Colin B. Swaney

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Academic

UNIVERSITY OF MISSISSIPPI
Visiting Assistant Professor of Finance 2017-2018

Education

UNIVERSITY OF IOWA
Ph.D. Finance 2012-2018 (proposal defended Aug. 2017)

UNIVERSITY OF IOWA
M.Sc. Mathematics 2009-2011

KANSAS STATE UNIVERSITY
B.Sc. Mathematics and Economics 2005-2009

Research Interests

Market microstructure and high-frequency trading; empirical asset pricing

Job Market Paper

Price Formation and the Shape of Limit Order Books (single authored)

Abstract
With a view towards exploring the information content of limit orders, as opposed to market orders, I propose a factor model of order book shape. I start by building a unique dataset of Nasdaq limit order books that tracks order activity at ultra high-frequency. Analyzing over 20,000 stock-days, I find that the limit order book comprises three common factors, which I characterize as level, slope, and curvature. By combining these factors alongside price increments in a vector autoregression, I demonstrate that the factors not only explain limit order book shape but also predict returns over one-minute time intervals.

Working Papers

Order Book Events on a Poisson Network (single authored)

Abstract

In this paper, I explore the dynamics of a fully electronic limit order book. Using recent advances from the field of machine learning, I demonstrate how to estimate a continuous-time, event-driven model of market dynamics in a fully Bayesian fashion. I estimate the model using event message data from the Nasdaq exchange for two stocks with contrasting order book characteristics over a one month period. My results highlight the importance of order book shape in explaining patterns in order arrivals, and because the model reacts to incoming orders, it serves as a plausible testing environment for evaluating the fitness of algorithmic order execution and trading strategies.

Evaluating Fund Manager Skill: A Mixture Model Approach (single authored; accepted at *R/Finance 2016*)

Abstract
Evaluating the performance of actively managed equity mutual funds is among the most important topics in the field of finance. In this paper, I present a new assessment of the stock picking ability of actively managed funds that accounts for the occurrence of false positives, an issue that complicates traditional assessments. I find that while the data is consistent with a small group of alpha-generating funds, the composition of this population experiences significant annual turnover and is, therefore, difficult to identify in advance. Between 1975 and 2015, the returns to a fund selection strategy based on the classification method fail to generate alpha.

Teaching

COURSES TAUGHT AS INSTRUCTOR
- Financial Management (Summer 2013, Fall 2013, Spring 2014)

COURSES TAUGHT AS ASSISTANT
- Financial Management, Investments, Corporate Finance, International Finance

Publications

Swaney, Colin *et al.* 2015. Efficient Skin Segmentation via Neural Networks: HP-ELM and BD-SOM. *Procedia Computer Science* 53: 400-409. (Presented at *INNS Big Data* 2015)

Professional Activity & Awards

- AFA Student Travel Grant, 2015
- Graduate College Summer Fellowship, 2014
- Discussant, FMA Annual Meeting, 2013

Industry

CONVERSANT
Decision Science Internship, Optimization Group — Summer 2016
- Analyzed data from real-time bidding platform.

Skills

GENERAL PROGRAMMING:

- Python, C, CUDA, UNIX/Linux, High-Performance Computing (HPC)

SCIENTIFIC AND DATA PROGRAMMING

- MATLAB, R, SAS, PostgreSQL

OTHER PROGRAMMING

- LaTeX, HTML, CSS, Git