NEW YORK UNIVERSITY
NYU STERN
LEONARD N. STERN
SCHOOL OF BUSINESS

Topics in Hedge Fund Strategies (B40.3121)
Summer 2009, Saturdays 9am-12pm

Instructor
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Office hours: by appointment

Teaching Assistant
TBD

Course Description
The class surveys a broad range of trading strategies used by hedge funds and proprietary traders with an emphasis on systematic, model-driven investment processes. Important concepts and techniques will be illustrated via examples of popular strategies that span the equities, futures, and currency markets. The class provides general tools and methods for backtesting and analyzing the performance of strategies. The class also covers institutional issues related to strategy implementation including: short selling costs and mechanics, transaction costs, margin and capital requirements, and the management of liquidity and other risks.

The class is presented largely from a practitioner's perspective, and will assume – rather than provide –knowledge of basic financial theory (e.g. portfolio math, arbitrage concepts, return calculations, etc) and products (cash and derivative). At the same time, the class projects are highly quantitative and require each student to be able to analyze and manipulate market data and use statistical and mathematical modeling techniques.

Group Projects
A major component of the class is the group project. Students will form groups of up to 5 members to develop and analyze a systematic trading strategy. The professor will provide ideas for strategies to analyze, but the students are also encouraged to come up with their own.

Each group analyzing a strategy must study the economic rationale behind the strategy, the relevant evidence from the academic literature (if any), the strategy's past returns using real data, estimate the associated transactions costs and use of capital (margin), and describe its success (or failure) using several performance measures. The group must document these findings as well as provide detailed specifications of how trading signals and portfolios are constructed in a written report due on the last day of class.

Grading
The class evaluation will be based on the written group projects (50%), a final exam taken on the last day of class (30%), and class participation and presentations (20%).

Tentative Session Outline

1. Introduction and the Basics of Strategy Development **May 16, 2009**

- General background on hedge funds and prop desks
- Taxonomy of strategies
- Performance Metrics (Sharpe, drawdown, hit ratio, information coefficient)
- Strategy development components (data management, alpha design, portfolio construction, execution, diagnostics)
- Backtesting
- Common pitfalls in alpha / forecast design (look ahead, overfitting, data snooping, etc)

2. Implementation Costs and Risks – Limits to Arbitrage **May 30, 2009**

- Transaction costs (bid ask, market impact, clearing fees)
- Short Selling (mechanics and examples, fees, recalls, squeezes)
- Margin and Capital Usage
- Liquidity Risk (capital outflows, forced liquidation, predatory trading)

3. Equity Strategies: Statistical Arbitrage **June 6, 2009**

- Players / Competitive landscape
- Data challenges
- Common Alphas (cross sectional momentum, mean reversion, accounting based, etc)
- Portfolio Construction (sorts, Markowitz, Black Litterman, multi-period / multi-horizon)
- Execution challenges
- Historical Performance and Risk Profile
- Comparison to discretionary strategies (Equity Long Short, Risk Arbitrage)

4. Futures Strategies: Momentum and Breakouts **June 13, 2009**

- Players / Competitive landscape (CTA industry)
- Data challenges
- Alphas (technical indicators)
- Portfolio Construction (trading rules vs. optimization, stops, asset and risk allocation)
- Execution challenges
- Historical Performance and Risk Profile

5. Currency Strategies: The Carry Trade **June 20, 2009**

- Players / Competitive landscape
- Data and Execution Challenges (which interest rates to use?)
- Alpha (Uncovered Interest Parity – theory vs. empirical evidence; conditional models)
- Portfolio Construction (drawdown management; using options)
- Historical Performance and Risk Profile
- Comparison to discretionary strategies (Global Macro)

6. Presentation of Class Projects and Final Exam **June 27, 2009**