UNIVERSITY of GUELPH

# Graduate Seminar

Department of Economics and Finance

Gordon S. Lang School of Business and Economics


## Chenyi Suo

MA Candidate

Supervisor: Yiguo Sun

Second Reader: Delong Li


### Spot Crude Oil Threshold CAPM Model


The ongoing outbreak of the Coronavirus Disease 2019 have posted unprecedent challenges to the global health system, and made considerable changes to investors' investment strategies. The purpose of this research paper is to examine whether the severity of the COVID-19 pandemic in U.S. may influence the expected returns on spot crude oil. We build an empirical model that introduces additional factors and market variables -- including momentum, market volatility index (VIX), and oil market volatility index (OVX) -- into traditional CAPM model established by Fama and French (2015). We also apply the post-adaptive LASSO method to estimate the augmented CAPM models. In addition, to identify if there exists a threshold-like structure in the crude oil market, we consider threshold CAPM model by introduction of three COVID-19 related factors in subsample period (from January 3, 2020 to April 30, 2021), namely the daily number of COVID-19 cases, the daily number of infected patients admitted to ICUs, and Stringency index. The empirical evidence shows that VIX can effectively identify whether the crude oil market is panic during a long time period. Nevertheless, during the pandemic, the COVID-19 factors as threshold variables provide better fits than models employing market volatility indexes as threshold variables.


Date: Wed, August 11th, 2021
Time: 9:30 am
Room: Teams

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