FIN 4486 – Review Sheet for Quiz #2: Chapters 7, 8, and 9

• Interest-Rate Swaps
  – Mechanics
  – Cash flows to counter parties
  – Diagrams
  – Transforming a liability from fixed to variable rate
  – Transforming an asset from fixed to variable rate
  – Role of financial intermediary
  – Comparative advantage argument

• Currency Swaps
  – Mechanics
  – Cash flow to counter parties
  – Diagrams
  – Transforming a liability from one currency to another
  – Comparative advantage argument

• Interest-Rate Swap Design to Transform a Liability (See Figure 1)
  1. Determine in which market each party has a CA and CD.
  2. Determine total rate gain from swap.
  3. Adjust rate gain for intermediary’s spread.
  4. Determine each party’s gain (G)
  5. Draw block diagram.
  6. Assume two floating rate legs are LIBOR.
  7. Party A borrows at CA rate and B borrows at CA rate.
  8. Set A’s fixed rate leg so that A’s borrowing cost with swap is CD market rate minus A’s gain G.
  9. Set B’s fixed rate leg so that B’s borrowing cost with swap is CD market rate minus B’s gain G.
  10. Optional: check FI spread on diagram.

• Currency Swap Design to Transform Liabilities (See Figure 2)
  – First five steps are the same.
  – Assume FI absorbs exchange risk.
• Intrinsic value for put and call options
• Specification of stock options
• Adjustment for splits and cash dividends
• Factors affecting option prices (page 206)
• Relationship between value of American and European options
• Effect of dividends on option value
• Early exercise of American option: what type? when? and why?
• Upper and lower bounds for American and European options without dividends
• Demonstrating an arbitrage opportunity for American option if bounds do not hold
• Put-call parity relationship for European option without dividends on underlying
• Prove put-call parity relationship for European option without dividends on underlying

Formulas:
• 1. Payoff and profit diagram for put, call, stock, and riskless bond
• 2. Intrinsic value for put and call options (same as payoff with $S$ substituted for $S_T$)
• 3. Adjustment for a stock split and a stock dividend: reduce $X$ and increase $N$.
• 4. Lower bound American options: intrinsic value
• 5. Upper bound American call: $S$; and American put: $X$
• 6. Bounds on European without dividends: $Xe^{-rT} \to X$ in all American bounds
• 8. Put-Call parity: $c - p = S - Xe^{-rT}$