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Academic Appointments

Visiting Assistant Professor of Finance, **The Ohio State University**, Columbus, OH   since 2014

Education

Ph.D. in Finance, **The Pennsylvania State University**, University Park, PA   2014

B.S. in Statistics, Cum Laude, **Fudan University**, Shanghai, China   2008

Research Interests

Fixed Income, Macro-Finance, Asset Pricing, Financial Econometrics

Working Papers

"Time-Varying Ambiguity and Asset Pricing Puzzles"
presented at the WFA 2014
This paper studies the effects of time-varying Knightian uncertainty (ambiguity) on asset pricing in a Lucas exchange economy. Specifically, I consider a general equilibrium model where an ambiguity-averse agent applies a discount rate that is adjusted not only for the current magnitude of ambiguity but also for the risk associated with its future fluctuations. As such, both the ambiguity level and volatility help raise asset premia and accommodate richer dynamics of asset prices. With a novel measure for the ambiguity level, I show that the estimated model is able to explain a wide range of asset markets anomalies, including the equity premium puzzle, the risk-free rate puzzle, the credit spread puzzle, and the expectations puzzle. In particular, this paper establishes both theoretical and empirical linkages of ambiguity with the unspanned predictability in the Treasury market. Furthermore, the proposed ambiguity measure is found to exhibit significant predictive power for excess returns on equities and bonds as well as for corporate yield spreads, a finding that justifies uncertainty channels highlighted in the model.

"Revisiting the Equity-Credit Market Integration Anomaly"   *with Jingzhi Huang*
presented at the NFA 2013, R & R in RFS
Empirical evidence has documented that while variables suggested by structural credit risk models can explain only a small portion of corporate bond spread changes (Collin-Dufresne, Goldstein, and Martin, 2001), these models provide quite accurate predictions of hedge ratios for corporate bond returns (Schaefer and Strebulaev, 2008). The implication of these two seemingly conflicting findings has been referred to as the "equity-credit market integration anomaly." In this paper we provide evidence that these two findings can be reconciled with each other within the standard structural modeling framework. In particular, we show empirically that sensitivities of spread changes to leverage ratio or equity predicted by structural models—namely, the Merton (1974) hedge ratios for changes in the spread—are not rejected either in time-series tests.

"Understanding Term Premia on Real Bonds"   *with Jingzhi Huang*
presented at the SICF 2012, NFA 2012, AFA 2013

Real bonds are a very important asset class and deciphering their risk-return relationship deepens our already extensive understanding about term premia. However, there has been little research on the dynamic behavior and economic determinants of risk premia on such bonds. This paper takes a series of steps towards extending extant evidence on nominal bond premia to their real counterparts. First, we document empirically that the real bond risk premium changes over time and fluctuates between positive and negative values. Second, we find that the real term structure itself contains a component that, albeit undetectable from cross section of bond yields, drives risk premia. Finally, we examine the potential link between the real bond premia and macroeconomic variables. We find that macro factors associated with real estate and consumer income and expenditure can capture a large portion of forecastable variations in excess returns on real bonds. Our empirical results indicate an essential need to propose asset pricing models such that implied real yields are able to account for these stylized facts.

"Estimation of Asset Value and Asset Volatility in Structural Models" *with Jingzhi Huang and Yuchen Luo*

One widely used approach to credit risk modeling is the structural framework of Black and Scholes (1973) and Merton (1974). The implementation of a structural credit risk model requires the knowledge of two important and yet unobservable parameters, asset value and asset volatility. Various methods have been proposed in the literature for the estimation of these two parameters; however, so far there is no consensus on what method should be used in practice. We conduct a comprehensive comparison utilizing rigorous mathematical derivation and simulation. We make recommendations on which method to use. We also shed new light on the previous critics on some of the methods. We propose a methodology for analyzing the source of estimation errors, which could be applied in a much more general setting.

"Determinants of Bond Risk Premia"   *with Jingzhi Huang*
presented at the AFA 2011, R & R in RFS

In this paper, we provide new and robust evidence on the power of macro variables for forecasting bond risk premia by using a recently developed model selection method–the supervised adaptive group "least absolute shrinkage and selection operator" (lasso) approach. We identify a single macro factor that can not only subsume the macro factors documented in the existing literature but also can substantially raise their forecasting power for future bond excess returns. Specifically, we find that the new macro factor, a linear combination of four group factors (including employment, housing, and price indices), can explain the variation in excess returns on bonds with maturities ranging from 2 to 5 years up to 43%. The new factor is countercyclical and furthermore picks up unspanned predictability in bond excess returns. Namely, the new macro factor contains substantial information on expected excess returns (as well as expected future short rates) but has negligible impact on the cross section of bond yields.

Book Chapter

Model Selection for High-Dimensional Problems (with Jingzhi Huang and Wei Zhong), 2013, *Handbook of Financial Econometrics and Statistics,* edited by C.F. Lee and John Lee, Chapter 77, Springer Verlag.

Professional Activities

Presentations

Time-Varying Ambiguity and Asset Pricing Puzzles

2014 Western Finance Association Meeting, Monterey

2013 Financial Management Association Doctoral Student Consortium

Revisiting the Equity-Credit Market Integration Anomaly

2014 Fixed Income Conference, Charleston

2013 Asian Finance Association Meeting, Nanchang*

2013 ITAM Finance Conference, Mexico City*

2013 Northern Finance Association Meeting, Quebec City*

2013 Annual Derivatives Securities and Risk Management Conference*

Understanding Term Premia on Real Bonds

2013 Fixed Income Conference, Charleston

2013 American Finance Association Meeting, San Diego

2012 Northern Finance Association Meeting, Niagara Falls

2012 Singapore International Conference on Finance

2012 Midwest Finance Association Meeting, New Orleans

Estimation of Asset Value and Asset Volatility in Structural Models

2014 Midwest Finance Association Meeting, Orlando

Determinants of Bond Risk Premia

2012 Fixed Income Conference, Charleston*

2011 American Finance Association Meeting, Denver

2010 Financial Management Association Meeting, New York

2010 SAIF and CKGSB Summer Research Conference, Shanghai

2010 China International Conference in Finance

2010 Annual Derivatives Securities and Risk Management Conference

* presented by a co-author

Discussions

2015 Midwest Finance Association Meeting, Chicago

2014 Midwest Finance Association Meeting, Orlando

2013 Midwest Finance Association Meeting, Chicago

2012 Fixed Income Conference, Charleston

2012 Midwest Finance Association Meeting, New Orleans

2010 Financial Management Association Meeting, New York

Program Committee

2015 European Finance Association Meeting, Vienna, Austria

2015 Midwest Finance Association Meeting, Chicago

2014 Midwest Finance Association Meeting, Orlando

2013 Midwest Finance Association Meeting, Chicago

Teaching

Options & Futures I (OSU, undergraduate)	2014-2015
Fixed Income & Credit Risk (OSU, MBA & Master in Finance)	2014
Derivative Markets (PSU, undergraduate)	2012
Security Analysis and Portfolio Management (PSU, undergraduate)	2010-2011

Awards and Grants

WFA Cubist Systematic Strategies Ph.D. Candidate Award	2014
MFA Doctoral Student Travel Grant	2013, 2014
Kenneth J. Carey Memorial Scholarship	2012
Competitive Dissertation Summer Award	2012
Smeal Research Grant Award	2009-2013
Fudan Best Undergraduate Thesis Prize	2008