

# HARITIMA CHAUHAN

## Office Contact Information

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## Education

May 2018    Ph.D. Economics, Northern Illinois University, DeKalb IL, USA. (GPA 3.94/4.0)  
Expected    Dissertation Title: “*Essays on the Effects of Consumer and Investor Behavior on Asset Markets and Macroeconomy*”.  
                  Dissertation Committee: Dr. Evan Anderson, Dr. Ai-ru Cheng and Dr. Alex Garivaltis  
2012        MA Economics, Northern Illinois University, DeKalb IL, USA. (GPA 4.0/4.0)  
2005        MBA Finance, ICFAI Business School, Mumbai, India.

## Fields

Primary     Applied Econometrics • Empirical Financial Economics  
Secondary    Macroeconomics • Applications of Network Analysis and Machine Learning

## Working Papers (Abstracts appended)

- Is Collective Real-time Sentiment of Individual Investors Influential?
- Effects of Risks to Changes in Preferences on Asset Markets and Macroeconomy.
- Does Economies of Scale and Productivity Growth Exist in Indian Banking Industry?

## Work In Progress

- Risk and Return Tradeoff using Mixed Data. (with Dr. Evan Anderson and Dr. Ai-ru Cheng)
- Information Quality of Rare Events and its Implication on Asset Markets and Macroeconomy.
- Are Public and Private Banks Equally Efficient in India?

## Academic Employment

2018, 2017    Instructor, Intermediate Macroeconomics (Spring and Fall respectively)  
                  Evaluation: Available on completion  
2015, 2014    Instructor, Principles of Microeconomics (Spring)  
                  Evaluation: 2.02 (2015) and 2.45 (2014) (Best-1; Worst-5)  
2014        Econometrics and Economic Applications (TA - Undergraduate; Fall)  
2013        Econometrics I (TA - PhD; Fall)  
                  Current Issues in (Financial) Economics (TA - Undergraduate; Spring and Fall)  
                  Financial Economics I (TA - PhD; Spring)  
2012        Economic Statistics and Econometrics (TA - PhD; Fall)

## Technical Skills

Programming    Python, MATLAB, Stata, R, Julia  
                  Python Libraries: Natural Language Toolkit, scikit-learn, Keras, Pandas  
Others             $\LaTeX$ (Typesetting), Gephi (Visuals)

### Technical Skills (Continued)

|                 |   |
|-----------------|---|
| Data Analytics  | Machine Learning Algorithms: Maximum Entropy, Support Vector Machines, Naïve Bayes<br>Sentiment Analysis (Textual Analytics, Natural Language Processing) |
| Data Experience | Social Media Network Data, High Frequency Trading Data  |
| Dynamic Models  | Simulation and Estimation using Simulated Methods of Moments  |
| Econometrics    | Mixed Data Regression with Maximum Likelihood Estimation<br>Generalized Methods of Moments Estimation in Large Panel Dataset                              |

### Conference Presentation and Service

|            |   |
|------------|---|
| 2018       | Midwest Economic Association, Evanston IL (Presenter and Discussant)  |
| 2017       | Western Economic Association, San Diego CA (Presenter and Session Chair)<br>Midwest Economic Association, Cincinnati OH (Presenter and Discussant)                                  |
| 2016       | Southern Economic Association, Washington DC (Presenter, Session Chair and Discussant)<br>Outstanding Graduate Student Award, Department of Economics, Northern Illinois University |
| 2008       | Member, Editorial Committee, Department Newsletter, Tata AIG Life Insurance Company   |
| 2005       | Students Placement Coordinator, ICAI Business School<br>Member, Student Council, ICAI Business School<br>Member, Editorial Committee, School Newsletter, ICAI Business School       |
| 2017, 2015 | Graduate Seminar, Northern Illinois University  |

### Professional Memberships

American Economic Association • Western Economic Association • Midwest Economic Association • Committee on the Status of Women in the Economics Profession (CSWEP)

### Awards and Scholarships

|         |   |
|---------|---|
| 2016    | StockTwits Data Access,<br>Southern Economic Association Travel Grant, Northern Illinois University   |
| 2013    | Outstanding Teaching Assistant Award, Northern Illinois University  |
| 2012    | Outstanding Graduate Student Award, Division of Research, Northern Illinois University<br>Outstanding Graduate Student Award, Department of Economics, Northern Illinois University |
| 2012-15 | Doctoral Scholarship, Northern Illinois University  |
| 2010-12 | Graduate Student Recruitment Scholarship, Northern Illinois University  |
| 2005    | Merit Scholarship, ICAI Business School   |

### Other Employment

|           |   |
|-----------|---|
| 2008 - 09 | Compliance Manager, Tata AIG Life Insurance Company Ltd., Jaipur, India. <ul style="list-style-type: none"><li>• Responsible for regulatory audits, training and approvals (over 100 offices/1000 employees)</li><li>• Involved in the development of a nation-wide risk-assessment plan</li><li>• Received employee recognition award (February 2009)</li></ul>    |
| 2006 - 08 | Service Manager-Priority Banking, Standard Chartered Bank, Jaipur and Delhi, India. <ul style="list-style-type: none"><li>• Responsible for MIS and data analysis of the branch unit and managed its operations</li><li>• Unit cleared all audits with zero comments and achieved/reduced the SLA targets</li></ul>   |
| 2005 - 06 | Management Trainee, State Bank of India (SBI) Life Insurance, Jaipur and Mumbai, India. <ul style="list-style-type: none"><li>• Supervised the team processing insurance business from 800 bank branches</li><li>• Involved in a nation-wide marketing analytics study for customer acquisition of more than 500,000 SBIs equity holders and bond holders</li></ul> |

## References

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## Paper Abstracts

### **Is Collective Real-time Sentiment of Individual Investors Influential?**

I identify investor heterogeneity using importance of investors and incorporate it in the models predicting financial variables using self-revealed sentiment measures. Using the investors on a social media network (StockTwits) as my sample of investors, I use two measures of importance to identify investor heterogeneity: (1) the centrality defined by the in-degree or the number of followers, and (2) the predictive accuracy of the sentiments of the members. These measures are not affected by the market outcomes in the in-sample period and provide a high-frequency stream of sentiments and activity levels of different investor groups. The study uses a five-year social network dataset with 38 million observations accessed under an academic research license. I use natural language processing and multiple text-classification algorithms to extract sentiments and draw predictive conclusions on financial variables for a panel of 2,000 firms over 500 days. The responses of different investor groups to the returns, sentiments, and activity levels are similar to those of the investor groups documented in the literature. I show improvements in the predictive power of sentiments and activity levels when the analysis incorporates investor heterogeneity. I also find that the sentiments of the group with the highest importance have the most substantial impact on abnormal returns, and this effect is also the highest found among the studies using aggregated sentiments to predict returns (Antweiler and Frank (2004) and Da et al. (2015)). The sentiments have a statistically significant but an economically small effect on trading volume and, do not have a substantial impact on the bid-ask spread and overall market volatility measured by VIX.

### **Effects of Risks to Changes in Preferences on Asset Markets and Macroeconomy**

I develop a production-based asset pricing model in which the demand side disturbances are incorporated as shocks to the tradeoff between the present and future utility. The study estimates the structural parameters of the dynamic stochastic general equilibrium model using perturbation, to match the means, variances, covariances and the persistence of financial and macroeconomic series. The estimation reveals significant risks to the inter-temporal substitution of utility and explains the data with a lower risk aversion, an inter-temporal elasticity of substitution greater than one and high adjustment costs. The simulations resolve many empirical observations including: (1) excess volatility puzzle, (2) equity premium and risk-free rate puzzle, (3) persistence of risk premium and consumption growth, (4) volatility of investment growth, labor growth and investment-output ratio, and (5) contemporaneous correlation of consumption growth with risk premia and with investment growth.

### **Does Economies of Scale and Productivity Growth Exist in Indian Banking Industry?**

Following the economic reforms of 1990-91, Indian banking industry has evolved significantly. This paper examines the effects on the economies of scale and the productivity growth of the industry in the deregulated and a more competitive environment. I use a 16-year post-economic reform panel and found that though the industry was relatively resilient to the recent economic crisis, every new economic downturn has an increasing impact. I also find a 56 percent increase in productivity growth and a 27 percent decline in the economies of scale. Though this finding substantiates the argument of positive effects of deregulation, it also highlights the need for additional policy changes by the central bank and the banks. The study also reveals that the ownership of the banks affects the performance results and the group of private banks outperformed all the other groups.