
Class #23

Sarbanes-Oxley Act & Capstone to FSA

An Overview of the Sarbanes-Oxley Act of 2002

- A series of recent accounting undermined investor confidence in firms and capital markets. In response to the crisis, the U.S. Congress passed the Sarbanes-Oxley Act of 2002, changing forever the financial reporting landscape for finance professionals.
- Major national securities exchanges (NYSE, NASDAQ, AMEX) have also implemented reforms to their own membership standards as well.

Provisions of Sarbanes-Oxley Act

Congress has mandated numerous changes to financial reporting:

- Real time disclosures
- Officer certification
- Increasing transparency
- Independence - now a law
- Mandated SEC review
- New rules for pro forma statements
- New audit committee requirements
- Loans and certain trades prohibited

Provisions of Sarbanes-Oxley Act

Congress has given new powers to the U.S. Securities and Exchange Commission (SEC):

- New Public Company Accounting Oversight Board
- Criminal penalties for “white collar” crimes strengthened
- Statutes of limitations changed
- New analyst conflicts of interest rules
- New attorney professional responsibility rules
- Protection for whistleblowers

Sarbanes-Oxley Act: Key Changes

- In April 2003, the SEC directed the NYSE and Nasdaq to prohibit listing any company whose audit committee does not comply with a new list of requirements affecting auditor appointment, compensation and oversight.
 - Audit committee must consist solely of independent directors.
- CEOs and CFOs must certify in each periodic report containing financial statements that the report fully complies with the Securities Exchange Act of 1934 and that the information fairly presents the company's financial condition and results of operations
 - Officers will face penalties for false certification of \$1,000,000 and/or up to 10 years' imprisonment for "knowing" violation and \$5,000,000 and/or up to 20 years' imprisonment for "willing" violation.

Sarbanes-Oxley Act: Key Changes

- No publicly-traded firm may make any personal loan to its executive officers or directors, with limited exceptions.
- The Act changes the deadline for insiders to report any trading in their firms' securities to within 2 business days after the execution date of the transaction.
- Each firm must disclose on a very timely basis additional information about the firm's financial condition as the SEC determines is necessary or useful to investors.

Sarbanes-Oxley Act: Key Changes

The Act introduces new crimes for securities violations including:

- Destroying, altering or falsifying records with the intent to impede federal investigation or bankruptcy proceeding.
- Failure by an accountant to maintain all audit documentation for 5 years.
- Knowingly defrauding investors in connection with any security.

Sarbanes-Oxley: Public Company Accounting Oversight Board

Section 201: Auditors Prohibited from Consulting

It is now "unlawful" for accounting firms to provide non-audit services at the same time that they audit a client, including:

- (1) bookkeeping;
- (2) financial information systems consulting;
- (3) appraisal/valuation services;
- (4) actuarial services;
- (5) internal audit outsourcing services;
- (6) management functions or human resources;
- (7) broker or dealer, investment adviser, or investment banking services;
- (8) legal services.

A Capstone Review of 15.535

“Some highlights of 15.535 in 30 minutes or less....”

Back to Lecture #1: “The Central Theme of 15.535”

- Understand that the value of equity (enterprise) should be related to the discounted PV of future free cash flows:
 - $PV = CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + \dots$
- The Big Problem: How do we estimate future cash flows and risk!
 - Cash Flows – Current accounting information is very useful!
 - Risk – Use CAPM, 3-factor, implied cost of capital

The 5 baby steps!

- Single cash flow:
 - $PV = CF_1/(1+r)$
- Single cash flow in “n” years from now:
 - $PV = CF_n/(1+r)^n$
- Multiple cash flows in future:
 - $PV = CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + \dots$
- Perpetuity of fixed cash flows:
 - $PV = CF/r$ (1st CF is at the end of year 1!)
- Growing Perpetuity:
 - $PV = CF/(r-g)$ (1st CF at end of year 1, then grow at g)
- Understanding P/E ratio (just restating DCF!)

Valuation

- 1) Equity valuation:
 - Forecast cash flows available to equityholders.
 - Discount expected cash flows by the cost of equity capital. Remember unlevered “Beta”!
- 2) Enterprise (firm or asset) valuation:
 - Forecast cash flows available to *all providers of capital* (debt and equity).
 - Discount expected cash flows by weighted average cost of (debt and equity) capital
 - Can get equity value by subtracting value of debt.
 - More widely used in practice.

Equity Valuation Analysis: What Do Analysts Use? (Asquith et al, 2001)

Earnings Multiple	99%
P-E	97%
Relative P-E	35%
Revenue Multiple	15%
Price-to-Book	25%
CF Multiple	13%
DCF	13%
EVA	2%
“Model”	4%

Approach to Multiples

- Implicit assumptions of multiples analysis:
 - Rely on the market to evaluate the prospects of profitability and growth for comparables firms.
 - Assume that the same prospects apply to firm of interest.
- How to identify comparables?
 - Assumptions of same industry, risk, size, growth, accounting methods, etc.
 - Note: Use Multex (through Yahoo!) to get quick industry benchmarks.

The Residual Income Model (EBO)

- Use this idea to express current equity value of the firm as a function of book value of the firms and *abnormal earnings*:

$$\text{Equity Value}_0 = \text{BV}_0 + \sum_{t=1}^{\infty} [\text{AE}_t / (1+r)^t]$$

where: BV_t = Book value of equity at beginning of year t

r = Cost of equity capital

AE_t = Expected value of abnormal earnings in year t
= Projected earnings in yr t - (r * BV of equity at beginning of year t)

Cost of Capital

- CAPM: $E(R) = R_f + \beta^*(R_m - R_f)$
 - Expected return is increasing in systematic risk!
 - What is “Beta”?
 - $\text{Cov}(R_{\text{stock}}, R_{\text{market}} - R_f) / \text{Var}(R_{\text{market}} - R_f)$
- The Fama-French 3-factor model:
 - $R_{\text{stock}} = R_f + \beta^*(R_m - R_f) + \beta_{\text{SIZE}}^*(R_{\text{SMB}}) + \beta_{\text{BM}}^*(R_{\text{HML}})$
 - Every stock has different market β , β_{SIZE} , β_{BM}
- Implied Cost of Capital: Use Discounted FCF formula:
 - $P_0 = CF_1 / (1+r) + CF_2 / (1+r)^2 + CF_3 / [(r-g)(1+r)^2]$

Now that we can value a firm: Does the market prices correctly all the time?

- EMPHASIZE: Mkts are very competitive!
- But .. it appears that they are not perfectly efficient → Possible (risky) arbitrage opportunities.
- Question: Can we use current (historical) financial accounting information and fundamental analysis to “pick” which stocks will do better/worse in the upcoming months/years?
 - Answer: There is growing evidence that this appears to be possible!

Abnormal Stock Returns:

Getting the benchmark correct

- Abnormal stock performance must be calculated relative to the stock return predicted by CAPM (or other model):
 - $\alpha = \text{Abnormal return} = \text{Actual return} - \{ R_f + \beta^*(R_m - R_f) \}$
 - Abnormal return is known as the “alpha”.
 - A positive (negative) alpha means that the stock provided a higher (lower) return than predicted for a given level of systematic risk.
 - Strategy: Attempt to go “long” in stocks that will have future positive alphas and “short” in stocks that will have negative alphas.

Caveats on Apparent Trading Strategies: Implementation

- Risky Arbitrage
 - These are average returns over many years.
- Is history a good predictor of the future?
- Does risk explain the “abnormal” returns?
- Transactions costs
 - Brokerage fees
 - Bid-Ask spread
 - Taxes (different rates for short-term vs long-term)
 - Shorting a stock is often impossible or very costly
 - Put options often are not traded on a particular stock, often have large spreads
 - Price Pressure!

Contracting and Accounting

- **Contract terms address conflicting incentives of self-interested parties:**
 - Accounting numbers (such as earnings, book value of assets, cash flows, etc) used to specify contract terms/compliance & monitor performance
 - Why use GAAP accounting numbers? Are they objective, verifiable, unbiased, consistent, comparable, timely, reliable, and neutral?
- **Examples of Contracts:**
 - Loan Agreements: Principal – Bank, Bondholders, Private lenders, Agent – Equityholders (managers)
 - Compensation Agreements: Principal – Equityholders Agent – Managers
 - Agreements with Suppliers, Customers, Partners
 - Agreements with Government/Regulators

Stock and Option Compensation

- Companies use stock options to augment cash compensation for several reasons:
 - Reporting: Can increase EPS today (no comp charge for “at or out-of-money” options if you use APB 25). Rules are likely to change this year!
 - Incentives: Options help align managers/ employees’ interests with those of shareholders
 - Financing: companies are often “cash starved” and cannot afford to pay cash salaries today.
 - Taxes: Option comp is not taxable to employee on grant date AND company gets tax write-off at exercise (Microsoft: huge profits, zero federal tax)

Cooking the books and earnings management/manipulation

- Central theme: Firms & managers often have incentives to misstate earnings/balance sheet items:
 - Contracting incentives:
 - Avoid violating accounting covenants in loan agreements
 - Avoid taxation (Progressive tax scheme)
 - Maximize bonus (managers)
 - Avoid regulatory/government/union intervention (understate profits)
 - Avoid detection of managerial shirking or outright “stealing”
 - Stock market incentives: Meet analysts’ targets
 - Stock options; issuing equity in near future

Real Methods for Detecting Earnings Management

– Methods:

- Compare % growth in sales with the % growth in AR over the past 5 years (quarters).
- Calculate the ratio of the scaled standard deviation of Operating Income over the past 5 years to the scaled standard deviation of CFO over the past 5 years. Also, calculate this same ratio for two of the firm's competitors and then make a relative comparison of these ratios.
- Compare change in NI to change in Basic EPS.

Evaluating Accounting, Hedging and Transactions: Use Modigliani-Miller!

- If accounting methods, hedging, or other financial transactions affect current firm value, then they must:
 - 1) Affect the level of taxes (cash flows) paid to the government
 - 2) Affect transactions and contracting costs (cash flows)
 - 3) Affect real investment policy (cash flows)

Types of Financial Statement Analysis

- Common-Size Financial Statements (cross-sectional analysis)
 - e.g. Deflate all financial numbers by total assets
- Trend Financial Statements (time-series analysis)
 - Compare growth rates over time
- Financial Ratio Analysis
 - Profitability ratios, short-term liquidity ratios, long-term solvency ratios

Bankruptcy Prediction: Altman's Z-score

One prediction model is Altman's Z-score. Altman used data for manufacturing firms to develop the model.

Calculation of the model's Z-score is as follows:

$$\begin{aligned} \text{Z-score} = & 1.2(\text{Net Working Capital/Total Assets}) + \\ & 1.4(\text{Retained Earnings/Total Assets}) + \\ & 3.3(\text{Earnings Before Interest and Taxes/Total Assets}) + \\ & 0.6(\text{Market Value of Equity/Book Value of Liabilities}) + \\ & 1.0(\text{Sales/Total Assets}) \end{aligned}$$

The New Merger Accounting Rules

- New rule now in effect:
 - Statement 141 requires that all M&A be accounted for under a single method - The new purchase method (pooling-of-interests is no longer permitted). Purchase method must be used for M&A starting July 1, 2001.
 - Statement 142 Goodwill no longer has to be amortized to earnings, but instead be reviewed for impairment. This rule is retroactive! Amortization of Goodwill ceases for most companies on January 1, 2002.
 - Implications for comparison?

Summary of Pension Accounting

- Will be major accounting issue in next year!
- Major Impact: Defined Contribution Plans
 - Not an issue for Defined Contribution/401K Plans
- Large Unreported Pension Assets and Liabilities
- Defined Benefit Accounting: Earnings Manipulation
- Particularly important for:
 - Older firms (carryover Defined Benefit Plans)
 - Firms with large plans (ie General Motors)
 - Non-U.S. firms using different accounting rules

International Financial Analysis

- Across-Country Accounting Differences
 - Lack of Comparability: Be careful in analyzing companies!
- Use Outsider vs Insider Economies (Legal Tradition/Laws)
- Differences in Opacity:
 - Companies face higher cost of capital if they poor disclosures
- Potential Solutions:
 - Convenience Report: local GAAP but print the report in English
 - Reconcile to U.S. Standards (20-F reconciliation) – ADR firms
 - Use International Standards (IAS) or adopt U.S. GAAP
- International Accounting Standards (IAS):
 - Mandatory in European Union in 2005 – Possible acceptance in US
 - Lack of consistent enforcement across countries:
 - Other institutions have to change as well

“The End”

- Summary of the main goal of this course :
 - Develop a “Framework” for understanding, evaluating and valuing companies.
 - It is certain that the following will change:
 - Accounting Rules, Technology, Integration of Markets, Contracting Methods, Etc
 - However, the economics and the “thought process” for the analysis will remain much the same ... Hopefully, we developed some life-long tools this semester!
 - The “Acid Test” Your analyst projects.