

# **Prof. Fotios C. Harmantzis**

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Dr. Fotios Harmantzis is a member of the Investment Management Research team at FX Concepts, one of the world's leading private currency manager. A scientist and engineer by training, he is responsible for research and development of systematic trading models for the firm's multi-asset portfolios. Besides CTA and global macro, his prior hedge fund experience is in Long/Short (Market Neutral) U.S. equities (fundamentals driven) and Long/Short U.S. credit (capital structure arbitrage). Dr. Harmantzis has extensive research experience in specific areas of finance, operations research and computer science & engineering. His current research interests are in volatility, equity and credit modeling, financial econometrics, real options, and risk management. His works have been published in several academic journals and he maintains strong ties with academia.

His degrees include a Ph.D. in Electrical Engineering from the University of Toronto, a Finance MBA from the Rotman School (U. Toronto) & Stern (NYU), and a Master's in Operations Research from the University of Pennsylvania.

## **I Education**

- Ph.D., University of Toronto, Canada, 2002 (Electrical & Computer Engineering)
- M.B.A., University of Toronto/New York University, 2003 (Finance)
- M.S.E., University of Pennsylvania, U.S.A., 1998 (Operations Research)
- M.S., University of Crete, Greece, 1997 (Computer Science)
- B.Sc., University of Crete, Greece, 1995 (Computer Science)

## **II Professional Employment**

### *B. Industry*

2006-Now	Investment Research Analyst, FX Concepts, USA
2004-Now	Director of Telecom & Media, Real Options Group, USA
2004-2006	Quantitative Equity Research & Portfolio Analyst, David. J. Greene & Co., USA
2002-2003	Consultant, Etolian Capital Group, USA
2001-2002	Senior Analyst, Bank of Montreal, Risk Management Group, Canada
Summer 1998	Summer Intern, Bell Communications Research, Mathematical Sciences Research Center, USA
1992-1997	Research Associate, Foundation for Research and Technology - Hellas, Institute of Computer Science, Greece

#### A. Academic

2007-Now	Research Associate, EDHEC Risk and Asset Management Research Center, EDHEC Business School, France
2002-Now	Assistant Professor, School of Management, Stevens Institute of Technology, USA
1998-2002	Teaching and Research Fellow, University of Toronto, Canada

### III Research Interests

- Alternative Investments: Commodities/Currencies, Global Macro, Volatility, Long/Short Equity, Long/Short Credit, Technology Investing
- Investment Decisions Making: Algorithmic (Programs) Trading , Quantitative Arbitrage, Portfolio Management, Risk Management
- Investments Theory: Investments under Uncertainty, Real Options, Rare-Events (Catastrophic Risk)

### IV Teaching Specialties

- Finance & Financial Engineering: *Derivatives Pricing and Hedging, Portfolio Theory and Risk Management, Real Options, Computational Methods in Finance*
- Operations Research: *Probability and Stochastic Processes, Discrete-Event Simulation and Modeling, Economics of Networks*

### V Honors

2006	Research Grants, Networks, Electronic Commerce, and Telecommunications (NET) Institute, New York University
2004-2005	Outstanding Research Faculty Award, Stevens Institute of Technology
2004	Research Grant, Center for Technology Management Research, Stevens Institute of Technology
2003	Research Grant, Wireless Center Security Center, Stevens Institute of Technology
2002	Outreach Grant from International House, New York City
2001	Mobility Fund, Mathematics of Information Technology and Complex Systems, Government of Canada
2001-2002	Edward S. Rogers Sr. Scholarship, ECE Dept., University of Toronto
2000-2002	Ontario Graduate Scholarship, Government of Canada
1998-2001	Connaught Scholarship, University of Toronto
1997-1998	Teaching Fellowship, University of Pennsylvania

## VI Professional Associations

- American Finance Association (AFA)
- Financial Management Association (FMA)
- International Association of Financial Engineers (IAFE)
- Society of Quantitative Analysts (SQA)
- Institute of Electrical and Electronics Engineers (IEEE)
- Institute for Operations Research and the Management Sciences (INFORMS)
- International Telecommunications Society (ITS)

## VII Publications

### Journal Publications

#### In Press

1. Harmantzis, F. and V.P. Tanguturi, "Investment decisions in wireless industry applying real options", Forthcoming in *Journal of Telecommunications Policy*.
2. Tanguturi, V.P. and F. Harmantzis, "Broadband spread in India: Strategic investment opportunities", Forthcoming in *Journal of Technology in Society*.
3. Yaiparaj, S., F. Harmantzis, and V. Gunasekaran, "On the economics of GPRS Networks with Wi-Fi Integration", Forthcoming in *European Journal of Operations Research*.
4. Rahman, M. and F. Harmantzis, "Gateway Performance for Network Controlled WLAN IP Mobility", Forthcoming in *International Journal of Communication Systems*.

#### Finance

5. Harmantzis, F., L. Miao, and Y. Chien (2006), "Empirical Study of Value-at-Risk and Expected Shortfall Models with Heavy Tails", *Journal of Risk Finance*. Vol. 7, Issue 2, pp. 117-135.
6. Goldman, I., P. Dubovski, and F. Harmantzis (2005), "A Markov Model for Stocks with Small and Medium Market Capitalization", *Financial Letters*, Volume 3, Issue 4.

#### Technology

7. Gunasekaran, V. and F. Harmantzis (2007), "Emerging wireless technologies for developing countries", *Journal of Technology in Society*, Vol. 26, Issue 1, pp. 23-42.
8. Ramirez, W., F. Harmantzis, and V.P. Tanguturi (2007), "Valuing wireless data services solutions for corporate clients using real options", *International Journal of Mobile Communications*, Vol. 5, No. 3, pp. 259-280.
9. Rahman, M. and F. Harmantzis (2007), "Low-latency handoff inter-WLAN IP mobility with broadband network control", *Computer Communications*, Vol. 30, No. 4, pp. 750-766.
10. Gunasekaran, V. and F. Harmantzis (2006), "Financial assessment of citywide WiFi/WiMAX deployment", *Communications and Strategy*, No. 63, 3rd Quarter, pp. 131-153.
11. Tanguturi, V.P. and F. Harmantzis (2006), "Migration to 3G wireless broadband internet and real options: The case of an operator in India", *Journal of Telecommunications Policy*, Vol. 30, No. 7, pp. 400-419.
12. Yaiparaj, S. and F. Harmantzis (2006), "An auction-based pricing model for performance and revenue optimization in mobile data services", *Journal of Revenue and Pricing Management*, Vol. 5, No. 1, pp. 32-44.
13. Rahman, M. and F. Harmantzis (2006), "Broadband-facilitated inter-WLAN mobility architecture", *International Journal of Wireless Information Networks*, Vol. 13, No. 3, pp. 173-192.
14. Laskin, N., I. Lambadaris, F. Harmantzis, and M. Devetsikiotis (2002), "Fractional Levy motion and its application to network traffic modeling", *Journal of Computer Networks*, Vol. 40, No. 3, pp. 363-375.

## Working Papers/Under Review

1. Athwal, B., F. Harmantzis, and V. P. Tanguturi, "Valuing hosted VoIP Services in the enterprise market: case application using real options"
2. Zghaibeh, M. and F. Harmantzis, "An "S-String" Scheme for Business-Oriented Peer-to-Peer Networks"
3. Yaipairoj, S. and F. Harmantzis, "Low-cost UMTS networks via pricing"
4. Gunasekaran, V. and F. Harmantzis, "Towards a Wi-Fi Ecosystem"

## Book Chapters

1. Gunasekaran, V. and F. Harmantzis, "Applications of Wi-Fi/WiMAX Technologies in the Emerging World", Chapter 8 in *WiMAX Applications*, Edited by Dr. Ilyas and Dr. Ahsoin, Taylor and Francis, 2008.

## Magazines

1. F. Harmantzis, "Operational Risk Management in Financial Services". *ORMS Today*, 30(1), 2003.

## Refereed Conference Proceedings

1. Zghaibeh, M. and F. Harmantzis (2006), "A Lottery-based Pricing Scheme for Peer-to-Peer Networks". *Proc. 2006 IEEE Inter. Conf. Communications (ICC)*, pp.903-908 .
2. Yaipairoj, S. and F. Harmantzis (2006), "Auction-based Congestion Pricing for Wireless Data Services". *Proc. 2006 IEEE Inter. Conf. Communications (ICC)*, pp. 1059-1064.
3. Harmantzis, F. and D. Hatzinakos (2005), "Heavy Network Traffic Modeling and Simulation using Stable FARIMA Processes". *Proc. 19<sup>th</sup> International Teletraffic Congress (ITC-19)*.
4. Yaipairoj, S., Harmantzis, F. and V. Gunasekaran (2005), "A Pricing Model of GPRS Networks with Wi-Fi Integration for "Heavy" Data Users". *Proc. 2<sup>nd</sup> IEEE Int. Conf. E-Business and Telecom. Networks (ICETE)*.
5. Yaipairoj, S. and F. Harmantzis (2005), "Enhanced Data Services in GPRS Networks via Auction-Based Prices for Admission". *Proc. Technical Committee on Communication Systems (TC 6) IFIP Networking Conf.*, pp. 1445-1448.
6. Yaipairoj, S. and F. Harmantzis (2005), "Dynamic Pricing with Alternatives for Data Services in Mobile Networks". *Proc. IASTED International Conference on Networks and Communications Systems (NCS)*, April 2005.
7. Gunasekaran, V. and F. Harmantzis (2005), "Affordable Infrastructure for Deploying WiMAX Systems". *Proc. IEEE 61<sup>st</sup> IEEE Semiannual Vehicular Technology Conference (VTC)*, pp. 2979-2983.
8. Gunasekaran, V. and F. Harmantzis (2005), "Remodeling Hotspot Economics with Voice over Wi-Fi". *Proc. IFIP/IEEE International Symposium on Integrated Network Management (IM)*, no.1, pp. 1101-1104.
9. Rahman, M., Harmantzis, F. and V. Gunasekaran (2005), "QoS for inter-WLAN IP Mobility with High Speed Accessed Network Server". *Proc. 2005 IEEE Wireless Comm. Networking Conf. (WCNC)*, pp. 1564-1569.
10. Harmantzis, F. and M. Malek (2004), "Security Risk Analysis and Evaluation". *Proc. 2004 IEEE Inter. Conf. Communications (ICC)*, pp. 1897-1901.
11. Malek, M. and F. Harmantzis (2004), "Data Mining Techniques for Security of Web Services". *Proc. 1<sup>st</sup> Int. Conf. E-Business and Telecom. Networks (ICETE)*, pp. 61-67.
12. Yaipairoj, S. and F. Harmantzis (2004), "A Dynamic Pricing Model for Data Services in GPRS Networks". *Proc. 2004 IEEE Workshop on Adaptive Wireless Networks (AWiN 2004) (in conjunction with GLOBECOM 2004)*, pp. 453-458.
13. Yaipairoj, S. and F. Harmantzis (2004), "Dynamic Pricing with "Alternatives" for Mobile Networks". *Proc. 2004 IEEE Wireless Comm. Networking Conf. (WCNC)*, pp. 671-676.
14. Yaipairoj, S. and F. Harmantzis (2004), "Priority Telephony System with Pricing Alternatives". *Proc. 13<sup>th</sup> Intern. Conf. Telecommunications (ICT)*, pp. 183-191.

15. Rahman, M. and F. Harmantzis (2004), "IP Mobility with High Speed Access and Network Intelligence". *Proc. 2004 IEEE Wireless Comm. Networking Conf. (WCNC)*, pp. 2159-2164.
16. Rahman, M. and F. Harmantzis (2004), "IEEE 802.11 Inter-WLAN Mobility Control with Broadband supported Distribution System integrating WLAN and WAN", *Proc. 13<sup>th</sup> Intern. Conf. Telecommunications (ICT)*, pp. 848-857.
17. Harmantzis, F., D. Hatzinakos and I. Lambadaris (2003), "Effective Bandwidths and Tail Probabilities for Gaussian and Self-Similar Traffic". *Proc. 2003 IEEE Inter. Conf. Communications (ICC)*, pp. 1515-1520.
18. Harmantzis, F., D. Hatzinakos and I. Katzela (2001), "Tail Probabilities for Multiplexing of Fractional alpha-Stable Broadband Traffic". *Proc. 2001 IEEE Inter. Conf. Communications (ICC)*, pp. 2665-2669.
19. Laskin, N., I. Lambadaris, F. Harmantzis and M. Devetsikiotis (2001), "Fractional Levy Motion and its Application to Network Traffic Modeling". *Proc. 17<sup>th</sup> International Teletraffic Congress (ITC-17)*, pp. 457-470.
20. Harmantzis, F., D. Hatzinakos and I. Katzela (2001), "Shaping and Policing of Fractal alpha-Stable Broadband Traffic". *Proc. 2001 Canadian Conf. on Elec. and Comp. Engin. (CCECE)*, pp. 697-702.

## **Conference Presentations**

### **Finance, Economics**

*Financial Management Association International (FMA) European Conference* (Stockholm, 2006)  
*World Congress Bachelier Finance Society* (Tokyo, 2006)  
*SIAM Conference on Financial Mathematics and Engineering (FM&E)* (Boston, 2006)  
*Annual Real Options Conference* (New York (2006), Paris (2005))  
*Quantitative Methods in Finance (QMF)* (Sydney (2005))  
*SAMSI Workshop on Financial Mathematics, Statistics and Econometrics* (Research Triangle Park, 2005)  
*ABER Global Conference on Business and Economics (GCBE)* (Oxford, 2005)  
*Symposium on Advances in Financial Forecasting (AFF)* (Loutraki, 2005)  
*Annual Conference of the Northeast Business & Economics Association (NBEA)* (New York, 2004)

### **Engineering & Business: Telecom & Networks**

*International Telecommunications Society (ITS) Biennial Conference* (Beijing (2006), Berlin (2004))  
*International Telecommunications Society (ITS) European Regional Conference* (Porto, 2005)  
*International Conference on Telecommunication Systems-Modeling and Analysis* (Penn State, 2006)  
*World Wireless Conference (WCC)* (SF Bay Area, 2005)  
*IEEE/IFIP Network Operations and Management Symposium (NOMS)* (Seoul, 2004)  
*New York Metro Area Networking Workshop (NYMAN)* (New York, 2004)  
*IEEE International Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD)* (New York, 2002)  
*International Web Caching Workshop (IWCW)* (Boulder, 1997)  
*IEE Colloquium on Charging ATM Networks* (London, 1996)

### **Operations Research**

*INFORMS Annual Meeting* (San Francisco (2005), Denver (2004), San Jose (2002), Miami (2001))  
*INFORMS Applied Probability Conference* (Ottawa (2005), Beijing(2004))  
*INFORMS Telecommunications Conference* (Dallas (2006), Boca Raton (2004, 2000))  
*INFORMS Marketing Science Conference* (Pittsburgh, 2006)  
*IAMOT Conference (Beijing, 2005)*  
*EURO Conference on Operations Research* (Rhodes, 2004)  
*EURO/INFORMS* (Istanbul, 2003)  
*Winter Simulation Conference* (Orlando, 2000)

## Technical Reports

1. Anagnostakis, K., F. Harmantzis, S. Ioannidis and M. Zghaibeh (2006), "On the Impact of Practical P2P Incentive Mechanisms on User Behavior," *NET Institute, Stern School of Business, New York University*, Working Paper #06-14.
2. Harmantzis, F., L. Trigeorgis and V.P. Tangaturi (2006), "Flexible Investment Decisions in the Telecommunications Industry: Case Applications using Real Options," *NET Institute, Stern School of Business, New York University*, Working Paper #06-06.
3. Tangaturi, V.P. and F. Harmantzis (2006), "Migration to 3G Wireless Broadband internet and Real Options: The Case of an Operator in India", *Deutsche Bank Research*.