

Ec 136, Financial Economics

Lecture 25

December 3

Outline for today

1. Final
2. Forward pricing
3. Options

www.econ.berkeley.edu/~szeidl/ec136/ec136index.htm

Readings: BKM Chapter 22.1-22.4; 20.1-20.4, 21.1-21.3

Problem set 8: due today.

1. Final exam

1. Format

- Tues, Dec 15, 5-8pm, 155 DWINELLE
- Three parts: true/false, problems, essay
- Bring three two-sided sheets of notes/formulas; a calculator; and two blue books.

2. Material

- Cumulative, main emphasis on last third of course

3. What to study

- Lecture notes and textbook
- Sample finals

4. Office hours, etc.:

- Review sections

- Tues, Dec 8, 5-7pm, 2060 VLSB

- Sun, Dec 13, 1-3pm, 10 Evans

- Office hours

- Pedro: Mon, Dec 7, 3-5pm, 508-5 Evans

- Erin: Mon, Dec 7, 4-6pm, 608-3 Evans

- Sung Bin: Fri, Dec 10, 10-12pm, 608-5

- Xing: Fri, Dec 10, 2-4pm, 608-1 Evans

- I will have office hours Thurs, December 9, 2-4 pm, 517 Evans

5. Grading: 20% problem sets, 40% midterms, 40% final.

2. Forward pricing

- Forward price F_0^T determined by **no arbitrage**.
- Two investment strategies:
 1. Borrow $F_0^T / (1 + R_f)^T$, buy 1 ounce of gold at price S_0
 2. Go long in forward contract for 1 ounce of gold

	Strategy 1	Strategy 2
Payoff at T	$S_T - F_0^T$	$S_T - F_0^T$
Price today	$S_0 - F_0 / (1 + R_f)^T$	0

- Same payoff at T , so must have same price:

$$F_0 = S_0 \cdot (1 + R_f)^T .$$

- **Spot-futures parity.**

More general forward valuation

- General formula:

$$F_0 = S_0 \cdot (1 + \text{cost of carry})^T .$$

- Here

cost of carry =
storage cost + foregone interest – income from holding.

- What would be cost of carry for wheat futures?
For a futures on the S&P500?

Futures speculation: Barings bank

“On February 26, 1995, the Queen of Great Britain woke up to the news that Barings, a venerable 233-year-old bank, had gone bankrupt. Apparently, the downfall of the bank was due to a single trader, 28-year-old Nicholas Leeson, who lost \$1.3 billion from derivatives trading. This loss wiped out the firm’s entire equity capital.” – From “Value at Risk” by Philippe Jorion:

- Leeson took long side of \$7.7 billion futures position on the Nikkei 225.
 - Then massive earthquake hit Japan, market fell from 20000 to 17000
- Barings’ trade was essentially a leveraged bet on the Nikkei.
 - Unlevered bet: invest \$7.7 billion in the Nikkei.
 - Forward: borrow \$7.7B and buy the Nikkei

2. Options: pricing lessons

1. American option prices are at least as great as prices of otherwise identical European options.
2. American option prices are at least as great as the value if the options are exercised immediately.
3. American options with greater time to expiration are more valuable than otherwise identical options with less time to expiration.
4. Call options with lower exercise prices are more valuable than otherwise identical calls with higher exercise prices.
5. The price of a call option is never greater than the price of the underlying security.
6. Put-call parity for European options.

Other stuff in finance

- Corporate finance
 - How should firms finance their operations, debt or equity?
 - What determines corporate investment?
 - How should managers be compensated?
 - Corporate governance
- Behavioral finance
 - When and how does market efficiency fail?
 - What are the effects of psychological biases on asset prices?
 - How do biases affect investor welfare?