Applicant:

First Name	**Erfan**
Last Name	**Danesh Jafari**
School	**Rotman School of Management, University of Toronto**
Year	**End of Second Year**
Referee	**Prof. Redouane Elkamhi**

Applicant's Contact Information:

Address	**Rotman School of Management** **105 St. George St.** **Toronto, Ontario, Canada, M5S 3E6**
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Courses:

Course Name	Mark	Note
Mathematical and Statistical Review for PhD Students	Credit	
Microeconomic Theory I	A	The highest mark in the class of 20
Microeconomic Theory II	A+	The only one in the class of 20
Corporate Finance (Theory and Empirics)	A	The highest mark in the class of 6
Financial Theory I	A+	The only one in the class of 4
Market Risk Management	A	The highest mark in the class of 7
Corporate Finance (Theory crash course by Prof. Denis Gromb)	A+	The only one in the class of 7
Macroeconomic Theory	A	
Empirical Methods in Finance	B+	
Econometrics II	A-	
Research Methods in Business	Credit	
Financial Theory II	A+	
Special Topics in Finance	A-	
Topics in Accounting Research		Currently taking

Rotman School of Management
UNIVERSITY OF TORONTO

Rotman

I know Erfan very well. First, he has worked with me as a research assistant for the more than a year. Second, he was currently enrolled in my PhD class on research Topics in Asset Pricing.

In my view Erfan is probably the most talented student currently enrolled in our program. Based on his outstanding performance at the University of Waterloo he was selected from a pool of 120 applicants as one of only three students admitted into our program last year. During his first and second years he excelled in his coursework. At the end of the first year we ask our students to take the comprehensive exam in microeconomics in the Economics Department where our students are competing with students majoring in economics. Erfan was to my knowledge the only student who received a "Pass with Distinction" on his comprehensive exam. This result provides incredibly strong evidence on his academic prospects.

Erfan was enrolled in my PhD course on Research Topics in Asset Pricing. Erfan clearly distinguished himself in the class by thinking deeply about the material covered and by asking penetrating questions on the papers presented. In most of my lectures he will start by asking a question on the material covered during the previous week. His questions show clearly that he has spent a great deal of time in-between classes thinking deeply about the material covered and trying hard to identify gaps in the literature worthy of further scrutiny.

In his research proposal Erfan has outlined his choice of dissertation topic. Academic finance has traditionally been split into two camps: A theory camp where new theoretical models are developed (but never estimated and tested) and an empirical camp which estimates and tests models but rarely contribute to the development of new theories. Erfan proposes an integrated approach which I think has many appealing features. There is much evidence in the finance literature suggesting that the ranking of competing models depends on their intended use: No single model performs the best at all tasks. This finding in turn suggests that model building and implementation should not be separated into two different tasks. They should be integrated so as to generate optimal results when applying the model.

I give Erfan my highest recommendation.

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Mohammad Erfan Danesh Jafari

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Research Interests: Asset Pricing

Education

Rotman School of Management, University of Toronto, Toronto, Canada

PhD in Finance, expected convocation Sept 2015

University of Waterloo, Waterloo, Canada

Master of Arts in Economics, June 2009

- Total GPA: 90.5/100

Master of Science in Electrical and Computer Engineering, June 2008

- Thesis topic: Adaptive Lattice Reduction in MIMO Systems
- Advisor: Professor M. O. Damen
- Total GPA: 88/100

Sharif University of Technology, Tehran, Iran

Bachelor of Science in Electrical and Computer Engineering, Sept 2005

- Thesis topic: Voice Signal Noise Cancelation Using Kallman Filter
- Advisor: Prof. M. Babaizadeh
- Total GPA: 16.86/20

Teaching Assistance Experience

University of Toronto, Toronto, Canada

RSM 1232, Finance II	**Jan 2011 to April 2011**

University of Waterloo, Waterloo, Canada

ECON 321, Introduction to Econometrics	**Jan 2009 to April 2009**
ECON 301, Microeconomics Theory II	**Sept 2008 to Dec 2008**
ECE 222, Digital Computers	**Sept 2007 to Dec 2007**
ECE 318, Communication Systems	**Sept 2006 to Dec 2006**

Sharif University of Technology, Tehran, Iran

Introduction to Computer Programming	**Sept 2002 to Jan 2003**

Honors

University of Toronto, Toronto, Canada

Passed the Core Micro Exam with distinction (The only one among 15 finance and economics major students)

University of Toronto Fellowship (Sept 2010-Current)

University of Toronto Tuition Fellowship (Sept 2010-Current)

University of Waterloo, Waterloo, Canada

UW/Faculty of Arts Graduate Scholarship (Sept 2008 to Apr 2009)

Arts Graduate Experience Award (Sept 2008 to Apr 2009)

International Master Student Award (May 2006 to Apr 2009)

Sharif University of Technology, Tehran, Iran

Gifted student, exempted from graduate studies entrance exam (2005)

Pre-University, Tehran, Iran

Ranked 44^{th} among 400000 participants in the national university entrance exam (2001)

Silver medal of National Informatics Olympiad of Iran (2000)

Publications

M. E. Danesh Jafari, H. Najafi, M. O. Damen, "Adaptive Lattice Reduction in MIMO Systems", proceedings of International Symposium on Information Theory and its Applications, Dec 7-10, Auckland, New Zealand, 2008

H. Najafi, M. E. Danesh Jafari, M. O. Damen, "Adaptive Soft-Output Detection in MIMO Systems", proceedings of Forty-Sixth Annual Allerton Conference on Communication, Control, and Computing, Sep 23-26, Monticello, Illinois, 2008

H. Najafi, M. E. Danesh Jafari, M. O. Damen, "Robustness of Lattice Reduction Over Correlated Fading Channels", submitted to IEEE Transactions on Communications

Editor of the book "ABCs of Informatics and Mathematics Olympiad" written by Morteza Mohammadabadi which is the first and the only reference book for National Informatics and Mathematics Olympiad Applicants published by Young Scholars Club

Work Experience

University of Toronto

Research Assistant **Feb 2011 to Current**

- Editing the second edition of Elements of Financial Risk Management by Peter Christoffersen
- Preparing the solutions to the exercises in Elements of Financial Risk Management

Oxford Seminars

GMAT Instructor **Aug 2010 to Current**

- Conducting intensive weekend GMAT seminars for classes of 30-40 students
- Preparing teaching material to keep the seminars up to date

Google

Page Quality Rater and Moderator **Sept 2008 to June 2009**

- Rating google search results based on relevancy of the page
- Moderating the discussions and disputes among other raters

University of Waterloo

Research Assistant **May 2006 to Dec 2008**

- Processing high frequency stock market data and extracting the required data for further research (Sept 2008 to Dec 2008)
- Developing a new algorithm to improve the computational complexity of sequential decoders (May 2006 to Aug 2008)

Mobile Company of Iran (MCI)

Consultant on Network Optimization **Sept 2005 to Apr 2006**

- Performing network optimization process in certain regions of Tehran

EXTRA CURRICULAR ACTIVITIES

Rotman School of Management PhD Association President (Sept 2011 to Current)

TECHNICAL SKILLS

MATLAB expertise

Statistical softwares: STATA, MATLAB

Programming languages: C, C++, Pascal, ASP, PHP, MEX, and SQL

Applications: LaTeX, Microsoft Office, and other common productivity packages for Windows, OS X, and Linux platforms

My name is Erfan Danesh Jafari and I am a PhD student of finance at Rotman School of Management, University of Toronto. I hold an MA in Economics, and a MSc in Electrical Engineering from University of Waterloo, and a BSc in Electrical Engineering form Sharif University of Technology. Over the past two years, I have taken several PhD-level courses in the fields of Microeconomics, Macroeconomics, Econometrics, Asset Pricing, Corporate Finance, and etc. A complete list of these courses is duly enclosed. My broad interest lies in Corporate Finance and I'm more specifically interested in capital structure decisions. The following essay is to support my application to attend the 2012 NBER Entrepreneurship Research Boot Camp. The first part of my essay will give a brief overview of my current research and the second section will be devoted to explaining why I think this boot camp would be beneficial to my research career.

Brief Overview of My Current Research: Capital structure decisions are ones of outmost importance in the lifespan of a firm. These decisions are very closely related to the value of the firm's corporate debt perceived by the investors. Leland (1994) is a seminal work that examines corporate debt values and optimal capital structure in a unified analytical framework. In a static context, it derives closed-form results relating the value of infinite maturity debt and optimal capital structure to firm risk, bankruptcy costs and other parameters. The assumptions made in that work are rather strong and later researchers have tackled these assumptions one-by-one. The first assumption that was relaxed was the assumption of the firm being restricted to using infinite maturity debt. Leland and Toft (1996) found the optimal capital structure as well as the optimal maturity of debt in the presence of agency costs. Goldstein, Ju, and Leland (2001) relaxed the static capital structure decision assumption, and found the optimal capital structure of a firm restricted to using infinite maturity debt in a dynamic framework. He and Xiong (2012) introduced liquidity shocks to the model and found the optimal maturity of debt and the optimal capital structure in a static framework.

The question yet unanswered, perhaps due to its mathematical challenges, is the question of joint determination of optimal debt level and maturity in a dynamic framework. Leland and Toft (1996) and He and Xiong (2012) show that the optimal capital structure (both leverage ratio and debt maturity) depends on the level of agency conflicts such as asset substitution and bond market illiquidity. In reality, the level of these agency conflicts varies over time and therefore the optimal capital structure should also vary accordingly. Barclay and Smith (1995) and Guedes and Opler (1996) find that indeed firms vary their corporate debt maturity and leverage ratio over time. These findings further asserts the need for a theoretical model for endogenous and joint determination of optimal corporate debt maturity in a dynamic framework. In our model, the firms readjust their capital structure at discrete points in time. This takes into account the fact that issuing or repurchasing debt is costly.

This is similar to the dynamic framework introduced in Goldstein, Ju, and Leland (2001). Our model is different from theirs in that it takes agency costs into account. The focus of our paper is on agency costs between debt holders and shareholders caused by the illiquidity of the corporate bond market. In the presence of bond market illiquidity the infinite maturity debt is no longer optimal and the leverage ratio and debt maturity should be jointly determined at every restructuring point. As a next step we plan to add other agency conflicts such as asset substitution and debt overhang to our model.

Why the NBER Entrepreneurship Research Boot Camp? To be a successful researcher in the entrepreneurial corporate finance field one needs to have extensive institutional knowledge. Since privately held firms have substantial difficulties in obtaining the financing through bank debt and corporate bonds, they rely on venture capitals and private equities. Since financing decisions are ones of outmost importance in the financial wellbeing of any firm, this mandates a researcher active in the entrepreneurial corporate finance field to be well acquainted with venture capitals and private equities and their interactions with privately held firms. Private equity funds often have complex structures and the legal issues involved are frequently arcane. I have never had exposure to private equities in any of my courses and unfortunately Rotman does not offer any doctoral courses in Entrepreneurship. This boot camp would be an ideal place for me to learn about cutting-edge ideas, methods, data, theory, and empirical findings from the leaders in the field. The prestigious NBER Entrepreneurship Research Boot Camp is the best place to learn about all the aspects of the decisions made by startup firms including the financing decisions that I'm more interested in.

I have shown my research abilities through my published peer reviewed papers in my previous existence as an engineer. My strong Mathematics and Economics background has given me the opportunity to excel in the theoretical aspect of research in the finance field. By looking at the preliminary schedule of the boot camp, and by discussions with previous participants, I'm positive that attending the ERBC will provide me with the opportunity to expand my research horizon by acquiring the institutional knowledge required to research in entrepreneurial finance field. I am highly interested in this area and I believe that with my strong background in math, and economics, I can make a distinctive contribution to the entrepreneurship economics literature. I am thoroughly committed to reading all the papers prior to the boot camp and doing my best during the program.

Erfan Danesh Jafari
PhD Candidate of Finance
Rotman School of Management
University of Toronto