 2023 and Fall 2023
both for MBAs and Undergrads

Quarter-long courses on Investments taught by Prof. Viktor Todorov both at the MBA and Undergrad level. I prepared computational exercises for students and went in depth into the more abstract concepts behind portfolio optimization.

Derivatives at Northwestern University Fall 2021 and Fall 2022, Winter 2022
both for MBAs and Undergrads

Quarter-long courses on Derivatives taught by Prof. Viktor Todorov both at the MBA and Undergrad level.

Data Science at FGV-EPGE for the Masters in Finance program March 2019 - June 2019
MBA-Level Teaching Assistantship

I was an assistant to Prof. Genaro Lins. MBA-level statistical reasoning both with theory and with R examples, including writing lecture notes in Markdown for classes.

Econometrics at FGV-EPGE for the Masters in Finance program January 2019 - March 2019
MBA-Level Teaching Assistantship

I was an assistant to Prof. Pedro Engel. I taught MBA-level statistical reasoning both with theory and with R examples, including writing lecture notes in Markdown for classes.

Teaching Assistant at FGV-EPGE M.Sc. and Ph.D. programs April 2018 - October 2018
Statistics PhD Core Sequence

Assisted Professors André Trindade and Marcelo Moreira for their courses on the Statistics core sequence at FGV-EPGE M.Sc. and Ph.D programs.