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EDUCATION

- 2015 **Stern School of Business, New York University (Expected)**
Ph.D. Candidate in Finance
- 2012 **Stern School of Business, New York University**
M.Phil. in Finance
- 2009 **Princeton University**
B.S.E. in Operational Research and Financial Engineering
Cumulative GPA: 3.85/4.00 (*Magna Cum Laude - High Honors*)

PROFESSIONAL EXPERIENCE

- 2012-2014 **U.S. Department of the Treasury, the Office of Financial Research**
Research Intern
- 2008 **UBS**
Summer Intern, Equity Capital Markets Group
Origination and Execution of Healthcare and Consumer/Retail Equity Offerings
- 2006 **US Senate - Senator Jay Rockefeller**
Rotational Intern

RESEARCH INTERESTS

Credit Risk
Macro Finance with Intermediation
Rare Disasters and Extreme Events
Systemic Risk and Financial Stability
Empirical Asset Pricing
Financial Econometrics

WORKING PAPERS

Concentrated Capital Losses and the Pricing of Corporate Credit Risk

Job Market Paper

Abstract: Using proprietary credit default swap (CDS) data from 2010 to 2014, I discover that CDS markets are dominated by a handful of net protection sellers. In turn, financial frictions — in the form of capital losses — for these sellers affect the aggregate pricing of corporate credit risk. A one standard deviation loss to the CDS portfolios of the five largest sellers increases weekly credit spreads by 1.4 percent. CDS portfolio performance of the five largest sellers also appears to explain about one-eighth of variations in the price of credit risk. To alleviate identification concerns, I use the Japanese tsunami of 2011 as a source of exogenous variation in risk bearing capacity. Following the tsunami, spreads increased for U.S. firms whose sellers were most exposed to Japanese firms. Finally, I examine CDS transaction prices and show that sellers who have experienced losses charge higher premiums.

Structural GARCH: The Volatility-Leverage Connection (with Robert F. Engle)

Finalist for 2014 AQR Insight Award

Abstract: We propose a new model of volatility where financial leverage amplifies equity volatility by what we call the leverage multiplier. The exact specification is motivated by standard structural models of credit; however, our parametrization departs from the classic Merton (1974) model and can accommodate environments where the firm's asset volatility is stochastic, asset returns can jump, and asset shocks are non-normal. In addition, our specification nests both a standard GARCH and the Merton model, which allows for a statistical test of how leverage interacts with equity volatility. Empirically, the Structural GARCH model outperforms a standard asymmetric GARCH model for approximately 74 percent of the financial firms we analyze. We then apply the Structural GARCH model to two empirical applications: the leverage effect and systemic risk measurement. As a part of our systemic risk analysis, we define a new measure called precautionary capital that uses our model to quantify the advantages of regulation aimed at reducing financial firm leverage.

“The Probability of Rare Disasters: Estimation and Implications”

Finalist: 2013 Olin Best Finance PhD Award in Honor of Prof. Greenbaum

Abstract: I analyze a rare disasters economy that yields a measure of the risk neutral (RN) probability of a consumption disaster. A large panel of options data provides strong evidence of a common aggregate RN disaster probability. Empirically, I find the market return sensitivity to RN disaster probability to be consistent with a reasonable calibration of the model. In addition, I show that the RN disaster probability is a robust predictor of business cycle variables as suggested by a full general equilibrium model. I also derive a model-implied measure of firm disaster risk. An equity portfolio consisting of high disaster risk stocks earns excess annualized returns of 11.59%, even after controlling for a plethora of risk factors. Following with model intuition, the RN probability of disaster positively forecasts returns of the portfolio of high disaster risk stocks. Finally, I use the cross-section of equity returns to estimate moments of disaster recovery rates.

WORKS IN PROGRESS

Long Run Value at Risk (with Robert F. Engle)

CDS Risk Factors and Stress Testing (with Sriram Rajan)

Has Central Clearing Improved Risk Sharing in CDS Markets?

Embedded Leverage in Equities (with Robert F. Engle)

HONORS AND AWARDS

- 2013 NYU Volatility Institute Deutsche Bank Dissertation Fellow
- 2013 Washington University in St. Louis Olin Business School Best Finance Ph.D. Award and Poster Session, Finalist
- 2012 Chicago Booth Junior Finance Symposium on Financial Regulation and Risk Management, Ph.D. travel award
- 2012 AFA Doctoral Student Travel Award
- 2011 David M. Graifman Memorial Award for Best Summer Paper in Finance - NYU Stern School of Business
- 2011 Member of NYU Stern Volatility Institute's Volatility Laboratory - Directed by Robert F. Engle
- 2009 NYU Stern School of Business Doctoral Fellowship
- 2009 Princeton University Tau Beta Pi Honor Society (top 12.5% of Engineering class)

RESEARCH GRANTS

- 2013-2015 Dissertation support awarded by the Macro Financial Modeling Group. Funded by the Alfred P. Sloan Foundation, the Becker Friedman Institute, and MIT Laboratory for Financial Engineering
- 2013-2014 Ph.D. Research Grant awarded by the Global Finance Group within the Center for Global Economy and Business at NYU Stern School of Business.

CONFERENCE PARTICIPATION

- 2014 Western Finance Association Annual Conference, Federal Reserve Bank of Cleveland and the Office of Financial Research Joint Conference

TEACHING EXPERIENCE

- 2013 Instructor, Foundations of Finance (undergraduate). Instructor Evaluation: 7.0/7.0
- 2011-2014 Grader, Corporate Finance (MBA), Prof. Holger Mueller
- 2011 Teaching Assistant, Foundations of Finance (MBA), Prof. Anthony Lynch

PROFESSIONAL SERVICE

- Referee *Journal of Financial Econometrics*

REFERENCES

Prof. Robert F. Engle (Chair)

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Prof. Viral Acharya

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