



Business Valuation and Model Risk

Presentation to Annual Meeting Attendees:
Eastern Finance Association

April 22, 2004

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What Is Business Valuation All About?

- **An appraisal should reflect an independent, unbiased opinion of value of business interests, partial or otherwise.**
- **An appraisal can be used for compliance, corporate governance or value enhancement.**
- **Tangibles such as equipment or real estate are appraised by specialists in these areas.**
- **The purpose of the valuation is a cornerstone of the process.**
- **There are many business valuation standards and guidelines that include state law, federal law, USPAP, NACVA, IBA, AICPA, IRS, DOL, AIMR, FASB, international groups, etc.**





Some Reasons to Get a Business Valuation

- Business and Commercial Damages
- Buying or Selling Business
- Charitable Donation
- Dissenting Shareholder Disputes
- Dissolution of Business
- Divorce
- Employee Benefit Plans
- Eminent Domain
- Estate Settlement
- Employee Ownership Plans
- Family Succession
- Going Private
- Going Public
- Goodwill Impairment
- Key Man Life Insurance
- Litigation
- Merger or Acquisition
- Option Compensation Values
- Partner or Member Buyout
- Purchase Price Transfer Work
- Quality Control
- Reorganization of Business
- Regulatory Mandate
- Value Enhancement





Some Standards of Value

- **Collateral Value**
- **Fair Market Value**
- **Fair Value**
- **Intrinsic Value**
- **Investment value**
- **Liquidation Value**



Some Examples of Business Interests

- **Equity:**
 - **Common Stock in Closely-Held Business**
 - **Restricted Stock in Publicly Traded Corporation**
 - **Partnership Interest in Limited or General Partnership**
 - **Member Interest in Limited Liability Company**
 - **Employee Stock Options**

- **Invested Capital (Equity + Interest-Bearing Debt)**

- **Other:**
 - **Copyright**
 - **Patent**
 - **Trademark**
 - **General Management Position with Investment Fund**
 - **Distribution Rights**
 - **Celebrity**

Sidebar: A Few Facts About Business Mix in the U.S.

- **Firms with fewer than 500 companies “represent over 99% of all employer firms and employ 51% of all private workers” (Source: Business Facts 2002, U.S. Chamber of Commerce Statistics and Research Center)**
- **Sole proprietorships and partnerships account for 34% of legal business forms in 1997 (Source: U.S. Chamber of Commerce Statistics and Research Center)**
- **Small businesses have accounted for more than half of new job growth in recent years. (Source: Small Business Administration Web Site)**
- **Regulation is motivating some public companies to “go private”.**

What Does a Valuator Need to Know?

- **Accounting**
- **Best Practices**
- **Capital Structure**
- **Corporate Governance Implications**
- **Economics**
- **Financial Statement Analysis**
- **Growth Analysis**
- **Industry Information**
- **Legal Environment: Federal, State, Local**
- **Management Strategy**
- **Regulatory Standards**
- **Statistics**
- **Taxes**



Some Basic Valuation Approaches

- **Asset-Based Approach:**
 - **Adjusted Book Value Method**
 - **Excess Earnings Method (can also be listed under Income approach as hybrid method)**

- **Income Approach:**
 - **Discounted Cash Flow Method**
 - **Capitalization of Cash Flow Method**

- **Market Approach:**
 - **Public Company Guideline Method**
 - **Transaction Guideline Method**

- **Other:**
 - **Game Theory**
 - **Real Options**

Why Is Valuation Important?

- **Accounting**
- **Capital Structure**
- **Compliance**
- **Divorce Settlements**
- **Economic Damages**
- **Fiduciary Duty**
- **Funding**
- **Investing**
- **Litigation**
- **Partnership Buy In or Split**
- **Regulation**
- **Reputation**
- **Tax Basis**





What Affects Valuation Results?

- **Approach**
- **Assumptions**
- **Data**
- **Definition**
- **Model**
- **Regulations**
- **Time Period**

Partial List of Elements of a Good Model

- **Computationally Plausible**
- **Consistent Results**
- **Cost-Effective**
- **Data Integrity**
- **Easy to Explain**
- **Generalized Assumptions**
- **Impervious to Extreme Values**
- **Logical**
- **Supports theory or expected outcome**



Some Elements of Business Valuation Models

- **Discount Rate Determination**
- **Discounts**
- **Estimated Future Expected Economic Benefits**
- **Premiums**



Partial List of Model Risk Factors

- **Bad Model**
- **Compound Errors**
- **Costly to Implement**
- **Flawed Results**
- **Inappropriate Model Choice**
- **Incorrect Application**
- **Poor Data**
- **Unstable**

A Few Examples of Model Risk

	PROBLEM	EXAMPLE
Completeness	Missing variable	Income = function of Education (Ignores Experience)
Consistency	Results vary dramatically as a function of data form or range of data	Price versus return data
Data Quality	Data is hard to get or poor in quality	New product, privately-held company information, regulatory restructuring, Chapter 11 filing
Mathematical Issues	Expensive to compute values or program blows up	Simulations that require many trials or complex algorithms
Use	Inappropriate some or all of the time	Linear regression used for non-linear relationship

Model Risk and Business Valuation: Where Things Can Go Wrong

- Data:
 - Availability
 - Classification
 - Quality

- Discounts or Premiums:
 - Applicable
 - Objective
 - Reasonable

- Model Choice:
 - Availability
 - Appropriate for Stated Purpose
 - Defensible

- Risk Factor:
 - Beta
 - Collection Methodology
 - Firm size
 - Industry



Model Risk and Business Valuation: Some Data Issues

- **Industry Misclassification**
- **Infrequent Collection**
- **Mixing Data from Different Sources**
- **Omission or Inclusion of Information**
- **Poor Data Quality**
- **Tiny Sample Size**



Model Risk and Business Valuation: Issues Related to Rules of Evidence

- **Difficulty in Testing Model**
- **Little or no Peer Review**
- **Not Generally Accepted Within Appropriate Community**
- **Unknown Error Rate Associated with Methodology**

Model Risk and Business Valuation: Model Choice – Regression

- **Inappropriate Choice**
- **Incorrect Specification**
- **Dependence Among Variables**
- **Non-Linearity**
- **Use of Coefficient of Determination to Select Best Model**
- **Time variation**

Model Risk and Business Valuation: Risk Factors

- **Failure to Consider Vital Information**
- **Ignoring Restrictions on Economic Benefits**
- **Improper Beta Benchmark**
- **Inappropriate or Incorrect Firm Size or Industry Adjustment**
- **Inappropriate Tax Adjustment**
- **Etc.**



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Speaker Biography

- **Dr. Susan M. Mangiero is Founder and Managing Member of BVA, LLC, a business valuation and litigation support firm. She has conducted business analysis, valuations, and deal evaluation and structuring for over 15 years. Dr. Mangiero's industry experience spans several areas, including asset-liability management, stock options, capital markets, economic assessment, financial statement analysis, risk management, statistical modeling and valuation. She worked with mid-size and regional clients as a vice president at several global banks, project manager for a large consulting firm, treasury professional for a Fortune 50 multinational corporation, financial consultant to policy-making organizations and board member of several non-profit groups. Litigation support work includes financial valuation, assessment of economic damages, rebuttal of opponent's testimony, statistical evaluation and creation of instructional materials for jury members and judges.**
- **She is a CFA charterholder, certified Financial Risk Manager and an Accredited Valuation Analyst. She holds a Ph.D. in finance with a minor in math from the University of Connecticut, a MBA in Finance from New York University, a MA in Economics from George Washington University, a BA in Economics from George Mason University and graduate work in computational finance at Carnegie Mellon University.**
- **Her book about pensions, endowments and foundations is due out in August 2004 and adds to her already long list of publications that includes articles for *Investment Lawyer*, *Valuation Strategies*, *RISK Magazine*, *Financial Services Review* and *Bankers Magazine* and chapter contributions to the *Litigation Services Handbook: The Role of the Financial Expert* and the *Handbook of Interest Rate Risk Management*.**
- **She has spoken extensively on the topics of valuation and risk assessment and is a member of the American Society of Appraisers, National Association of Certified Valuation Analysts, Institute of Business Appraisers, Association for Investment Management and Research, Entrepreneurial Women's Network, Quinnipiac University Entrepreneurship & Small Business Management Institute, Financial Executives International, Institute of Internal Auditors, American Bar Association and the Association for Financial Professionals and the National Association of Speakers.**
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