



Rensselaer



3rd QUANTITATIVE FINANCE WORKSHOP (QFW)

December 14th (Wed) to 17th (Sat), 2011 at IDRBT, Hyderabad, INDIA

JOINTLY CONDUCTED BY

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RPI, NEW YORK, USA



IDRBT, HYDERABAD

Indira Gandhi Institute of Development Research (IGIDR), Mumbai, INDIA; Indian Institute of Technology, Kanpur (IIT Kanpur), INDIA, Rensselaer Polytechnic Institute, USA and Institute for Development and Research in Banking Technology (IDRBT), Hyderabad, INDIA are jointly conducting the Third **Quantitative Finance Workshop (QFW)** at IDRBT, Hyderabad, INDIA for four days during December 14 to 17, 2011.

Information about the Quantitative Finance Workshop:

The 3rd *Quantitative Finance Workshop* is one of the collaborative activities of these four Institutes, and this workshop in the area of *Quantitative Finance* is carefully designed to guide the participants along the difficult terrain of Financial Mathematics to support their exploration and learning of the various theories of quantitative and mathematical finance, as well as obtain good hands-on learning experience with different tools used in finance. The workshop will explore different introductory aspects of quantitative finance, like (i) Asset Pricing Model (CAPM, APT, etc.); (ii) Derivative Pricing; (iii) Mutual Funds; (iv) Investment performance measures and Valuation; (v) Risk Management and (vi) Asset Liability Management. Emphasis will be on different quantitative and mathematical modelling techniques like, (i) Statistical estimation; (ii) Optimization; (ii) Time series

analysis; (iv) Stochastic Calculus; (v) Fuzzy Programming and Neural Networks as applicable to Quantitative Finance. The aim is to give a thorough and in-depth understanding of models and quantitative techniques to support problem solving in the exciting area of finance, to different groups of participants, namely the people from academia and those from finance related industries, like banks, financial institutions, investment firms etc. The instructors of the workshop are reputed faculty members from IGIDR, IIT Kanpur, RPI and IDRBT, who along with able resource persons from academia and industry, will deliver the material through exciting class lectures, innovative and up to date course materials, and hands on tutorials.

Who can attend this workshop:

This workshop is specifically meant for dynamic professionals from Banks and Financial Institutions, Insurance and Investment industry, academically oriented post graduate and doctoral students, business faculty members who have an aptitude and interest in Financial Economics, Financial Engineering & Management, Statistics and Financial Mathematics. People in academia and industry or anyone keen to gain knowledge of quantitative finance and its applications are strongly encouraged to apply for this exclusive and unique workshop. With an excellent blend of theory as well as practical examples and a comprehensive course curriculum schedule, this workshop will undoubtedly be a very good learning experience for the participants. In all, around 50~60 participants will be selected from across the country, based on their vita, work experience, as well as reference letters (where applicable). The workshop built on the expertise of highly distinguished faculty members from the four collaborating institutions, as well as other stalwarts from academia and industry, is an excellent opportunity for a superior learning experience. The applicant is advised that although there are no pre-requisites for this workshop, some elementary knowledge of mathematics and statistics will be helpful in keeping pace with the material delivered in the workshop.

How to Apply

- 1 Please check for the Application Form and Workshop details on IDRBT Website: <http://www.idrbt.ac.in/> or at the collaborative institutions corresponding links at <http://www.igidr.ac.in>, <http://www.iitk.ac.in>, <http://www.iitk.ac.in/ime> and <http://lallyschool.rpi.edu>

2 For further information and any queries, you are welcome and also advised to get in touch with

(a) Dr.Subrata Sarkar

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or

(b) Dr.Raghu Nandan Sengupta

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or

(d) Dr.V. N. Sastry

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3 Contact at IDRBT, Hyderabad, INDIA, which is the venue for the workshop

Dr.V. N. Sastry, Coordinator (QFW)

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Information about the Institutes and Instructors:

Indira Gandhi Institute of Development Research (IGIDR), Mumbai, INDIA

Indira Gandhi Institute of Development Research (IGIDR) which came into existence in 1987 is a very well known autonomous research body located in Mumbai which was founded by the Reserve Bank of India (RBI). IGIDR is one of the few centers of higher learning in India that focuses on academic training and research from an interdisciplinary perspective. It is a deemed university and offers a Masters program in Economics and an integrated M.Phil/Ph.D. program in Development Studies. It started its Ph.D. program in 1990 and extended its curriculum to include M.Phil in 1996, followed by Masters in Economics in 2003. IGIDR encourages students from a variety of disciplines like Economics, Mathematics, Science and Engineering and the institute also brings together researchers from diverse specializations to provide a holistic analyses of contemporary issues in areas like climate change, law and economics, money and finance, etc.

IGIDR hosts several annual events such as the Annual Conference on Money and Finance, European Union sponsored Law and Economics Training Workshop, etc, and is also open to students from all around the world through various outreach activities. The Institute routinely carries out research funded by various international organizations like World Bank, USAID, etc. IGIDR is well known for its biennial India Development Report that surveys contemporary economic issues.

The campus is as good as one can get in a sprawling metropolis such as Mumbai. It is surrounded by verdant green all around and birds chirping and is yet proximate to the financial center of India. IGIDR offers the best of both worlds. Located on a 14-acre hillock in Goregaon (East) and adjacent to the serene Borivli National Park, it is a 20 minutes drive from the airport. The residential campus, includes academic blocks with faculty and student offices, several seminar rooms equipped with the state-of-the-art interactive presentation technology, a 500 seat auditorium, a cafeteria and residential blocks for faculty, staff and students, including a fully equipped Guest House. The recreational facilities include a tennis court, jogger's path, swimming pool, table tennis, badminton court and a gymnasium. Academic life at IGIDR is interspersed with vibrant cultural activities that reflect its national character.

Instructors

Dr.Subrata Sarkar: Subrata Sarkar is Professor at the Indira Gandhi Institute of Development Research, Mumbai, India. He received his Ph.D in Economics, with specialization in Econometrics and Industrial Organization, from the University of Southern California. His research interests are in the areas of corporate governance, corporate finance, risk and default modeling, and productivity and efficiency studies. He has been a visiting faculty at the University of Sydney, University of Southern California, ISB Hyderabad. His research has been published in reputed journals like the Journal of Economics and Management Strategy; Journal of Money, Credit and Banking; Review of International Finance; Journal of Accounting, Auditing and Finance; Journal of Comparative Economics. He is one of the founding editors of the journal Macroeconomics and Finance in Emerging Market Economies published by Routledge.

Indian Institute of Technology Kanpur (IIT Kanpur), INDIA

Indian Institute of Technology, Kanpur (IIT Kanpur) is one of the premier technical institutions established in 1959 by the Government of India with the collaboration of a consortium of nine universities from the USA. From the day of its inception, the aim of the institute has been to provide meaningful education, to conduct original research of the highest standard and to provide leadership for the growth of this country. At present IIT Kanpur has a sprawling residential campus of 1055 acres with about 2500 undergraduate and 1500 postgraduate students, 330 faculty members and more than 1500 supporting staff. The institute has a well designed faculty building, fully equipped classrooms, seminar and conference rooms, computer science building, biological sciences building, residential quarters for the faculty & staff members, hostels for the students, an excellent library, etc. The presence of lush green trees, manicured lawns, wide roads make the campus picturesque and well endowed. IIT Kanpur has always strived to develop itself into an institution of excellence in education and research in consonance with the contemporary and future needs of India. The institute has made special efforts to recruit talented faculty on a worldwide basis and admits students in the different programs from all over the country by a very careful selection process. In addition to offering formal undergraduate, post-graduate and Ph.D. programs, the institute has also been involved in continuing education and research & development in areas of value to both the industry and the society. The vision of the institute is to emerge as an international centre of excellence in all facets of technical and management

education by being a melting pot of academia, industry and research, but at the same time being rooted in Indian ethos and societal values.

The Industrial and Management Engineering (IME) department at IIT Kanpur started in 1974. It has three separate programs, which are Ph.D, M.Tech and MBA. For the Ph.D. and M.Tech programs the main thrust areas of research and teaching are in Operations Research (OR), Operations Management (OM), Flexible Manufacturing Systems (FMS), etc. In 2000 the IME department started the MBA program, which, under the aegis of IIT Kanpur, has fast blossomed into a successful program where the emphasis is always on building the quantitative skills of the students along with their knowledge in other areas of management. IME has a very vibrant faculty, who are deeply dedicated into research and teaching. The vision of the department is to define itself as a leading management institute of the twenty-first century so that it is able to educate the leaders of a technologically driven world for the coming decades. For that, the IME department is geared up to impart the best education needed to the students as well as to the industry in such a way that synergy is attained within the requirements of industry, government and the core beliefs of IIT Kanpur.

Instructor

- 1 **Dr.Raghu N. Sengupta**: Raghu N. Sengupta completed his B.E from BIT, Mesra and his FPM (Ph.D.) from IIM Calcutta with a specialization in OM and Finance. His research interests are in the areas of Sequential Analysis, Statistical & Mathematical Reliability, Financial Risk Analysis and use of Meta-heuristic techniques for optimization. He research work has been published in journals like Metrika, Sequential Analysis, Statistics, Journal of Applied Statistics, European Journal of Operational Research, etc. At IIT Kanpur he is an Associate Professor and teaches Probability & Statistics, Financial Risks Analysis, Portfolio Management and Derivatives, Stochastic Processes and their Applications, Management Decision Analysis. He is also the recipient of the prestigious Indo-US Science and Technology Forum (IUSSTF) Fellowship 2008 and was senior research associate at ORFE department at Princeton University, USA.

Rensselaer Polytechnic Institute (RPI), USA:

Rensselaer Polytechnic Institute, founded in 1824 in Troy, New York (USA), is the nation's oldest technological university. The university offers bachelors, masters, and doctoral degrees in engineering, the sciences, information technology, architecture, management, and the humanities & social sciences. The Institute's programs serve undergraduates, graduate students, and working professionals around the world. Rensselaer faculty members are

known for pre-eminence in research conducted in a wide range of fields, with particular emphasis in biotechnology, nanotechnology, information technology, and the media arts and technology. The institute is well known for its success in the transfer of technology from the laboratory to the marketplace so that new discoveries and inventions benefit human life, protect the environment, and strengthen economic development.

The Lally School of Management and Technology was founded in 1963 as an integral part of Rensselaer Polytechnic Institute. Building on a heritage of more than 175 years of leadership in science and engineering, Rensselaer's Lally School develops technologically-savvy, entrepreneurial business leaders who can initiate and guide innovation for commercial success in today's challenging global marketplace. All programs enable the next generation of business leaders to combine their passion for technology with the management ability to succeed in today's challenging global marketplace. The School offers BS, MS, and MBA programs consistent with the School's mission to develop technically sophisticated business leaders who are prepared to guide their organizations in the integration of technology for new products, new businesses, and new systems. The School's thriving doctoral program is built around rigor and relevance in intellectual contributions and business practices. The cutting-edge research and programs offered by the Lally School faculty, as well as the diversity in its student body increasingly reflect Rensselaer's emergence as a world-class research university with global reach and impact.

Finance at the Lally School is consistent with the School's quantitative, analytical and technology-savvy orientation of education. The School's thrust in Finance and financial research is driven by its International Center for Financial Research, while it conducts its training and pedagogy in Finance through an MS degree program in Financial Engineering and Risk Analytics (FERA). The MS in FERA program utilizes expertise of faculty members beyond the business school, from Mathematics, Decision Sciences, and Computer Science departments at RPI for delivering rigorous training in the field.

Instructors

1. **Dr.Aparna Gupta**: Aparna Gupta teaches managerial finance, investments, risk management and financial simulations at the Lally School of Management and Technology. Aparna Gupta's research interests are in financial decision support, risk management, and financial engineering. Her research work has been published in reputed journals, such as, Journal of Computational Finance, Insurance: Mathematics and Economics, Annals of Operations Research, Computational Optimization and Applications, etc. Aparna Gupta has an M.Sc. (Integrated) in Mathematics from IIT

Kanpur, and she received her Ph.D. from Stanford University. Professor Gupta serves as a reviewer for several business, finance and management science journals, and is the Vice-Chair of the Financial Services section of the Institute for Operations Research and Management Science (INFORMS). Professor Gupta is also a member of AFA, FMA, IAFE, INFORMS, and IEEE.

2. Dr. John Teall: John Teall is currently Visiting Professor of Finance at RPI and Adjunct Professor of Finance at New York University. He has previously served on the faculties of Pace University, Fordham University, Dublin City University, etc. He is the author of the book Financial Market Analytics published by the Quorum Press, Governance and the Market for Corporate Control published by Routledge Press and coauthor of Quantitative Methods for Finance and Investments published by Blackwell Publishing. Dr. Teall obtained his Ph.D. from New York University and is a former member of the American Stock Exchange. Professor Teall's primary research activities have been concentrated in the area of corporate control, though his interests in applications of quantitative technique have led to other research topics as well.

Institute for Development and Research in Banking Technology (IDRBT), INDIA

The Institute for Development & Research in Banking Technology [IDRBT] at Hyderabad was established by the Reserve Bank of India in 1996 as an Autonomous Centre for Development and Research in Banking Technology. It is a unique Institution of the World focusing on frontier Technology for Banks and Technology oriented services for Banks and Financial Institutions. IDRBT has been conducting the programmes of Ph.D. and M.Tech.(IT) with specialization in Banking Technology and Information Security since 2001 in collaboration with the Central University of Hyderabad and IIT-Bombay (Mumbai) besides the regular Executive Development Programmes in varied areas for the BFSI Sector. IDRBT is recognized as an Associate Institution to offer Ph.D. programme by the Central University of Hyderabad and it has joint collaboration with leading Institutions such as IIT-Kanpur.

Instructors

1. Dr. V. N. Sastry: Vinjamuri Narsimha Sastry, Associate Professor, IDRBT has obtained his Master of Science Degree in Mathematics from the Indian Institute of Technology (IIT), Kharagpur in 1987 and also from the same I.I.T., Kharagpur he was awarded Ph.D. Degree in 1994 for his work on "Optimization Methods for Control Problems of Deterministic and Fuzzy Models". He has more than 20 years of

Research and Teaching experience. Prior to Joining IDRBT as Assistant Professor in November 1999, he has served as Senior Lecturer for 2 years and as Lecturer for 5 years in the Department of Mathematics and Computer Applications at the National Institute of Technology (formerly Regional Engineering College), Tiruchirappalli, Tamilnadu during 1993-1999. Main areas of his research interest are Operations Research, Multiple Criteria Decision Making, Quality of Service (QoS) based Network Routing Algorithms, Risk Modeling, Portfolio Optimization and Asset Liability Management, Access Control Models for Mobile Ad-Hoc Networks (MANET) and Banking Grid, Fuzzy Control, Mobile Payments and Feature Subset Selection. He has guided 3 Ph.D. scholars in the area of Fuzzy Control, Multi-objective Routing Algorithms and Grid Computing Security respectively and 4 Ph.D. students are currently working under his guidance in the areas of Authentication Techniques, Mobile Payments, Mobile Operating Systems and Feature Subset Selection methods. He has guided about 50 postgraduate projects (M.Tech., M.Sc., M.C.A., M.B.A. and PGPBTM.) and published above 50 research publications in Journals and Conferences of International repute. Dr. Sastry is a Co-founder and Executive Secretary of the Mobile Payment Forum of India (MPFI). He has visited UK, Canada, USA(thrice), Australia, Brazil, South Africa etc. and delivered invited Lectures in several leading Institutions & Universities abroad and in India. He has initiated and conducted several short-term programmes on Financial Risks and Asset Liability Management (FRALM), Wireless Technologies and Mobile Payments (WitMoB), Quantitative Techniques for Banking and Financial Applications (QTBF), Software Engineering; Web based Learning, Network Technologies, etc. He has reviewed research papers of technical Journals and International Conferences such as EJOR, JOTA, Mathematical Reviews, CIT, ICDCIT, J-IISC etc. He is a member of Professional Societies IEEE, CSI, MCDM, ISTE, MPFI etc.

2. Dr.V.Ravi: Vadlamani Ravi is an Associate Professor in the Institute for Development and Research in Banking Technology (IDRBT), Hyderabad, since February 2010. He obtained his PhD in Soft Computing from Osmania University, Hyderabad and RWTH Aachen, Germany (2001); MS (Science and Technology) from BITS, Pilani (1991) and MSc (Statistics and Operations Research) from IIT, Bombay (1987). Prior to joining IDRBT as an Assistant Professor in April 2005, he worked as a Faculty at the National University of Singapore for three years. Earlier, he worked as an Assistant Director at the Indian Institute of Chemical Technology (IICT), Hyderabad.

He conducted advanced research at RWTH Aachen under the DAAD Long Term during 1997–1999. In the last 22 years, he worked in the applications of soft computing, data mining, global/multi-criteria/combinatorial optimization in various domains including financial engineering, software engineering etc. He published 93 papers in refereed international/national journals/conferences and invited chapters in edited volumes. He edited a Book on Advances in Banking Technology and Management: Impact of ICT and CRM, published by IGI Global, USA, 2007. Further, he is a referee for 31 international journals of repute. Moreover, he is an Editorial Board Member of IJSSSS, IJDATS, IJIDS, IJWS and IJITPM. His current research interests include bankruptcy prediction, CRM, churn prediction, FOREX rate prediction, risk modeling and asset liability management through optimization, software reliability prediction, software development cost estimation. He is listed in Marquis Who's Who in the World 2009, 2010, 2000 Outstanding Intellectuals of the 21st Century 2009/2010 and 100 Top Educators in 2009 both published by International Biographical Center, UK.