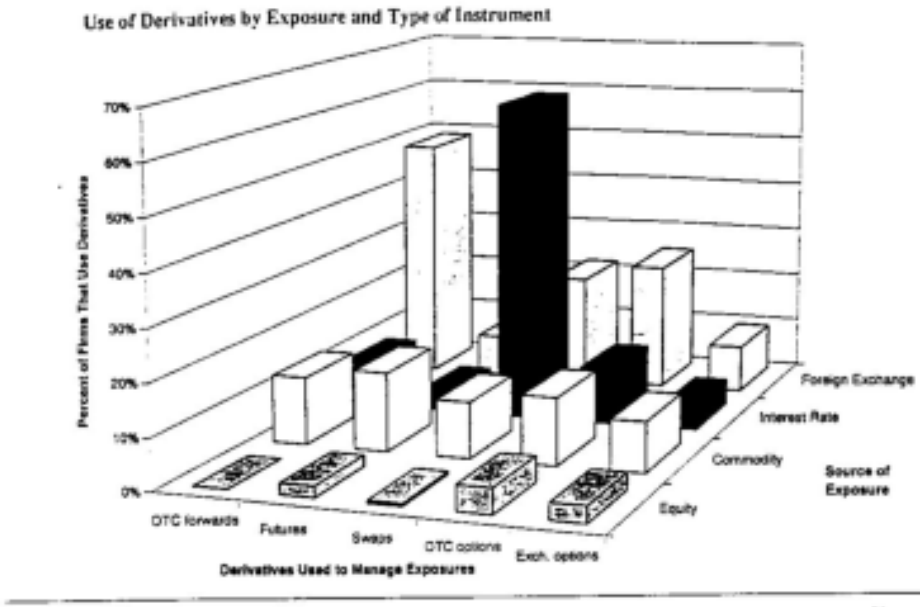
Lecture 2
Introduction to Risk Management

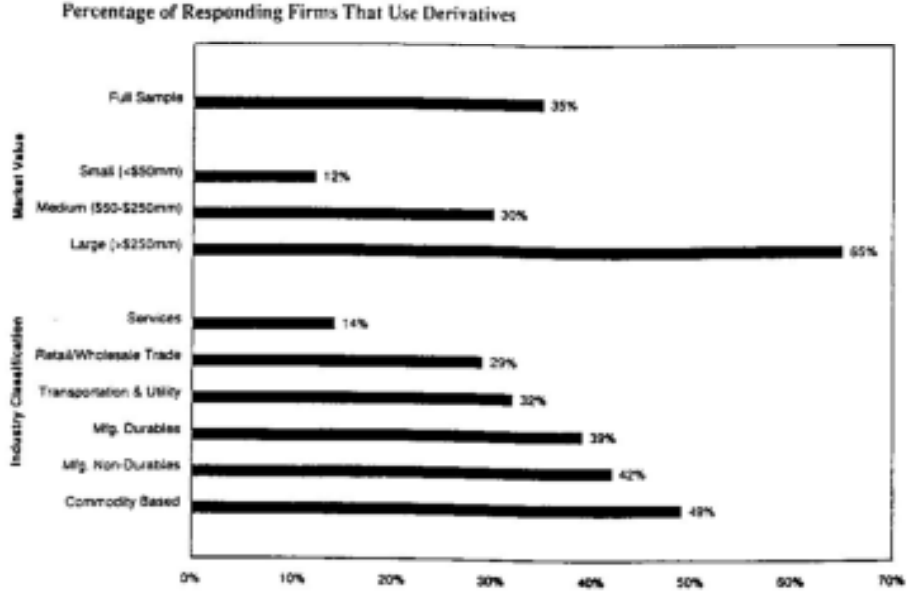
- Corporate Usage of Derivative Securities
- Financial Risk Management
- Commodity Risk Management
- Regulators and Regulations

Corporate Usage of Derivative Securities

- Introduction of old FAS 133 (and iterations 138 and 149) now codified by FASB as Topic 815 has provided a wealth of information about corporate usage of derivative securities.

- Previous results based on surveys and the like, see RSD, p.70-9.


Use of Derivatives by Exposure and Type of Instrument
Percent of Firms That Use Derivatives
70%
60%
50%
40%
30%
20%
10%
0%
OTC forwards
Futures
Swaps
OTC options
Exch. options
Derivatives Used to Manage Exposures
Foreign Exchange
Interest Rate
Commodity
Equity
Source of Exposure


Percentage of Responding Firms That Use Derivatives
Market Value
Full Sample
35%
Small (<$50mm)
12%
Medium ($50-$250mm)
30%
Large (>$250mm)
65%
Industry Classification
Services
14%
Retail/Wholesale Trade
29%
Transportation & Utility
32%
Mfg. Durables
39%
Mfg. Non-Durables
42%
Commodity Based
49%
0%
10%
20%
30%
40%
50%
60%
70%

Connection to Class Presentations

- The class presentations are designed to provide a hands-on examination of the corporate usage of derivative securities in various industries.

- **Key items to examine in annual report/10K**: the MD&A will contain a statement about 'qualitative and quantitative assessment of risk'; the notes to the financial statements will contain information about the actual derivative positions; in the notes and possibly in the MD&A there will be discussion of stock based compensation.

Definitions of Risk Management

- Financial Risk Management
- Enterprise Risk Management
- Strategic Risk Management
- Commodity Risk Management
- Business Risk Management

  -> A problem of overlapping definitions

Financial Risk Management

- Various definitions of Financial Risk Management (FRM)
  - Numerous academic and industry programs on FRM, e.g., Global Association of Risk Professionals (GARP) (www.garp.com) and at SFU Segal

    → P. Jorion "Financial Risk Manager Handbook" GARP course text

Confusions about FRM

- Problems of definition
  - FRM is risk management for financial institutions
    - → Focus on Basel III, problems of risk management for financial intermediaries
  - FRM is risk management that involves the use of derivative securities and other financial securities
    - → Extends focus to include a wider range of activities, identification of sources of risk (market, operational and credit) for a range of different corporate risk management situations

Common FRM Elements

- Risk in FRM is classified as market risk, operational risk, credit risk and legal/regulatory risk

- Market risk is a variable that can be measured, e.g., Value at Risk (VaR) and modeled using statistical techniques, e.g., back testing and stress testing

Risk management in Financial institutions

- Financial institutions are in the business of managing risk → the risk management problem is decidedly different than for small and medium sized firms
- Depository institutions often contain proprietary trading desks
- See handout on Basel II
  - Tier I, II and II capital ratios

Commodity Risk Management

- What is a Commodity?
  - Legal Definition
  - Functional Definition
- Studies on Commodity Risk Management (CRM)
  - Academic Studies
  - Government Reports and Programs

Characteristics of CRM

- Singularity of commodity risk
  - Airlines and jet fuel exposure
  - Junior and intermediate miners
  - Oil and gas exploration and development companies
  - Agricultural producers
    - Grain, corn and soybean producers
    - 3rd world subsistence farmers
    - Mixed fruit orchards

Commodity Risk Characteristics

- What Type of Commodity Risk?
  - –> $\Pi(t) = TR(t) - TC(t)$
  - –> $= PQ - FC - VC$
  - – $= PQ - FC - c\,Q$

Where P is the commodity price, Q is the output, FC is fixed costs, VC is variable cost and c is the marginal cost of production (which might change over time)

Types of Commodity Risk

- Commodity Price Risk (P only)
  - One random variable
  - What about FX risk?
- Commodity Income Risk (P and Q)
  - Two random variables
- Commodity Business Risk
  - P, Q and c

Regulations

- The internet is an excellent source of regulatory information, see the Government Agencies links on the LINKS PAGE.
- Key US regulator for futures markets: the Commodity Futures Trading Commission (**CFTC**), empowered by the Commodity Exchange Act.
- Key US regulator for equity securities (including derivatives on those securities) the Securities and Exchange Commission (**SEC**)

Reading: RSD, p.80-4.

More on Regulations

- Canadian regulations, see RSD, p.84.
- As with equities and bonds, there is also a considerable amount of self-regulation in the industry through the exchanges (see Hunt silver debacle, RSD, p.47-52) and industry groups (see collapse of LTCM, RSD, p.64-7).

Exchanges and Available Contracts

- As with regulators, the internet is an essential resource. There are two important links on the LINKS PAGE: Derivative Securities Sites and Futures, Options and Stock Exchanges.

- Examine these links and read RSD, p.85-95.

Sources of Information on the Internet

- In addition to the links already given, the LINKS PAGE also has a number of other links that are useful in this course.

  See selected links under: Academic sites (e.g., Don Chance, Mark Rubinstein); Security Analysis; Introduction to Investments Sites; etc.