
Subject to Revision

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www.dersoft.com
www.cassandracm.com
www.dersoft.com/cv.docx
Objective: To educate the student in Finance so she/he can succeed in a global business environment, in particular,

- Financial Institutions: Investment banks, Commercial banks, Mutual Funds, Hedge Funds, Insurance companies, Exchanges, Financial services (Bloomberg, Reuters etc.)
- Government Institutions such as FED, Treasury, SEC, CFTC (regulates Futures and Options trading), FMCC, FMNA
- Supernatural organizations such as the IMF, World bank
- Financial Risk Management (tons of jobs there!)
- Compliance departments (Risk Management applied to Basel III, Dodd-Frank)
- Academia
Syllabus cont.

Videos and Literature:

Slides on Laulima:
Detailed slides on the class content will be distributed via Laulima

Articles on contemporary topics will be distributed on Laulima

You can ask questions on the market or any other financial topic. The answers will be discussed in class.

To be updated on recent events, surf
As supplemental readings we will use

Chapter 1: The Dow: History, Composition, Calculation, Chapter 2: Methods to predict stock prices, Chapter 3: Outperforming the Dow using Portfolio Strategies

Chapter 1: Introduction to Derivatives, Chapter 6: Option Basics, Chapter 7: Pricing Standard Options

“Correlation Risk Modeling and Management” John Wiley, ISBN 978-1-118-79690-0 (Gunter Meissner) Chapter 1: Some Correlation Basics: Properties, Motivation, Terminology [Chapters 1, 2, 3, and 4 of this book are on the official study guide for the FRM (Financial Risk Manager) exam of GARP (Global Association of Risk Professionals). There are tons of Jobs in Risk Management!]

These books are reserved at Sinclair library, call number 254, 255, 256.
Grading System:  

96.66 \leq A+ \leq 100  
93.33 \leq A < 96.66  
90.00 \leq A- < 93.33  
86.66 \leq B+ < 90.00  
83.33 \leq B < 86.66  
80.00 \leq B- < 83.33  
76.66 \leq C+ < 80.00  
73.33 \leq C < 76.66  
70.00 \leq C- < 73.33  
65.00 \leq D+ < 70.00  
60.00 \leq D < 65.00  
F < 60.00  

Office Hours:  
Tu, Th 10.45 to 11.45

Syllabus cont.

Grading:  
Homework/Participation 10%  
Research Project 30%  
Presentation of Project 10%  
Mid term 25%  
Final 25%
Content Overview

The course consists of three major areas:

1) Financial Markets, Investing, and Trading


The three types of Derivatives: Futures, Options, Swaps. How do Options work? Are Options risky? How can we price Options: The Nobel Prize rewarded Black-Scholes-Merton model. How do Futures work? When should we use Futures, when Options to speculate and reduce Risk?

3) Risk Management (Tons of Jobs there)

What types of Risks exist and how are they measured? VaR (Value at Risk), ES (Expected Shortfall) and EVT (Extreme Value Theory). Is there a ‘Best Risk Measure’? How do Correlations impact Risk Management? Is the Basel III Risk approach sufficient to prevent the next great Recession?
1) Each student will choose a research project and write a 5 to 8 page paper or program a model, which is 30% of the students grade. The student will present his project to the class.

Students can also suggest a research topic to the Prof
1) Program the Black-Scholes-Merton Option pricing model including Risk Parameters

2) Latest Developments in Basel III – Can it prevent the next global financial and economic crisis?

3) Basel III’s Credit risk approach CVaR (Credit Value at Risk) – Too simplistic?

4) Basel III’s “Too big too Fail”. Pros and Cons

5) Basel III’s Wrong Way Risk (WWR) approach. Is it “State of the Art”?

6) Dodd-Frank – 2,300 Pages! Necessary or too much regulation? Can it prevent the next global financial and economic crisis?

7) Operational Risk: What are the threats? How can we prevent it?

8) Market risk: It caused the great depression and the dot.com crisis. How can we measure it and will cause the next crisis?

9) Correlation Risk was a major factor in the 2007 – 2009 great recession. Latest developments in modeling Correlation Risk

10) China owns $1.1 trillion = 22.5% of US Treasury debt – The next crisis in the making?
11) While the Fed has completed its QE (Quantitative Easing), the ECB and the BoJ are just starting their own QE. Will it have a similar success as the Fed’s QE?

12) The Fed is currently extremely capital market accommodative. Will it guide the markets through the coming interest rate hikes without a market disruption?

13) Markets are getting more and more efficient. Mutual Funds and recently also Hedge Funds are underperforming the Indexes. Is it still possible to beat the market?

14) Option implied Volatility is typically higher than historical volatility, resulting in the “Option Risk Premium” (OPR). Which stocks have the highest OPR? Should we play this anomaly?

15) Technical Analysis is an important trading tool. Does it still work?

16) The Volker rule reduces bank’s proprietary trading. Is the Volker rule too restrictive or is it necessary to reduce risks in the financial system?
17) The outstanding Derivatives OTC contracts are about $630 trillion, which is 10 times the world GDP. Are Derivatives ‘Weapons of Mass Destruction” (Warren Buffet), which will cause the next big crisis?

18) The hedge funds LTCM lost 4 billion in 1997, Amaranth lost 6 billion in 2006. Both had to be bailed out by Governments and private institutions. Can this happen tomorrow on a bigger scale? Would that be a threat to financial markets?

19) Hedge fund strategies: An overview; Which strategies are the most profitable, which are the most dangerous?

20) More than 80% of trades are executed by Computers using Algorithms (Algorithmic Trading). What are the most popular Algorithms? Try to program one.

21) The Dollar has increased 40% in recent months. Is this a Curse or Blessing for the US economy?

22) The oil price has plummeted in the recent past from $150 to $27. Is this a danger to the world economy or a benefit? Who benefits, who loses?

23) How does Correlation enter into EVT (Extreme Value Theory)?
24) Bond prices include a significant ‘Risk Premium’, meaning their implied yield is higher than the historical yield. Why? Should we buy high-yield bonds?

25) Latest Developments in Correlation Trading – Is it only for Professionals?
www.dersoft.com/correlationtrading.pdf

26) Latest Developments in Dispersion Trading – Has it been ‘arbed (arbitraged) away’?
www.dersoft.com/correlationtrading.pdf point 6

27) Can “News Trading” support our Trading Decision?

28) Can “Query Trading” support our Trading Decision?

29) How efficient have markets become? Do the plays “Sell in May and go away” and the “January barometer” etc. still work?
30) High Frequency Trading (HFT): What comprises it? Is it an unfair trading advantage for professionals? A potential threat to the financial system?

31) High Frequency Trading (HFT): Getting on top order queue by special order type and cash. Is it illegal? Should it be illegal?

32) Latest Trading Schemes: Frontrunning. Is it illegal? Should it be illegal? Is it applied? Does it provide an unfair trading advantage to professionals?

33) Latest Trading Schemes: Pump and dump. Is it illegal? Should it be illegal? Is it applied? Does it provide an unfair trading advantage to professionals?

34) Latest Trading Schemes: Spoofing. Is it illegal? Should it be illegal? Is it applied? Does it provide an unfair trading advantage to professionals?
Project Topics

35) Dark pool trading - A solution to the asymmetric information advantage?

35a) Rule 610 of Reg NMS: “Jumping on top of the queue to lock or cross a market is prohibited”. A reasonable rule? Does it prevent HFT advantages?


37) Review of the Book: “Flash Boys” by Michael Lewis

38) Review of the Book: “Flash Boys, not so fast” by Peter Kovac

39) Algorithmic Trading: Can computers trade better than humans?

40) Algorithmic Trading: Which methodologies are applied? Which are successful?

41) Does Algo and HFT trading increase or decrease volatility?
42) The Flash Crash of 2010. What happened? What are the lessons to learn?

43) The Mini Flash Crash of 2015. What happened? What are the lessons to learn?

44) The Regulation NMS (New Market System) by the SEC. Key elements. Pros and Cons

45) A locked or crossed market. How does Reg NMS handle it:
http://www.wallstreetandtech.com/exchanges/nasdaqandrsquos-battle-over-locked-crossed-markets/d/d-id/1255842?

Come up with your own topic and suggest it to the Professor!
The Spirit of this class

- Let’s have active discussions, not a Professor monologue!
- Let’s apply the principle of science!

This goes back to Rene Descartes and his Principle of Radical Doubt...

Descartes (Latin: Cartesius) also founded the ‘Cartesian coordinate system’