

Course Description

The course undertakes a rigorous study of concepts and evidence relevant to investment management. Topics include asset allocation, diversification, long-short strategies, factor models, long-horizon investing, portfolio optimization, hedge funds, mutual funds, behavioral finance, performance evaluation, trading, and simulation. The course does not deal with individual security valuation, i.e., “equity research” or “stock picking.”

The prerequisites are Fin 601 and Stat 621 (MBA students) or Fin 100 and Stat 101 (undergraduates). Given that investment management requires one to analyze and deal effectively with uncertainty, a good grounding in statistics is essential, and familiarity with statistics should extend through multiple regression, covariance, and correlation.

Purchases

1. *Investments*, by Zvi Bodie, Alex Kane, and Alan J. Marcus (10th ed.), McGraw-Hill. (*Student Solutions Manual* recommended.) Several copies of the text and solutions manual will be on reserve at Lippincott Library.
2. Cases available from Wharton Reprographics, via www.study.net.

Grading

Course grades will be based on two exams, four project write-ups, and class participation:

	<u>Percent</u>
Exam 1 (Feb. 26 , in class)	30
Exam 2 (Apr. 23 , in class)	30
Project write-ups	20
Class participation	20
Total	<hr/> 100

Team sign up

At the beginning of the course, students will form teams of three or four members for purposes of submitting project write-ups and preparing for class discussions. Team sign up is via Canvas. (Non-Wharton students who are enrolled in the course but do not yet have a Wharton computing account, required for Canvas, can establish one by visiting <http://accounts.wharton.upenn.edu>.)

Projects

Team members will work jointly on each of the four projects and submit one write-up per team. Write-ups should be submitted by **9:00 AM on the due date**, using Canvas, in order to avoid lateness penalties. Project assignments will be posted on Canvas about two weeks prior to the due dates. Project due dates are February 3, February 17, April 2, and April 30.

Case discussions

A significant portion of the class participation grade is based on case discussions. It is expected that team members will work jointly in analyzing cases and preparing for class discussions, but every student in the class should be prepared to discuss each case. I will cold-call occasionally but expect students to volunteer comments much of the time. About a week before each case discussion, I will post on Canvas a few pertinent questions about the case. These questions are not intended to be a comprehensive summary of the issues that could arise during the case discussion, but I hope they will be useful when thinking about the case and in stimulating discussion. Written answers are not submitted.

Exams

The exams, given during regular class-meeting times, are closed-book but you may bring one 8½ × 11 inch “cheat sheet” (two-sided) to each exam. Exam answers will be posted on Canvas a day or two following the exam.

Exam 2 will confine its focus to topics covered after Exam 1. Much of the course knowledge is cumulative, however, such that fully understanding issues addressed later in the course can require mastery of earlier material.

Help and questions

I welcome students to see me outside of class to discuss any aspect of the course. My scheduled office hours, when students may come without appointments, are Wednesday 4:45–6:00pm, but I am available by appointment at other times. My office is at 3251 SHDH, my e-mail is stambaugh@wharton.upenn.edu, and my phone is 8-5734.

The TA’s for the course are Anna Cororaton, Andrew (Di) Wu, who are Wharton finance Ph.D. students, Weichang Xu, who is a Wharton MBA student, and Chengjie (CJ) Yan, who is a Wharton undergraduate student.

TA	email	Office hours
Anna Cororaton	annadc@wharton.upenn.edu	Thursday, 4:45–6:00pm, SHDH 2406
Andrew Wu	wudi1@wharton.upenn.edu	Friday, 1:30–2:45pm, SHDH 2403
Weichang Xu	weichang@wharton.upenn.edu	Friday, 12:15-1:30pm, SHDH 2305, Desk A
CJ Yan	chengjie@wharton.upenn.edu	Tuesday, 2:00–4:30pm, SHDH 2305, Desk A

Notice from the finance department to undergraduate students: The finance waitlist is open from January 10th through January 22nd, 2014 at 5:00 PM. The finance department’s drop deadline (different from the University’s) is Friday, January 24th, 2014. Should you decide to drop a finance course, you must do so through Penn In Touch prior to the finance department’s deadline. After that deadline, if you drop a finance course that is full, you will receive a “W” on your transcript.

COURSE OUTLINE

1. Foundations: Portfolio return, risk, and performance
 - 1.1. Returns and risk
 - 1.2. Equity-cash positions, using return swaps and futures
 - 1.3. Beta, hedging
 - 1.4. Alpha, long-short, margin and leverage
 - 1.5. Portfolio diversification, time-varying volatility
 - 1.6. Portfolio opportunities and selection
 - 1.7. Portfolio design and optimization; multiple asset classes
 - 1.8. Performance evaluation/attribution; mutual-fund performance
 - 1.9. Multiple return factors; size and value

*** Exam 1 ***

2. Strategies—seeking performance
 - 2.1. Hedge funds
 - 2.2. Behavioral perspectives
 - 2.3. Market-neutral investing; momentum
 - 2.4. Value and valuation
3. Asset allocation and long-run investing
 - 3.1. Equity premium
 - 3.2. Shortfall risk and options/insurance
 - 3.3. Mean reversion and the life-cycle
 - 3.4. Pension funds

*** Exam 2 ***

4. Special topics
 - 4.1. Trading
 - 4.2. Liquidity risk; simulation; active vs. passive

CLASS SCHEDULE - SUMMARY

	<i>Topics</i>	<i>Cases & Projects</i>
15-Jan	Overview; returns and risk	
22-Jan	Stock-cash positions; using return swaps & futures	
27-Jan	Beta; hedging	
29-Jan	Alpha; long-short; margin & leverage	<i>The Vanderbilt University Endowment (2006)</i>
3-Feb	Portfolio diversification; time-varying volatility	Diversification write-up due
5-Feb	Portfolio opportunities and selection	
10-Feb	Portfolio design and optimization; multiple asset classes	<i>Harvard Management Company (2010)</i>
12-Feb	Refining optimization: Black-Litterman model	
17-Feb	Performance evaluation/attribution; mutual funds and their performance	Optimization write-up due
19-Feb	Multiple return factors; size & value	<i>Dimensional Fund Advisors, 2002</i>
24-Feb	Review and synthesis	
26-Feb	Exam 1 (in class)	
3-Mar*	Guest speaker: Joseph Cerniglia – BlackRock	
5-Mar	Hedge funds and strategies	
17-Mar	Behavioral strategies	<i>Behavioral Finance at JP Morgan</i>
19-Mar	ETFs and market-neutral investing; momentum	<i>Innovating into Active ETFs: Factor Funds Capital Management LLC</i>
24-Mar	Combining and implementing strategies	<i>numeric investors l.p.</i>
26-Mar	Valuation, value investing, and the equity premium	<i>Grantham, Mayo, Van Otterloo & Co., 2001; Grantham, Mayo, Van Otterloo 2012: Estimating the Equity Risk Premium</i>
31-Mar*	Guest speaker: Gregor Andrade – AQR Capital Management	
2-Apr	Equity premium – alternative approaches	Stock-screening write-up due; Deutsche Bank: Discussing the Equity Risk Premium
7-Apr	Long-horizon framework; shortfall and options/insurance	<i>The Risk of Stocks in the Long Run: The Barnstable College Endowment</i>
9-Apr	Life-cycle issues; mean reversion and long-horizon volatility	<i>The Vanguard Group, Inc. in 2006 and Target Retirement Funds</i>
14-Apr*	Guest speaker: Jinghua Yan – S.A.C. Capital Advisors, LP	
16-Apr	Pension-fund asset allocation	<i>Pension Policy at The Boots Company PLC</i>
21-Apr	Review and synthesis	
23-Apr	Exam 2 (in class)	
28-Apr	Trading	<i>At the T. Rowe Price Trading Desk (A); Investment Technology Group</i>
30-Apr	Liquidity risk; active vs. passive	Simulation write-up due

***Note: this class will meet at 4:30pm (location TBA)**

CLASS SCHEDULE – ASSIGNMENTS AND READINGS

Notes:

- “BKM” denotes the textbook (Bodie, Kane, and Marcus)
- The BKM and sample exam problems are not to be turned in.
- The sample exam problems are available on the course Canvas site.
- Optional readings are ordered by likely accessibility/relevance and available on the course Canvas site

<u>Date</u>	<u>Topics, assignments, and readings</u>
15- Jan	Overview; returns and risk BKM chapter 5, pp. 117–152, problems 7, 9, 10 Sample exam problems 1–3
22-Jan	Stock-cash positions; using return swaps and futures BKM chapter 6, pp. 175–181, 187–189, problems 13–18 BKM chapter 22, pp. 771–781 BKM chapter 23, pp. 806–809, problem 7(a & b) Sample exam problem 4 Optional: BKM chapter 22, pp. 785–788, problems 4–10 Chance, “Equity Swaps and Equity Investing” ProShares (hyperlink) Direxion (hyperlink)
27-Jan	Beta; hedging BKM chapter 8, pp. 258–259, 264–271, 279–282, problems 9, 10, 12–14 BKM chapter 23, problems 7c, 8 Sample exam problems 5–8
29-Jan	Alpha; long-short; margin & leverage ● Case discussion: <i>The Vanderbilt University Endowment (2006)</i> BKM chapter 3, pp. 76–83, problems 11, 12 BKM chapter 9, pp. 291–302, problems 20, 23, CFA problems 11,12 Sample exam problems 9, 10 Optional: Cohen et al., “Mechanics of the Equity Lending Market” Jacobs and Levy, “Long/Short Equity Investing” and “Enhanced Active Equity Strategies”
3-Feb	Portfolio diversification; time-varying volatility Diversification write-up due BKM chapter 7, pp. 206–207, 226–228, CFA problems 1–3, 8–10 BKM chapter 8, pp. 262–264

BKM chapter 21, pp. 743–744

Sample exam problem 11

Optional:

Booth and Fama, “Diversification Returns and Asset Contributions”

5-Feb Portfolio opportunities and selection

BKM chapter 6, pp. 168–175, 182–187

BKM chapter 7, pp. 208–226, CFA problems 8–10, 12

Sample exam problems 12–18

Optional:

[Fidelity](#) (hyperlink)

Vanguard - <https://investor.vanguard.com/mutual-funds/lifestrategy/#/>

[Optimization examples](#) (hyperlink)

10-Feb Portfolio design and optimization; multiple asset classes

● Case discussion: *Harvard Management Company (2010)*

BKM chapter 14, pp. 446–460

BKM chapter 16, pp. 516–518

Optional:

BKM chapter 7, pp. 244–249

12-Feb Refining optimization; Black-Litterman model

BKM chapter 8, pp. 257, 259–262

Sample exam problems 19–22

Optional:

He and Litterman, “The Intuition Behind Black-Litterman Model Portfolios”

Litterman, “Beyond Equilibrium: The Black-Litterman Approach”

Black and Litterman,, “ Global Portfolio Optimization”

<http://www.blacklitterman.org/>

17-Feb Performance evaluation/attribution; mutual fund performance

Optimization write-up due

BKM chapter 24 (all but pp. 851–853 & 858–860), problems 7–12

Sample exam problems 23–28

Optional:

Elton and Gruber, “Mutual Funds”

Wermers, “Mutual Fund Performance: An Empirical Decomposition into Stock-Picking Talent, Style, Transactions Costs, and Expenses”

Pastor and Stambaugh, “Mutual Fund Performance and Seemingly Unrelated Assets”

19-Feb Multiple return factors; size and value

● Case discussion: *Dimensional Fund Advisors, 2002*

BKM chapter 10 (all), problems 7–9

BKM chapter 13, pp. 426–432

- Sample exam problems 29–32
Optional:
Fama and French, “Common Risk Factors in the Returns on Stocks and Bonds”
Fama and French, “Value versus Growth: The International Evidence”
Berk, “Does Size Really Matter?”
- 24-Feb Review and synthesis
- 26-Feb **Exam 1 (in class)**
- 3-Mar **Guest speaker:** Joseph Cerniglia, BlackRock
- 4:30pm, JMHH F95**
***Note special time and room—no class meeting at regular time
- 5-Mar Hedge funds and strategies
- BKM chapter 8, pp. 271–275
BKM chapter 24, pp. 851–853
Sample exam problems 33–39
Optional:
Asness, Krail, and Liew, “Do Hedge Funds Hedge?”
Goldman Sachs, “The Quant Liquidity Crunch”
Gatev, Goetzmann, and Rouwenhorst, “Pairs Trading: Performance of a Relative-Value Arbitrage Rule”
Mitchell and Pulvino, “Characteristics of Risk and Return in Risk Arbitrage”
Cooper, Gulen, Schill, “Asset Growth and the Cross-Section of Stock Returns”
Cohen and Frazzini, “Economic Links and Predictable Returns”
Daniel and Titman, “Market Reactions to Tangible and Intangible Information”
- 17-Mar Behavioral strategies
- Case discussion: *Behavioral Finance at JP Morgan*
- BKM chapter 12, pp. 388–400, CFA problems 1, 2
Sample exam problems 40, 41
Optional:
Barber and Odean, “The Courage of Misguided Convictions”
Baker, Wang, Wurgler, “How Does Investor Sentiment Affect the Cross-Section of Stock Returns”
Lakonishok, Shleifer, Vishny, “Contrarian Investment, Extrapolation, and Risk”
Stambaugh, Yu, Yuan, “The Short of It: Investor Sentiment and Anomalies”
- 19-Mar ETFs and Market-Neutral Investing; Momentum
- Case discussion: *Innovating into Active ETFs: Factor Funds Capital Management LLC*
- BKM chapter 4, pp. 103–107
Sample exam problem 42
Optional:
[QuantShares](#)

Chan, Jegadeesh, Lakonishok, "The Profitability of Momentum Strategies"
Daniel and Moskowitz, "Momentum Crashes"
Da, Gurun, Warachka, "Frog in the Pan: Continuous Information and Momentum"

24-Mar Combining and implementing strategies

- Case discussion: *numeric investors l.p.*
Sample exam problems 43–47
Optional:
Hameed and Mian, "Industries and Stock Return Reversals"

26-Mar Valuation, value investing, and the equity premium

- Case discussions: *Grantham, Mayo, Van Oterloo & Co., 2001*
Grantham, Mayo, Van Otterloo 2012: Estimating the Equity Risk Premium
BKM chapter 18, pp. 591–617, 622–623, CFA problems 1, 2, 4
Sample exam problem 48
Optional:
Cohen, Polk, Vuolteenaho, "The Value Spread"
Gulen, Xing, Zhang, "Value versus Growth: Time-Varying Expected Stock Returns"

31-Mar **Guest speaker:** Gregor Andrade, AQR Capital Management

4:30pm, JMHH F95

***Note special time and room—no class meeting at regular time

2-Apr Equity premium – alternative approaches

Stock-screening write-up due

- Case discussion: *Deutsche Bank: Discussing the Equity Risk Premium*
BKM chapter 13, pp. 435–441
Sample exam problems 49–53
Optional:
Stowe, McLeavey, Pinto, "Share Repurchases and Stock Valuation Models"
Fama and French, "The Equity Premium"
Fama and French, "The Corporate Cost of Capital and the Return on Corp. Investment"

7-Apr Long-horizon framework; shortfall and options/insurance

- Case discussion: *The Risk of Stocks in the Long Run: The Barnstable College Endowment*
BKM chapter 5, pp. 152–161
BKM chapter 20, pp. 679–680, 685–693, 698–700, problem 29
BKM chapter 21, pp. 729–731, problems 9, 10
Sample exam problems 54–58

- 9-Apr Life-cycle issues; mean reversion and long-horizon volatility
- Case discussion: The Vanguard Group, Inc. in 2006 and Target Retirement Funds
BKM chapter 28, pp. 1003–1004
Sample exam problems 59, 60
Optional:
NYTimes articles, 3/29/2009 and 6/20/2009
Pastor and Stambaugh, “Are Stocks Really Less Volatile in the Long Run?”
- 14-Apr **Guest speaker:** Jinghua Yan, SAC Capital Advisors, LP
- 4:30pm, JMHH F95**
***Note special time and room—no class meeting at regular time
- 16-Apr Pension-fund asset allocation
- Case discussion: *Pension Policy at The Boots Company PLC*
BKM chapter 28, pp. 1000–1002
Sample exam problems 61–63
Optional:
Bodie, “Shortfall Risk and Pension Fund Asset Management”
Black, “The Tax Consequences of Long-Run Pension Policy”
Dammon, Spatt, Zhang, “Optimal Asset Location and Allocation with Taxable and Tax-Deferred Investing”
- 21-Apr Review and synthesis
- 23-Apr **Exam 2 (in class)**
- 28-Apr Trading
- Case discussion: *At the T. Rowe Price Trading Desk (A)*
 - Case discussion: *Investment Technology Group*
BKM chapter 3, pp. 63–76
Optional:
Keim and Madhavan, “The Cost of Institutional Equity Trades”
- 30-Apr Liquidity risk; active vs. passive
- Simulation write-up due**
BKM chapter 9, 310–313
BKM chapter 13, 433–435
Optional:
Pastor and Stambaugh, “Liquidity Risk and Expected Stock Returns”
Sadka, “Liquidity Risk and the Cross-Section of Hedge-Fund Returns”
Franzoni, Nowak, Phalippou, “Private Equity Performance and Liquidity Risk”
Pastor and Stambaugh, “On the Size of the Active Management Industry”