

Bhattacharya, Ayan (Version: March 2017)

1. EDUCATION:

<u>Degree</u>	<u>Institution</u>	<u>Field</u>
Ph D	Cornell University	Finance
MS	Stanford University	Financial Math
MBA	Indian Institute of Management, Lucknow	
BEngg	BMS College of Engineering, Bangalore, India	Computer Science and Information Engineering

2. FULL-TIME ACADEMIC EXPERIENCE:

<u>Institution</u>	<u>Rank</u>	<u>Field</u>	<u>Dates</u>
Baruch College, The City University of New York	Assistant Professor	Finance	August 25, 2016 - Present

3. NON ACADEMIC EXPERIENCE:

<u>Place of Employment</u>	<u>Title</u>	<u>Dates</u>
Kotak Securities, India (formerly, a joint venture between Goldman Sachs and India's Kotak financial group)	Associate Vice President (Structured products trader at Prop desk)	May 2006 - August 2009

4. EMPLOYMENT RECORD AT BARUCH COLLEGE, CITY UNIVERSITY OF NEW YORK:

<u>Rank</u>	<u>Dates</u>
Assistant Professor	August 25, 2016 - Present

5. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:

Bhattacharya, A. (Presenter & Author), Western Finance Association Meetings, 2017, Western Finance Association, Whistler, Canada, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Conference, International, Refereed. (June 26, 2017).

Bhattacharya, A. (Presenter & Author), Conference on Financial Market Design, Center for the Economic Analysis of Risk, Georgia State Univ., Atlanta, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Conference, International. (April 7, 2017).

- Bhattacharya, A. (Author Only), O'Hara, M. (Presenter & Author), Harvard Financial Economics Seminar, Harvard University, Boston, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Seminar. (November 2, 2016).
- Bhattacharya, A. (Panelist), Financial Markets Conference, 2016, Baruch College, "Indexing, ETFs, and Robos – Are Stocks an Endangered Species? (Panel Discussion)", Conference. (November 1, 2016).
- Bhattacharya, A. (Presenter & Author), Central Bank Workshop on Microstructure of Financial Markets, Bank of France, Paris, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Conference. (September 30, 2016).
- Bhattacharya, A. (Author Only), O'Hara, M. (Presenter & Author), Cornell University Finance seminar, Ithaca, NY, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Seminar. (September 2016).
- Bhattacharya, A. (Discussant), Northern Finance Association Meetings, 2016, Mont Tremblant, Canada, "Informed Trading, Forced Trades and Amplification Mechanisms-Discussion". (September 17, 2016).
- Bhattacharya, A. (Presenter & Author), Triple Crown Conference, 2016, Rutgers University, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Conference. (September 9, 2016).
- Bhattacharya, A. (Author Only), O'Hara, M. (Presenter & Author), NBER Asset Pricing Meetings, 2016, NBER, Boston, "Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets", Conference, Refereed, Accepted. (July 15, 2016).
- Bhattacharya, A. (Presenter & Author), Brandeis University Finance Seminar, Boston, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).
- Bhattacharya, A. (Presenter & Author), NTU Finance Seminar, Singapore, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).
- Bhattacharya, A. (Presenter & Author), Ohio State University Finance Seminar, Ohio State University, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).
- Bhattacharya, A. (Presenter & Author), Penn State University Finance seminar, Penn State University, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).
- Bhattacharya, A. (Presenter & Author), Singapore Management University Finance seminar, Singapore, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).

Bhattacharya, A., Syracuse University Finance Seminar, Syracuse, NY, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (February 2016).

Bhattacharya, A. (Presenter & Author), Cornell University Finance Seminar, Ithaca, NY, "Can Transparency Hurt Investors in Over-The-Counter Markets?", Seminar. (October 2015).

6. WORK IN PROGRESS:

A. Papers submitted to journals for consideration.

Bhattacharya, A., & O'Hara, M. *Can ETFs Increase Market Fragility? Effect of Information Linkages in ETF Markets*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2740699

B. Other completed papers.

Bhattacharya, A. *Can Transparency Hurt Investors in Over-The-Counter Markets?*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2746910

C. Research in progress.

Bhattacharya, Ayan, "Evolutionary Equilibrium for Market Design", On-Going.

Current state-of-the-art models for market design rely on the rational expectations framework and game theoretic equilibrium. There are three major issues with this approach: (i) these models are impossible to solve except in the simplest of cases, (ii) there is very little one can say about the dynamics of the setting, i.e. "path taken to the equilibrium", (iii) numerous experiments have shown a divergence in actual human behavior. In this paper I develop an evolutionary framework for modeling where agents learn as the game proceeds, and are rewarded if they learn well. This is closer to the experimentally recorded behavior of market agents and allows me to overcome the problems with the rational expectations framework. For instance, I can trace the dynamics of the model as it converges to equilibrium. I also obtain conditions under which the evolutionary equilibrium converges to the rational expectations equilibrium.

Gideon Saar, "Information and the Limit Order Book", On-Going.

The almost standard assumption in theoretical market microstructure literature has been that informed traders use market orders to take advantage of their information. Yet a lot of experimental and empirical evidence has accumulated showing otherwise. The main issue that has hampered the development of more realistic models is the lack of tractability. In this paper we show that, using a combinatorial approach, it is possible to obtain a closed-form solution. We use the new approach to build a tractable model of limit order trading that demonstrates how information enters the order book.

"Robustness of financial networks", On-Going.

This paper develops a framework for robust financial market design using tools from electrical grid design. In recent years, financial markets have witnessed a number of

"technical" failures, for instance the Flash Crash of 2010. Rather than blaming particular trades or trading behavior, in this paper I take the approach that it is the underlying design of the grid that determines the propensity to failure. This approach has a long history in electrical engineering.

7. PROFESSIONAL SOCIETIES:

Northern Finance Association, NFA.

Western Finance Association, WFA.

American Finance Association, AFA.

8. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

Journal of Empirical Finance, Reviewer

Review of Financial Studies, Reviewer

Journal of Financial Services Research, Reviewer

9. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

FIN 3710 - 1, Investment Analysis, 6 credit hours, Undergraduate, Classroom, (Spring 2017).

FIN 3710 - 2, Investment Analysis, 6 credit hours, (Spring 2017).

FIN 3710 - 3, Investment Analysis, 6 credit hours, (Spring 2017).

B. New courses/programs developed

10. CERTIFICATION ITEM:

I hereby certify that the information given above is accurate and complete to the best of my knowledge.

Ayan Bhattacharya

March 2017
