


# Business Valuation and Model Risk



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# Business Valuation Overview

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- ❑ Independent, unbiased opinion of value of business interests, partial or otherwise
- ❑ Used for compliance or value enhancement or both
- ❑ Appraisal of economic rights, not tangibles
- ❑ Purpose of valuation
- ❑ Business Valuation Standards and Guidelines (USPAP, NACVA, IBA, AICPA, IRS, DOL, AIMR, FASB, international groups, etc.)

# Business Valuation as Complex Process

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- ❑ Standards of value: fair value, fair market value, liquidation value, asset value, investment value
- ❑ Multiple definitions for fair value
- ❑ Concept of business interest: equity or invested capital (equity plus interest-bearing debt)
- ❑ Types of equity interests: common stock in a corporation, partnership interest in a limited or general partnership, member interest in a limited-liability company
- ❑ Private versus public company
- ❑ Partial versus full ownership
- ❑ Small versus big organization

# Sidebar:

## A Few Facts About Small Businesses

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- ❑ Firms with fewer than 500 employees “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)
- ❑ Estimated 23 million small businesses in U.S. in 2002 (Source: Small Business Administration)
- ❑ Small businesses currently account for roughly half of the private work force (Source: Small Business Administration)

# Some Reasons to Get a Business Valuation

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- **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**

# Three Basic Appraisal Approaches

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- ❑ 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 of privates sales method
  - Direct market data method

# Partial List of Elements of a Good Model:

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- ❑ 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:

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- ❑ Present value of future expected economic benefits
- ❑ Discount rate determination
- ❑ Discounts
- ❑ Premiums

# Partial List of Model Risk Factors:

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- ❑ Bad model
- ❑ Compound errors
- ❑ Costly to implement
- ❑ Flawed results
- ❑ Inappropriate model choice
- ❑ Incorrect application
- ❑ Poor data
- ❑ Unstable

# A Few Examples of Model Risk

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

# Model Risk and Business Valuation: Why Bother?

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- ❑ **Corporate governance**
- ❑ **Courts**
- ❑ **Department of Labor**
- ❑ **Insurance underwriters**
- ❑ **IRS**
- ❑ **Litigation**
- ❑ **Public opinion**
- ❑ **SEC**
- ❑ **Shareholders**
- ❑ **Etc.**

# Model Risk and Business Valuation: Where Things Can Go Wrong

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- **Data**
  - **Availability**
  - **Classification**
  - **Quality**
  
- **Discounts or Premiums**
  - **Applicable**
  - **Objective**
  - **Reasonable**
  
- **Model choice**
  - **Appropriate for stated purpose**
  - **Defensible**
  
- **Risk factor**
  - **Beta**
  - **Firm size**
  - **Methodology**

# Model Risk and Business Valuation: Some Data Issues

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- ❑ 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

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- ❑ 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

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- ❑ Inappropriate choice
- ❑ Incorrect specification
- ❑ Dependence among variable
- ❑ No null hypothesis
- ❑ Use of coefficient of determination to select best model
- ❑ Etc.

# Model Risk and Business Valuation: Risk Factors

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- ❑ 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.

# Speaker Biography

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- **Dr. Susan M. Mangiero is Managing Director of Business Valuation Analytics, LLC, a business valuation and litigation support firm. Her second company, GSM Associates, LLC, offers executive seminars in the areas of asset valuation, financial analysis, modeling, risk assessment and business statistics. Before starting her two companies, she spent fifteen years working in the areas of asset-liability management, consulting, sales and trading and treasury analysis.**
- **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 early 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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