

# Indrajit Mitra

Federal Reserve Bank of Atlanta  
1000 Peachtree Road, NE  
Atlanta, GA 30309

indrajit.mitra@atl.frb.org  
Phone: 617-997-9467

## Education

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MIT Sloan School of Management, Ph.D., Financial Economics, 2015

Princeton University, Ph.D., Theoretical Particle Physics, 2003

Indian Institute of Technology, Kharagpur, India, BSc. Physics 1996, MSc. Physics, 1998.

## Employment

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Federal Reserve Bank of Atlanta, Financial Economist and Assistant Policy Advisor, 2020 – present

Ross School of Business, University of Michigan, Assistant Professor of Finance, 2015 – 2020

MSCI, Barra, Senior Research Associate, 2008 – 2009

Thomson Financial, Senior Quantitative Analyst, 2005 – 2008

University of California, Berkeley, Physics Department, Post-doctoral Fellow, 2003 – 2005

## Research Interests

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Asset Pricing, Macro-finance, Labor, Financial frictions, General equilibrium, Dynamic Contracting.

## Teaching Experience

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Capital Markets and Investment Strategy (BBA Elective). Teaching Evaluations: 4.7/5 (Winter A 2020)

Fixed Income Securities and Markets (BBA Elective). Teaching Evaluations: 4.6/5 (Winter A 2020)

BBA Finance Core. Teaching Evaluations: 4.6/5 (Winter 2018), 4.5/5 (Winter 2017), 4.1/5 (Winter 2016)

Ph.D. Continuous Time (Fin 872). Teaching Evaluations: 5/5 (Winter 2019), 5/5 (Winter 2017)

As a teaching assistant at MIT Sloan: Advanced Corporate Risk Management, International Finance, Investments, Analytics of Finance, Mathematics Boot-camp for Master of Finance students.

## Publications

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**“Time-varying Risk Premium and Unemployment Risk Across Age Groups”** (with Y. Xu), *Review of Financial Studies*, 33 (8), 3624 – 3673.

We show that time-varying risk premium in financial markets can explain a key yet puzzling feature of labor markets: the large differences in unemployment risk faced by workers of different ages over the business cycle. Our search model features a time-varying risk premium and learning about unobserved heterogeneity in worker productivity. The interaction of these two features has large real effects through firms' labor policies. Our model predicts the unemployment risk of young workers relative to prime-age workers to be more sensitive to productivity shocks (a) when market risk premium is high, and (b) in high beta industries. We find empirical support for these predictions.

## Working Papers

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**“Limited Household Risk-Sharing: General Equilibrium Implications for the Term-Structure of Interest Rates”** (with Y. Xu) (New)

We propose a theory of real interest rates in which imperfect insurance of idiosyncratic labor-income risk across individual households is a key determinant of interest rate risk. Our production-based model relates the distribution of labor-income risk in the cross-section of households to firm-hiring decisions. Our model makes two key predictions. First, it predicts a positive risk-premium of long-term bonds while simultaneously matching key macro-economic moments. Second, it predicts that a decline in labor market conditions as reflected by low aggregate employment growth, job-finding rate, and labor market tightness, predict higher bond risk-premium. These predictions are in line with empirical evidence.

**“Moral Hazard, Firm Age, and Slow Recovery with Uncertainty Shocks”**

I provide an explanation for the puzzle of slow recovery of aggregate real variables from financial crises. My model features a representative investor who finances firms with optimal long-term contracts derived from a moral hazard problem. An increase in uncertainty about firm-productivity intensifies the moral hazard problem and implies a decline in the entry of new firms and a persistent investment slump in existing firms, especially young ones. In general equilibrium, large uncertainty shocks result in a financial crisis with a slow recovery. In contrast, recovery from a decline in mean productivity is fast. My model's prediction lines up with empirical findings that associate slow recoveries with an investment slump in young firms.

**“Near-Rational Equilibria in Heterogeneous-Agent Models: A Verification Method ”** (with L. Kogan)

We propose a simulation-based procedure for evaluating approximation accuracy of numerical solutions of general equilibrium models with heterogeneous agents. We measure the approximation accuracy by the magnitude of the welfare loss suffered by the agents as a result of following suboptimal policies. Our procedure allows agents to have knowledge of the future paths of the economy under suitably imposed

costs of such foresight. This method is very general, straightforward to implement, and can be used in conjunction with various solution algorithms. We illustrate our method in two contexts: first, in the incomplete-markets model of Krusell and Smith (1998) and second, in the heterogeneous firm model of Khan and Thomas (2008).

## **Work in Progress**

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“Large shocks in Heterogeneous Agent Economies” (with E. Bayraktar and J. Zhang ).

“High Discounts and Low Fundamental Surplus: An Equivalence Result for Unemployment Fluctuations” (with Y. Xu).

## **Publications in Practitioner Journals**

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“Extreme Risk Analysis”, with L. Goldberg, J. Menchero, and M. Hayes, *J. of Performance Measurement*, Spring 2010, 14 (3).

“The Structure of Hybrid Factor Models”, with J. Menchero, *J. of Investment Management*, Third Quarter, 2008, 6 (3).

## **Conference and Seminar Presentations (\* indicates presentation by co-author)**

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**2020:** AFA (scheduled), BI Annual Workshop on Investment and Production-Based Asset Pricing (scheduled), EFA (scheduled), WFA, U. of Rochester, Federal Reserve Bank of Atlanta, Federal Reserve Bank of New York, Federal Reserve Board, Temple University.

**2019:** SFS Cavalcade, North American Summer Meeting Econometric Society, European Summer Meeting Econometric Society, Labor and Finance conference, NFA, Office of Financial Research, U. of Houston, U. of Maryland, Texas A&M.

**2018:** AFA, North American Summer Meeting Econometric Society, European Summer Meeting Econometric Society, EFA\*, Barcelona GSE Summer Forum\*, Stanford SITE, City U. Hong Kong, HKU, NTU Singapore, Ohio State (Econ.), Tel-Aviv Finance Conference.

**2017:** MFA, U.C. Berkeley (Haas)\*, UCLA (Anderson)\*

**2016:** MFA, WFA.

**2015:** MIT Capital Markets Workshop, Duke University (Fuqua), Imperial College, London School of Economics, U. of Michigan (Ross), Michigan State University, U. of Minnesota (Carlson), U. of Pennsylvania (Wharton).

**2014:** Duke-UNC AP Conference\*, Minnesota Macro – Asset Pricing conference\*, MIT Capital Markets Workshop, SED Annual Meeting\*, Stanford SITE.

## **Professional Service**

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**Referee:** Journal of Financial Economics, Review of Financial Studies, Review of Economic Dynamics, Review of Finance.

**Conference Program Committee:** WFA (2019) Associate Program Chair, WFA (2017, 2018), EFA (2018, 2019), NFA (2018, 2019), MFA (2016).

### **Discussions:**

“Risk Premia and Unemployment Fluctuations”, by J. Borovicka and K. Borovickova, WFA (2020) (scheduled).

“Business Group Spillovers: Evidence from the Golden Quadrilateral in India”, by D. Wolfenzon, and L. Naaraayanan, FIRS (2019).

“Level and Volatility Shocks to Fiscal Policy: Term Structure Implications”, by L. Bretscher, A. Hsu, and A. Tamoni, NFA (2017).

“Government Debt and the Returns to Innovation”, by M. Croce, T. Nguyen, S. Raymond, and L. Schmid, WFA (2017).

“A Reexamination of Contingent Convertibles with Stock Price Triggers” by G. Pennacchi and A. Tchisty, FIRS (2016).

“The Consumption Risk of Bonds and Stocks” by S. Bryzgalova and C. Julliard, MFA (2016).

## **Awards and Fellowships**

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NTT Mitsui Fellowship, 2017 – 2018

MIT Sloan Doctoral Program Fellowship, 2009 – 2014

Joseph Henry Prize, Princeton University, 1998

Princeton University Fellowship in Mathematics and Natural Sciences, 1998

Gold Medal, National Physics Olympiad (India), 1996

## **Personal Information**

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Citizenship: United States

Languages: English

