Speculation, Crises, and Behavioral Finance

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Overview

The following topics will be covered:

- A roadmap for financial speculation
- Applications to quantitative equity investment
- The financial crisis in the US and in the euro zone
- Individual decision making and their applications to markets

Finance - corporate and capital markets - is based on the twin premises of optimal, rational behavior on part of market participants and of frictionless markets. Successful speculation in financial markets depends on understanding the weaknesses of these two assumptions and how they can interact to produce opportunities of exploitable mispricing.

Frictions are present always and everywhere, and in important contexts create perverse incentives and surprising outcomes in financial markets.

A good deal of time will be devoted to the exploration of frictions and their implications, especially in the context of the recent financial crisis. Applications to asset management will be discussed throughout the course.

Research on decision making has documented systematic deviations from optimality, even when strong incentives to optimize are present. These deviations manifest themselves in important ways in finance, and are collected in the emerging subfield of behavioral finance.

Behavioral finance is a subfield in finance. The lectures and class discussions will draw on and routinely challenge your knowledge from prior courses.

The term behavioral finance has various interpretations: from the strict requirement that to qualify as “behavioral finance” an idea must have strong grounding in the psychology of decision making to a much looser interpretation that accepts any approach that is in conflict with the neo classical/markets-are-efficient paradigm. The course will adopt the latter approach and therefore will be heavy on finance and light on behavioral decision making.
The course is an indictment of market efficiency. At various points it will point at the reasons for its failure. Understanding these reasons does not immediately imply the design of specific money-making strategies, but helps in constructing them.

Financial markets’ possible dysfunction suggests perils and opportunities, often at the same time. The course will highlight both.

Students who will take it will
- Develop a blueprint of financial speculation and learn to appreciate its strengths and weaknesses,
- Improve their understanding of financial markets and the relation between human behavior and asset prices,
- Understand and improve their own decision making processes,
- Gain insights into the motives and modes of behavior of other market participants as well as colleagues and employees.

The course presents a heterodox approach to finance. Students thinking of careers in the financial services industry will find it useful.

**Course Material and Delivery Methods**

The course will consist of lectures and of case discussions. A few cases will be covered in class. Students should prepare for class discussions of these cases.

Students should read ALL the cases before the course meets. Below you will find a series of short questions pertaining to the cases covered from the course’s second day and onward. They will help your orientation in the case. Please answer them in writing and download the answers into the designated Assignment on Canvas.

Please prepare the first three cases for thorough discussions before the course meets for the first time. These are Royal Dutch/Shell, LTCM (A) and LTCM (C). You should upload your write-ups on these cases to the appropriate Canvas assignment by Sunday, September 7. These write-up will discuss the main points of the case as you perceive them and should not exceed two pages each.

In addition, please read the remaining cases that we’ll cover and answer the questions at the end of the syllabus before September 7. Upload your answers onto Canvas.

Students will prepare the remaining cases in groups as the course progresses.

In the October meetings we will discuss another three cases: Martingale, GMO, AQR. Students will prepare and upload them to Canvas before the course meets in Sao Paolo, i.e., before October 19.
In the December meetings we will discuss the following two cases: Auction Rate Securities and WaMu’s Covered Bonds. Students will prepare and upload them to Canvas before the course meets in Sao Paolo, i.e., before December 1.

The write-ups will not be graded but will help me assess student perception of the main issues.

In our first meeting we will discuss the HBS case on Royal Dutch/Shell; the relevant questions are at the end of the syllabus. Please prepare.

**Grading**

The grade will be based on the pre-course assignments (10%), case write-up submission (10%), class participation (10%), midterm (25%) and a final exam (45%).

**In class**

No electronic device in class, except when explicitly needed for the class. No email, SMS, or texting of any kind.

**First day introduction** Please write a brief description of yourselves, your careers so far, your career goals, why you are taking this course and what are your expectations from it. Please include your picture. There’s a Canvas assignment in which I’d like you to submit this short essay. Please submit this short essay before August 28.

**Assignment for the first day (1)**

Read HBS case 5-201-093, Global Equity Markets: The Case of Royal Dutch and Shell, and answer the following questions.

1. Describe the structure of Royal Dutch/Shell Group. Does it differ from the equity listings of other companies that you know?

2. What are the ADRs? Why might companies find it attractive to issue ADRs? Why would investors be interested in this method of raising equity capital?

3. Identify price differentials between different equity listings of the Royal Dutch/Shell Group. How can they be explained? What percentage of the particular price differentials you identified can be due to the explanations you suggested?
4. Is there an arbitrage opportunity in the price differentials you identified? What kind of arbitrage transactions would you propose to exploit these opportunities?

5. Calculate the net payoffs of the arbitrage transactions you suggested. Can such transactions enforce market discipline?

6. To what extent and in what direction do prices of the stocks of RD or Shell move with the markets in which they trade? With exchange rates? How consistent is this observation with the fundamentalist approach to security analysis? How would you interpret this observation?

7. On the basis of your analysis and the findings presented in the case, what other suggestions would you propose to explain the observed phenomena? To what extent can you provide a satisfactory answer?

**Long-Term Capital Management, L.P. (A)**

Read HBS Case 9-200-007, Long-Term Capital Management, L.P. (A). Prepare answers to the following questions for class discussion. The assignment may seem brief, but it is not.

1. What are convergence, relative value, and directional trades strategies?

2. The case describes the following strategies: Swap-spread, Fixed-rate residential mortgages, Japanese government bond swap spread, Yield-curve relative-value trades, Selling volatility, Risk arbitrage, Equity relative value trades – Royal Dutch/Shell. Explain the mechanics and underlying logic of each of these. What’s the risk, i.e., what can go wrong?

**Long-Term Capital Management, L.P. (C)**

Read the HBS case on LTCM (C), case number 9-200-009. Prepare to discuss the following:
1. Explain each of the major trading positions of LTCM in August 1998.
2. What was LTCM’s return to clients during its first 12 months of operations? Second 12 months? Third 12 months?
3. After LTCM broke up, various teams of its partners and other senior personnel tried to establish new money management businesses. If you worked for Columbia University’s endowment fund, would you give such a team some of Columbia’s money to manage?
4. In September 1998 the NY Fed orchestrated a bailout of LTCM by major banks and investment banks. Was that a bailout? Was that in the public short-run interest? What were the long-run implications of the Fed’s actions?
Assignment for the first day (2)

Below are questions pertaining to seven of the cases we will discuss. Please answer each question briefly. Please submit your answers by September 7.

Auction Rate Securities

1. Liquidity is a key consideration. What is it? What does the following sentence mean, “ARSs are liquid instruments?”
2. What is the auction outcome if the orders are as in Table 1 below?

<table>
<thead>
<tr>
<th>Orders</th>
<th>Hold orders (current holders)</th>
<th>Hold-at-Rate Orders (current holders)</th>
<th>Sell Orders (current holders)</th>
<th>Buy Orders (prospective holders)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Order Number</td>
<td>Order Quantity</td>
<td>Order Number</td>
<td>Order Quantity</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>100</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>302</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>120</td>
<td>3.05%</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>3.10%</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>200</td>
<td>3.12%</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
<td>3.20%</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>Total 600</td>
<td>Total 300</td>
<td>Total 700</td>
</tr>
</tbody>
</table>

Figure A shows a hypothetical auction for 1000 auction rate securities. One current holder, holding 100 of the securities, submits a hold order. Six current holders, holding 600 of the securities, submit hold-at-rate orders. Three holders, holding 300, submit sell orders. Seven bidders who do not currently own the securities submit orders for a total quantity of 700.

Washington Mutual Covered Bonds

In September 2008, what are the possible scenarios for WaMu and their implications for the covered bonds? Will you hazard suggesting probabilities for these scenarios?

GMO

What, if anything, is distinctive about GMO as a business? What is the purpose of slicing? Does it work?

Martingale

Do you believe the risk anomaly (the beta-adjusted underperformance of high volatility stocks) will persist?

AQR Momentum

What are the appropriate benchmarks for the momentum funds?
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep 9</td>
<td>Royal Dutch + price volatility</td>
<td>The fundamental pricing models; can security prices be wrong? If so, in what sense?</td>
</tr>
<tr>
<td>Sep 11</td>
<td>LTCM (A) + Limits of Arbitrage</td>
<td>Models underlying speculative trades, the procedures they entail, their return/risk profiles, why they are likely to be profitable and what can go wrong</td>
</tr>
<tr>
<td>Sep 12</td>
<td>LTCM (A, continued); LTCM (C)</td>
<td>A review of LTCM’s trades. What went wrong; was the failure predictable?</td>
</tr>
<tr>
<td>Oct 20</td>
<td>Value/growth momentum + Martingale</td>
<td>Performance evaluation; a quant equity fund with leverage. Experiments to demonstrate the importance of thinking about others</td>
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<tr>
<td>Oct 21</td>
<td>GMO + crisis overview (1)</td>
<td>The behavioral insights underlying value investing and its implementation in a quant portfolio construction; tension between investment strategy and business strategy. An introduction to the financial crisis; what's special about banks?</td>
</tr>
<tr>
<td>Oct 22</td>
<td>AQR/Momentum + crisis overview (2)</td>
<td>An evaluation of a quant investment strategy and the statistics at its foundation. ABCP in 2007: motivation for and collapse of the SIVs</td>
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<tr>
<td>Oct 23</td>
<td>Patient Zero: Northern Rock + pre-midterm discussion + midterm</td>
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<tr>
<td>Dec 2</td>
<td>Auction Rate Securities + crisis overview (3)</td>
<td>Liquidity as an equilibrium phenomenon, the possibility of its breakdown; accounting treatment of ARS</td>
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<td>Dec 3</td>
<td>WaMu + crisis overview (4)</td>
<td>Analysis of a crisis-generated investment idea; a behavioral interpretation of key features of the crisis</td>
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<td>Dec 4</td>
<td>Forbearance (2)</td>
<td>Introduction to bank accounting and the regulators' perspective</td>
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<tr>
<td>Dec 5</td>
<td>The euro</td>
<td>The problematics of the euro, the ECB and some of its crisis-induced policies; more on lax regulators and loose bank accounting</td>
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<tr>
<td>Dec 6</td>
<td>Wrap-up and Final exam</td>
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