ZONGMING MA
B.Mgmt. (Information Management and Systems (Major)/B.Econ Finance (Minor)) Shandong University of Finance and Economics, 2012
MA (Economics) Dalhousie University, 2013

DEPARTMENT OF ECONOMICS

TITLE OF THESIS:	THREE ESSAYS ON ASSET PRICING IN REGIME AND ESG ENVIRONMENT
TIME/DATE:	10:00 am, Wednesday, December 4, 2019
PLACE:	Room 3107, The Mona Campbell Building, 1459 LeMarchant Street

EXAMINING COMMITTEE:

Dr. Jason Z. Wei, Department of Management, University of Toronto, Scarborough (External Examiner)

Dr. Iraj Fooladi, Rowe School of Business, Dalhousie University (Reader)

Dr. Mevlude Akbulut-Yuksel, Department of Economics, Dalhousie University (Reader)

Dr. Kuan Xu, Department of Economics, Dalhousie University (Co-Supervisor)

Dr. Yonggan Zhao, Rowe School of Business, Dalhousie University (Co-Supervisor)

DEPARTMENTAL REPRESENTATIVE:	Dr. Yulia Kotlyarova, Department of Economics, Dalhousie University
CHAIR:	Dr. Frank Harvey, PhD Defence Panel, Faculty of Graduate Studies

ABSTRACT

Asset pricing has been a focal point among a broad range of financial studies. Traditional asset pricing models are encountering challenges by empirical data and sustainable compliance. For example, the Black-Scholes-Merton (BSM) model exhibits the “volatility smile” puzzle and the role that sustainability plays in accounting for asset pricing remains controversial. Based on these observations, I raise three research questions. First, can an option valuation model with a pricing kernel that depends on market regimes address volatility smile and be consistent with observed market prices? Second, how do the Environment, Social and Governance (ESG) ratings affect asset prices across different economic sectors, firm sizes, and time horizons? Third, since the macroeconomic environment affects firms’ strategies and financial performance, how do ESG ratings affect stock returns across market regimes? I address these questions in three essays. The first essay reveals that the proposed model can predict the market option prices more accurate than the alternative models (Black-Scholes-Merton, Heston-Nandi, Hardy) do for both the in-sample and out-of-sample data across regimes. The second essay finds that ESG ratings have a positive effect on stock returns, particularly for sensitive industries (gas, oil, chemical, mining, alcohol, and tobacco, etc.), for large capitalization firms, and for long-term investment horizons. The third essay uses a machine learning method to identify market regime using 134 macroeconomic factors and a factor model to discover a positive relationship between ESG and asset returns in the bear regime. The factor model also shows that the impact of ESG rating on stock returns in a sector, given a market regime, depends significantly on the level of demand in that sector under that market regime.