

# Taylor's Power Law and Financial Markets

## Participants

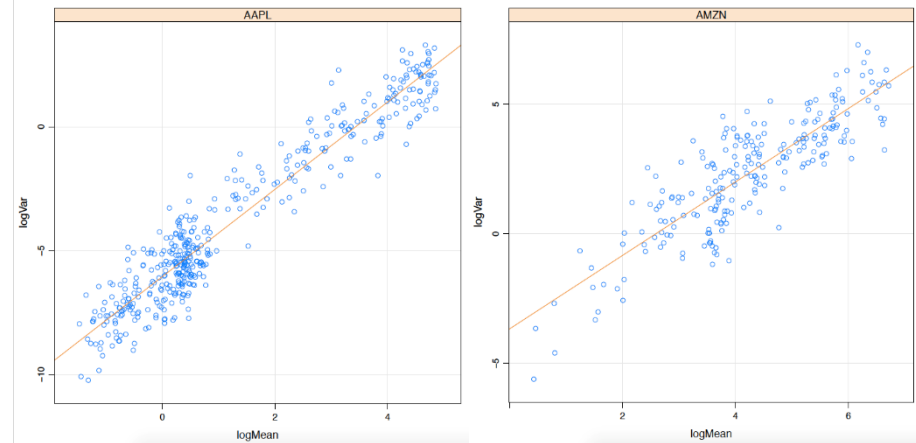
Meng Xu, PhD

## With

Mr. Nantaporn Yuennan

- Pace University 2014-2017

- Columbia University 2017-



The aim of this project is to prove (or disapprove) the empirical validity of Taylor's power law for high-quality financial data and to explain its financial mechanism: temporal variance of price is a power function of the temporal mean price. In other words, stock price level affects its volatility.

1. Test Taylor's power law for Fortune 100 stock price data at multiple time scales
2. Compare the power exponent of Taylor's power law across various industrial sectors and across various companies within the same sector
3. Use Taylor's power law to develop a risk measure that aids investment strategy

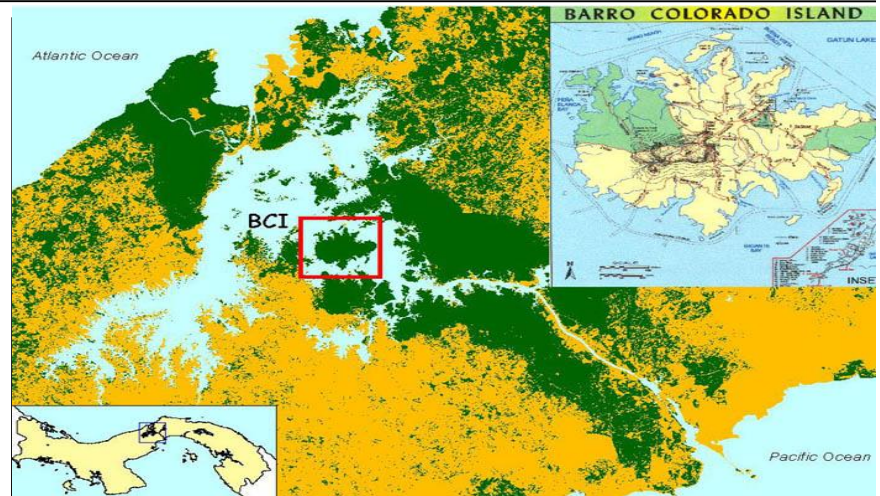
# Phenomenological models for the relationships among occupancy, spatial mean, and spatial variance of species population abundance

- **Participants**

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Student: Kaiying Mo (Marketing & Statistics)

- Pace University



- **Overall Goal/Purposes:**

- Relationships among mean, variance, and occupancy of species abundance are relevant to conservation and species invasion.
- Mathematical models are useful for analyzing these relationships but require synthesis.

- **Specific Research Aims:**

1. Test empirically the usefulness of phenomenological models in describing the relationships among occupancy, spatial mean, and spatial variance of species abundance
2. Standardize the methods, scales, and measures used in model fitting and assessment
3. Examine the analytic validity of the He-Gaston model for occupancy prediction
4. Provide model selection recommendations that aid modeling practice in the future