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FINANCIAL ENGINEERING TEAM REPORT

October 2006

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Meet the Class of 2007

By Vani Rao

There are a wide variety of people creating a very interesting class dynamic. Each student has a different background, culture, and experience; not one is like the next. With eleven men and two women, the class is quite small but ready to make a big impression. These thirteen students have a variety of achievements in fields ranging from chemistry to golf architecture. Each student has followed a different path, which ultimately led him or her to Kent State's MSFE program as his or her destination. With a lot of determination, hard work, and perseverance, each student has the aptitude to succeed in accomplishing his or her goals after completing the program.

Presenting the Class of 2007:

Wei-Ting, Chou (Sherry)

Financial analysis was the area of concentration I chose for my MBA program. Researching financial reports with all those figures is quite interesting. The format and design of each companies financial report attract me because I have a keen interest in the design of history collections. Sometimes a marketing strategy comes out from the images. My favorite exercises are swimming, hiking, and surfing. There is no denying that exercise inspires my studies and interests which reduce stress from my daily life.

Seth Chute

Prior to entering the MSFE program at Kent State University, I studied at The University of Texas at Austin, graduating with a BA in Business Economics. I decided to study Financial Engineering in order to demonstrate and improve my analytical abilities as a financial economist so that I can enter into the technical side of the financial industry. Before college, I spent four years in the U.S. Navy as an electronic warfare specialist on the USS Ogden.



A couple of potential career paths that appeal to me are risk management and working with over-the-counter derivatives. I also would like to gain some experience trading various instruments to better understand market mechanics. Growing up in Houston, I have some interest in the energy industry, however investment banking has also become an intriguing area to me.

In addition to my studies, I enjoy traveling to visit family and friends. I am an avid sports fan and enjoy good music. I like to run and exercise at the gym. I believe that such activities are important, but at this stage in my life most of my focus is on my education and career.

Ankit Doshi

Prior to enrolling for a MSFE with Kent State University, I pursued my Bachelor of Engineering from Mumbai University in India. The financial markets have interested me since a very young age. After having met eminent personalities from the Indian Financial Markets I have realized that these people made their mark by combining technical and financial qualifications. Hence, I decided to pursue an engineering degree to get my technical skills and then a Masters in F.E. to learn financial skills. I am sure the integration of both these skills will give me an edge, as I will know the best of both the worlds.

My hobbies include playing sports like lawn tennis, cricket, soccer, and baseball. Playing a competitive sport like lawn tennis at the national level as the #7 seed has inculcated in me the “never say die” attitude and an unwavering dedication towards hard work. I am also an avid reader. I usually read books related to finance to enrich my knowledge about the subject; one of my favorite books being Liar’s Poker by Michael Lewis. Superior networking and communication skills are also my strong points.

Kee Grinde

Prior to joining the MSFE program at Kent State, I completed a JD at Arizona State University in 2005. While in school, I was employed as a paralegal and had the opportunity to work on a variety of cases, most of which dealt with real estate transitions or federal Indian law issues. I read about the KSU MSFE program and it seemed to be an ideal transition from the legal profession to finance.

In my personal life, I try to maintain a balance between work, recreation, and relaxation. Although my career has played a central role in my life, I continually make an effort to spend time with family and friends. I am looking forward to the MSFE curriculum and to a potential career in quantitative finance.

Chris Hunt

In May 2001, I received my Bachelor's degree from Cornell University with concentrations in mathematics and landscape architecture. After graduation, I moved to Edinburgh, Scotland to complete a Master's degree in golf course architecture from the Edinburgh College of Art. The program allowed me to study and visit many of the finest golf courses in the world. In the fall of 2002, I began work as a golf architect with Tom Doak's firm, Renaissance Golf Design. Over the next several years, I started my own firm and worked with both Renaissance and Coore/Crenshaw, Inc. on the designs and builds of such courses as Friar's Head GC, Cape Kidnapper's GC, Texas Tech GC, Tumble Creek Club, Sebonack GC, and Rock Creek Club. I also assisted with work at Barona Creek GC and Erin Hills GC for other clients.

In an effort to reduce travel days, I decided to put golf architecture on the backburner and explore a career more in tune with my math background. Having also completed a distance MBA from the New York Institute of Technology, I felt the MSFE program at Kent State would be the perfect transition to the world of finance. I hope this third and final Master's degree will lead me to a fulfilling career in derivatives trading or risk management.

Sushant Khot

My background in computer engineering and passion for the markets led me to the MSFE program. Apart from financial engineering, I love playing the guitar, reading books, discussing current affairs, and listening to music as varied as the Beatles to Indian Classical music. I am very passionate about cricket and follow the game very closely.

**Vani Rao**

I recently earned a bachelor's degree in mathematics from The Courant Institute of Mathematical Science at New York University in May 2006 where I directed my concentration towards financial mathematics. While on this track, I developed an avid interest in risk management within derivative markets. Since I already had a strong mathematics background, I decided to pursue my master's in financial engineering to focus my studies on the financial aspects of derivatives markets. After completing my degree, I would like to become a quantitative analyst where I can use my background and inclinations in mathematics and finance to develop strategies to manage risk.

When I'm not studying math or finance, I enjoy running marathons, wearing bright colors, watching movies, and adventurous traveling. I have already been fortunate enough to travel to several parts of the world and I hope that this career will lead to me to work internationally, particularly in Hong Kong or London so I can continue to pursue my passion for traveling.

Rakesh Sharma

I received my Bachelor of Commerce in 1998 from Devi Ahilya University, Indore, India. Thereafter, I pursued the professional course conducted by The Institute of Chartered Accountants of India. I am at the final level now. During my studies, I completed three years of training with the Fellow Chartered Accountant firm at my native place. Along with that I've recently completed a MBA in finance from the Devi Ahilya University, Indore, India. During my MBA I worked with PepsiCo. and a stock broking firm at Indore. I have come to Kent State University with the clear intention of being an investment and risk manager. This program would enable me to possess those cutting edge skills that fulfill the needs of the financial industry.



When I am not working I play the flute or read books. I have deep a interest in Indian Classical Music; I consider this a means of spiritual culmination. I've participated in various programs held at school and college level. Along with that, I sing classical based songs as a pastime. And yes, I like kids. I think they are the best friends of all time and really a great stress buster. Reading books on finance and inspiring papers on philosophy and religion is another aspect of my personality. There is one allegory in "Geeta" that tells us that "skillful accomplishment of task leads to the "yoga", the oneness with the ultimate soul. My philosophy of life lies in these words.

Taetaye Shimeles



I graduated from the University of Pittsburgh with a Bachelor of Science in Chemical Engineering. As an undergraduate chemical engineering student, I had a chance to take an introductory course in corporate finance. Even though the subject material is quiet different from my major area of study, I found this course to be fascinating. Apparently, it was fascinating enough to make me change my career path upon graduation.

After graduation, I started trading currencies in the foreign exchange market. This required me to follow daily economic data and global events as these are sensitive factors in the market. This experience made me realize the challenges and rewards that the financial industry can provide.

Recognizing that I do not have sufficient exposure to the complexities of financial markets, I decided to pursue the MSFE program at Kent State University. After obtaining, my MSFE it is my goal is to work in area of risk management.

In my spare time, I love playing soccer and poker. I also enjoy reading the Almanac and I follow politics and daily news events around the globe.

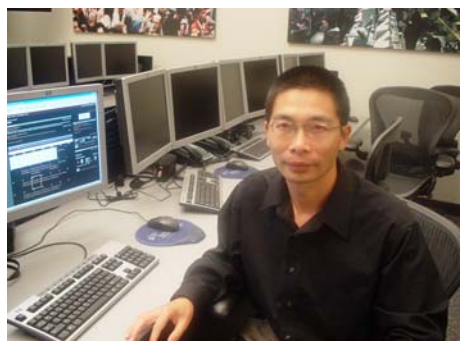
Robert Skupinski

Prior to beginning the MSFE degree program, I obtained a Bachelor's and Master's degree in Mechanical Engineering from The University of Michigan. My subsequent work experience primarily involved mechanical and thermal design. Past projects included research and design of small engines, engine components, experimental heat exchangers, and automated and telerobotic laboratory instruments. One of these instruments was featured on the cover of *Applied Optics*.

Since a teenager, I've invested in the stock market and have been very interested in the commodity markets, especially the energy markets. After reading and learning about "quants" and financial engineers for the last several years, meeting with Dr. Holder and visiting the Trading Floor at Kent State University, I decided to change careers.



I plan to spend my time at Kent State learning and exploring areas within Financial Engineering such as proprietary trading and risk management, to find what I enjoy the most. In my spare time I enjoy programming, snowboarding, and volunteering at my local high-school's FIRST Robotics Club.

Shirong Wen

Risk management, derivatives, and investment management are my interest areas based on my solid background in industry and international business. At my leisure, I enjoy swimming, playing basketball, and reading.

Xiang Zhou

My thirst for being a professional in the field of risk management and quantitative analysis impelled me into this challenging program, which brings me into a brand-new world. With a solid mathematics background and an engineering mind, which I acquired from my previous major mechanical engineering, I can probe into quantitative finance step by step. In my spare time, I prefer to do lots of reading, especially philosophy, which helps to keep my mind sharp. I'm also a big sports fan, and actively involved in different kinds of sports, soccer, basketball, pool, swimming and others.



Financial Engineering Information Sessions

The Financial Engineering Information Sessions explain to prospective students what Financial Engineering is and information on how to apply for the program. The benefits of attending one of these sessions is that the student will have the opportunity of talking to a representative of the Graduate School of Management as well as the Director and Administrator for the program. After a brief presentation, attendees have an opportunity to ask questions and hear the questions of other prospective students.

The sessions take place on the Olga A. Mural Financial Engineering Trading Floor in the College of Business Administration on the fourth floor, room 401. Seating is limited, for reservations contact Rebecca Evans via email at evansr@kent.edu.

Schedule:

Thursday, October 19, 1:00 PM & 6:00 PM

Monday, November 13, 7:00 PM

Tuesday, November 14, 1:00 PM & 6:00 PM

Friday, November 17, 5:00 PM

Financial Engineering Career Choices

By Shirong Wen

Risk Manager

Generally speaking, a Risk Manager is in charge of the process of measuring or assessing risk and developing strategies to manage it by using traded financial instruments. Strategies include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting partial or all of a particular risk.

Associated positions:

Risk Analyst; Risk Administrator; Risk Associate; Credit Analyst; Quantitative Risk Management; Credit Risk Specialist; Credit Quantitative Specialist; Risk Modeler; Associate Risk Controller

Investment Bankers

Investment Bankers raise money for a company, through a stock or bond offering and handle larger sums that need investing especially via special investments such as derivatives (swaps, etc); also it includes mergers, divestitures and other restructurings of companies.

Associated positions:

Investment Banking Analyst; Investment Banking Associates; M & A Analyst; Operation Manager

Asset Managers

Asset Managers are responsible for the process of money managing for individuals, typically via stocks, bonds and/or cash equivalents according to specific stated objectives or investments styles.

Associated positions:

Portfolio Manager; Compliance Officer; Compliance Analyst; Portfolio Analyst; Equity Analyst; Portfolio Administrator; Product Advisor

Proprietary Trading

Proprietary Trading is trading the firm's own funds. Stocks, bonds, options, commodities, or other items are some typical instruments. It makes a market in the stocks and bonds and provides liquidity to the markets.

Associated position:

Proprietary Trading Analyst; Trading Desk Support; Trading Business Analyst; Algorithmic Trading

Derivative Product Development

Derivative Product Development includes creating, pricing, marketing, delivering structured product solutions and OTC derivatives solutions to clients, and positioning the above structured and OTC product solutions with a wider portfolio context.

Associated positions:

Derivative Product Specialist; Structured Product Specialist; Derivatives Processing Analyst; Equity Derivatives Analyst; Structures Product Manager; Structurer; Derivatives Product Sales; Solution Manager

Guest Speakers & Trainers for September & October

By Shawn Zhou

September

Speaker: Patrick Catania
 Time: 9/15/2006 1:00 PM~ 4:00 PM
 Time: 9/15/2006 1:00 PM~ 4:00 PM
 Location: Trading Floor

Title: Marketing
 Speaker: Dr. Langrehr
 Date: 10/26/2006
 Time: 3:45 PM ~ 7:15 PM
 Location: BSA 483
 Date: 10/27/2006
 Time: 3:45 PM ~ 7:15 PM
 Location: TBD

October

Title: Trading Technologies Training
 Speaker: Ed Shulman
 Date: 10/6/2006
 Time: 11:30 AM~ 5:30 PM
 Location: Trading Floor

Title: Training on Patsystems
 Speaker: Kevin Condryn
 Date: 10/13/2006
 Time: 9:30 AM~3:30 PM
 Location: Trading Floor

Title: CQG Training
 Speaker: Stan Yabroff
 Date: 11/3/2006
 Time: 10:30 AM~ 5:00 PM
 Location: Trading Floor

Reuters 3000 Xtra Training

By Robert Skupinski

Friday, September 8th, the Financial Engineering class learned how to use the Reuters 3000 Xtra information software. Charles Snider from Reuters demonstrated how to use the Reuters software to access and display real-time quotes from the commodities, currency, and equities markets. The software also provides the latest financial news on various instruments and the market in general. There is also the ability to research a variety of news sources.

A particularly interesting part of the demonstration was the ability to cut-and-paste real time quotes from Reuters directly into Excel, and watch the spreadsheet update in real time. Charles also generously offered to help out at any time in the future with the Reuters system and mentioned he is still in touch with several students from previous FE classes.

Of course, the next challenge for the MSFE Class of 2007 is to use those Reuter's quotes in an Excel spreadsheet to make profitable trading decisions!

Guest Lecturer, Patrick Catania on “The Industry History and Development”

By Taetaye Shimeles

Friday, September 15, 2006

It was a privilege to have Mr. Catania share his experience and wealth of knowledge about the derivative and financial market industry. Mr. Catania has more than 35 years experience in the industry. Prior to retiring from Chicago Board of Trade (CBOT) he was as the vice executive for business development. Previously, he had held positions at the CBOT as a floor clerk, floor trader and broker. For financial engineering students, this makes Mr. Catania the ideal person to talk to when it comes to the derivative industry.

His presentation covered the history of the futures market including the structural changes it has gone through over the years. When the CBOT was established, its original intent was to bring farmers and merchants together to trade commodities. This led to the development and trading of contracts similar to today’s futures. Now, over 150 years later, the futures exchange market has become a global phenomenon, where future contracts are being traded not only in the agriculture commodities, but also in energy, metal, financial and equity products.

The most intriguing part of the presentation was his experiences with his current position as a global futures market consultant where he provides consultancy for upcoming exchange markets and exchange markets that are struggling to succeed. The diverse nature of the presentation attendees made the discussion very interactive and interesting, as student shared there home countries economic and political influence in the market.

Overall the presentation gave us the opportunity to ask some of the lingering questions we had. And we learned new things that will help us in our future endeavors as practitioners in the financial market.

The SEC Responds to Options Backdating

Student Research Assignment

By Seth Chute

The outbreak of corporate scandal since the turn of the century has prompted regulators and the media to be on the lookout for any corporate practices that could be deemed as fraudulent or undermining to shareholders. In such cases, the issue is often improper accounting or disclosure of decisions and expenses that can affect shareholder value. Proper disclosure of information is important because it is this transparency that allows for more accurate valuation of equity. The overriding tendency in such cases is that improper disclosure leads to understated expenditures or losses leading to overvalued stock.

The issue of disclosure is the focus of the recent scandal involving the backdating of option grants to executives in dozens of companies. When corporations issue stock options as compensation to executives, the designated strike price is typically the stock price on the date the option was granted. Companies involved in the practice of backdating options choose a date in which the stock price was at a low point followed by a sharp increase. The option is therefore in the money today based on a hand picked past stock price, thus creating an immediate large potential payoff to the holder. Due to reporting standards, if the option was at the money on the selected past date it would not need to appear on the company's financial statement as compensation.

The fact that backdating options can necessarily increase potential payoffs to executives doesn't make it illegal. However, corporations need to take proper accounting, reporting, and disclosure measures to make such compensation viable. A particular stock option grant must conform to a shareholder approved option plan. In order for an option plan to gain shareholder approval, a corporation must publicly disclose the terms of the plan, including any backdating. In addition, while options issued at the money are not reported as compensation and are tax deductions, options granted in the money do not receive these benefits. According to Chairman Cox, the ongoing SEC investigations are attempting to determine if corporate executives are fraudulently backdated stock option grants to disguise in the money options in order to treat them as at the money options with regard to disclosure and tax laws.

In light of the number of corporate scandals in recent years, the SEC and accounting regulators took immediate action to improve disclosure of stock option programs for executives and eliminate the advantages of at the money option grants. Under new rules, a company will be forced to provide a total compensation figure for each of its top five executives. This gives investors the opportunity to see how specific corporations compensate executives and compare across companies and sectors. Also, companies must disclose precisely how and when options are granted; any backdating would also require explanation. Finally, a table is required with relevant compensation information, including dates of option grants, value of options on that date, and closing stock price on that day. The SEC is content that these new rules will help eliminate the abuse of option backdating.

17th APFRS

The 17th Annual Asia Pacific Futures Research Symposium will be held in Shanghai, China on March 1 and 2, 2007. Jiao Tong and Xiamen Universities will be assisting with the symposium. Direct Marketing International will once again handle the local arrangements for the symposium.

The www.business.kent.edu/erf web site is undergoing a new transformation as we add the new symposium information. A "Call for papers" has been posted and the home page has been updated. Please check for additional information in the coming weeks.

New Methods and Applications of Financial Engineering

KSU and IFM Sponsored Seminar with Dr. Salih Neftci

Program: This advanced two-day course on September 26 & 27, led by renowned author and lecturer, Dr. Salih Neftci, explores financial engineering methods for swaps and contingent claims used in analyzing credit default risks with applications to areas such as CDS, tranche trading, volatility trading and term structure analysis. The program uses lecture, hands-on computer applications, and discussion to convey the practical elements of financial engineering along with theoretical finance, mathematics and modeling.

Class Size: Registration is limited to approximately 25 persons to promote a friendly atmosphere, encourage attendee discussion, and provide networking opportunities.

Who should attend: Risk Managers, Heads of Trading, Hedging and Structured Products, Portfolio Managers, Quantitative Researchers, Financial Engineers, Derivatives Analysts, Academics, Analytical Traders, High-Frequency Traders and Corporate Credit Modelers.

Part 1: The Swap Logic

- Equivalent of "zero" in finance: Libor Deposits
- Swap Example 1: Equity swap
- Swap Example 2: Interest rate swap
- Swap Example 3: Commodity swap

Part 2: A Recent Application of the Swap Logic

- Credit Default Swaps
- Examples of synthetic bonds, loans and ABS
- CDS Indices, iTraxx, CDX
- Tranche trading
- Tranche strategies
- CDS strategies

Part 3: Measuring Term Structure

- Modern Term Structure analysis and its role in financial engineering

- A brief summary of Forward Libor Model
- Zero coupon bonds and measure changes

Part 4: Volatility Trading

- Volatility trading
- Introduction to non-linear instruments. Engineering Convexity
- Basic option engineering
- Black-Scholes PDE interpreted as arbitrage-free value of Volatility
- Funding with volatility
- Volatility swap

Part 5: Financial Engineering of Exotics

- Exotic instruments
- The meaning of an "exotic"
- Exotic Libor Callables
- The role of Greeks

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The Olga A. Mural Financial Engineering Trading Floor

A Busy Place

By Chris Dispina

The Olga A. Mural Financial Engineering Trading Floor (Trading Floor) is available to the Master of Science in Financial Engineering (MSFE) students year round on a 24/7 basis. The Trading Floor has limited access to the “Time Series” Economics students for class preparation, and the Finance PhD students for research projects. Additionally, the Finance, Economics, and Mathematics faculty have access to the Trading Floor anytime there is not a scheduled class or event for research purposes, to prepare for classes, or use the program software. The Trading Floor is also the office for the 10 hour per week for the three Graduate Assistants assigned to the Program Administrator for administrative and research work.

During the year long lock-step program eight courses are taught on the Trading Floor. In addition to the scheduled class time students spend an additional 10 to 15 hour per week on the floor to do assignments, study, or practice trading. The MSFE students are not the only beneficiaries of the Trading Floor. The Time Series students are welcome during the Spring semester to come in and use the EViews program and the PhD students are welcome to use the Trading Floor for research and other Finance projects.

A guest Speaker/Trainer Series accounts for an average of four hours per week on Fridays. These special events are open to the MSFE class and MSFE Teaching Faculty. These guest speakers come from the financial industry to instruct the students on products, or lecture about new trends, potential employment choices, what the students will find once they enter the job market, and many other topics of interest to the students. Occasionally the MSFE Director will also invite the Finance, Economics and Mathematics faculty as well as the PhD students to join in the guest lecture/trainer series.

The Trading Floor is also open for tours during the week and occasionally on Saturday, when many visitors to the campus attend a private scheduled tour. During tours, live trading is simulated as the MSFE program is explained. The President, Dean, Development Office, and potential students, schedule these tours. In an effort to reduce the number of individual tours, we have several Information Sessions per year to host potential students and to answer any questions they may have about the floor or the program.

Several MSFE Internships are held on the Kent campus. These students utilize the Trading Floor programs for about half to two thirds of their Internship. Past Kent State Sponsored Internships have been with the Power Plant, Foundation Account, and Research Papers on Rice futures through the Tokyo Grain Exchange.

Last year a Seminar Series was started by holding a one week training program for the Tokyo Grain Exchange on Continuous Trading Markets. This year TGE returned for a second seminar and the Financial Engineering Center plans to add two more seminars to the schedule.

During the eight week Internships for the MSFE students, the Trading Floor gets a break for systems maintenance, such as program upgrades, system patches, and cleanup. This time is used

to prepare for the upcoming MSFE class. The systems are wiped clean, email addresses and accounts are set up with new user ids, and all of the support programs are prepared for the new users. The students receive login ids for X_Trader, CQG, Reuters, and LIM.

A new Seminar Series through the Financial Engineering Center has been developed and it is expected that at least three seminars will take place on the Trading Floor each year. Annually the (TGE) Grain Exchange has spent four days on the Trading Floor during the first week in August and two more seminars are in development for local businesses in the derivatives trading field.

The Trading Floor hosts a series of outside companies that benchmark new products for the IT industry pertaining to the financial services market. We have tested new processors and workstations, benchmarking their performance in a trading environment. This is an added bonus for the program in credibility, corporate partnerships, and sponsorships.

News from the Alumni

Ryan Kozak, '03

In my current role as a VP of Interest Rate Risk Management at KeyBank, I provide hedging solutions to clients throughout the Southwest, Rocky Mountains, and Northwest. The lines of business I focus on are Commercial Banking, Healthcare, Public Sector, and Real Estate.

Now in my third year at the bank, the transactions are getting larger and more complex. Having the background in financial engineering, and the implicit understanding of the fundamentals of derivative markets has been a tremendous help throughout my career. The team based projects at Kent State are a great example of the real life dynamic of working on a derivatives sales desk. Learning these communications skills early on are essential to being successful in a team environment.

KeyBank has been a great place to work. Throughout the years they have constantly raised the bar of responsibility, while providing tremendous training in all aspects of the job. It's great to work with managers that have extensive experience with interest rate products, and learning from them in every way.

The progression of other Kent State alumni at the bank has been amazing. It's fulfilling to know that the academic relationships built in the program now serve as effective business relationships. For example, my lab partner while at Kent (Dr. Dennis Jarecke) is now a head trader on the derivatives desk. Picking up the phone from the Seattle desk and calling the Cleveland trading desk is that much easier when you know a fellow alum is on the other end.