

DANIELA KOLUSHEVA

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Education:

PhD Candidate, International Economics and Finance, Brandeis University

Dissertation: “**Asset Allocation, Retirement Savings and Economic Disasters**”

Committee Members: Blake LeBaron (Chair), George J. Hall, Jens Hilscher

Expected Completion Date: May 2010

M.S. International Economics and Finance, Brandeis University, 2007

B.A. Economics, B.A. Business Administration, American University in Bulgaria, *summa cum laude*, 2002

Research and Teaching Fields:

- Primary fields: Financial Economics, Macroeconomics, Applied Econometrics
- Secondary fields: International Finance, International Trade

Research Papers:

- “*Lifecycle Portfolio Allocation when Disasters are Possible*” (Job Market Paper)
- “*Out-of-sample Performance of Asset Allocation Strategies*”
- “*Are Heuristics Better than Theory if Market Crashes are Possible?*”

Teaching Experience:

Harvard University

Instructor

- International Monetary Economics (Summer 2008, 2009)
- Introduction to Econometrics (Summer 2007, 2008, 2009)

Teaching Fellow

- International Monetary Economics, for Professors Aryeh Blumberg and Tanseli Savaser (Summer 2006)

Brandeis University

Instructor

- Introduction to Econometrics (Masters) (Spring 2007, 2008, 2009)
- Applications of Econometrics (Masters) (Spring 2007, 2008, 2009)

Teaching Assistant

- Applied Risk Management (Masters), for Professor Robert Reitano (Fall 2009)
- Time Series Econometrics (PhD), for Professor Hong Li (Fall 2007)
- Advanced Macroeconomics (PhD), for Professor George Hall (Fall 2006)
- Introduction to Econometrics, for Professor Hong Li (Fall 2005, Spring 2006)
- Intermediate Macroeconomics, for Professor Rashmi Shankar (Fall 2006)

Research Experience and Other Employment:

Research Assistant for Professor Can Erbil, Brandeis University (Fall 2009)

- Evaluated the impact of relaxing financial constraints through banking sector reform on firm performance in emerging markets

Research Assistant for Professor Laarni Bulan, Brandeis University (Fall 2008)

- Investigated the relationship between firm productivity and CEO pay-for-performance incentives in US companies

Quantitative Research Associate, Advanced Research Center, State Street Global Advisors, Boston, MA (Fall 2007)

- Constructed and tested a factor model of order imbalances for UK stocks, investigated the power of sudden order flow reversals to signal financial turmoil

Quantitative Research Associate, Asset Allocation Group, State Street Global Advisors, Boston, MA (Summer 2007)

- Designed Monte Carlo simulations to assess the risks and returns of target retirement (life-cycle) funds

Management Accounting Department Manager, United Utilities PLC (Sofia Office), United Kingdom (2003-2004)

- Supervised operating and capital budgeting, performed variance analysis, prepared comprehensive management accounting reports and financial forecasts for senior management and shareholders, participated in the preparation and audit of IFRS financial statements

Financial Controller, Sparky GmbH (Sofia Office), Germany (2001-2002)

- Performed internal audit, devised and carried out information systems analysis, established procedures for the costing and pricing of subcontracting projects

Honors, Scholarships, and Fellowships:

- Graduate Fellowship, Brandeis University (2004-2008)
- Best Teaching Assistant Award, Brandeis University (2006)
- Honors for Outstanding Achievement in Economics and in Business Administration, American University in Bulgaria (awarded to the top graduating student in a major) (2002)
- Salutatorian, Class of 2002, American University in Bulgaria (2002)

Professional Organizations:

- American Finance Association (2006-present)
- Association of Chartered Certified Accountants (2001-present)

Computing Skills:

- *Programming and Statistical Packages*: Matlab, Mathematica, STATA, SPSS
- *Databases*: FactSet, CRSP, WRDS, Compustat, Datastream, StreamBase, Global Insight, PSID, SCF

Language Skills:

- Bulgarian (native), English (fluent), German (intermediate), French (intermediate), Russian (basic)

References:

Blake LeBaron (Committee Chair)
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Jens Hilscher
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Aryeh Blumberg
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Research Papers Abstracts:

“Lifecycle Portfolio Allocation when Disasters are Possible” (Job Market Paper)

In contrast to the predictions of life-cycle models with homothetic utility and risky labor income, the majority of US households do not hold any wealth in the stock market. Even among stockholders, the equity share out of net worth is modest. I develop a life-cycle model in which there are rare disasters, calibrated to match the joint empirical distribution of stock market crashes and macroeconomic contractions. The model provides an explanation for the low portfolio share in equity. About half of the decrease in stock holdings can be attributed to the correlation between stock market crashes and depressions. Furthermore, a 6% perceived probability of disaster is sufficient to deter the median household from investing in stocks during its working life. Small differences in expectations lead to dramatically different portfolios, consistent with the heterogeneity of asset allocation in data.

“Out-of-sample Performance of Asset Allocation Strategies”

Using data for the S&P 500 Sector portfolios between 1989 and 2007, I find that sample-based mean-variance portfolios are very unstable and perform poorly out of sample in terms of Sharpe ratios, certainty equivalent returns and turnover. Minimum-variance and Bayes-Stein portfolios, which are supposed to be less susceptible to the estimation error plaguing mean-variance, also fall significantly short of a naive equally-weighted policy. Imposing shortsale or turnover constraints limits the fluctuation of portfolio weights and improves performance considerably. I propose a sophisticated turnover constraint rule which recognizes the path dependency of the optimal portfolio policy and enhances the out-of-sample monthly Sharpe ratio by 13% relative to the best of the other strategies considered in this paper.

“Are Heuristics Better than Theory if Market Crashes are Possible?”

Financial advisers often recommend that investors should place $(100 - \text{age})\%$ of their wealth in a well-diversified equity portfolio. Large mutual funds have responded to this simple heuristic by creating target retirement funds that roll down automatically the proportion of stocks in the portfolio as the investor approaches retirement. I solve a calibrated life-cycle model with stochastic labor income and rare disasters to investigate the welfare costs of constraining portfolio allocations to mimic target retirement funds. When there is a possibility of a stock-market crash accompanied by a macroeconomic contraction, the simple rule-of-thumb outperforms more sophisticated dynamic programming rules that ignore the risk of rare disasters. The annual utility loss of following the heuristic amounts to only 0.2% relative to the optimal allocation. Ignoring disasters can impose a cost as high as 2%.