Amora Elsaify

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Research Fields

Macro-finance, Empirical Asset Pricing, Dynamic Corporate Finance,
Applications of Nonparametric Statistics and Machine Learning to Finance

Education

The Wharton School, University of Pennsylvania

Ph.D. Finance	Expected May 2017
M.A. Mathematics	Expected May 2017
M.S. Statistics	Expected May 2017
B.S. Economics	December 2012

Job Market Paper

The Innovation Premium

Firms that engage in innovative product development, as measured by the fraction of their investment that goes to Research and Development (R&D) activities, earn higher risk-adjusted equity returns. A portfolio that goes long the most innovative and shorts the least innovative firms earns a risk-adjusted return in excess of 7% per annum. R&D-intensive firms also tend to charge higher price markups. Combining insights from industrial organization with a production-based asset pricing framework, I propose a model in which heterogeneous firms produce vertically differentiated goods and market them to heterogeneous consumers. Firms are subject to aggregate demand and supply shocks, which are both priced by investors, and thus the return premium of innovative firms is explained by their differential exposures to these shocks. In addition to explaining this return spread, the model makes predictions on firm investments, future profit markups, and firm size that are consistent with the data.

Awards and Research Grants

2016: Rodney White Center for Financial Research Grant, Jacobs Levy Equity Management Center for Quantitative Financial Research Grant, Macro-Finance Society Travel Grant
2015: American Finance Association Student Travel Grant, MIT FARFE Invited Student
Earlier: University of Pennsylvania Dean's Fellowship for Distinguished Merit (Ph.D.), Penn Undergraduate Research Mentoring Grant, Joseph Wharton Scholar, Benjamin Franklin Scholar, National Merit Scholarship

Teaching Experience

Fixed Income Securities (Lead TA): 2014
Corporate Finance (Lead TA): 2014, 2016
Behavioral Finance (Lead TA): 2015, 2016
Global Monetary and Financial Stability Policy: 2015, 2016

Professional Experience

AQR Capital Management, Research Analyst, Global Asset Allocation (2013)
Mizuho Corporate and Investment Bank, Summer Intern, Corporate Finance (2011)

Computer

Python, Matlab, R, SQL, Stata, Visual Basic

Working Papers

Why Do Firms Issue Callable Bonds? (joint with Nikolai Roussanov)
Winner of 2015-16 Rodney White Center for Financial Research Grant

Corporations in the US have significantly increased their usage of callable bonds in the past 10-15 years. Whereas callable debt was issued in the past for interest rate hedging motives, the vast majority of callable bonds issued today have call options that will never be "in the money". This feature implies that previous explanations for the issuance of callable debt no longer rationalize the current pattern. We present evidence on the types of firms issuing these bonds and their usage of the proceeds, which motivates a new theory for why firms desire these eternally "out of the money" call options. This theory captures the motives of firms in matching the maturities of investment and financing and endogenously generates firm-specific refinancing risk. We then embed this theory into a production-based model and show that callable bonds can expand access to capital markets and increase investment.

Firm Volatility and the Composition of Investment

This paper studies the question of when firms invest in Research and Development (R&D) activities and physical capital. It begins by documenting novel empirical evidence on how the composition of investment changes with firm profitability conditions, in contrast to the focus on aggregate or industry-level cyclicality in the existing literature. It then shows that this new evidence is not as consistent with existing explanations for the timing of investment, and proposes a new mechanism to explain this through the relation between types of investment and future equity volatility. New evidence on this relation is documented. In particular, I show that R&D is significantly associated with future idiosyncratic volatility while investment in physical capital is positively associated with future systematic volatility. I then propose a simple model to illustrate how the relation between investment and volatility can explain the investment timing patterns.

A Machine Learning Analysis of Equity Return Predictability

This paper analyzes the predictive power of traditional equity return factors by utilizing machine learning models. These models offer the advantages of allowing for nonlinearities in relationships between the quantity of risk and the effect on excess returns as well as allowing for interactions between factors. Sampling of predictors is also employed in order to potentially quantify the effects of weaker predictors. In addition to evaluating the individual predictive power of various factors, this paper also quantifies the impacts of these departures from the linear framework.

Making Matrices Better: Geometry and Topology of Singular Value and Polar Decomposition (joint with Dennis DeTurck, Herman Gluck, *et al.*) *Currently submitting to Notices of the American Mathematical Society*

Our goal here is to see the space of matrices of a given size from a geometric and topological perspective, with emphasis on the families of various ranks and how they fit together. We pay special attention to the nearest orthogonal neighbor and nearest singular neighbor of a given matrix, both of which play central roles in matrix decompositions, and then against this backdrop visualize the polar and singular value decompositions and examine some of their applications.

References

Dr. Nikolai Roussanov (chair)
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