

Finance 4000

Money and Capital Markets

Twelfth class

- Management of Risk
  - Credit risk
    - Default leading to loss
  - Interest rate risk
    - Interest rate change leading to loss

- Credit risk
  - Without asymmetric information, there still would be credit risk
    - Bad things happen
  - Banks want to
    - Make losses less likely, within limits
      - Do **not** want to “minimize losses”
      - Do **not** want to have no losses
    - How low does a bank want loan losses if not zero?
      - Want the amount of losses such that the marginal benefit of reducing loan losses equals the marginal cost of reducing such losses
      - Want the amount of losses such that the marginal benefit of loan losses equals the marginal cost

- How can a bank reduce credit risk?
  - Screening
  - Monitoring
  - Collateral
  - Compensating balances
    - Collateral
    - Useful for monitoring
  - Long-term customer relationships
    - Gives borrower an incentive to have a continuing relationship
    - Lender has an incentive to have a continuing relationship also

- Can also reduce credit risk by making smaller loans than some borrowers might be willing to take
  - Extreme example: I borrow \$1 billion at any interest rate
    - Take the money and run
  - or
  - Spend the money and file for bankruptcy
  - Interest rate is irrelevant in either case
- The larger the loan relative to a borrower's equity, the more severe the moral hazard problem

- A bank may not make any loans at some interest rates even if borrowers willing to pay them
  - Loans are too risky
  - A higher interest rate may not compensate a bank for the higher risk because adverse selection may increase the risk more the higher interest rate compensates for the risk
  - Probably a more important reason that banks do not make very risky loans is their specialization in lower risk customers and loans
    - After all, finance companies and pawn brokers make loans that banks won't

- Managing interest rate risk
  - Basic idea is to estimate the effect of changes in interest rates on assets and liabilities
    - Simplest is change in interest rate times (interest rate-sensitive assets - interest-rate-sensitive liabilities)
    - More complex computations use duration
  - Problems with these computations
    - Interest rates change by the same amount
    - Estimates of sensitive assets and liabilities or durations of assets and liabilities are subject to error
    - Erroneous idea of immunizing the balance sheet suggested by duration gap
      - Immunizing the balance sheet is compensating for a large amount of interest rate-sensitive assets relative to liabilities by having a low duration (and therefore lower sensitivity of market value of assets to changes in interest rates) or vice versa