

## Alan Moreira

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### **Academic positions:**

University of Rochester, Simon Graduate School of Business Associate Professor of Finance (without tenure)	2020-
University of Rochester, Simon Graduate School of Business Assistant Professor of Finance	2017- 2020
Yale University, Yale School of Management Assistant Professor of Finance	2011- 2017
National Bureau of Economic Research (NBER) Faculty Research Fellow, Asset Pricing	2021-

### **Education**

University of Chicago, Booth School of Business and Department of Economics Ph. D. Financial Economics,	2006-2011
Pontificia Universidade Catolica do Rio de Janeiro (PUC-RIO), Brazil, M.A. in Economics,	2004-2006
Universidade Federal do Rio de Janeiro (UFRJ), Brazil B.Sc. in Industrial Engineering,	1998-2003

### **Professional Activities:**

Associate Editor, Management Science	2021-
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### **Teaching experience:**

Quantitative Investing with Python, MSF/MBA, U of R Simon	2017-
PhD seminar, PhD, U of R Simon	2017-2018
Strategic Risk Management, MBA, Yale SOM	2011-2016

Financial Economics 1, PhD, Yale University	2011-2014
Financial Economics 2, PhD, Yale University	2015-2017
PhD seminar, PhD, Yale University	2011-2014

### **Research interests:**

Financial Intermediation, Asset Pricing, Monetary Policy

### **Publications:**

1. [News Implied Volatility and Disasters Concerns](#) (joint with Asaf Manela)  
Journal of Financial Economics, January 2017

We construct a text-based measure of uncertainty starting in 1890 using front-page articles of the Wall Street Journal. News implied volatility (NVIX) peaks during stock market crashes, times of policy-related uncertainty, world wars, and financial crises. In US postwar data, periods when NVIX is high are followed by periods of above average stock returns, even after controlling for contemporaneous and forward-looking measures of stock market volatility. News coverage related to wars and government policy explains most of the time variation in risk premia our measure identifies. Over the longer 1890–2009 sample that includes the Great Depression and two world wars, high NVIX predicts high future returns in normal times and rises just before transitions into economic disasters. The evidence is consistent with recent theories emphasizing time variation in rare disaster risk as a source of aggregate asset prices fluctuations.

2. [The Macroeconomics of Shadow Banking](#) (joint with Alexi Savov)  
Journal of Finance, December 2017 (Lead article)

We build a macro-finance model of shadow banking---the transformation of risky assets into securities that are money-like in quiet times but become illiquid when uncertainty spikes. Shadow banking economizes on scarce collateral, expanding liquidity provision, boosting asset prices and growth, but also building up fragility. A rise in uncertainty raises shadow banking spreads, forcing financial institutions to switch to collateral-intensive funding. Shadow banking collapses, liquidity provision shrinks, liquidity premia and discount rates rise, asset prices and investment fall. The model generates slow recoveries, collateral runs, and flight-to-quality effects, and it sheds light on LSAPs, Operation Twist, and other interventions.

3. [Volatility Managed Portfolios](#) (joint with Tyler Muir)  
Journal of Finance, October 2017

Managed portfolios that take less risk when volatility is high produce large alphas, increase Sharpe ratios, and produce large utility gains for mean-variance investors. We document this for the market, value, momentum, profitability, return on equity, investment, and betting-against-beta factors, as well as the currency carry trade. Volatility timing increases Sharpe ratios because changes in volatility are

not offset by proportional changes in expected returns. Our strategy is contrary to conventional wisdom because it takes relatively less risk in recessions. This rules out typical risk-based explanations and is a challenge to structural models of time-varying expected returns.

4. [Should Long-Term Investors Time Volatility?](#) (joint with Tyler Muir)

Journal of Financial Economics, March 2019 (Lead article)

A long-term investor who ignores variation in volatility gives up the equivalent of 2.4\% of wealth per year. This result holds for a wide range of parameters that are consistent with US stock market data, and it is robust to estimation uncertainty. We propose and test a new channel, the volatility composition channel, for how investment horizon interacts with volatility timing. Investors respond substantially less to volatility variation if the amount of mean reversion in returns disproportionately increases with volatility and also if mean reversion happens quickly. We find that these conditions are unlikely to hold in the data.

5. [Capital Immobility and the Reach for Yield](#)

Journal of Economic Theory, September 2019

I build a model in which financial intermediation slows down capital flows. Investors optimally learn from intermediary performance to allocate capital toward profitable intermediaries. Intermediaries reach for yield---i.e., they invest in high-tail-risk assets---in an attempt to drive flows and reduce liquidation risk. Intermediaries with strong opportunities face a trade-off between choosing a portfolio that maximizes profitability, and choosing one that maximizes the speed at which capital flows. In equilibrium, reaching for yield is stronger among intermediaries with weak opportunities, resulting in a reduction in the informativeness of performance; investors thus take longer to learn, and capital flows become less responsive to performance. Capital becomes slow-moving because the reach for yield dampens learning. The model predicts capital immobility to be stronger when tail risk is high; when tail risk is under priced; and in asset classes with large cross-sectional variation in tail-risk exposures.

6. [When Selling Becomes Viral: Disruptions in Debt Markets in the COVID-19 Crisis and the Fed's Response](#) (joint with Tyler Muir and Valentin Haddad)

Review of Financial Studies, January 2021

We document extreme disruption in debt markets during the COVID-19 crisis: a severe price crash accompanied by significant dislocations at the safer end of the credit spectrum. Investment-grade corporate bonds traded at a discount to CDS; ETFs traded at a discount to their NAV, more so for safer bonds. These disruptions disappeared after the Fed announced it would buy corporate bonds. The initial announcement, targeting investment-grade debt only, lowered the spreads of bonds with the most severe dislocations. The later expansion of the program boosted prices throughout markets. We use these facts to evaluate potential channels behind the disruption.

7. [Text Selection](#) (joint with Bryan Kelly and Asaf Manela)

Conditionally accepted, Journal of Business & Economic Statistics

Text data is inherently ultra-high dimensional, which makes machine learning techniques indispensable for textual analysis. Text also tends to be a highly selected outcome—journalists, speechwriters, and others carefully craft messages to target the limited attention of their audiences. We develop an economically motivated high dimensional selection model that improves machine learning from text (and from sparse counts data more generally). Our model is especially useful in cases where the cover/no-cover choice is separate or more interesting than the coverage quantity choice. Our design

allows for parallel estimation, making the model highly computationally scalable. We apply our framework to backcast, nowcast, and forecast financial variables using newspaper text, and find that it substantially improves out-of-sample fit relative to alternative state-of-the-art approaches.

### **Working papers:**

#### 8. [Hedging Risk Factors](#) (joint with Tyler Muir and Bernard Herskovic)

Standard risk factors can be hedged with minimal reduction in average return. This is true for "macro" factors such as industrial production, unemployment, and credit spreads, as well as for "reduced form" asset pricing factors such as value, momentum, or profitability. Low beta versions of the factors perform close to as well as high beta versions, hence a long short portfolio can hedge factor exposure with little reduction in expected return. For the reduced form factors this mismatch between factor exposure and expected return generates large alphas. For the macroeconomic factors, hedging the factors also hedges business cycle risk by significantly lowering exposure to consumption, GDP, and NBER recessions. We study implications both for optimal portfolio formation and for understanding the economic mechanisms for generating equity risk premiums.

#### 9. [Liquidity Creation as Volatility Risk](#) (joint with Itamar Drechsler and Alexi Savov)

We show, both theoretically and empirically, that liquidity creation induces negative exposure to volatility risk. Intuitively, liquidity creation involves taking positions that can be exploited by privately informed investors. These investors' ability to predict future price changes makes their payoff resemble a straddle (a combination of a call and a put). By taking the other side, liquidity providers are implicitly short a straddle, suffering losses when volatility spikes. Empirically, we show that short-term reversal strategies, which mimic liquidity creation by buying stocks that go down and selling stocks that go up, have a large negative exposure to volatility shocks. This exposure, together with the large premium investors demand for bearing volatility risk, explains why liquidity creation earns a premium, why this premium is strongly increasing in volatility, and why times of high volatility like the 2008 financial crisis trigger a contraction in liquidity. Taken together, these results provide a new, asset-pricing view of the risks and rewards to financial intermediation.

#### 10. [Hedge funds, long-term opportunities, and optimal lockups](#) (with Juhani Linnainmaa)

Many hedge funds restrict investors' ability to redeem their investments. We show that lockups alleviate a delegation friction. In our model hedge funds can trade a long-term arbitrage opportunity; doing so increases expected returns but lowers short-term returns. Investors who rationally learn from returns may mistake a skilled manager who pursues the arbitrage opportunity for an unskilled manager. Skilled managers therefore have an incentive to avoid redemptions by distorting their portfolios to enhance short-term returns. The tradeoff between the ability to trade the arbitrage opportunity more aggressively and investors' fears of being stuck with an unskilled manager determines the optimal lockup. We calibrate the model to hedge fund data and show that arbitrage remains limited even with optimal lockups; the average manager sacrifices 146 basis points in expected returns per year to improve short-term returns.

This subsumes an earlier working paper called "Limits to Arbitrage and Lockup Maturities".

11. [Relative Valuation and Information Production](#) (joint with Armando Gomes and David Sovich)

We study the problem of an investor that allocates analysts to assets to learn about future asset values. We show that when analysts are better at relative rather than absolute asset valuations the optimal matching of analysts to assets displays a balancedness property in which pairs of distinct assets are covered by a similar number of analysts. A balanced allocation allows the investor to efficiently aggregate information using the relative value between assets, eliminating the effect of the analyst-specific component. We show that the optimal matching of analysts to assets and the optimal portfolio decision depends on the structure of the analyst coverage network - the bipartite graph where the vertices are the firms and the edges are all the pairs of distinct firms that are covered by at least one common analyst. For example, capital is only reallocated between firms that are connected in the network, and the intensity of the reallocations depends on both the value of relative asset recommendations and the strength of the connection between the assets.

**Conferences presentations**

- 2021** MFA
- 2020** AFA, NBER AP, NBER RISK, SaMFF,
- 2019** AFA, WFA, EFA, Lubrafin, NBER Summer Institute
- 2018** AFA, IDC , MFA, EFA, CBOE Derivatives conference, Insead Finance Conference, Duke Asset Pricing conference, NBER Spring, NBER Summer Institute, John Hopkins Finance Conference
- 2017** AFA, SBFIN meeting
- 2016** Jackson Hole, ASU Finance conference, UBC Winter conference, NBER Developments in Long-term Asset Management, SFS Cavalcade, FMG Paul Wooley LSE conference, Red Rock, MIT Junior conference, Brevan Howard Hedge Fund conference
- 2015** Colorado, Five Star, Richmond Fed, Gerzensee ESSM, Atlanta Fed , Chicago Booth Media conference, Bank of England
- 2014** NBER AP, WFA, Macro Finance Society, NBER Behavioral, AFA, NY FED, TAU, Mad Money Monetary conference, Society of Economic Dynamics, Safe Assets and the Macro economy conference
- 2013** SFS cavalcade, Texas Finance Festival, Rothschild Caesarea Center Conference, PUC , Kellogg Junior conference, NBER monetary economics
- 2012** BSF
- 2011** WFA

*(some were presented by co-authors)*

### Seminar presentations

- 2021** Dartmouth, Blackrock, Texas A&M
- 2020** Wharton, OFR, Rochester, FGV
- 2019** University to Texas- Austin, HKUST, NUS, CUHK, HKU, NTU, PUC-RIO
- 2018** UC Davis, UIC, Cornell, Toulouse
- 2017** UC Irvine, 2 University of Rochester (internal), UNC, Ohio, Maryland, Boston University, Yale Law
- 2016** Harvard, University of Michigan, Cornell, Duke, Rochester, Wisconsin, Washington University, University Southern California, University of California at San Diego, Imperial College, Boston College
- 2015** Yale (internal), Columbia, FGV, Insper
- 2014** Yale Econ
- 2013** Yale SOM (internal), University of Amsterdam, PUC
- 2012** BRB, Yale (internal)
- 2011** Chicago Booth, Boston University, Yale, Federal Reserve Board, PUC, FGV

### Discussions (slides on my website)

- 2021** “**Corporate Bond Liquidity During the COVID-19 Crisis**” by Kargar, Lester, Lindsay, Liu, Weil, Zuniga
- 2020** “**Nonlinear Dynamics in Conditional Volatility**” by Friedrich Lorenz , Karl Schmedders , and Malte Schumacher  
“**Flights to Safety and Volatility Pricing**” by Claudia E. Moise  
“**In Search of the Origins of Financial Fluctuations: The Inelastic Markets Hypothesis**” by Xavier Gabaix and Ralph S.J. Koijen
- 2019** “**The Private Production of Safe Assets**” by Marcin Kacperczyk, Christophe Perignon, and Guillaume Vuillemey  
“**Granular Origins of the Federal Reserve Information Advantage**” by Edward Li, Gary Lind, K. Ramesh, and Min Shen  
“**Volatility, Valuation Ratios, and Bubbles: An Empirical Measure of Market Sentiment**” by Can Gao and Ian Martin  
“**Money Market Fund Reform and Arbitrage Capital**” by Alyssa Anderson, Wenxi Du, and Bernd Schlusche  
“**The short rate disconnect in a monetary economy**” by Moritz Lenel, Monika Piazzesi, and Martin Schneider  
“**Do t-stat Hurdles Need to be Raised? Direct Estimates of False Discoveries in the Cross-Section of Stock Returns**” by Andrew Chen  
“**How I Learned to Stop Worrying and Love Fire Sales**” by Pablo Kurlat  
“**Regulatory Limits to Risk Management**” by Ishita Sen
- 2018** “**Insurers as Asset Managers and Systemic Risk**” by Andrew Ellul, Chotibhak Jotikashira, Anastasia Kartasheva, Christian Lundblad, and Wolf Wagner

- “Model Comparison with Sharpe Ratios”** by Francisco Barillas, Raymond Kan, Cesare Robotti and Jay Shanken  
**“Mutual Fund Flows and Fluctuations in Credit and Business Cycles”** by Azi Ben-Raphael, Jaewon Choi, and Itay Goldstein  
**“Asset Price Bubbles and Systemic Risk”** by Markus Brunnermeier, Simon Rother, and Isabel Schnabel  
**2016 “Does Variance Risk Have Two Prices?”** by Laurent Barras and Aytek Malkhozov, American Finance Association  
**“Concentrated Capital Losses and the Pricing of Corporate Credit Risk”**, by Emil N. Siriwardane  
**“The Tail that Wags the Economy: Belief-Driven Business Cycle and Persistent Stagnation”** by Kozlowski, Veldkamp, and Venkateswaram  
  
**2015 “Credit Expansion and Neglected Crash Risk”** by Matthew Baron and Wei Xiong, Red Rock  
**“Financial Intermediation and Capital Misallocation”**, by Hengjie Ai, Kai Li, and Fang Yang, Mitsui Symposium  
**“Investor Sophistication and Capital Income Inequality”** by Marcin Kacperczyk, Jaromir Nosal, and Luminita Stevens, WFA  
**“Retirement in the Shadow (Banking)”** by Guillermo Ordonez and Facundo Piguillem, ITAM-PIER Conference on Macroeconomics  
**“Testing Asset Pricing Models with Long-Run Expected Returns”** by Lars Lochstoer and Paul Tealock, Chicago Becker Friedman conference  
**“Rare Disaster Concerns Everywhere”** George Gao and Zhaogang Son, SFS cavalcade  
**“Collateral Risk, Repo Rollover, and Shadow Banking”** by Shengxing Zhang, Bank of England macro-prudential conference  
**2013 “Heterogeneous Information Diffusion and Horizon Effects in Average Returns”**, by Oliver Boguth, Murray Carlson, Adlai Fisher and Mikhail Simutin  
**“Tradable Aggregate Risk Factors and the Cross-section of Stock Returns”** by Nikolay Doskov, Tapio Pekkala, and Ruy Ribeiro, PUC Finance conference

### **Industry talks**

Arrow Street Capital, Phase Capital, Norges Bank Investment Management, Thalesians, PricewaterhouseCoopers

### **Honors and awards**

- 2021** 2nd Prize in the 2020 Roger F. Murray prize competition  
**2018** Best Paper Award CBOE Derivatives Conference  
**2015** Best Paper Award Colorado Finance conference

**2010** Fisher Black Fellow  
**2009** Katherine Dusak Miller Fellow

**Service**

Referee for American Economic Review, Review of Financial Studies, Journal of Finance, Management Science, Journal of Financial Intermediation, Journal of the European Economic Association, Journal of Financial Economics, Financial Analyst Journal, Journal of Banking and Finance, Journal of Applied Econometrics, American Economic Journal: Macroeconomics, Review of Economic Studies, Review of Economics and Statistics

Selection committee: Brazilian Society of Finance, European Finance Association, Midwest Finance Association, SFS Cavalcade , IDC, American Finance Association, Colorado Finance Summit.

**Non-academic professional experience**

Gavea Investimentos (Brazil): Feb. 2006 – Aug. 2006, Research Economist.

ASM Asset Management (Brazil): March 2002 - March 2003, Trainee.

Siemens AG (Germany): July 2001 – Feb. 2002, Intern.